UNDERSTANDING THE PSYCHOLOGICAL AND CONTEXTUAL PREDICTORS OF PARENT INVOLVEMENT BEHAVIORS AMONG HEAD START PARENTS OF CHILDREN WITH AND WITHOUT DISABILITIES

By

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ABSTRACT

UNDERSTANDING THE PSYCHOLOGICAL AND CONTEXTUAL PREDICTORS
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Preschoolers living in poverty are at risk for several negative school outcomes. Parent involvement in the home and school environment is one way to potentially help mitigate these risks. However, parents in poverty tend to experience barriers that may prevent their involvement. When a preschooler has a disability, their parents can play a potentially even more crucial role, though these parents also face more potential barriers. Hoover-Dempsey and colleagues offer a model of psychological and contextual variables that may help explain what motivates a parent to become involved (Hoover-Dempsey & Sandler, 1995, 1997; Walker, Wilkins, Dallaire, Sandler & Hoover-Dempsey, 2005). This model has yet to be adequately studied with parents of preschoolers with and without disabilities living in poverty.

The present study collected parent survey data from two local consortiums of Head Start preschools. Head Start preschools serve families living in poverty. A measure by Walker and (2005) was designed to capture the psychological and contextual variables from the Hoover-Dempsey model and this measure was adapted for use with preschool populations. The adaptation first involved multiple focus groups to identify a set of items that had reasonable content validity. Then, the surveys were distributed via children's Friday folders at all of the Head Starts in the consortium. Data was collected at an additional consortium to supplement sample size. The results were first analyzed for construct validity through a series of factor analyses. The resulting measurement model contained fourteen predictor variables and three outcome variables. This factor structure underwent multigroup structural equation modeling to

estimate the relationships between predictor variables (i.e. psychological and contextual variables) and outcome variables (i.e. home, school, and home-school conferencing). The results revealed several significant relationships between the psychological and contextual predictors and the outcome variables, as well as group differences between parents of children receiving special education and parents of children who do not receive special education. Implications and limitations are discussed.

For my parents, Mary and Donald Clinton,
and all caregivers who know what it means
to provide unconditional support,
in whatever way they can,
to help their children achieve their goals and dreams.

And for my faithful research assistant, Luna Clinton.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Purpose

Parents and caregivers play an important role in fostering their children's learning. Even when children begin school and start to receive instruction from teachers, parents continue to be important partners in their children's education in both the home and school settings. Parent involvement represents a broad range of activities that include efforts at home, school, and in the community (Epstein, 2010; Fantuzzo, Tighe & Childs, 2000). It is important to note that individuals who are not the biological parent of a child may still serve in the parent, or caregiver role in a child's life. For the remainder of this paper, the term "parent" will refer to adults who are in a primary caregiver role for the child, unless otherwise specified. In other words, individuals that spends the most time caring for the child, or a person in the main parental role (Keenan, Newman, Gray & Rinehart, 2016).

Head Start organizations serve a population that can be difficult to engage in parent involvement activities (Altschul, 2012; Arnold, Zeljo & Ortiz, 2008; Keith et al., 1998; Lamb-Parker et al., 2001; Wong & Hughes, 2006). Based on the evidence of how important parent involvement can be at the preschool level, particularly for students with disabilities, more information is needed to determine what might motivate parents to make the decision to become involved. The law governing Head Start requires that centers take deliberate steps to facilitate parent involvement (Improving Head Start for School Readiness Act, 2007). Despite these efforts, it is unclear if Head Starts are addressing potential factors or barriers that are motivating or discouraging parents from becoming involved. A better understanding of the Head Start parent involvement experience may inform a more targeted approach to the facilitation of parent involvement for this population. This approach requires identifying the psychological and

contextual factors that are predictive of parent involvement behavior for parents of Head Start preschoolers.

Background

Head Start is a federally funded initiative intended to provide quality preschool to low-income families (Improving Head Start for School Readiness Act, 2007). The law governing Head Start organizations consider *low-income* to be at or below the federal poverty line. Part of Head Start's mission is to promote general parent involvement. For the purpose of this study, *general parent involvement* is defined as the collection of opportunities for involvement that are available to any parent, regardless of their child's disability status. General parent involvement at the preschool level can be divided into the specific domains of home involvement, school involvement, and home-school conferencing (Fantuzzo, Tighe & Childs, 2000). This paper refers to these general parent involvement activities as simply *parent involvement*.

Parents from low-income backgrounds, such as those attending Head Start, tend to experience challenges in becoming involved (Arnold, Zeljo & Ortiz, 2008; Altschul, 2012; Keith et al., 1998; Lamb-Parker et al., 2001; Watkins, 1997; Wong & Hughes, 2006). Being from a low-income background is an example of a "status" variable, in that it is a demographic characteristic of a person. Schools cannot change the income status of a parent. In contrast, Hoover-Dempsey and colleagues offer several "process" variables that might explain the mechanisms that lead to a low-income parent's decision to become involved (Hoover-Dempsey & Sandler, 1995,1997, 2005; Walker et al., 2005). They include parents' motivational beliefs, perceptions of invitations for involvement, and life context variables. Unlike status variables, Hoover-Dempsey and Sandler's process variables are potentially more malleable, and thus, provide school personnel with access points to intervene.

In addition to low-income status, child disability status is another characteristic that may relate to parent involvement. Head Start centers are required to have at least 10% of their population be students with disabilities, and sites often enroll greater than 10% of students with disabilities (Head Start for School Readiness Act, 2007; Office of Head Start, 2014-2015). A "child with a disability", as defined by Head Start organizations, is a child who meets the criteria for special education per the national special education law, the Individuals with Disabilities Education Act (IDEA; Individuals with Disabilities Education Improvement Act, 2004). To remain congruent with this definition, whenever a "child with a disability" or "student with a disability" is mentioned in this document, it is referring to a child found eligible for special education under IDEA. Parents of students with disabilities are met with unique demands, such as participating in special education system-related activities (e.g., Individualized Education Program meetings; Individuals with Disabilities Education Improvement Act, 2004) and attending disability-related appointments outside of the school setting (Horridge et al., 2016; Rapee, Schiering & Hudson, 2009; Sonuga-Barke, Daley, Thompson, Laver-Bradbury & Weeks, 2001). It is important to note that parents of students with disabilities have separate involvement demands and opportunities inherent to having a child with a disability, though they also have the potential to engage in general parent involvement activities, and in turn, experience the benefits of these involvement opportunities.

Importance

General parent involvement at the preschool level is important because it has been linked to a number of positive outcomes for preschoolers, including academic, cognitive, and social-emotional benefits (Lampard, Jurkowski and Davison, 2012; Lengua, Honorado & Bush, 2007; Roberts, Jergens & Burchinal, 2005; Russell, Amod & Rosenthal, 2008; Weigel, Martin & Bennett, 2006). Preschool is a crucial period of time for gaining skills for both students in

general (Reynolds & Temple, 1998; Slaughter-Defoe & Rubin, 2001; Topitzes, Godes, Mersky, Ceglarek & Reynolds, 2009) and, in particular, for students with disabilities (Lynch, Dickerson, Saldana, & Fisher, 2014; Park, 2008; Rapee, 2013). Furthermore, there is evidence to that parent involvement may be especially beneficial for at-risk individuals (e.g., low-income), such as parents of children who attend Head Start (Kingston, Huang, Calzada, Dawson-McClure & Brotman, 2013; Sheridan, Knoche & Bovaird, 2010).

Despite these clear benefits of involvement, low-income parents sometimes experience difficulties being involved. Low-income parents are at-risk for a number of barriers to involvement such as maternal depression (National Center for Children in Poverty, 2008), inflexible work schedules (Benson & Martin, 2003), low confidence in their abilities (Bandura, Barbaranelli, Caprara & Pastorelli, 2001), and a cultural mismatch with school personnel (Kim, 2009). Hoover-Dempsey's model of process variables provides a framework to examine these barriers, and potentially inform how one might intervene.

Head Start parents of students with disabilities may have an even more difficult time engaging in general parent involvement (i.e., the parent involvement opportunities available to all parents) due to the inherent additional demands of being a parent of a student with a disability (Murray, Handyside, Straka and Arton-Titus, 2013, Leiter & Krauss, 2004; McLaughlin, 1995; Sonuga-Barke, Daley, Thompson, Laver-Bradbury & Weeks, 2001). It is unclear how these additional responsibilities may impact their general parent involvement (i.e., home, school, and home-school conferencing), and the associated benefits of this involvement. If significant differences are identified between Head Start parents of students with and without disabilities, there may need to be targeted and individualized efforts to promote parent involvement within each group. A closer examination of the role that psychological and contextual variables play in

predicting involvement for each Head Start group might inform involvement efforts, and ultimately boost outcomes for all Head Start students.

Rationale

Several studies have examined the extent that the Hoover-Dempsey and Sandler model (1997) predicts parent involvement among parents of general education, special education, elementary-age, and older students, though none have applied the model to a Head Start population (Green et al., 2007; Hoover-Dempsey and Sandler, 1997; Walker et al., 2005). Bramesfeld and colleagues (2013) attempted to apply the model to a preschool population, however, they did not use a statistically validated measure, nor did they include Head Start preschoolers in their examination. One study examined the model with a special education population, but only with an elementary-age group, and did not compare the findings to parents of students who do not receive special education (Fishman & Nickerson, 2015). The present study used statistically valid measures to investigate the extent that the Hoover-Dempsey psychological and contextual process variables predict parent involvement in a sample of Head Start families of children with and without disabilities.

CHAPTER I

LITERATURE REVIEW

The Importance of Preschool Parent Involvement

The following review is organized into five overarching sections: (1) the importance of preschool parent involvement, (2) the theory and empirical evidence guiding the current investigation, (3) the relevant considerations of parents of preschoolers in poverty, (4) an overview of Head Start organizations, and (5) the present study. The first section provides evidence to support the extent that parent involvement promotes positive outcomes for preschoolers. Next, the Revised Hoover-Dempsey and Sandler Theoretical Model (Walker et al., 2005) is introduced to describe potential psychological and contextual predictors of parent involvement. In addition, empirical evidence is presented in support of the predictive power of each of the psychological and contextual variables individually, and how they function together. Evidence of the variables' relevance for preschool parent populations is also presented, while gaps and lack of research with this population is highlighted. In the third section of the literature review, challenges and opportunities sometimes experienced by preschool parents in poverty are reviewed. This evidence provides a rationale for why an investigation into the psychological and contextual predictors of involvement is particularly important for preschool parents in poverty. In addition, the evidence describing the additional challenges and opportunities of parents of students with disabilities is also discussed; evidence for specific differences in levels of the psychological and contextual variables of the Revised Hoover-Dempsey and Sandler model (Walker et. al. 2005) between parents of students with disabilities and parents of students without disabilities is presented. Then, an overview of Head Start preschools and their focus on parent involvement is provided. Finally, there is a summary and rationale for the current study, including research questions and hypotheses.

Definitions

Parents can be involved in their preschoolers' learning and education in many ways. The construct of "parent involvement" is broadly conceptualized as either those activities occurring within the school environment, or those occurring outside of school, such as at home or within the community that support children's learning (Epstein, 2011). Beyond this dichotomy, some choose to further specify certain aspects of parent involvement. For example, Anderson and Minke (2010) specified school involvement to be either a one-time behavior, like volunteering at a single event, or continuous participation, such as attending parent-teacher association meetings throughout the year. Others emphasize collaborative problem-solving between parents and schools and refer to this as "parent *engagement"* (Epstein, 2011). Still others include parenting practices, such as parental warmth and supporting autonomy in their definition (Sheridan, Knoche, Edwards, Bovaird & Kupzyk, 2010). For the purposes of this study, the focus was on parent involvement rather than parent engagement.

Parent involvement was defined in the current study as home-based, school-based, or home-school conferencing activities (Fantuzzo, Tighe & Childs, 2000). This definition specifically pertains to involvement in the population of interest: Head Start parents. In developing their definition of involvement, Fantuzzo and colleagues (2000) drew upon Epstein's (2011) framework for parent involvement and also engaged in collaborative relationships with Head Start staff, parents, and experts in the field to develop a measure that fully captured involvement behaviors of preschool parents attending Head Start. The result was three domains of involvement that represented, "the most frequent and valued family behaviors" (*p*. 369) among Head Start parents: home involvement, school involvement, and home-school conferencing.

Fantuzzo and colleagues' (2000) definition of home-based involvement includes working with a child on specific academic or literacy skills, conveying a positive attitude about school or learning to one's child, and setting clear behavioral expectations. Fantuzzo and colleagues describe school-related involvement behaviors as volunteering for school events, attending meetings, planning activities with the child's teacher, and interacting with fellow parents of children in the child's class. Finally, Fantuzzo and colleagues (2000) divide specific parent-teacher interactions into a separate category, which they term home-school conferencing. This domain pertains to parent and teacher discussions about the students' academic and behavioral performance, specific, at-home behaviors for the parent and child, and the daily routine in the classroom. The decision to consider "home-school conferencing" as separate from school involvement is supported by content validity evidence (i.e., focus groups with Head Start parents and experts) and construct validity evidence (i.e., factor analysis; see Fantuzzo, Tighe & Childs, 2000). This evidence is further described in the methods section of this document.

Positive Outcomes

The purpose of the present study was to identify factors that predict parent involvement behaviors; however, it is important to establish *why* and *how* parent involvement in preschool matters. Preschool has consistently been identified as crucial time for learning, as it is often associated with multiple, positive, long-term outcomes (Reynolds & Temple, 1998; Slaughter-Defoe & Rubin, 2001; Topitzes, Godes, Mersky, Ceglarek & Reynolds, 2009). Preschoolers are at an age where they are rapidly developing abilities that will serve as the building blocks for more advanced skills, including academic and behavioral abilities (Galotti, 2015).

Parents have many opportunities to facilitate this growth. The following sections discuss research supporting the relationships between parent involvement and children's positive outcomes. It is organized by form of involvement: home involvement and school involvement.

School involvement and home-school conferencing is combined into one section because many studies consider school involvement (e.g., volunteering in the school setting, speaking with other parents are school-related topics) and home-school conferencing (e.g., parents discussing students' progress with the students' teacher, parents discussing school routines with the students' teacher) together, as a single variable. For a discussion of why these two variables are separated into school involvement and home-school conferencing in this study, see the *Methods* section of this paper.

Home. Several studies demonstrate how parents' literacy activities at home can lead to positive literacy outcomes. Weigel, Martin & Bennett (2006) examined the longitudinal impacts of the home literacy environment of 85 parents and their preschool children. They found that parents' engagement in literacy and language related activities with their child (e.g., how often parents read aloud to their children, visited the library, recited rhymes, etc.), significantly predicted children's print knowledge ($b = .26$, $p < .01$) and reading interest ($b = .70$, $p < .001$). Hammer, Farkas and Maczuga (2010) specifically examined Head Start children ($N = 3{,}200$). They found that home literacy activities (i.e. telling the child a story, reading to the child from a book or magazine, teaching letters, and singing songs) were linked to children's vocabulary abilities in kindergarten ($b = .71$, SE = .18, $p < .001$). Froiland, Powell, Diamond and Son (2013) also considered the role of the literacy environment within a Head Start population ($N = 7{,}600$) and found that home literacy environment (i.e., books at home and frequency of reading with a child) predicted children's early literacy skills (i.e., letter-word identification, concepts about print, and receptive vocabulary; $b = .43$, $p < .05$). Wen, Dultosky-Shearer, Hans-Vaughn and Korfmacher (2012) conducted a multifaceted, growth curve analysis of children's vocabulary, literacy, and math achievement with a national sample of 1968 Head Start children. Parent home involvement was included as a predictor in their models, and was defined as learning activities in

the home setting (e.g., told a story, taught letters, word or numbers) and education-related outings (e.g., visits to libraries or museums). Home involvement had a significant positive, main effect on children's vocabulary scores measured at the beginning of Head Start (b = .62, SE = .15, p < .001). In sum, the literature supports the notion that Head Start parents can play an influential role in improving their children's academic skills, particularly in the areas of reading and language.

There is also evidence to suggest that parent behaviors in the home setting may predict math-related skills. Skwarchuk, Sowkinski and LeFevre (2014) examined the role of several parent numeracy behaviors in a group of preschoolers (N = 183), including formal numeracy practices (i.e., explicitly teaching math skills), informal practices (i.e., exposure to math concepts through games), parental attitudes towards literacy and numeracy, and parental expectations. They found that formal numeracy practices predicted symbolic number knowledge (b = .21, p < .05), informal practices predicted non-symbolic arithmetic performance (b = .20, p < .05) and parental attitudes predicted formal numeracy practices (b = .34, p < .05). This study provided preliminary evidence that parent practices at home might not only enhance literacy outcomes, but also numeracy skills.

Finally, parents' home involvement may be associated with positive behavior change. Lengua, Honorado and Bush (2007) observed how parental limit setting (i.e, "clarity, consistency, and follow-through with directions"; p. 47) predicted preschoolers' (N = 80) performance on several tests of effortful control (b = .20, p < 01). In addition, parental home involvement behaviors (i.e., facilitating learning opportunities, communicating positive attitudes towards learning) predicted significant amounts of variance in children's competence motivation (b = .35, p < .0001), attention and persistence (b = .36, p < .0001), attitude toward learning (b = .30, p <.01), conduct problems (b = .30, p < .01), hyperactivity (b = -.24, p < .01) and

inattention/passivity (b = -.20, P < .01) in a sample of 144 Head Start children (Fantuzzo, McWayne, Perry & Childs, 2004). These studies provide evidence regarding the positive role that parents' home involvement, such as through limit setting and facilitating learning opportunities, can play in children's behavioral skills.

School. As is the case with home-based involvement, parent involvement at school is associated with a variety of positive outcomes for preschoolers, including academic, social, and behavior skills. Again, many studies do not delineate separate outcomes associated specifically with home-school conferencing; instead, the authors consider the total outcomes associated with school-based involvement and home-school conferencing behaviors, combined. Regardless of whether these forms of involvement are combined or separate, they are associated with positive outcomes.

Arnold, Zeljo, Doctoroff and Ortiz (2008) found that their parental school involvement variable (i.e., attending events at their children's schools and having conversations with teachers about their children's progress) was correlated with preliteracy skills (r = .27, p < .001) in a group of 163 low-income preschool students. Powell, Son, File & San Juan (2010) found that school involvement (e.g., volunteering at school and meeting with the child's teacher) was a significant predictor of preschoolers' math problem solving (t = 1.99, p < .05), in addition to students' social skills (t = 2.82, p < .01) and problem behaviors (t = -2.46, p < .05). Kingston, Huang, Calzaada, Dawson-McClure and Brotman (2013) found a relationship between school involvement (i.e., teacher rated "parent involvement in education" and frequency of parent-teacher contact) and preschoolers' prosocial behavior (b = 3.59, SE = 1.12, p < .01) in a sample of 171 preschoolers. Finally, Marcon (1999) found several relationships between low-income, urban preschoolers' parents' (n = 708) school involvement (e.g., teacher- reported parent contact with the school, teacher-reported parent participation at school events) and children's

communication (F = 5.78, $p < .05$), daily living (F = 19.15, $p < .001$), socialization (F = 4.08, $p < .05$) and motor skills (F = 11.81, $p < .001$). These studies all demonstrate the potential positive impact of school-based parent involvement.

Some studies attempt to highlight the unique potential benefits of home-school conferencing, though the evidence is more limited. For example, Sheldon and Epstein (2002) found that communication between teachers and parents at elementary and secondary schools (N = 47 schools) was associated with a decreased likelihood that a student would receive an in-school suspension ($r = .62$, $p < .10$). Another study that took place in a high school classroom demonstrated how a progress monitoring sheet that was shared between parents and teachers was associated with improvements with conduct and engagement (Shirvani & Hosiin, 2007). In terms of the preschool literature, there is a lack of evidence that isolates positive outcomes potentially associated between home-school conferencing. However, overall, whether considered separately or together, school-based involvement and home-school conferencing are consistently associated with positive student outcomes.

Theoretical Framework

Overview

Hoover-Dempsey and Sandler (1995) introduced a theoretical model to describe the process variables that may play a role in parents' decisions to become involved in their child's education. In contrast to status variables that simply identify parent characteristics that are associated with more or less involvement (e.g., income level, immigrant status, occupation, race, gender), process variables attempt to answer the questions of why or how parents of certain statuses are more or less involved. In turn, these variables may provide potential access points for schools to intervene. For example, if it is determined that parents who report lower levels of

self-efficacy in their involvement behaviors have lower levels of involvement, schools may be able to take steps to increase parents' self-efficacy.

Hoover-Dempsey and Sandler's (1995, 1997) original model attempted to describe the multiple levels of variables that may ultimately lead to positive child outcomes (see Figure 1). At the first level, the authors drew from the psychological literature to theorize that one's role construction and beliefs, personal efficacy, perceptions of the school environment and invitations for involvement played a role in a parent's decision to become involved in the home or school environment. Level 2 variables were context-related influences that included parents' levels of knowledge and skills and demands on one's time and energy. At Level 3 were specific parent behaviors (i.e., modeling, reinforcement, and instruction) that were theorized to play a direct role in influencing child outcomes. Level 4 contained the interaction between parents' involvement strategies and the child's developmental level, and the alignment between involvement behavior and school expectations. Finally, Level 5 was comprised of children's knowledge and skills outcomes.

Level 1	Parent's basic involvement decision, influenced by • Parent's construction of the parental role • Parent's sense of efficacy for helping her/his children succeed in school • General invitations and demand for involvement from child and school
Level 2	Parent's choice of involvement forms, influenced by • Specific domains of parent's skill and knowledge • Mix of demands on total parental time and energy (i.e., family, employment) • Specific invitations and demands for involvement from child and school
Level 3	Mechanisms through which parent involvement influences child outcomes • Modeling • Reinforcement • Instruction
Level 4	Tempering/mediating variables • Parent's use of developmentally appropriate involvement strategies • Fit between parents' involvement actions & school expectations
Level 5	Child/Student Outcomes • Knowledge and skills • Personal sense of efficacy for doing well in school

Figure 1. This figure depicts the original Hoover-Dempsey and Sandler's (1995; 1997) theoretical model of the parental involvement process.

Hoover-Dempsey, Sandler and their colleagues (Hoover-Dempsey & Sandler, 1997; Walker, Wilkins, Dallaire, Sandler & Hoover-Dempsey, 2005) worked to refine the model through updating its theoretical evidence and conducting empirical tests of its validity. Their work has focused on the first two levels of the model for several reasons. First, given the comprehensiveness of the model and the inclusion of numerous, multifaceted variables, it was considered prudent to focus on refining the model in smaller parts. In addition, the first two levels inform, or precede a parent's decision to become involved, while the remaining three levels theoretically come "after" a parent's involvement behaviors. This process is depicted in Figure 2.

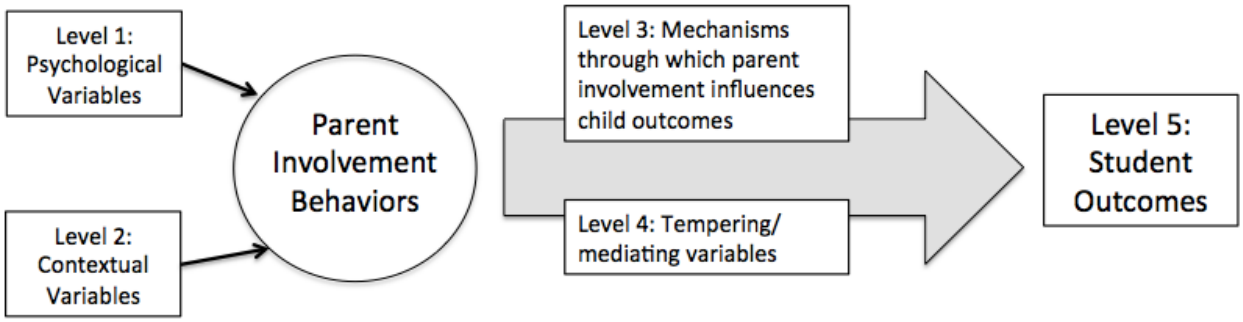


Figure 2. This figure depicts the order of the Hoover-Dempsey and Sandler (1995) process levels where Levels 1 and 2 precede parent involvement behaviors, and Levels 3-5 follow parent involvement behaviors.

Walker and colleagues (2005) collected both qualitative (i.e., interviews) and quantitative (i.e., surveys) data across multiple studies with elementary and secondary parents from diverse income backgrounds to examine relationships between Hoover-Dempsey and Sandler's (1995; 1997) Levels 1 and 2 variables and parent involvement behaviors. Their findings led to a reorganization of the original model (see Figure 3). First, Level 1 and Level 2 variables were consolidated into a single level of variables. The reason for this change was a lack of a logical rationale and empirical evidence for why the psychological variables would precede the influence of contextual variables in a theoretical model. Another consolidation occurred between

Level 1's "general invitations and demand for involvement from the child and school" (Hoover-Dempsey & Sandler, 1997, p. 4) and Level 2's "specific invitations and demands for involvement from child and school" (Hoover-Dempsey & Sandler, 1997, *p*. 4). According to Hoover-Dempsey and Sandler, "general invitations and demand for involvement from the child and school" referred both to aspects of the school environment and attributes of the child. More specifically, general invitations from the school indicated the degree in which a school felt welcoming and conveyed the message that they appreciated parent involvement. General child attributes included characteristics about the child such as age and achievement level. The variable of "specific invitations and demands for involvement from the school and the child," as it implied, referred to specific efforts made by teachers, and specific efforts by one's child to invite parents to become involved. To determine the potential relatedness of these two variables, Walker and colleagues (2005) developed items corresponding to these ideas and surveyed groups of elementary and secondary parents. Internal consistency and factor analysis revealed that several aspects of these variables contributed unique variance to the parent involvement outcomes, while others were more predictive when combined with items from other variables. The result was a reorganization of items that produced variables contained under the category of "parents' perceptions of invitations for involvement from others": Perceptions of General School Invitations, Perceptions of Specific Child invitations, and Perceptions of Specific Teacher Invitations.

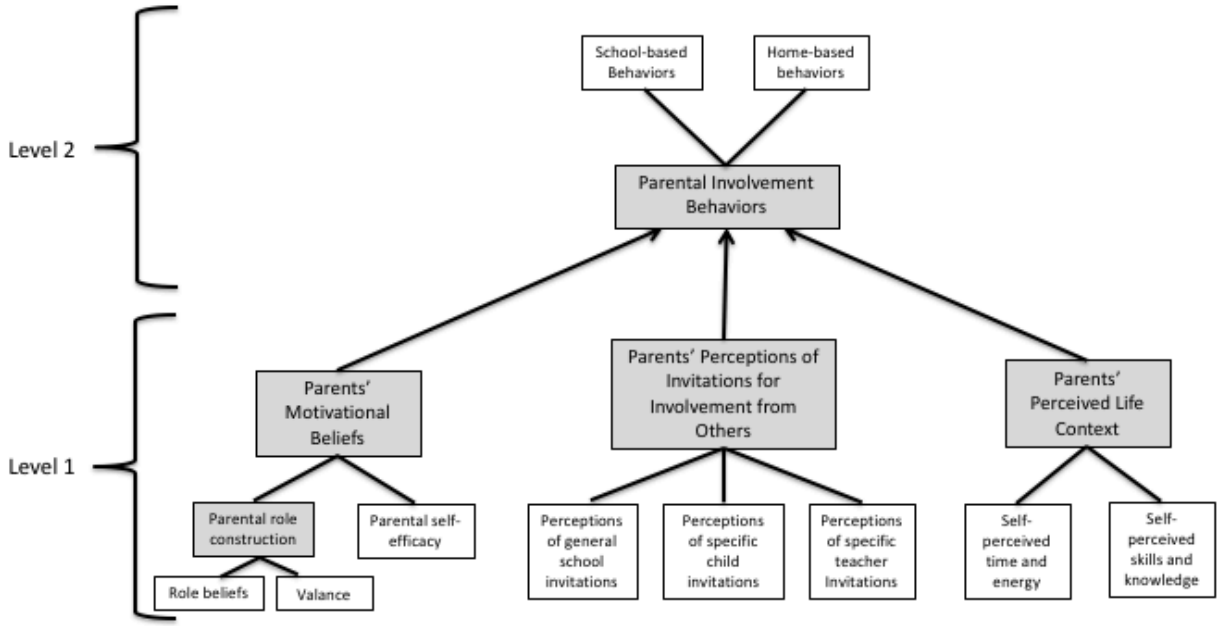


Figure 3. This figure depicts Levels 1 and 2 of the Revised Hoover-Dempsey Theoretical Model (Walker, Wilkins, Dallaire, Sandler & Hoover-Dempsey, 2005). Rectangles that are shaded grey represent categories and rectangles shaded white are variables.

Defining parental role construction was another important clarification. Walker and colleagues (2005) found that statistical analysis suggested that role construction was divided between parents' beliefs about their role as a parent and parents' perceptions of their own school experiences when they were students, or valence. The authors found that these constructs were theoretical components of parent role construction, but distinct qualities as evidenced by their relatively uncorrelated relationship in pilot survey studies (Walker et al., 2005).

Walker and colleagues (2005) also further operationalized what is meant by "parent involvement behaviors". The authors determined that it was important to explicitly define these behaviors so that it may be examined whether certain predictors may differentially predict different forms of involvement. In addition, for measurement and application purposes, it is important to capture whether the process variables are meaningfully related to parent involvement behaviors; otherwise, why should schools care about them? The authors drew on the work of a survey developed by Epstein and Salinas (1993) to identify which parent involvement

behaviors should be included in the model. The result was two separate parent involvement variables: home-based involvement and school-based involvement. Variables characterized as home-school conferencing or home-school communication were included within the school-based involvement. This categorization was supported by factor analysis and internal consistency analyses (Walker et al., 2005).

These consolidations and changes resulted in the current two-level model (see Figure 3). Level 1 contains the three categories of Parents' Motivational Beliefs, Parents' Perceptions of Invitations from Others, and Parents' Perceived Life Contexts. Each category contains two or three variables, and the "Role Beliefs" and "Valence" variables are housed within Parental Role Construction. Level 2 contains Parent Involvement Behaviors, which was divided into the variables of home-based involvement and school-based involvement. Each variable is described in further detail in the next section. This model is referred to as the Revised Hoover-Dempsey and Sandler Model for the remainder of this paper.

Measuring the Theoretical Framework

Many of theoretical changes to the Hoover-Dempsey and Sandler model were informed through measurement. Their measurement analyses included factor analyses (Green et al., 2007; Walker et al., 2005) and qualitative investigations (Walker et al., 2005) to support the construct and criterion validity of the model. Hoover-Dempsey, Sandler, Walker and several other colleagues piloted items from the measure with multiple samples including thousands of parents of elementary and middle school students from diverse income, race, and education backgrounds. Ultimately, they found adequate evidence to support the validity of the Revised Hoover-Dempsey and Sandler Model (see Walker et al., 2005). However, there is still additional evidence and data analysis needed to support the model (Walker et al., 2005). Namely, the theoretical model suggests that the eight psychological and contextual predictors are organized

into three distinct categories (i.e., Parents' Motivational Beliefs, Parents' Perceptions of Invitations for Involvement from Others and Parents' Perceived Life Context), but this organization has not been tested and supported by data collection and analyses; the exploratory and confirmatory factor analyses used to support the factor structure suggested by the theoretical model stopped short of supporting a hierarchical, three factor model whereby the psychological/contextual variables are nested within a three factor solution (Green et al., 2007; Fishman & Nickerson, 2015; Walker et al., 2005). In addition, the items that were used to represent the theoretical variables of school-based and home-based involvement were sparse and lacked depth and breadth in describing these forms of parent involvement. Therefore, additional tests of validity are needed to ensure that the theoretical variables of home and school-based involvement are adequately represented in measurement. Overall, additional work is needed to provide stronger evidence of valid relationships between the model's predictors and school and home-based involvement.

As a result of these measurement gaps, there is a discrepancy between the Revised Hoover-Dempsey and Sandler (Walker et al., 2005) theoretical model and the measurement models previously tested. Currently, there is only empirical support for an eight-factor model (i.e. the seven variables presented in Level 1; see Figure 3) predicting a weak representation of school and home involvement (i.e., Level 2 of Figure 3). The current study employed additional analyses (i.e., structural equation modeling) to either confirm synonymy between the theoretical model and the measurement model or provide evidence for adaptations to the theoretical model. It is important to note that the current study also applied the theoretical model to a new population and therefore, evidence for or against changes to the existing theoretical structure may only apply to Head Start populations. Still, the results provide novel information about the motivators of parent involvement among Head Start parents.

Level 1: Psychological and Contextual Variables of Involvement

The first level of the Revised Hoover-Dempsey & Sandler model (Walker et al., 2005) contains psychological and contextual variables that are hypothesized to contribute to parents' decisions to become involved in their child's education (see Figure 3). Level 1 is divided into three broad categories (1) Parents' Motivational Beliefs, (2) Parents' Perceptions of Invitations for Involvement from Others, and (3) Parents' Perceived Life Contexts. As mentioned above, this categorization is not supported by empirical validity and reliability evidence. However, for the purpose of clarity, these categories are used for organizational purposes in this review of the literature. Parents' Motivational Beliefs is comprised of the variables of Parental Role Construction (comprised of Role Beliefs and Valence) and Parental Self-Efficacy. Parents' Perceptions of Invitations for Involvement from Others contains Perceptions of General School Invitations, Specific Child Invitations, and Specific Teacher Invitations. Finally, the Parents' Perceived Life Context category includes the variables Self-Perceived Time and Energy and Self-Perceived Knowledge and skills. The following sections present theoretical rationales and empirical evidence for the predictive power of each of the Level 1 variables. Whenever possible, evidence with preschool populations is presented. However, most the work with the variables has been conducted with older populations. Thus, in cases where there is a lack of preschool evidence, studies with elementary and secondary students are discussed.

Parents' motivational beliefs. The category of Parents' Motivational Beliefs contains the variables of Parental Self- Efficacy and Parental Role Construction (Walker et al., 2005). Parental Self-Efficacy refers to the extent that a parent believes that their involvement behaviors will be impactful, and Parental Role Construction refers to a parent's conceptualization of the tasks that are his or her responsibility as a child's parent. These variables draw from the psychology literature to make an argument for a relationship between parent's beliefs about

whether their behavior can and should make a difference, and their decisions to become involved.

Parental self-efficacy. The concept of self-efficacy originates from Albert Bandura's (1997, 2010) work about how the extent that someone believes that he or she can be successful at a task determines the likelihood that he or she will attempt the task. According to Bandura (2010), one's sense of efficacy is informed by four sources of information: mastery experiences, social modeling, social persuasion, and one's perceived strength and energy. Regarding parents, self-efficacy theory suggests that a parent may not attempt to be involved in their child's learning because he or she does not believe that they can be impactful through their actions.

Several researchers have considered the role self-efficacy plays in parent involvement. Parent's self-efficacy appears to play a particularly important role in predicting several forms of educational support at home, while evidence for its influence in the school environment is less established (Green et al., 2007; Grolnick, Benjet, Kurowski & Apostoleris, 1997; Sheldon, 2003). Green and colleagues (2007) found that parents' sense of efficacy predicted parents' academic monitoring of their children in a sample of children in first through fifth graders, though did not play a role in school-based involvement. Similarly, Sheldon (2003) found that in a sample of parents of elementary-age students, parental self-efficacy beliefs predicted parents' likelihood to engage in academic support, such as homework help, though not school-based support. Looking specifically at children with disruptive behaviors, Semke, Garbacz, Kwon, Sheridan and Woods (2010) again observed the influence of self-efficacy in the home environment, but not in the school setting.

Evidence for the role of self-efficacy in preschool populations is limited, though does mirror the trend of an association between parental self-efficacy and parent involvement at home, rather than at school. In a Head Start sample, Waanders, Mendez and Downer (2007) found that

parental reports of efficacy in parenting predicted involvement in their Head Start child's home-based activities, but not school-based activities. Newland and colleagues (2011) only examined at-home behaviors (i.e., reading-related involvement), though found that self-efficacy also predicted involvement for their sample of preschoolers. These studies provide some preliminary evidence that efficacy may be an important variable to consider in preschool populations, at least in the home environment.

Parental role construction. This construct is informed by role theory, which is the idea that societal groups have prescribed expectations for the behaviors of their members (Biddle, 1986; Hoover-Dempsey & Sandler, 1995). In terms of parents, some parents may view certain involvement activities to be the teacher's role responsibility as opposed to the parents', for example. Walker and colleagues (2005) found through qualitative and quantitative investigations that these role responsibilities may be informed, in part, by a parents' prior school experiences. For example, a parent who has had predominantly negative experiences in the school setting throughout his or her life may be less inclined to actively participate in involvement activities within his or her child's school setting. Walker and colleagues refer to this notion as a parents' "valence" towards school. Together, a parents' beliefs about their involvement responsibilities and their perceptions of prior school experiences inform a parent's conceptualization of their role activities as a parent.

Role activity beliefs. One's role activity beliefs have been shown to play a role in their future behaviors. According to role theory, individuals behave in predictable ways that align with their social identities and the situation (Biddle, 1986). Hoover-Dempsey and Jones (1997) demonstrated this theoretical idea with a sample of 74 parents of elementary school children. Through in-depth interviews, they found clear themes linking parents' involvement values and their involvement behaviors. Role theory suggests that parents have a set of beliefs about how

involved in their child's education they should be, and this notion informs their involvement behavior.

Valence. Hoover-Dempsey and colleagues (Hoover-Dempsey and Sandler, 1995; 1997; Walker et al., 2005) capture the potential impact of parents' prior school experiences under their variable, "valence." Valence includes a parent's prior experiences with several levels of the school environment, including the school itself and teachers, and the parent's sense of belonging during his or her school experiences. A parent's prior school experiences may also impact their current involvement choices (Hoover-Dempsey et al., 2005; Hoover-Dempsey and Sandler, 1995; 1997; Walker et al., 2005). Cognitive psychologists describe how individuals develop schemas, or templates of scenarios that are based on their prior experiences (DiMaggio, 1997). These schemas inform what individuals expect from future, similar scenarios. For example, a parent who has a history of negative interactions with their teachers throughout schooling may develop a schema of school teachers as a source of undesirable interactions, and thus, choose to avoid these individuals.

There is a lack of empirical evidence that explicitly draws a connection between a parents' valence towards the school environment and their involvement choices. However, there are examples of this relationship within the context of mental health providers. For example, Kerkorian, McKay, and Bannon (2006) demonstrated how parents' prior experiences with previous mental health providers predicted feelings of doubt and mistrust with a current health care provider. More research is needed to determine whether a parent's prior experiences may be a meaningful predictor of parental involvement behaviors.

Parents' perceptions of invitations for involvement from others. This category of variables pertains to invitations for involvement. Hoover-Dempsey and Sandler (1995; 1997; Walker et al., 2005) theorized that parents' decisions to become involved might be influenced by

both the extent that parents perceive the school environment to promote involvement in general, and the number of specific involvement invitations parents receive. This category is divided into three variables: General School Invitations, Specific Teacher Invitations, and Specific Child Invitations. General School Invitations refers to parents' impressions of the school's overall culture of involvement. Specific Teacher Invitations and Specific Child Invitations refer to the frequency and content of personalized invitations from either the teacher or the child.

General school invitations. This variable is meant to represent the extent that a school, in general, is perceived to foster a positive climate for parent involvement. Per the Revised Hoover-Dempsey and Sandler Model (Walker et al., 2005), this includes the extent that the school staff extend schoolwide invitations, portray a positive attitude during parent-school interactions, schedule involvement activities when parents are available, and in general, regularly inform parents of their children's progress. These practices have been linked to increased involvement.

Griffith (1998) examined several aspects of the school environment, including general school invitations qualities. His largescale survey across 122 elementary schools revealed that the following parent-reported school qualities were significant predictors of parent school-based involvement behavior: "empowered parent" (i.e., "the school tells the parent about schools events and meeting, ways the parent can help out in the school, and the school schedules events so that the parent can attend"; b = .147, $p < .05$) and "school climate" (i.e., "the parent is made to feel welcome, office staff are helpful and courteous to the parent, and teachers and principal are interested and cooperative when discussing the parents' child"; $b = .072$, $p < .001$; Griffith, 1998, p. 57). Given the large sample size, and the similarity between these variables and the Revised Hoover-Dempsey and Sandler theoretical variables, Griffith's findings provide compelling evidence for the role of general school invitation characteristics in predicting parent involvement behavior.

Another largescale study drew connections between teacher-reported general engagement efforts and parent school-based involvement (Seistsinger, Felner, Brand & Burns, 2008). In their sample of over 35,000 teachers across elementary, middle and high schools they found that multiple teacher behaviors significantly correlated with parents' attendance at conferences activities, including teachers regularly sharing information with parents about students' performances (.17 to .41, $p < .05$) and sharing resources intended to increase parent involvement with parents (.16 to .49, $p < .05$). This adds additional evidence linking schools' general involvement practices and parent participation in involvement activities.

Neither of these studies examined general school involvement practices in preschool populations. Therefore, more information is needed to draw connections between preschool parents' perceptions of a school's general involvement efforts and their involvement behaviors. However, given that there is evidence for this connection between all education levels aside from preschool, it is likely that is this relationship is present at the preschool level as well.

Specific teacher invitations. A parent's involvement is also likely to be influenced by the amount of personal or specific invitations for involvement that a parent receives. Unlike General School Invitations, Specific Teacher Invitations refers simply to the frequency of teacher invitations for involvement. Scholars maintain that schools can play an active role in engaging parents and facilitating involvement opportunities (Epstein, 2011; Hoover-Dempsey, Walker, Jones & Reed, 2002; Warren, Hong, Rubin & Uy, 2009), such as through specific invitations. Furthermore, a teacher's specific invitation may provide guidance to a parent for how they can be involved when the parent might not otherwise be aware of this opportunity (Hoover-Dempsey et al., 2005).

There is empirical evidence to support a direct relationship between teacher invitations for involvement and parents' involvement behaviors. Feurstein (2000) examined a large sample

(N = 24,599) of parents of 8th graders and found that the more teachers contacted parents about a student's behavior, the more likely parents were to contact the school (b = .258, p < .001), and the more teachers requested that parents volunteer, the more likely parents were to volunteer (b =.108, p <.001). Similarly, Green and colleagues (2007) found that frequency of teacher invitations for involvement were associated with increased school-based involvement (b = .36, p < 001) within a sample of 853 sociodemographically diverse elementary students. These data support the notion that teachers might be able to facilitate the involvement of parents through extending specific invitations.

There is a lack of evidence that connects the frequency of teacher invitations and parent involvement within a Head Start population. The law guiding Head Start programs requires that efforts are made to involve parents (Improving Head Start Readiness Act, 2007), though it is unclear the role that specific invitations for involvement may play in predicting involvement. However, the evidence among parents of older students does suggest that teacher invitations can promote involvement.

Specific child invitations. Parents generally want their children to do well and therefore respond to their children's needs (Hoover-Dempsey et al., 1995). This notion likely contributes to parents' responsiveness when their children ask them to become involved in their education. Hoover-Dempsey and colleagues (2005) highlight that students' invitations could be prompted by a number of factors, such as teachers imploring their students to ask their parents to become involved, a child enjoying positive attention from the parent and therefore seeking it out, or a child seeking assistance from their parent with a difficult school-related task. These invitations may be related to at-home involvement behaviors, such as asking for reading or homework help, or opportunities for the parent to be involved at school (e.g., speaking with a child's teacher, volunteering at a school event).

Evidence suggests that children's invitations for involvement may be more likely to predict involvement at home, rather than at school. Deslandes and Bertrand (2005) examined the role of specific child invitations in a Canadian adolescent sample, and parents reported that child invitations for academic involvement were a significant predictor of at-home behaviors, but not school. Green and colleagues (2007) also found that child invitations predicted parent involvement behaviors at home, but not at school in an elementary-age sample. Finally, Walker and colleagues' (2011) study of Latino parents of elementary-age students found a significant ($p < .05$) relationship between student invitations and home involvement, but not school involvement. This evidence provides support that children's invitations are associated with increased involvement in at least the home environment.

The role of child invitations at the preschool level may be more limited. This may be due, in part, to the fact that the role of the child in soliciting parent involvement is presumably more limited with a younger population. Preschoolers lack maturity and possess less advanced language ability when compared to elementary and secondary level students. Perhaps this indicates parent involvement may be more strongly related to general and specific teacher invitations rather than specific child invitations. Another potential reason is the lack of structured home activities assigned by preschools (i.e., homework). The research with older children highlights connections between child invitations and home involvement; perhaps without the prompt of homework there are less opportunities for child invitations.

Parents' perceived life contexts. Hoover-Dempsey, Sandler and colleagues (1995, 1997; Walker et al., 2005) categorized a parents' self-perceptions about their time and energy, and knowledge and skills, into a category labeled as Perceived Life Context. Compared to the other predictor variables, the variables in this category pertain more closely to parents' perceptions of how logistically feasible it will be to engage in an involvement behavior.

Self-perceived time and energy. Parents have many responsibilities that are competing for their time and energy. Examples include work schedules, caregiving with other children in the family, and taking care of older relatives. These activities have the potential to take priority over decisions to become involved (Hoover-Dempsey & Sandler, 1995; 1997). It is important to note that in research, parents' time and energy are often parent-reported, and therefore, are inherently perceptions. However, perhaps even more important than the "true" amount of competing activities, is one's perception of the extent that they have limited time and energy. According to cognitive psychological literature, the perception of one's resource depletion is potentially more influential than their actual resource depletion (Clarkson, Hirt, Jia & Alexander, 2010).

Researchers have attempted to estimate the impact of parental perceptions of time and energy and there is fair amount of data to support its impact on a parent's involvement, particularly in the school environment. Employment status has been identified as one indicator of less time or energy for parent involvement. In Weiss and colleagues' (2003) survey of mothers of kindergarten students, the researchers found that when controlling for parent demographic characteristics, full-time school or work status was associated with decreased school involvement. Castro and colleagues (2004) observed a similar, negative association between parent employment and frequency of school-based involvement, though not home involvement, among a sample of Head Start parents. Lamb-Parker and colleagues (2001) gathered descriptive data about a variety of factors, in addition to employment status, that might compromise mothers' time and energy for school-based involvement among 68 mothers of children attending Head Start. The two most commonly reported barriers that interfered with their involvement included having a scheduling conflict (30.9%) and having a baby or toddler at home (26.5%). There were also many other time and energy compromising barriers that were reported by at

least ten parents, such as "working, going to school or volunteering outside Head Start during the year" and "not having dependable, convenient child care" (p. 44). In summary, parents who encounter greater perceived work, childcare, or other life demands may be less involved in the school environment.

Self-perceived knowledge and skills. Parents' perceptions of their involvement-related knowledge and skills may also shape the extent that they choose to be involved (Hoover-Dempsey et al., 2005). Motivation researchers often consider one's self-concept of their skills as a factor that contributes to one's decision for action (Eccles, 2009). There are several potential prerequisite skills that a parent may need to participate in involvement activities, such as knowing how to use developmentally appropriate language, how to contact a child's teacher, and the academic skills needed to facilitate a child's learning in the home environment (Walker et al., 2005). Without these skills, a parent may be less likely to engage in an involvement activity. Green and colleagues (2007) note how this variable is related to but is distinctly different than the variable of self-efficacy. The authors argue that two people with the same amount of perceived knowledge and skills may still act differently based on their personal efficacy to access those knowledge and skills.

There is a lack of empirical evidence to support a direct link between a parent's perceived knowledge and skills and their parent involvement behaviors. However, one way to consider the role of parents' perceived knowledge and skills is to examine the effectiveness of efforts to improve parents' knowledge and skills. Fishel and Ramirez (2005) evaluated 24 studies of parent involvement trainings for school-age children (i.e., kindergarten to seventh grade). The authors concluded that one form of parent involvement intervention, parent home tutoring, did have quality evidence to support positive effects on students' math performance: Fantuzzo, Davis and Ginsburg (1995) assigned 76 urban, African American fourth and fifth graders at-risk

for academic failure to either a parent involvement intervention (PI) group, a parent involvement plus reciprocal peer tutoring group (PI + RPT), or control group. ANCOVA analysis revealed that the students who were either in the PI or PI +RPT groups significantly ($p < .01$) outperformed the control group on a measure of math achievement and a measure of behavioral self-concept. Studies contemporary to this review highlight the effectiveness of parent-led literacy training among English preschool children (Drouin, 2009) and limited English proficient migrant families (St. Clair, Jackson & Zweilback, 2012). Despite a lack of studies linking a parents' self-perceived knowledge and skills and their decisions to become involved, there is evidence to parents' actual knowledge and skills are malleable, at least in the home environment, and can ultimately lead to effective involvement.

Level 2: Parent Involvement

The Revised Hoover-Dempsey and Sandler model (Walker et al., 2005) depicts the aforementioned Level 1 conceptual and psychological variables predicting parent involvement behaviors at Level 2. Like Fantuzzo, Tighe, and Childs (2000) who conceptualized family involvement for Head Start preschool families, Hoover-Dempsey, Sandler and colleagues (Walker et al., 2005) drew on the theoretical and empirical parent involvement work of Epstein (2011) to define which parent involvement behaviors these Level 1 variables might be predicting. In a paper authored by Hoover-Dempsey, Sandler and several colleagues in 2005 (Walker et al., 2005), they operationalized Epstein's' constructs as falling under one of two broad categories: school-based involvement and home-based involvement. School-based behaviors included volunteering at a child's school and attending PTA meetings, while home-based behaviors included talking with one's child about his or her school day, and reading with one's child. In a separate paper, Hoover-Dempsey and colleagues (2005) referenced home-school conferencing as being a third, distinct category; they presented evidence for the extent

that their psychological and contextual variables predict, home, school, and specifically "parent-teacher communication" (p. 105). However, they do not provide evidence to why it is separate from school involvement. Other researchers tend to define home-school conferencing as behaviors that include talking with his or her child's teacher about the child's academic and social behavior at school (Fantuzzo et al., 2000). Fantuzzo and colleagues (2000) series of factor analyses provided evidence for home-school conferencing as a separate category specifically among *low-income parents of preschoolers*. Therefore, for the purpose of this study, home-school conferencing was considered a separate involvement category.

Model Functioning

The research presented thus far has predominantly considered how a single Level 1 variable predicts parent involvement. However, examining how all of the Level 1 and 2 variables function together in one model is highly beneficial. When a variable's predictive power is considered in isolation without controlling for the other variables in the model, it is unclear whether the impact we observe is due to that variable itself, or perhaps a collection of variables. Including all of the variables allows for the researchers to use statistical techniques, such as regression and path analysis, to evaluate each variable's unique contribution. Without considering all Level 1 and Level 2 variables within the same model, it is difficult to determine which variable is the primary source of impact and thus, how one might intervene. Consider the following example: a researcher conducts survey research to examine the relationship between a parents' perceived time and energy and their parent involvement behaviors. The researcher finds a positive, significant link between these two variables. However, it turns out that in reality, parental perceptions of time and energy are also positively associated with the amount of invitations they receive from their children's teacher. In other words, parents with low perceived time and energy report lower frequencies of teacher invitations. Perhaps it is the case that

teachers are not asking parents to become involved if they think they do not have enough time and energy. Without these invitations, these parents with low perceived time and energy are not even aware of the involvement opportunities, and thus, are not participating. However, because the researcher only asked about perceived time and energy, she may incorrectly assume that this is the reason parents are not becoming more involved, rather than a lack of invitations. This example demonstrates the importance of evaluating all of the variables together in one study.

Several researchers have examined how a few of the Revised Hoover-Dempsey and Sandler (2015) variables may interact together to predict home or school involvement. Anderson and Minke (2007) examined the relationships between role construction, specific invitations (i.e., from child or parent) and a parents' resources (i.e., time and energy demands) in a sample of 203 elementary-age students. Their path analysis revealed several relationships between these variables. Most notably, the variable of specific invitations was a significant mediator between role construction and all of the home and school involvement behaviors (b = .45 to .49, $p < .05$). However, it is important to note that their model predicted only approximately 50% of the variance in each of the involvement outcome behaviors—this suggests that there is the potential for the other variables from the revised Hoover-Dempsey and Sandler model (Walker et al., 2005) to explain additional variance. Another study focused specifically on the extent that specific invitations, parental self-efficacy, and parental role construction predicted home and school involvement for 770 Canadian adolescents (Deslandes & Bertrand, 2010). They found that specific child invitations, parental role construction, and parental self-efficacy were significant ($p < .05$) predictors of home involvement for 7th and 8th graders, but not for 9th graders; in addition, parental role construction, parents' perceptions of teachers' invitations, and specific student invitations predicted school-involvement. Like the Anderson and Minke (2005)

study, there was still a substantial amount of variance that was unexplained in the involvement outcome variables.

There are three studies to date that have analyzed the functioning of the entire Revised Hoover-Dempsey and Sandler Model. Two are with elementary or middle-school aged children, and one is with children in an early childhood center. Green and colleagues (2007) distributed a survey designed to measure the variables included in the model to 853 parents of elementary and middle school-age students and analyzed the results using multiple hierarchical linear regression. They found that together, all seven Level 1 variables predicted a significant amount of variance in home involvement, F (5, 843) = 78.32, and school involvement, F(5, 843) = 117.09. The following variables contributed significant ($p < .05$), unique variance to home involvement: parental self-efficacy ($b = .23$, SE = .04), specific child invitations ($b = .54$, SE = .04), and time and energy ($b = .14$; SE = .04). The following variables predicted a significant amount of variance for school involvement: role activity beliefs ($b = .08$; SE = .04), parental self-efficacy for involvement ($b = -.08$, SE = .03), specific teacher invitations ($b = .29$, SE = .03), specific child invitations ($b = .31$, SE = .03), and time and energy ($b = .18$, SE = .04). General school invitations and knowledge and skills were nonsignificant across both outcome variables.

Fishman and Nickerson (2015) conducted an analysis of the full model with a sample of parents of elementary-age students with disabilities ($N = 137$). Like Green and colleagues (2005) they used hierarchical regression analyses, where each category of Level 1 variables was entered in a stepwise fashion; this allowed for the examination of the amount of variance that each category of variables may contribute to the home and school involvement outcomes. When the full model was examined, all of the psychological and contextual variables accounted for 18% of the total variance in home involvement. General school invitations was a significant, negative predictor ($b = -.14$, SE = .06, $p < .01$) and specific child invitations was a significant, positive

predictor of home-based involvement (b = .09, SE = .04, p < .05). For school-based involvement all of the psychological and contextual variables explained 38% of the total variance; role activity beliefs (b = .22, SE = .09, p < .01), specific child invitations (b = .09, SE = .03, p < .01) and time and energy (b = .16, SE = .06, p < .05) were the three significant predictors. These findings suggest that many of the variables from the Revised Hoover-Dempsey and Sandler Model (Walker et al., 2005) contribute a unique amount of variance in involvement behaviors even when controlling for the other predictors in the model.

Finally, Bramesfeld and colleagues (2013) collected survey data with parents of children attending an early childhood center that served infants, toddlers, and preschool-age children (N = 43). They found that when all variables from the Revised Hoover-Dempsey and Sandler Model (Walker et al., 2005) were entered into a multiple regression analysis, only the variable of "parents' motivational beliefs" was a significant predictor of involvement behaviors (b = .52, p < .05). However, it is important to note that there were several methodological issues to this study that limit the validity and generalizability of the results. The main concern was that the authors authored their own set of survey items without reporting construct validity (i.e., factor analysis) or content validity (i.e., consulting with experts). Furthermore, they did not report internal consistency coefficients. These issues challenge the notion that these items are capturing parents' true levels of the Revised Hoover-Dempsey and Sandler Model variables, and thus, that we can make claims about these variables within an infant through preschool population.

Overall, more advanced statistics, such as structural equation modeling (SEM), may help further elucidate the nature of the relationships between the Level 1 and 2 variables within preschool populations. There are several advantages to SEM over a multiple regression approach (e.g., general linear modeling). They include the ability to consider the predictive power of all variables simultaneously, as opposed to one at a time, and the flexibility to consider the role of

latent variables (i.e. identify the influence of variables not initially considered in the model; Kline, 2016). However, these three studies do provide preliminary evidence that many Level 1 variables may contribute unique variance to parents' home and school involvement behaviors.

Parent Involvement for Parents in Poverty

Parent involvement may be particularly important for preschoolers living in poverty, and therefore, determining the role of the Revised Hoover-Dempsey and Sandler (Walker et al., 2005) motivational factors for this group is important. Living in poverty is associated with several factors that may put children at risk for poor school outcomes, such as exposure to stressful life events, health concerns and neighborhood unrest (Bradley & Corwyn, 2002; Gutman, Sameroff & Cole, 2003; Kingston, Huang, Calzada & Dawson-Mcclue, 2013). In addition, parents who experience chronic difficulty earning above the poverty level, such as many parents whose children attend Head Start, are more likely to have less advantageous levels of another component of socioeconomic status: education attainment (Addy & Wright, 2012; United States Bureau of Labor Statistics, 2015). According to the National Center for Children in Poverty, 85 percent of children whose parents have less than a high school degree live in poverty. In terms of Head Start parents, Sabol and Chase-Lansdale (2015) found that over 70 percent of their sample had no higher than a high school diploma. Like income level, parents' education attainment often has a negative relationship with child outcomes, such as achievement (Sirin, 2005).

Despite this link, there is evidence to suggest parent involvement may promote resiliency for preschoolers in poverty. It is important to note that much of the evidence in this domain examines those who come from both minority ethnic backgrounds *and* low-income backgrounds, rather than attempting to isolate income status as single variable of interest. However, it is important to consider how one's race and income (among other characteristics) may intersect;

every individual possesses many identities (e.g., race, gender, ethnicity, immigration status), that potentially afford the individual with privileges, or disadvantages in society, depending on the circumstances and combination of identities (*see* Billings and Tate, 1995). For this reason, it is impossible to ignore or separate one's multiple identities when considering their experiences and potential barriers to involvement. Therefore, the evidence presented in the following sections should be considered in the context of the many identities of the population that was examined—for example, outcomes found in a sample of Latino, low-income families, may not apply to African American, low-income families. That said, when samples from multiple populations corroborate similar findings for low-income groups, this is suggestive of how individuals in a diverse group of low-income parents may all experience a level of hardship based on their income status.

Studies examining the impact of parent involvement within low-income samples support the notion that despite the risk factors associated with a low-income background, parent involvement can still make a difference and potentially outweigh the effects of risk factors associated with poverty. Farver, Xu, Eppe and Lonigan (2006) recruited a sample of 144 low SES (i.e., income, parental education attainment, employment status) Latino Head Start parents to test this hypothesis. They found that when controlling for several SES factors, parents' literacy involvement predicted children's social functioning ($b = .30$, $p < .01$) and children's literacy interest ($b = .61$, $p < .01$). Hammer, Farkas & Maczuga (2010) examined a large sample (n = 3200) of Head Start children and found that when holding maternal education constant, home literacy activities (i.e. telling the child a story, reading to the child from a book or magazine, teaching letters, and singing songs) were associated with greater child vocabulary outcomes ($b = .71$, SE = .18, $p < .001$). In other words, parent home literacy involvement boosted scores within a low-income population, despite potential risk factors that might impede vocabulary growth.

Similarly, Froiland, Powell, Diamond and Son (2013) found links between families' home literacy environment (i.e., books at home and frequency of reading with a child) and early literacy skills (i.e., letter-word identification, concepts about print, and receptive vocabulary; b = .43, $p < .05$) in their sample of 551 Head Start families. The findings from this study provided further evidence of the variety of skills that low-income parents may influence through their involvement with learning-related activities.

Three studies have examined the mediation or moderation effects of parent involvement (as is defined for the current study). Examining the interactive role of parent involvement in the relationship between socioeconomic status and children's outcomes can provide particularly compelling evidence. The literature suggests that parent involvement is shown to interact with SES such that parent involvement may buffer against other risk factors associated with SES status. Dearing, McCartney, Weiss, Kreider and Simpkins (2013) examined longitudinal associations between several variables within a sample of low-income children being followed from kindergarten to 5th grade (N = 281). While this study was comprised entirely of low-income families, there was variance in another low-SES component: education level. Again, education level tends to be associated with income, and parents of children in Head Start, on average, have lower educational attainment than the national average (Addy & Wright, 2012; United States Bureau of Labor Statistics, 2015). They found that when mothers were less educated (i.e., one standard deviation below the average education within the sample), this predicted lower child literacy scores. However, this relationship disappeared when there were high parent involvement levels (b = -.13, SE = .03, $p < .01$). In other words, the data suggest that children with less educated mothers, but higher family involvement, tend to have similar literacy scores to children with mothers with higher levels of education.

Kingston, Huang, Calzada and Dawson-Mcclue (2013) examined potential moderation and mediation relationships within a diverse income sample. Using a diverse income sample to answer research questions about the potential protective impact of parent involvement has several advantages. First, it allows for a comparison of whether parent involvement may be assisting low-income preschoolers in "matching" the achievement of their higher income counterparts. In addition, a moderation analysis provides more compelling evidence for whether low-income preschoolers may experience a differential boost from parent involvement, whereby the low-income preschooler experiences greater net gains from parent involvement than a higher income peer who experiences the same level of parent involvement. The results of the authors' multivariate mixed effect models revealed a few moderation relationships that are relevant to parent involvement and SES. In terms of single parent status, a characteristic that is sometimes associated with SES (Schofield et al., 2012), and was in this sample, parent involvement moderated the relationship between single parent status and children's externalizing behaviors. More specifically, single parents with higher levels of involvement had children with lower externalizing scores than single parents with lower levels of involvement, (b = -6.63, SE = 2.28, $p < .01$). Another relevant finding was neighborhood childcare burden. Childcare burden represents the availability of other adults in the community to share in a parents' childcare responsibilities; this is another risk factor for families from low SES backgrounds (Coulton, Korbin, Su, 1999). In the Kingston and colleagues' sample, childcare burden had a significant interaction with involvement (b = -13.64, SE = 6.85, p = .05); families with low involvement experienced a positive relationship between child care burden and externalizing behaviors, whereas families with high involvement did not experience this link. The results of this study suggest that some aspects sometimes associated with parents living in poverty (i.e., single parent status, neighborhood childcare burden) may be moderated by a parents' decision to become

involved. The results of this study provide further evidence of the importance of parent involvement. However, it is important to note that there were several predictors that were not moderated by parent involvement, as hypothesized, including parental education and income. This may be due to the evidence that those from low SES backgrounds typically experience barriers to involvement, and in turn, there may not have been a substantial group of parents who were low SES and highly involved to compare to higher SES individuals. A thorough discussion of these barriers are described in the following section.

Finally, Penner (2016) found that parent involvement yielded greater benefits for low-SES families than for higher SES families. In a sample of 6,636 nationally representative kindergarten students, they found that parents' education engagement (i.e., a composite variable of parent home and school involvement) had a greater impact on low SES students' kindergarten achievement than for their high SES counterparts (b = -.022, SE = .007, p < .001). Again, this is strong evidence to suggest that parent involvement may be particularly important for students from low-income backgrounds.

Barriers to Involvement

Given the protective, and particularly important impact of parent involvement in low-income populations, more information is needed about what is motivating parents to decide to become involved, and what might be preventing involvement for this at-risk group. Research supports an association between SES and levels of parent involvement such that lower levels of SES are associated with lower levels of parent involvement (Epstein, 2011). However, the mechanisms that maintain this relationship are less clear. The psychological and contextual predictors from the Revised Hoover-Dempsey and Sandler model could help inform targeted efforts to increase involvement, and in turn, student outcomes in Head Start populations. The following sections review the literature regarding the barriers that some low-income parents

encounter in becoming involved and in turn, demonstrate the need to formally examine the role these barriers play in predicting involvement for low-income families. This evidence is organized by each of the eight psychological and contextual variables from the Revised Hoover-Dempsey and Sandler model (Walker et al., 2005). Again, if the following barriers contribute to lower involvement levels for families from low SES backgrounds, then efforts intended to mitigate these barriers may help boost involvement levels.

Parental role construction. The Revised Hoover-Dempsey and Sandler theoretical model (Walker et al., 2005) is comprised of, (1) parental role activity beliefs, or what they feel is their responsibility as a parent, and (2) parents' valence, or the extent that a parent experienced positive behaviors when they were attending school. There is reason to believe that a parent from a low-income background may be at risk for experiencing disadvantageous levels of both aspects of parental role construction.

Cultural differences between school staff and families may contribute to differences in role activity beliefs. For example, Guerra and Nelson (2013) reviewed studies of working class Latino parent involvement, and compared low-income Latinos conceptualization of involvement with the National Parent Teacher Organization's National Standards of Involvement. Guerra and Nelson (2013) found that there were several aspects of low income Latino's involvement that were not captured by the standards, such as "instilling values of respect, obedience, conformity and mutual help" and "being aware of and monitoring children's activities and peer group" (*p*. 436; Zarate, 2007). While these differences may not seem immediately problematic, parents who engage in behaviors that align with what schools define as involvement may experience greater benefits. Lee and Bowen (2006) examined the parenting behaviors of parents of 415 third through fifth graders from diverse demographic characteristics. Their results revealed that despite participants engaging in similar levels of involvement, the behaviors displayed by

members of the dominant group (i.e. middle to high income parents) were more strongly associated with achievement. Expanding on this finding, the dominant culture's view of how a parent should be engaged may be linked to how one succeeds in a school system. After all, the dominant culture possesses much of the power and leadership in determining what type of parent involvement is important, and expected (Bourdieu, 1986). Therefore, parents from non-dominant groups' involvement decisions may not be as strongly linked to the skills that help a child be successful within the dominant culture. For example, academic achievement at school may be predicated by the assumption that a parent will be an active participant in practicing the academic skills that the child is learning at school and at home. However, a parent from the non-dominant culture may not be aware, or subscribe to this assumption, resulting in a potential disadvantage. In sum, individuals who subscribe to parental role activity beliefs that do not align with the dominant culture may demonstrate lower levels of involvement that is linked to making a difference in their children's outcomes.

In terms of valence**,** some parents from low-income backgrounds may be more likely to have had negative memories of their own school experiences. Gorman (1998) compared working and middle class parents' perceptions of their school experiences through qualitative interviews. First, he found that working class parents had diverse views on their own educations; some had generally positive views towards their school experiences, which was labeled as the "conformity" group, and others were part of the "resistance" group", who reportedly had mostly negative schooling experiences. In contrast, those that were identified as being part of the middle class were almost entirely comprised of those who had positive school experiences.

Another consideration of valence for parents in poverty is when someone has a negative, unpleasant school experience, they are probably less likely to pursue further education. This aversion could have resulted in a parent who dropped out of high school, or who does not pursue

a college degree. Lower levels of education attainment are one indicator of socioeconomic status, and as mentioned previously, associated with lower income rates (United States Bureau of Labor Statistics, 2015). A recent review of nationally representative survey data revealed that some of the most common reasons individuals drop out of high school are suggestive of negative school experiences, such as "could not get along with teachers" (25%), "did not feel belonged there" (19.9%), and "could not get along with other students" (18.7%; p. 7, Doll, Eslami & Walters, 2013). Perhaps there is an association between negative school experiences and persons with low education attainment (American Psychological Association, 2016; Diemer, Mistry, Wadsworth, López & Reimers, 2013).

Parental self-efficacy. Self-efficacy may also be a particularly important variable to consider with low-income, ethnically diverse populations. As mentioned previously regarding self-efficacy in the Revised Hoover-Dempsey and Sandler model (Walker et al., 2005), self-efficacy is theorized to be positively predicted by several factors, and individuals from low-income backgrounds may be more at-risk for experiencing low levels of these factors. One factor, mastery experiences, implies that previous experiences of successful involvement may predict future involvement attempts. In a population that historically demonstrates, on average, lower involvement rates compared to their higher income peers (Green et al., 2007; Lee & Bowen, 2006), there may be a lack of opportunities for success. In addition, the factors of social modeling and social persuasion, implies that someone may be positively influenced by those in their social circles to have higher levels of self-efficacy. Considering the findings that parents from low-income backgrounds sometimes have less robust social networks (Ajrouch, Blandon & Antonucci, 2005), they may have lower levels of self-efficacy in some cases.

There is some empirical evidence to suggest that SES relates to a parents' self-efficacy. Bandura, Barbaranelli, Caprara and Pastorelli (2001) examined potential pathways between

several parent self-efficacy variables and child outcomes in an Italian sample of 272 children from diverse SES backgrounds. They found that parent SES was a significant predictor of parent's academic efficacy (b = .16,.15, p < .05). Another study examined self-efficacy in a population of 44 mothers living in poverty and found multiple relevant findings (Raver & Leadbeater, 1999). First, when mothers had higher levels of self-efficacy, this was associated with less conflict with one's toddler. In addition, the greater number of risk factors a mother was experiencing (i.e. low levels of social support, high levels of stress, parenting as a young adult, and lack of high school diploma), the lower their levels of self-efficacy. The findings from these studies suggest that self-efficacy is a relevant variable for mothers in poverty and that those with more hardship tend to display less self-efficacy.

Perceptions of general school invitations. There is reason to believe that the school environment may be more likely to be perceived negatively by parents from low-income backgrounds. Often school personnel possess differing sociodemographic characteristics than the populations they serve, which could be associated with differing cultural approaches to learning (as described in a previous section). The majority of teachers come from white, middle-class backgrounds (Nieto, 2009: United States Department of Education, 2016). Further, school expectations for involvement are typically defined by the dominant culture and this is sometimes a different conceptualization than parents from non-dominant cultures (Guerra & Nelson, 2013; Walker, Ice, Hoover-Dempsey and Sandler, 2011). These reasons support a rationale for why parents from low SES backgrounds may feel somewhat uncomfortable in their school environment.

Lareau's seminal, qualitative work helped identify the impact of potential cultural differences in the school system (Lareau, 1996; Lareau & Horvat, 1999). She describes how, like any social environment, there are implicit "rules of the game", or unspoken norms for how to

interact with others. These "rules of the game" are typically determined by the dominant social group, which in the case of schools, is those from white, middle class backgrounds. Someone who is not privy to the rules, such as someone from a low-income background, may be intimidated or feel unwelcome to engage in the school environment. From the school perspective, school staff may be less likely to be amenable, or inviting to families who display behavior that is inconsistent with school staff's expectations.

In Lareau and Horvat's 1999 case examples, she highlights how working class Black families' attempts at providing criticism of school's inequitable practices were perceived by teachers as "very upsetting" and "doing so much damage" (p. 43). This is contrasted with the experience of a middle class, Black family, who acknowledged that there were racist practices taking place as school, though they chose not to bring it up with the school staff. In turn, teachers reported preferring families that did not approach them with what they perceived as, undue, hostile criticisms. Lareau attributed these contrasting experiences to the fact that the higher class families knew the "rules of the game" in schools, and those of lower classes did not. These examples demonstrate the potentially negative dynamics that may develop between school staff and families from the non-dominant culture.

Several studies contemporary to Lareau's work further document reason why parents from low income backgrounds might find a school environment less than welcoming. Peña (2000) conducted an in-depth analysis with low-income Mexican American parents about their parent involvement experiences. Through interviews, document analysis, and observations, some parents reported that teachers and principals sometimes displayed attitudes that were perceived as disrespectful, such as not greeting parents, or dismissing parents' concerns. Smrekar and Cohen-Vogel (2001) conducted semi-structured interviews with low-income parents from African American, Latino, or Pacific Islander ethnic backgrounds. The parents had several

criticisms about the ways that schools attempted to facilitate parental involvement. One example was the formalities surrounding parent visits to schools; some parents in the study did not appreciate the discouragement of parents' unannounced visits to classrooms. In addition, while schools encouraged parents to attend general school meetings, parents critiqued how the content of meetings was dominated by school-directed concerns and priorities. Finally, some parents remarked how they did not appreciate how school contact about one's child was predominantly negative, and thus, not a friendly interaction. These case examples highlight how schools may inadvertently create an unwelcoming environment for ethnic minority low-income parents.

Finally, there is also the potential for school personnel to hold negative prejudices and stereotypes regarding low-income parents. When low-income parents are perceived to display limited involvement, a judgement is sometimes made that they do not value, or are disinterested in their child's education (Lott, 2003; Mapp, 2003). These preconceived notions have the potential to contribute to a lack of invitations.

Perceptions of specific teacher invitations. There are several considerations unique to parents living in poverty that may contribute to a low frequency of specific teacher invitations. Many of these factors occur at the school level, and are somewhat beyond the control of parents. First, teachers may bring several negative biases to their relationship with minority and low-income parents. Kim (2009) conducted a literature review of school-related barriers to involvement and found evidence to support that sometimes teachers underestimate the efficacy and capacity of low-income parents to make a difference. There are multiple characteristics associated with teachers at low-income schools that could be associated decreased involvement invitations, such as being more likely to get paid less and having lower quality classrooms (e.g., a less welcoming classroom environment, less variety of structured activities; Pianta et al., 2005). Given these risks for decreased specific involvement invitations at preschools serving

children in poverty, it is important to learn more about the actual frequency of involvement invitations.

When teachers do extend specific invitations for involvement to parents from low-income backgrounds, parents may respond. This was demonstrated in Anderson and Minke's (2007) investigation into the role of several Hoover-Dempsey and Sandler variables in predicting involvement for parents of low-income elementary students. They found that among these variables, specific teacher invitations had the largest effect (b = .45 to .49, $p < .001$) on all three forms of involvement (i.e. involvement at specific school events, ongoing school involvement, and home involvement). This supports the need for identifying when low-income families are receiving less invitations so that this barrier can be remedied.

Perceptions of specific child invitations. As mentioned in the context of preschool involvement in general, it is unclear the role that child invitations may play in predicting involvement in preschool populations. Language immaturity was cited as a predominant reason why child invitations may not be applicable when considering predictors of involvement at the preschool level. Low-income preschoolers, on average, tend to have even lower language abilities than their higher income peers (Hart & Risley, 2003). If specific child invitations are a relative nonfactor in predicting preschool parents' involvement in middle to upper class due to their language abilities in general, they may be even less relevant in low-income populations.

One study examined the role of specific child invitations in a low-income elementary sample. Walker and colleagues (2011) recruited a sample of urban, Latino parents of children in grades 1 through 6 (N = 147). Approximately 95% of the participants had an annual familial income below $30,000, and 79% had an annual income below $20,000. Using hierarchical linear regression, specific child invitations (i.e., two items probing parents about the extent that their children solicit homework help) contributed a significant amount of variance (b = .71, $p < .01$) to

parents' home involvement behaviors (i.e., two items capturing parental homework help). This provides evidence to suggest that the relationship between child invitations and home involvement may still be evident in low-income populations. However, there is a lack of evidence demonstrating this relationship within preschool populations.

Self-perceived time and energy. Parents living in poverty may experience multiple factors that could compromise their perceived time and energy for involvement. Lamb-Parker and colleagues (2001) analyzed a survey of 68 mothers of children in Head Start to provide a broad overview of mothers' potential barriers to involvement. The mothers reported many life stressors. The average number of life stressors was approximately six and the most common life stressor was feeling depressed (47.1%). Other common self-reported life stressors included "lacked energy or had little interest in things" and/or had a major health problem. Parents were also asked to identify which barriers they perceived got in the way of their involvement. The two most common life stressors that were actual barriers to their involvement were scheduling conflicts (30.9%) or having a baby/toddler at home (26.5%). This study provided data to support the variety of demands competing for a low-income preschool parents' time and energy.

Employment demands, such as inflexible work schedules, have been identified as particularly salient barrier for low-income parents. Low-income parents may work hours that are incompatible with expected involvement opportunities (Benson & Martin, 2003) or that substantially drain parents' energy (Plunkett & Bamaca-Gomez, 2003). Castro and colleagues (2004) used surveys, volunteer logs and classroom observations to capture the involvement experiences of Head Start parents. The authors found a moderate, negative correlation between parent employment and the number of hours that a parent volunteered in the school setting (r = -.39, p < .001). In addition, Kroeger's (2005) qualitative investigation of parent involvement and an ethnically and income-diverse school found that several working class or lower income

parents cited work obligations as reasons why they were unable to volunteer. Overall, the nature of low-income parents' employment could impact the amount of time that they are able to devote to involvement.

Low-income parents may also be at greater risk for depression. Low energy is a core symptom of depression (American Psychiatric Association, 2013). According to the National Center for Children in Poverty (2008), depression prevalence rates are at least 25% for women living in poverty in a given year, as compared to 12% of women in general. Furthermore, prevalence rates among low-income mothers with young children jump from 40 to 60%. Maternal depression has been linked to decreased parent involvement. Kohl, Lengua and McMahon's (2000) investigation of 387 kindergarten and first graders from low-income neighborhoods found that maternal depression was associated with six separate parent involvement factors with standardized beta coefficients ranging from -.13 ($p < .05$) to -.23 ($p < .05$). This relationship was also observed in a rural population, where low-income mothers were at greater risk for depression, which in turn, predicted poorer parenting (Lee, Anderson, Horowitz & August, 2009).

Self-perceived knowledge and skills. Low-income parents may be at-risk for perceiving themselves as having decreased knowledge and skills than higher income parents. This may be informed by three primary reasons: less formal education, decreased cultural capital, and poorer social networks. Lower education attainment is associated with lower income; according to 2014 national statistics from the United States Bureau of Labor Statistics, there is a linear relationship between one's level of education and income. For example, those who have less than a high school degree on average, make just $488 per week, while those with a bachelor's degree make over twice that amount at $1,193. Lower education may indicate that a parent possesses

decreased academic skills that could hinder their perceptions about their own knowledge and skills, particularly when it comes to education-related opportunities.

Parent education levels have been empirically linked to parent involvement, whereby lower education attainment is associated with lower involvement (Fantuzzo, Tighe, and Childs, 2000; Lareau, 2000). Kroeger (2005) contrasted the ways that in which education level impacted parents' perceptions of school-based volunteer involvement in at an ethnically and income-diverse school. She found that some low-income, immigrant families reported having negative volunteer experiences because these volunteer experiences highlight parents' struggles with the English language and lower education levels. In turn, these parents reported having "overwhelming and disengaging" volunteer experiences, while those with higher education attainment found the same volunteer experiences to be "rewarding and fruitful" (*p*. 20).

Cultural capital is another factor they may inform a parents' perceptions of their knowledge and skills (Bourdieu, 1986). Cultural capital refers to the implicit behaviors, attitudes, and preferences of the dominant culture (Bourdieu, 1986; Bojcayk, Rogers-Hverback, Pae, Davis & Mason, 2015). When individuals are not privy to these characteristics of the dominant culture, they may be denied access to certain resources. In the case of parent involvement within the school setting, a parent who possesses cultural capital is aware of effective modes to become involved in ways that are approved by the school culture. Examples of this are seen in Lareau's (1999) case studies where parents chose different routes of involvement, and some strategies were perceived as acceptable by the school, and some were not. Cultural capital deficits are often observed in members of the nondominant culture, such as those from low SES and ethnic minority backgrounds, as these parents have potentially less exposure to the implicit rules of the dominant culture (i.e., white, middle to upper class). Another example is from Trainor's (2010) interviews with mothers from diverse backgrounds about their special education school advocacy

experiences. In this study, certain forms of advocacy were perceived to be more effective at obtaining services than others. Those parents who possessed characteristics of the dominant culture (i.e., being white or middle class), tended to employ the more effective strategies. In sum, cultural capital differences may also help explain why parents in poverty perceive themselves to have less knowledge and skills when it comes to being involved.

Finally, parents' social networks may play a role in parents' knowledge and skills for involvement. When a parent interacts with other parents in their child's classroom, they may exchange information about involvement opportunities at school, or even strategies for effective involvement at home. Sheldon (2002) demonstrated this in a sample of 195 mothers. He found that the size of either the parent's, or a key adult in that parents' social network, predicted both home (b = .224, p < .001) and school involvement (b = .250, p < .001). Unfortunately, lower levels of education are associated with smaller social networks (Ajrouch, Blandon & Antonucci, 2005). Furthermore, there is evidence to suggest that those from higher SES backgrounds have more highly educated individuals in their network, who also may have potentially higher cultural capital (Campbell, Marsden & Hurlbert, 1986; Keller & Mcdade, 2000). In summary, social networks are one way for parents to gain knowledge and skills, yet those living in poverty may have less helpful social networks.

Summary and conclusions. In sum, parents of preschoolers in poverty sometimes have multiple challenges to involvement, though involvement presents a tremendous opportunity to support one's child in the face of potentially multiple risk factors. Because parent involvement can be particularly helpful for students in poverty, it is crucial that the factors that may impede this involvement are investigated. Unfortunately, studies show that parents in poverty may be at-risk for low levels of the predictor variables of the Revised Hoover-Dempsey and Sandler (Walker et al., 2005). A closer examination of such variables, and how they may interact to

contribute to variance in parent involvement levels in low-income populations, can inform school intervention efforts.

Preschoolers with Disabilities

One group of preschool parents in poverty that may experience an even more difficult time being involved is parents of students with disabilities. Previous sections outline the ways in which preschool is a crucial period of development where students are gaining many skills that will inform the rest of their school career. When a preschooler is identified as having a disability, this potentially puts them at risk for having trouble gaining those crucial early skills. However, the disability research suggests that when intervention to help remediate these skills comes early, there is a greater likelihood for better outcomes (Lynch, Dickerson, Saldana, Fisher, 2014; Park, 2008; Rapee, 2013). This, in part, is due to the notion that when children start to miss early milestones, such as obtaining age-expected academic and social skills in preschool, they are likely to fall even further behind as they progress through their schooling. Perhaps if a parent can become involved early to provide the many benefits associated with involvement, this could help reduce the risk of his or her preschooler with a disability falling further behind.

It is important to highlight that the focus of the current study was *general parent involvement*, as opposed to special education-specific involvement. Students with disabilities oftentimes receive special education services, and under the law governing the special education system, schools are required to facilitate parent involvement in this process (Individuals with Disabilities Education Improvement Act, 2004). The focus of the current study was students with disabilities receiving special education services. Examples of special education-specific involvement opportunities include having parents consent to special education assessment and services, and inviting parents to be involved in Individual Education Program meetings. Beyond this, parents of students with disabilities might also choose to request to engage in additional

special education services for their child and research about their child's disabilities (Leiter & Krauss, 2007; Trainor, 2010). In contrast to these special education-specific involvement activities, the current study examined the extent that parents of students with disabilities engage in involvement opportunities that pertain to all parents with preschoolers attending Head Start (i.e., home, school and home-school conferencing behaviors as defined by Fantuzzo, Tighe and Childs, 2000). Oftentimes this paper refers to these general parent involvement activities as simply "parent involvement".

Challenges. Given the importance of parent involvement for preschoolers with disabilities living in poverty, it is crucial that there is an examination into the factors that may prevent this group from becoming involved. Parents of preschoolers living in poverty may display disadvantageous levels of the psychological and contextual predictors for all the reasons that any parent in poverty might; however, there is evidence to suggest that parents of students with disabilities may have even more disadvantageous levels than parents in general education. The four constructs of the Revised Hoover-Dempsey and Sandler model (Walker et al., 2005) that research suggests are the most salient potential barriers for this group of parents are Parental Self-Efficacy, Perceptions of General School Invitations, Self-Perceived Time and Energy, and Self-Perceived Knowledge and skills. This evidence provides support for why parents of students with disabilities may experience disadvantageous levels of these variables when compared to students without disabilities.

Parental self-efficacy. Parents of students with disabilities are tasked with many responsibilities, including learning about a child's specific disability, navigating the special education system, and parenting a child with unique behavioral, learning, and/or physical needs. Because there is potentially more for the parent learn, there may be a higher potential that they feel less confident in their ability to make a difference. A clear link between the self-efficacy of

parents of students with disabilities and their decisions to become involved is not yet established in the literature; however, there are several examples of how influential, though fragile, self-efficacy can be for parents of students with a variety of disabilities. For example, Hasting and Brown (2002) found that maternal self-efficacy played a role in mediating the severity of children with autism's behavior problems in later life, in addition to contributing the worsening of maternal mental health issues. Also among children with autism, Kuhn and Carter (2006) found a significant association between maternal self-efficacy and positive parenting cognitions such that self-efficacy was associated with feelings of agency and well-being, and decreased feelings of guilt. In addition, Soref and colleagues (2012) identified a relationship between parents' self-efficacy and their facilitation of participation in everyday activities for their children with mild motor disabilities. Though lacking a direct connection, this evidence suggests self-efficacy is a relevant variable when considering parents of students with disabilities' contexts for making the decision to become involved.

Perceptions of general school invitations. There are reasons to consider how parents of students with disabilities may not always perceive the school environment and its personnel to be welcoming and trustworthy. First, students with disabilities, by the nature of their disability are often performing behind their peers in at least one area, in the school setting (Individuals with Disabilities Education Improvement Act, 2004). This may lead to several concerns from parents, such as whether the school setting is doing enough to support their children to succeed. In a study by Leiter and Krauss (2004), they found in their sample of parents of 1864 school-age children with disabilities that when parents made requests for additional services, 80% of those parents reported problems obtaining those services. Reasons included "school did not think child needed service", "available services inadequate", "school would not help find services". Another reason parents of children with disabilities may find the school unwelcoming is if they may be

concerned that they will be blamed for their child's poor performance. Parents in Murray, Handyside, Straka and Arton-Titus' (2013) sample of 77 parents of students with disabilities reported that negative parent-teacher relationships was sometimes a barrier to communication, citing reasons such as viewing the school staff as judgmental, impersonal, and intimidating, and experiencing feelings of defensiveness and despair. A final reason is parents often need to rely on school staff in explaining the complicated jargon and procedures of special education. However, parents may not always find school staffs' attempts at this sufficient. Harry, Allen and McLaughlin's (1995) qualitative interviews with a sample of African American parents (n = 24) revealed that staff were often being remiss in their explanations of special education related assessment and placements. Taken together, these reasons suggest a potential for parents of students with disabilities to feel less welcome and feel less positive towards school staff than parents of students not receiving special education.

Self-perceived time and energy. Parents of students with disabilities often experience demands beyond what parents of students without disabilities experience. This includes responsibilities and opportunities inherent to the special education process (e.g., attending Individualized Education Program meetings) and attending outside therapies for their children's disabilities (e.g., receiving applied behavior analysis for their preschooler with autism). These additional responsibilities have the potential to compromise the amount of time and energy that they may be able to devote to general involvement.

Certain disabilities typically require doctor or therapy appointments outside of the school setting. One example is participation in Applied Behavior Analysis (ABA) therapy for students with autism (Dillenburger, Keenan, Doherty, Byrne & Gallagher, 2012). Applied Behavior Analysis relies on the consistent and frequent reinforcement of learning new concepts during sessions that are to take place from 25 to 40 hours per week for optimal results, and parents are

often part of treatment (Hagopian, Hardesty & Gregory, n.d.). Other examples include parent training for preschoolers who are displaying symptoms of attention-deficit/hyperactivity disorder (e.g., Sonuga-Barke, Daley, Thompson, Laver-Bradbury & Weeks, 2001) and individual therapy for the treatment of childhood anxiety disorders (see Rapee, Schiering & Hudson, 2009). Horridge and colleagues (2016) provide striking evidence of the variety of needs and appointments that some children with more severe disabilities may need. They examined the data of 1999 patients who visited neurology disability clinics in a region of England. They found that the average number of annual patient visits by disability type ranged from 4.7 for a genetic syndrome to 7.7 for epilepsy. The authors also provided data regarding the additional medical and therapeutic needs for their patients; patients' disability types had on average 5.5 (genetic syndrome) to 7.8 (epilepsy) additional medical, technology, or family needs that probably required additional appointments. These examples suggest that parents of students with a variety of disabilities are likely to spend part of their time and energy pursuing necessary additional therapies for their child.

Further evidence of parents' decreased time and energy is evident in parents of students with disabilities' employment patterns. There is evidence to suggest mothers of children with disabilities tend to be underemployed or dissatisfied with their employment status (Gordon, Cuskelly & Rosenmann, 2008). Cuskelly, Pulman and Hayes' (1998) comparison of parents of preschoolers with and without disabilities found that mothers reported being less likely to be employed full-time due to a child's medical health issue (42 parents of students with disabilities compared to zero parents of students without disabilities). Baker and Drapela (2010) examined the impact of having a child with autism (N = 215). They identified several predictors of mothers' dissatisfaction with their career that related to the child with a disability: mother took a leave due to the child's autism (b = -.95, odds-ratio = .39, $p < .01$), mother changed work hours

due to child's autism (b = -.83, odds-ratio = .43, p <.01), and mother received a reprimand at work due to child's autism (b = 1.40, odd-ratio = 4.0, p < . 01). Another potential consideration that is particularly relevant to mothers of children with disabilities in poverty is that they may rely on welfare benefits to aid in the care of their children. Brandon and Hogan (2004) examined national, longitudinal survey data of 15,651 mothers and found that having a child with a disability was a significant (p < .10) predictor of a mother remaining on welfare (b = -.21, S.E. = .13, p < .10), and there was an even greater likelihood if both the child and parent had a disability (b = -.36, S.E. = .16, p < .05). Taken together, this evidence suggests having a child with a disability creates time demands that make it more difficult for mothers to maintain their desired level of employment, which in turn, could contribute to their potential financial hardship. These studies demonstrate the breadth and frequency of time demands unique to being a parent of a student with disabilities. Perhaps this contributes to a parent reporting low levels of time and energy as it relates to parent involvement. Future research, including longitudinal studies that can provide stronger evidence for causality (see Menard, 2004) might help clarify how parents' roles interact with the other factors influencing involvement.

Finally, research suggests that mothers of students with disabilities are at a greater risk for depression. By definition, depression is associated with decreased energy (American Psychiatric Association, 2013). Therefore, one way maternal depression may influence a parents' decision to become involved may be via their perceived time and energy. The research suggests that depression is prevalent at substantial rates for parents of students with disabilities. Singer (2006) conducted a meta-analysis of studies that compared rates of depression between mothers of children with and without disabilities. They found that across 18 studies, mothers of children with developmental disabilities tended to be at a greater risk for depression. Within the cumulative population of mothers of children with developmental disabilities, 29% reported

elevated levels of depressive symptoms compared to 19% of mothers without children with disabilities; this suggests that parents of children with developmental disabilities may be most at risk for depression. Resch, Elliott and Benz (2012) applied more stringent diagnostic criteria and found that among their sample of 110 parents of children with disabilities, 18% reported meeting criteria for depression. This prevalence is still significant in that approximately 18 out of 100 parents could be dealing with depression while they attempt to be involved in their children's education (they did not collect comparative depression rates based on this criterion from parents of students without disabilities). Overall, the data suggest that there may be differential rates of depression in parents with and without disabilities, which may translate to differential levels of perceived time and energy.

Self-perceived knowledge and skills. There is reason to believe that parents of students with disabilities require a larger set of knowledge and skills to engage in general involvement behaviors when compared to parents of students without disabilities, and in particular in the home environment. Parents of students with disabilities may be confronted with more challenging behaviors and academic deficits within the home environment; for example, their children may not respond as well to literacy instruction or behavioral techniques that are typically used with preschoolers. Cancio, West and Young (2004) acknowledged this potential knowledge gap in their investigation of specialized homework training for parents of students with emotional/behavioral disorders. The authors trained parents on how to facilitate homework completion with their children, focusing on strategies that are shown to be effective with students with emotional and behavioral concerns. The results of a multiple baseline analysis of six case examples demonstrated that with this training, on average, there was a 1-year grade equivalent improvement on a norm-referenced achievement test from before to after training was implemented. It is unclear the extent that parents are typically afforded this level of specialized

training. In terms of students with learning disabilities, Cooper and Nye's (1994) literature review identified several parent homework help strategies specific to the symptoms associated with learning disabilities. These studies suggest that parents of students with disabilities can benefit from training to help their child with schoolwork at home. Furthermore, parents may not know how to manage challenging behaviors exhibited by children with disabilities. Therefore, parent training by specialized professionals is sometimes sought out to teach parents how they might more effectively set limits for their child (e.g., Maughan, Christiansen, Jenson, Olympia & Clark, 2005). With potentially more to know about how to help one's child academic progress, parents of students with disabilities may perceive that they have less knowledge and skills to be involved at home.

Parent Involvement at Head Start

Head Start is a federally-funded, public preschool initiative that serves preschoolers living in poverty (Office of Head Start, 2015). In 1965, it was decided that a preschool setting was viewed as one way to help meet the needs of young children in poverty. In fact, Head Start was founded to address many of the risk factors described throughout this literature review. While students living in each state of the United States are entitled to a free, public education, this benefit does not universally begin until kindergarten or first grade (National Center for Education Statistics, 2015). Head Start provides preschool to low-income families who otherwise could not afford to send their young children to school. Since its inception, Head Start preschools have focused on providing holistic child services such as medical, mental health, and familial services to meet each disadvantaged child's basic needs for learning. It is important to note that compared to kindergarten through 12th grade public education, Head Start operates from a more federal level, whereby schools are led by federal government departments that prescribe many of the standards that are to be implemented throughout all Head Starts. Although

there is some variation between Head Start programs, such as classroom curriculum choice and hiring practices (*see* Walters, 2015), there is evidence that programs adopt family engagement practices in accordance with Head Start federal guidelines across sites (Hindman & Morrison, 2011)

Part of Head Start's mission to help the "whole child", is taking an intentional approach to include parents in their child's education. In Head Start's most recent reauthorization, organizations are to take steps to educate parents on parenting and educational practices (Improving Head Start for School Readiness Act, 2007). This includes inviting parents to be involved both within the school setting, at home, and through communicating with teachers (Improving Head Start for School Readiness Act, 2007). In addition, in 2018 Head Start published a "Head Start Parent, Family, and Community Engagement Framework" guide for implementing relevant Head Start Program Performance Standards (Office of Head Start 2018). This framework continues to be used in conjunction with the recent, 2016, updated Head Start Program Performance Standards (Office of Head Start, 2016). The framework describes specific parent engagement strategies to facilitate the active involvement of parents. Most of the intended seven outcomes of these strategies fall within Fantuzzo, Tighe, and Childs' (2000) conceptualization of parent involvement. This is depicted in Table 1. Some outcomes fall under multiple categories.

Table 1

Outcomes from the Head Start Parent, Family and Community Engagement Framework Categorized by the Fantuzzo and colleagues (2000) Parent Involvement Variables

Home Involvement	School Involvement	Home- School Conferencing
2. Positive Parent-Child Relationships: Beginning with transitions to parenthood, families develop warm relationships that nurture their child's health, development, and learning. 3. Families as Lifelong Educators: Parents and families observe, guide, promote, and participate in the everyday learning of their children at home, at school, and in their communities. 5. Family Engagement in Transitions: Parents and families support and advocate for their child's learning and development as they transition to new learning environments	3. Families as Lifelong Educators: Parents and families observe, guide, promote, and participate in the everyday learning of their children at home, school, and in their communities 6. Family Connections to Peers and Community: Parents and Families form connections with peers and mentor in formal or informal social networks that are supportive and/or educational and that enhance social well-being and community life	5. Family Engagement in Transitions: Parents and families support and advocate for their child's learning and development as they transition to new learning environments

Adapted from the "Head Start Parent, Family, and Community Engagement Framework. " (Office of Head Start, 2018)

In terms of students with disabilities, the 2018 framework does mention several efforts that are specifically focused towards parents of students with disabilities. However, they do not include strategies that are specific to the special education system, such as sharing community, disability-related resources and educating families about their special education rights. As described previously, general involvement from parents in poverty who have a child with a disability may be particularly challenging, so it is unclear how these standards may promote general parent involvement among parents with disabilities.

Given the Office of Head Start's clear goal of facilitating the involvement of parents, it is important to consider: (1) what may or may not be motivating parents to respond to these strategies, and (2) how effective these Head Start parent engagement efforts are at facilitating

parent involvement. Previous sections have reviewed the evidence to suggest that the Revised Hoover-Dempsey and Sandler Model may be an appropriate framework to consider these questions. However, there has been inadequate research to consider how all of the psychological and contextual variables of the model may jointly predict parent involvement that is specific to preschoolers.

Conclusions

The contextual and psychological variables of the Revised Hoover-Dempsey and Sandler Model have substantial evidence to suggest that these variables are meaningful in predicting parent involvement for elementary and secondary students. To a lesser extent, there have been studies to suggest that these variables also may predict involvement in preschool and disability populations. Preschoolers attending Head Start are a vulnerable population that may be at risk for experiencing contextual and psychological barriers to their parents' involvement, which makes this group particularly important to examine. When those children have disabilities, parents may be at greater risk for difficulty being involved. Head Start does take steps to encourage parent involvement, though it is unclear whether these efforts address influential contextual and psychological factors.

The Present Study

Given the needs of preschoolers with and without disabilities attending Head Start and the barriers that the parents of these preschoolers often experience in being involved, more information is needed to identify what factors might be predicting Head Start parents' involvement behavior. The present study had three main purposes: (1) describe the extent that the Revised Hoover-Dempsey and Sandler Model is applicable to parents of preschoolers attending Head Start, (2) explore the strength of the relationships between the variables of the Revised Hoover-Dempsey and Sandler Model, and (3) determine whether there are differences in

the extent that parents with and without disabilities experience the identified psychological and contextual barriers. To obtain this information, an existing measure of the Revised Hoover-Dempsey and Sandler Model (Walker et al., 2005) that has been used with parents of elementary and secondary students was adapted. Then, Head Start parents of children with and without disabilities were surveyed with the adapted measure. Once the data was collected and entered into a spreadsheet format, analyses determined the extent that the data matched the measurement model that previous research suggests is representative of the Revised Hoover-Dempsey and Sandler model. Then, the resulting data was analyzed with multigroup structural equation modeling (MSEM) to examine relationships among the variables and potential differences between parent groups. This information has the potential to provide the field with specific, malleable parent factors that play a role in parents' decisions to be involved.

Research Questions and Hypotheses

1) Do the adapted Walker and colleagues (2005) survey and Family Involvement Questionnaire (FIQ) have evidence for reliability and construct validity for Head Start parents?
   a) Does the Walker and colleagues (2005) survey have evidence for construct validity and reliability?

      There is reliability and validity evidence for the Walker and colleagues (2005) survey with parents of students from diverse income and racial backgrounds, elementary and secondary populations, and students with disabilities (Fishman & Nickerson, 2015; Green et al., 2007; Walker et al, 2011). It was expected that after slight modifications were made to support the measures' content validity for preschoolers, the resulting measure would provide evidence for reliability and construct validity with Head Start populations.

   b) Does the FIQ have evidence of adequate reliability and validity?

The FIQ was developed for Head Start populations, and several published studies support its reliability and validity (Fantuzzo, McWayne, Perry & Childs, 2004; Fantuzzo, Tighe & Childs, 2000; Waanders, Mendez & Downer, 2007). Therefore, it was hypothesized that the use of the FIQ with the current population would yield adequate reliability and validity information.

c) Is there a more parsimonious factor structure to describe the measurement model?

Previous studies provide evidence for an eight factor solution in predicting parent involvement behaviors (Green et al., 2007; Walker et al., 2005). However, the eight psychological and contextual variables are consistently labeled as belonging to three overarching categories: Parents' Motivational Beliefs, Parent Perceptions of Invitations for Involvement from Others and Parents' Perceived Life Contexts. There are no studies that have tested whether there is a factor structure to support this categorization. If the factor structure supported a hierarchical categorization such that the eight predictor variables could be combined to create composite variables, then this may enhance the utility of the resulting measure; it would allow the possibility of deriving composite scores that summarize the categories of variables. In addition, it would provide evidence to support or refute the theoretical categorization (i.e., the organization of the seven predictor variables into three overarching categories) of the Revised Hoover-Dempsey and Sandler model for Head Start populations.

2. To what extent does the Revised Hoover-Dempsey theoretical model (Walker et al., 2005) predict parent involvement behaviors in Head Start populations?

Based on the model's fit with elementary and secondary students from diverse income, racial, and disability backgrounds (Fisherman & Nickerson, 2015; Green et al., 2007; Walker et al., 2005) and the preliminary evidence that the psychological and

contextual variables may relate to parent involvement in preschooler populations (e.g., Lamb-Parker et al., 2001; St. Clair, Jackson & Zweilback, 2012; Waanders et al., 2007), it was expected that the psychological and contextual variables would explain variance in the parent involvement outcome variables. Some research supports the notion that certain variables may differentially predict home, school, or home/school conferencing involvement. However, given the slight variations in ways that variables are defined, conflicting findings across studies, and methodological weaknesses, this model remained exploratory in determining differential prediction of home, school, and home/school conferencing.

3. What differences exist in the levels of predictors of parent involvement between parents of general education students and parents of students receiving special education services?

There were several hypothesized differences in the psychological and contextual variables between these two groups. First, parents of students receiving special education services (PSE) are expected to report lower levels of *perceived self-efficacy*. Being a parent of a student with a disability is potentially uniquely challenging due to the sometimes specialized parenting and involvement associated with the needs of children with disabilities. In addition, mastery experiences are theorized to be a component of developing self-efficacy, and a parent of a child with a disability may experience greater challenges in mastering skills.

Parents of students with disabilities were also hypothesized to overall, have a less positive *perception of general school invitations*. Students with disabilities, by definition, have more difficulty achieving at their grade level and likely experience more difficulties or problems at school than their general education counterparts. When children do poorly

in school, this has the potential for negative parent-teacher interactions such that teachers inform parents of the ways their child is underperforming (parents likely prefer to hear positive affirmations about their children rather than being told the ways in which their child is performing poorly). Furthermore, the research demonstrates that parents of students with disabilities can be frustrated when schools do not provide the services that the parents feel their child needs to succeed in school (e.g., Leiter & Krauss, 2004). These reasons support the notion that parents of student with disabilities may be more likely to develop a negative view towards school personnel, and thus, less advantageous perceptions of general school invitations (e.g., the school as a welcoming environment, teachers are interested and cooperative when they discuss my child).

Another hypothesized difference was a decreased amount of perceived *time and energy* for general parent involvement opportunities. This might be due to the additional demands often inherent to being a parent of a student with a disability. In addition, parents of students with disabilities are likely tasked with a greater amount of specialized knowledge and skills to master in order to be involved even at the general involvement level and therefore, may report having decreased *knowledge and skills*. For example, two studies indicated that when parents were being taught specific strategies to manage their child's disability symptoms, this helped in assisting with their child's homework completion (Cancio, West & Young, 2004; Cooper & Nye, 2004). In summary, parents of students with disabilities are expected to have less advantageous levels of self-efficacy, general school invitations, and perceived knowledge and skills.

CHAPTER II

METHOD

Research Design

This study was a quantitative investigation of the Revised Hoover-Dempsey and Sandler Model (Walker et al., 2005) with the Head Start population. Part of the study examined evidence of the validity of an adapted measure of this model for preschool populations. Input from Head Start representatives was sought to support the measure's content validity and exploratory factor analyses (EFAs) were conducted to examine evidence for construct validity. Then multigroup structural equation modeling (MSEM) was used to examine the relationships between the variables in the Revised Hoover-Dempsey and Sandler Model (Walker et al., 2005) and evaluate potential mean differences between Head Start parents of students receiving special education (PSE) and parents of students who were not receiving special education (PGE).

Sampling

Participants were first recruited from a sample of parents with children attending a Head Start preschool within the Capital Area Community Services (CACS) consortium during the spring of the 2016-2017 school year or fall of the 2017-2018 school year. At the time of data collection, this consortium served approximately 1460 students across 28 preschools for a total of 50 preschool classrooms within four mid-Michigan counties (Capital Area Community Services, 2016). Per the current CACS special education coordinator, during the spring of the 2016-2017 school year, CACS was serving approximately 170 special education services students. In the fall of the 2017-2018 there were approximately 105 students receiving special education.

Recruitment was expanded from January through March 2018 to another Mid-Michigan Head Start Consortium: the Livingston Education Services Agency (LESA). According to data

from their 2016-2017 Annual Report, they served 486 Head Start students across 21 classrooms (LESA, n.d.). There were 36 current students receiving special education in January 2018 according to the director of their Head Start programs.

Measures

The measures chosen to capture the variables of interest are described below. Items that had not been previously validated within Head Start populations underwent a review and adaptation process with the aid of Head Start representatives and parents. This review informed which items were appropriate for appropriately measuring potentially unique needs and circumstances of Head Start parents. This process is further described in the "Procedures" section below.

Demographic Questionnaire

The Demographic Questionnaire served several purposes: to determine whether the individual was eligible to participate in the study, to identify the participant's group membership (i.e., PSE or PGE), and to provide descriptive information about the sample (see Appendix A). First, participants were asked whether they were the primary caregiver of a child attending a Head Start. Definitions of "primary caregiver" vary across research studies, and even state legislature. For the purpose of this study, terminology similar to the wording of Keenan, Newman, Gray & Rinehart (2016) was used. Participants were asked the following: are you a primary caregiver for the child (i.e., family member that spends the most time caring for the child, or a person in the main parental role)? If the participant indicated "no" for this question, then he or she were informed that he or she were not eligible to participate and were told to discontinue the survey. If he or she responded, "yes", then he or she was prompted to provide how he or she were related to the child (e.g., biological parent, foster parent, grandparent, aunt, etc.).

Additional items, as indicated in Appendix A included whether parents had a child receiving special education and the disability category under which their child received services. If parents reported not having a child with a disability, then they were prompted to think about their *oldest child* who attended Head Start as they completed the survey. This was intended to ensure that parents who had multiple children who attended Head Start were only thinking of one of their children. Parents were also asked whether their child had received a diagnosis from a doctor, psychologist, or other health professional as having a "learning difficulty or a disability (for example, ADD, ADHD, autism, or something else)". The purpose of this question was to capture whether a parent may have a child that required additional care outside of school due to a disability but was not eligible for special education services at school.

Finally, parents were asked to provide information about their race, ethnicity, income level, employment status, educational level and gender. The wording of these items was similar to that used in the United States Department of Health and Human Services nationwide survey of Head Start parents: The Head Start Family and Child Experiences Survey (FACES; Matematica Policy Research, 2013), which had previously undergone a piloting process and was customized for parents of Head Start children.

Psychological and Contextual Predictors

The psychological and contextual predictors of parent involvement had yet to be comprehensively examined in Head Start populations. For this reason, there was a lack of precedent on how to measure these variables. The Walker and colleagues (2005) measure of the Hoover-Dempsey & Sandler model (1997) has been used with adequate reliability and validity with populations as young as first grade (Green, Walker, Hoover-Dempsey & Sandler, 2007). With limited adaptations, the measure was adapted to accurately capture the psychological and contextual variables of a slightly younger, different population. A copy of this survey was

reviewed by several individuals from CACS Head Start leadership, other Head Start employees, and Head Start parents. Their feedback resulted in a few wording changes, additions, or omissions that are described below. Appendix B depicts new items compared to old items.

The original Walker and colleagues (2005) measure of the psychological and contextual parent involvement factors of Hoover-Dempsey and Sandler's (1997) revised model is depicted in Appendix C. This measure included eight scales to represent the eight psychological and contextual variables with the Revised Hoover-Dempsey and Sandler Model. All items prompted parents to respond by providing a rating on a six-point Likert scale. Scales are calculated by summing the values associated with each of the associated Likert item ratings (e.g., if a respondent indicated ratings of 1, 3, 4, and 5 for the four items included on a particular subscale, the subscale score would be 1+3+4+5 or 13). The construct validity of these totals is reportedly supported by prior factor analyses (Green et al., 2007; Walker et al., 2005). There were several items that were reversed coded before they were used to calculate the subscale score. For example, one item on the Self-Efficacy subscale probes parents about the extent they agree with the statement: "I don't know if I'm getting through to my child". A parent who circles "Disagree (2)" on this item would therefore receive a score of "5" for the purposes of calculating the subscale score. Higher totals on scales indicate greater, or more positive levels of endorsement.

Measure adaptation. In order to determine the extent that the items on the Walker and colleagues (2005) measure pertained to the present Head Start sample, the researchers worked with community partners and parent representatives at the CACS organization to make adaptations to items. Collaboration with the Head Start partners and parent representatives provided an opportunity to gauge the Walker and colleagues (2004) measure's overall cultural appropriateness for use with the Head Start sample. Soliciting this feedback is aligned with recommendations for conducting culturally sensitive research (Bernal, Cumba-Aviles,

Rodriguez-Quintana, 2014; Walker et al., 2005); when research is conducted with historically marginalized, understudied populations, steps to collaborate with community members and those familiar with such populations should be taken to ensure that methods are tailored to these populations' potentially unique characteristics.

Gaskins (1994) outlined a research and theory-based method for adapting measures in such scenarios. This method was used to adapt the FIQ measure from a measure intended for Head Start populations to a family involvement questionnaire for elementary populations (Manz, Fantuzzo & Power, 2000). Using Manz and colleagues' procedures as a model, the first step is gathering representatives from the population, which in this case was parents of Head Start children and Head Start employees (Gaskins, 1994; Manz, Fantuzzo & Power, 2000). Then, the researcher led the group through the measure, item by item, and participants indicated which items they feel do not apply to. In other words, participants indicated to the researcher which items should be modified or omitted. In addition, participants volunteered which items might be added that still fit within the theoretical domain.

The first round of feedback was collected in a meeting attended by the director, special education coordinator, and a parent liaison of CACS Head Start. The purpose of the meeting was to propose the project and elicit feedback about how the proposed methodology could best be applied within the CACS system. The attendees gave several recommendations regarding wording in the survey. One suggestion was that when asking whether a parent had a child receiving special education, provide examples of what those services might be in case a parent is unsure of whether their child receives special education. Another adaptation they suggested was to change "homework" to the parent-child activities that are assigned to Head Start parents, such as Nightly Reading. The attendees also recommended that the researcher attend a Head Start Policy Council meeting in order to get survey feedback from Head Start parents and employees.

Further, they affirmed the use Friday Folders and encouraged me to use both paper and electronic versions of the survey.

The researcher attended a policy council meeting on March 17, 2017. The CACS contact person placed the research with an established, existing committee group that included a total of four participants: two recently former Head Start parents and two Head Start employees. With this group, the researcher first gave an overview of the project and then asked them to go through each question and circle any items that did not make sense to them or do not apply to Head Start children or parents. Once everyone finished going through the survey, their findings were discussed. Solutions to some of the critiques that participants presented were resolved with the participants, while other comments were documented and addressed later. The changes made are outlined in the Psychological and Contextual Predictors section.

Most recommended changes were either that an item was asking something irrelevant or that an item was difficult to comprehend. Items that queried about homework or assignments were replaced with language to describe Head Start at-home parent-child activities. The participants were also confused by how to interpret the word "effective", as in "I know how to *effectively* communicate with my child". Items using the word "effective" were changed to more explicit language such as "I know how to communicate well with my child". Further, participants felt that the item "I don't know if I'm getting through to my child" was unclear. Instead, the item was changed to "I don't know if my child understands what I say to him/her". One former parent was unsure what was meant by "I have the skills to help out at my child's school". In the meeting it was proposed that specific examples of what "skills" meant would be helpful to clarify the object of the item. However, upon further reflection, it was decided that trying to fill in examples of what "skills" were may unintentionally narrow the scope of the question; instead, it was decided to leave interpretation up to the person filling out the survey. Finally, one parent

recommended an additional item for the "general school invitations" scale. This parent noted that sometimes, invitations for events are offered, but with short notice. There was no question that appeared to capture this aspect of general school invitations so therefore, the following item was added: "This school lets me know about parent activities, meetings and special school events with enough time in advance". A table of all of the item changes is depicted in Appendix B.

Parental Role Construction. The items devoted to Parental Role Construction included several items that probed specifically about the categories of Role Activity Beliefs and Valence. During the initial scale development, these categories contributed unique variance to the Role Construction subscale, and so were considered separately within the Role Construction subscale (Walker et al., 2005).

Role Activity Beliefs. Items about Role Activity Beliefs probed parents about the extent that they perceive it is part of their job as a parent to be involved in their child's education. All items in this category begin with, "I believe it is my responsibility to…", and examples include "communicate with my child's teacher regularly" and "talk with my child about the school day" (Walker et al., 2005, *p*. 101). The original validation sample attained an alpha score of .80 (Walker et al., 2005). Alpha scores of .70 are considered the minimum acceptable value for use in research (Remler & Van Ryzin, 2011; Spector, 1992).

One change suggested by Head Start representatives was the use of the term "homework". Head Start preschool children are not typically assigned homework like older students. Instead, Head Start parents are assigned several activities to promote learning called "LINKS, Steps to Success, and Nightly Reading". Two items were changed in the Role Activity Beliefs section to reflect this change in wording (see Appendix B).

Valance. Valence Toward School items prompt parents to rate how positive they feel towards aspects of their own school experiences. These include having parents rate their own

school experiences in areas such as what their teachers were like, and what their own sense of belonging was like when they were in school. The validation sample attained a Cronbach's alpha score of .85 for this category (Walker et al., 2005). No items were changed in this scale.

Parental Self-efficacy. This scale contains seven items that describe the extent that parents believe their involvement makes a positive difference in their children's educational growth. Example items include "I feel successful about my efforts to help my child learn" and "I make a significant difference in my child's school performance" (Walker et al., 2005, *p*. 101). The Cronbach's alpha for this scale when examined with the original validation sample was .78.

Two questions in the Walker et al. (2005) measure reference students' "grades". The wording was changed in these questions to reflect the fact that Head Start preschool students do not receive grades in the traditional sense. The adapted items changed grades to "developmental goals" or "developmental progress" (see Appendix B).

General School Invitations. In this scale, parents were probed about the extent that they agree with statements regarding invitations from the school generally. An example is "I feel welcome at this school" (Walker et al., 2005, p. 101). The Cronbach's alpha for this scale when examined with the original validation sample was .88 (Walker et al., 2005).

One item was added to this scale. A Head Start parent suggested that one of the issues she and other parents encounter is that school invitations are provided with short notice which might make it more difficult for a parent to attend. The item, "This school lets me know about parent activities, meetings and special school events with enough time in advance" (Walker et al., 2005, p. 101) was added to address this concern.

Specific Child Invitations. Then, parents were asked to rate the frequencies that their children invited them to be involved. One example is, "My child asked me to help out at the school" (Walker et al., 2005, p. 102). The Cronbach's alpha for this scale when examined with

the original validation sample was .70 (Walker et al., 2005, p. 102). One item that referenced "homework" was changed to "learning activities at home (for example LINKS, Steps to Success, Nightly Reading; see Appendix B).

Specific Teacher Invitations. Parents were asked to rate the frequencies with which they perceive that their children's teacher invite them to be involved. One example is, "My child's teacher asked me to attend a special event at school". The Cronbach's alpha for this scale with the original validation sample was .81 (Walker et. al., 2005, p.102).

Two items were changed from the original measure. One item that referenced "homework" was changed to "learning activities at home (for example LINKS, Steps to Success, Nightly Reading; see Appendix B). Another item asked parents if their children's teachers expected parents to *supervise* their children's homework. This item was considered not applicable and omitted because Head Start representatives characterized the Head Start learning activities at home as a joint-effort between parent and child rather than an independent assignment for the child needing supervision (see appendix B).

Perceived Time and Energy. Items in the Time and Energy scale probe about the extent that parents perceive having enough time and energy to perform parent involvement tasks. All of the subscale items begin with "I have enough time and energy to…", and probe about various involvement activities (Walker at al., 2005, p. 102). In the original pilot sample, the Time and Energy subscale yielded a Cronbach's alpha of .84.

Similar to the Specific Teacher Invitation changes, one item that referenced "homework" was changed to "learning activities at home (for example LINKS, Steps to Success, Nightly Reading; see appendix B) and another that referenced supervision was omitted (see appendix B). Feedback from Head Start representatives also led to changing the wording in two items that used the word "effectively". The item "I have enough time and energy to communicate

effectively with my child about the school day" (Walker et al., 2005, p. 102), was changed to "I have enough time and energy to communicate well with my child about the school day" and the item "I have enough time and energy to communicate effectively with my child's teacher" was changed to "I have enough time and energy to communicate well with my child's teacher".

Perceived Knowledge and Skills. This scale probes parents about the extent that they feel competent in performing parent involvement activities. This scale contains statements such as "I know about special events at my child's school", and "I know how to communicate effectively with my child about the school day" (Walker et al., p. 102). The Knowledge and Skills yielded a Cronbach's alpha of .83 in the original sample (Walker et al., 2005).

The same changes that were made for Specific Teacher invitations and Perceived Time and Energy scales pertaining to homework and supervision were made to two items from the Perceived Knowledge and Skills scale (see appendix B).

Parent Involvement Outcomes

The Walker and colleagues (2005) measure includes items pertaining to parent involvement outcomes, however, these are relatively few in number, reveal limited information about the construct, and appear more appropriate for older samples. For this reason, a different questionnaire that is anticipated to measure the same parent involvement construct was used. The Family Involvement Questionnaire (FIQ; Fantuzzo, Tighe & Childs, 2000) contains more items and was validated with preschool populations.

According to their authors, both the Walker measure and FIQ are derived from the Epstein theoretical model of Parental Involvement, whereby involvement activities are at their most broad level, defined as occurring at school, or outside of school (Epstein, 2011; Fantuzzo, Tighe & Childs, 2000; Walker et al., 2005). The FIQ measure divides this categorization even further to include Home-School Conferencing as a separate subscale in addition to Home and

School Involvement (Epstein, 2011; Fantuzzo, Tighe & Childs, 2000; Green, Walker, Hoover-Dempsey & Sandler, 2007). It should be noted that when the Hoover-Dempsey & Sandler model was originally developed, the Epstein model was still in its infancy, and thus had commonly only divided parent involvement into the more basic categorization of home and school settings (Epstein, 1996; Epstein & Salinas, 1993; Hoover-Dempsey & Sandler, 1997). Later iterations of the Epstein theoretical model included more precise categorization, as is reflected in the FIQ. In other words, the FIQ can be considered a more comprehensive assessment of parent involvement practices, as defined by the Epstein model of involvement (Epstein, 2011; Fantuzzo et al., 2000). Another reason to include home-school conferencing items is that when the FIQ was validated with specifically preschool parent populations, the items pertaining to home-school conferencing were identified during parent focus groups as particularly important (Fantuzzo et al., 2000). Thus, to thoroughly capture school involvement for preschool parents, sufficient home-school conferencing items should be included. Therefore, the Home-School Conferencing is likely a relevant, separate subscale to include in assessing parent involvement within this population (Fantuzzo et al., 2000).

Family Involvement Questionnaire. The Family Involvement Questionnaire (FIQ) measures the frequency that parents engage in various home and school involvement activities. It is divided into three subscales: (1) School Involvement, (2) Home Involvement, and (3) Home-School Conferencing. Each subscale contains 10, 13, and 11 items, respectively. The measure was developed specifically for populations of children who were attending a Head Start program, child development center, or were in public kindergarten or first grade that were low-income, and ethnically diverse (Fantuzzo, Tighe & Childs, 2000). On the measure, parents choose from a 4-point Likert scale to indicate the frequency that they engage in a list of involvement behaviors (1 = rarely, 2 = sometimes, 3 = often, 4 = always). Total scores are calculated for each subscale

by summing the corresponding value of each Likert item (e.g., indicating a "1" on the Likert scale is worth 1 point).

The developers originally validated the FIQ with 641 parents of young children, including parents of students in Head Start, and observed adequate validity and reliability (Fantuzzo et al., 2000). The authors cited theory, empirical evidence, and findings from their focus groups to support the content validity of the conceptual categories. In addition, construct validity was assessed through factor analysis that met established standards for this type of analysis. This validation sample also attained Cronbach's alpha coefficients of .85, .85, and .81 for each of the subscales, respectively. Furthermore, following its development, the FIQ has been applied in other studies with additional authors reporting reliability levels above .70 within their samples (e.g., Manz, 2015; Mendez, 2012).

School-Based Involvement. This subscale measured the frequency that the parent is engaging in activities pertaining to having an interaction with the school environment or a member of the school community. Examples include items that asked parents to rate their frequency of participation in activities in which they are physically present in the school setting, such as "I volunteer in my child's classroom" and their frequency of communication with other parents in their children's classrooms, such as "I talk with other parents about school meetings and events" (Fantuzzo, Tighe & Childs, 2000, p. 370). This scale contains ten items. The authors' original validation sample yielded Cronbach's alpha scores of .85 (Fantuzzo, Tighe & Childs, 2000). Item factor loadings ranged from .48 ("I feel that parents in my child's classroom support each other") and .74 ("I volunteer in my child's classroom"; Fantuzzo, Tighe & Childs, 2000, p. 370).

Home-Based Involvement*.* This subscale measured the frequency that the parent is engaging in learning-related activities occurring in the home setting such as "I spend time

working with my child on number skills" and "I review my child's school work". In addition, parents are asked about limit-setting behaviors at home, such as "I maintain clear rules at my home that my child should obey". Finally, parents indicate the extent that they engage in learning-related community activities, like "I take my child places in the community to learn special things (i.e., zoo, museum)" (Fantuzzo, Tighe & Childs, 2000, p. 370). This domain contains thirteen items. The authors' original validation sample yielded Cronbach's alpha scores of .85 in this scale (Fantuzzo, Tighe & Childs, 2000). Item factor loadings ranged from .43 ("I keep a regular morning and bedtime schedule for my child") to .74 ("I spend time working with my child on number skills"; Fantuzzo, Tighe & Childs, 2000, *p*. 370)

Home-School Conferencing. This scale measured interactions between the child's teacher and parent about the child's school progress. Examples of these behaviors include, "I talk to the teacher about how my child gets along with his/her classmates at school", "I talk with my child's teacher about school work to practice at home", and "I attend conferences with the teacher to talk about my child's learning or behavior" (Fantuzzo, Tighe & Childs, 2000, *p*. 370). This domain contains eleven items. The authors' original validation sample yielded Cronbach's alpha scores of .81 (Fantuzzo, Tighe & Childs, 2000). Item factor loadings ranged from .45 ("I talk to my child's teacher on the telephone") to .77 ("I talk with my child's teacher about school work to practice at home"; Fantuzzo, Tighe & Childs, 2000, *p*. 370).

Survey Format

Parents had the option to complete the survey on paper, online or by phone. The demographic questions 4 through 7 differed between the survey and Qualtrics format because Question 4 and Question 6 were conditional responses. If participants answered "yes" to question 4 on the Qualtrics survey, they were automatically directed to Question 6, and if they answered "yes" to Question 6, they were automatically prompted to fill in disability type; if they answered

"no" to Question 4, they were directed to Question 5, and then Question 7. In contrast, on the paper version of the survey parents were directed to skip the same questions but some parents answered the questions they were directed to skip. If a parent chose to answer survey questions by phone, the parent was read the Qualtrics version of the survey verbatim. If parents expressed confusion about an item on the phone, then clarification was provided.

Procedures

Survey Packet Contents

The survey packet contained a letter to parents (see Appendix D), a packet containing the survey items (see Appendix D) and a unique subject ID, a return envelope with postage for parents to return the survey, and a large envelope to contain these materials. When survey packets were being sent to just PSE (PSE), the parent letter was adapted to a simpler version (see Appendix E). In addition to these survey materials, a token of appreciation incentive was included in each of the packets. Token of appreciation incentives are a form of compensation that is non-contingent on survey completion (Dillman, Smyth & Christian, 2014). When incentives are provided prior to survey completion, this encourages a social exchange effect, whereby the participant may experience a social obligation to complete the survey. Furthermore, when compared to surveys that provide incentives contingent upon completion, meta-analyses have determined that non-contingent surveys tend to demonstrate greater response rates (Church, 1993; Edwards, 2002). A token of appreciation of a $1 bill was included in the survey packet.

Parents were also offered the option to enter a raffle to win a $25 Meijer gift card to further encourage completion. Research suggests that lottery-based incentives can increase response rates when compared to no incentive (Heerwegh, 2006). Consultation with a Michigan State University lawyer revealed that in order for this raffle to not be considered a *lottery*, and thus not require a Michigan lottery license, parents had to be allowed to enter the raffle even if

they did not complete a survey. To enter the survey, parents mailed back a form where they provided either their mailing or email address.

Another step taken to increase response rates was providing multiple modes for survey completion in the form of paper *or* electronic completion. In studies comparing multi-modal to singular mode survey completion, multi-modal tends to provide greater response rates (Bethlehem, 2009; Dillman, Smyth & Christian, 2014). One reason for multimodal distribution is that studies that examined the effects of distributing both paper and electronic modes of a survey found differential response rates that were associated with demographic differences of the selected individuals (Messer & Dillman, 2011). Multimodal distribution was accomplished in this study through participants being offered a choice to complete the survey on paper, online, and later, by phone. Providing paper, electronic, and phone options allows for participants to choose the method that is most convenient to them, and this ultimately was anticipated to increase the response rate.

Recruitment

Parents were recruited through a variety of methods: (1) surveys sent home with their children, (2) emailed invitations, (3) surveys mailed directly to parents' homes, and (4) in-person at their children's schools. A series of flyers were also mailed directly to parents to remind them to complete the survey. Recruitment at CACS Head Starts took place from March 2017 through December 2017. Recruitment began at LESA Head Starts in November 2017 and continued through April 2018. Some recruitment efforts targeted only PSE to promote sample size parity between PGE and PSE.

Friday Folders. Based on methods employed by other researchers collecting survey data among Head Start parents (e.g., Key, 2014), and in consultation with the Special Education Coordinator at the CACS agency, surveys were distributed via children's "Friday Folders".

Friday Folders are folders that are sent home with children weekly with information intended for Head Start parents to view. There are several reasons why it was presumed that information is more likely to elicit parent responses through Friday Folders than via mailing: (1) Head Start parents expect this folder each week, (2) low-income families tend to be a more transient population with changing addresses (Obradovic et al., 2009), and (3) response rates are higher among studies that employ this method with Head Start families than those who use a mailed survey (Fishman & Nickerson, 2015; Keys, 2015). Online distribution was considered; however, CACS does not have email addresses for all parents and it was unclear whether all low-income parents would have regular, convenient access to the internet.

In March 2017, 1,457 Friday Folder survey packets were sorted by CACS Head Start classroom and distributed to Head Start teacher supervisors. Supervisors gave these packets to classroom teachers. Each survey had a unique survey ID that indicated the classroom from which a completed survey was coming from. Shortly after distribution an email was sent to all Head Start teacher supervisors to provide an extra prompt for them to distribute the survey.

Email invitations. An additional invitation to complete the survey was emailed in April 2017 to all CACS parents who did have an email address on file with CACS. A link to the survey was included in this email.

In-person. On May 4th and May 8th 2017 survey stations were set-up during pick-off and drop-off times at the two CACS Head Starts with the greatest enrollment: Maple Hill and Grand River. Parents had a few options at the stations: (1) take a paper survey to complete at the station or later (and provided with a pre-stamped return envelope), (2) provide their phone number to complete the survey over the phone, or (3) provide their email addresses to be emailed the survey link.

A research project representative was also present at two CACS Head Start parent events on March 30th, 2017 and May 10th, 2017. As parents entered the event a flyer was distributed to remind parents to complete their paper survey, follow a link to complete it online, or call to schedule a time to complete it over the phone. Paper surveys were distributed to parents who requested an additional copy of the paper survey.

Mailings. PSE from both CACS and LESA were mailed home surveys packets. All CACS PSE were mailed home survey packets in May and November 2017; 170 parents were mailed surveys in April and 105 in November. All 36 LESA PSE were mailed survey packets in December 2017.

LESA PGE were also recruited to help ensure that there was a similar proportion in the total sample of LESA *PGE* to CACS *PGE* as there was of LESA *PSE* to CACS *PSE*. Survey packets were sent home to the first 140 parents listed alphabetically by last name in a database of LESA PGE.

Reminders. Survey reminders are another strategy that has been shown to be effective in increasing response rates (Dillman, Smyth & Christian, 2014; Edwards, 2002). Reminders generally targeted PSE as this group was most difficult to recruit. Reminder flyers encouraged parents to complete either their paper survey, follow the link to complete the survey online, or call to complete the survey over the phone. An example flyer is depicted in Appendix F. Reminder flyers were mailed out to CACS PSE in June 2017 following a May 2017 survey packet mailing. Reminders were also sent in December 2017 following the CACS special education mailing in November 2017. Reminders also followed a March 2018 mailing to LESA PSE and PGE.

Responses

Duplicate Responses

Some parents encountered multiple invitations to complete the survey and therefore, there were several duplicate responses from the same household. Duplicates were identified by cross-checking the mailing or email addresses provided for individuals to enter the raffle. If the information on a raffle entry matched an existing entry, then this survey was discarded. A total of 52 duplicate pairs were returned meaning that 26 surveys were discarded for being duplicate.

Response Rate

Separate response rates were calculated for each location, participant group, and school year of recruitment (see Table 2). The total response rates of PGE was 18.7% (N = 268) and 31.4% (N=78) from PSE. Five participants from CACS did not complete the questions that determined group membership. Each school year and location had a different total number of potential parents. Rates were calculated by dividing the total number of respondents divided by the total number of potential respondents from that group, site and school year. In general, all participants in the given group were contacted to participate in the survey. However, the sampling frame for one group, LESA PGE, was only a portion of their total population. For this group, contact rate was factored into the response rate such that the response rate was 28.7% (contact rate) multiplied by 19.3% (cooperation rate), or 5.5% (response rate; Remler & Van Ryzin, 2011).

Table 2

Participant Response Rates by Location

	CACS		LESA		Total	
School Year	General Education	Special Education	General Education	Special Education	General Education	Special Education
2016-2017	18.7% (n=242)	31.3% (n=51)	n/a	n/a	18.7% (n=242)	31.3% (n=51)
2017-2018	n/a	19.0% (n=10)	5.3% (n=26)	50% (n=18)	5.5% (n=27)	31.6% (n=28)
Total	18.7% (n=242)	28.7% (n=60)	5.3% (n=26)	50% (n=18)	18.7% (n = 268)	31.4% (n=78)

Note: CACS = Capital Area Community Services; LESA = Livingston Educational Services Agency; n/a = this group was not recruited during this time period

Another consideration was that PSE from CACS were the one group that was sampled across two school years. This means that in the second school year, there were parents who had already been invited to complete the survey and potentially completed the survey in the 2016-2017 school year. The CACS special education coordinator reported that there was not a feasible way for her to only mail surveys to new PSE. Instead of dividing the total number of respondents by the total number of PSE that school year to calculate the response rate for this group, respondents were divided by 52.5, or 50% of the total PSE population (N = 105).

Mode of response. Most participants completed a paper form of the survey (n=262). The next most common form of completion was Qualtrics (n=84) and finally by phone (n=5).

Data Screening and Entry

Paper survey responses were coded into a password-protected spreadsheet document. Response from the Qualtrics (2005) survey were combined with the paper survey responses. Several potential response patterns were excluded from the sample: (1) if a participant has answered "no" to the question asking if they are a primary care provider (then any remaining data from the survey was not entered), and (2) if upon visual inspection, the pattern of responses

appears highly unusual, such as responding with the same choice for each item, then the associated survey responses were be entered. Instances of missing values were indicated by a specific code for missing data. A copy of the coding manual is located in Appendix H.

Interrater Reliability

To help ensure that the data are entered accurately, a second person entered the data for 34.1% of the total number of paper-based participant entries. These entries were compared to the original data entry and there was 99.1% agreement. Discrepancies were assessed by the researcher and a final answer indicated.

Participant Characteristics

The total sample consisted of 351 surveys. A total of 307 (87.5%) of participants were from the Capital Area Community Services (CACS) Head Start consortium and 44 (12.5%) were from the Livingston Educational Services Agency (LESA). A total of 78 (31.1%) had a child who was receiving special education services and 268 (76.4%) were PGE. Table 3 depicts participants by location and group membership. Parents from CACS represented 77.0% of PSE and LESA parents represented 23.1%. In terms of PGE, 90.3% were from the CACS and 9.7% from LESA.

Table 3

Participants by Location and Group Membership

	General Education	Special Education	Total
CACS[a]	242	60	307[c]
LESA[b]	26	18	44
Total	268	78	351[c]

[a] Capital Area Community Services
[b] Livingston Educational Services Agency
[c] This number includes five participants that did not indicate their group memberships.

Participants endorsed a diverse set of demographic characteristics (Table 4). Most participants were female (91.7%) and mothers (82.6%). The most common race was white (64.4%), followed by Black (16.0%) and Multiracial (10.3%). White people were overrepresented and Black people underestimated compared to the 2015 population of Michigan Head Start parents which were 44.2% White and 38.9% African American (Michigan Department of Education, 2015). The current sample was 9.1% Hispanic which is similar to 8.4% Hispanic overall in Michigan. 25.9% of parents in the current population earned at least an Associate's degree compared to 39.27% of Michiganders in general (not specific to Head Start; Lumina Foundation, 2018).

Table 4

Participant Demographic Information by Group

Descriptive Information	General Education (%) (n = 268)	Special Education (%) (n = 78)	Total (%) (n = 351)
Gender			
Female	90.7	96.2	91.7
Male	8.6	3.8	7.7
Missing	0.7	0.0	0.6
Relation			
Mother	82.5	84.6	82.6
Father	6.7	5.1	6.6
Grandmother	6.7	3.8	6.0
Aunt	0.4	0.0	0.3
Foster mother	0.7	5.1	1.7
Legal Guardian	0.4	0.0	0.3
Cousin	0.4	0.0	0.3
Missing	2.2	1.3	0.3
Size of household			
1	1.9	2.6	2.0
2	6.3	15.4	8.3
3	21.6	11.5	19.4
4	26.9	34.6	28.5
5	22.0	15.4	20.8
6	10.8	7.7	10.3
7	4.5	5.1	4.6

Table 4 (cont'd)

8	1.1	1.3	1.1
9	0.0	1.3	0.3
10	0.0	1.3	0.3
11	0.7	0.0	0.6
12	0.4	0.0	0.3
Missing	3.7	3.8	3.7
Income ($)			
5,000 or less	13.4	21.8	15.4
5,001 to 10,000	9.0	7.7	8.8
10,001 to 15,000	11.2	9.0	10.5
15,001 to 20,000	15.7	7.7	14.0
20,001 to 25,000	13.4	11.5	12.8
25,001 to 30,000	7.5	1.3	6.0
30,001 to 35,000	6.0	5.1	5.7
35,001 to 40,000	4.9	6.4	5.4
40,001 to 50,000	3.4	5.1	3.7
50,001 to 75, 000	4.9	12.8	6.6
More than 75,000	2.2	3.8	2.6
Missing	8.6	7.7	8.5
Hispanic (yes/no)			
Yes	9.0	10.3	9.1
No	88.1	88.5	88.3
Missing	3.0	1.3	2.6
Race			
White	63.8	67.9	64.4
Black	15.7	16.7	16.0
Asian/Pacific Islander	4.1	0.0	3.4
American Indian/Alaskan Native	0.4	0.0	0.3
Other	3.4	2.6	3.4
Multiracial	9.7	12.8	10.3
Missing	3.0	0.0	2.3
Education			
Less than high school	10.4	11.5	11.1
High school diploma/GED	26.5	37.2	26.5
Some college but no degree	37.7	33.3	36.5
Associate's or Bachelor's degree	17.5	19.2	17.7
Graduate degree	4.9	7.7	5.4
Missing	3.0	2.6	2.8
Weekly employment hours			
0	31.3	43.6	34.2
1-19	6.3	3.8	6.0
20-39	27.2	16.7	24.8
40-59	28.7	25.6	26.8

Table 4 (cont'd)

60-79	1.5	2.6	1.7
80-100	0.7	0.0	0.6
Missing	5.6	7.7	6.0

Mean Differences

Groups within the group membership variable (i.e. special education and general education) and the location variable (i.e., CACS and LESA) were compared to assess for meaningful demographic differences between these groups. The following variables were examined based on group membership and location: income, weekly employment hours, Hispanic status, race, education level, gender, and relation. Income and weekly employment hours were treated as continuous variables and thus underwent t-tests of significance while the chi-squared test of significance was used with the remaining demographic variables.

Location. For location, an independent samples t-test showed a statistically significant difference between income levels such that LESA parents on average (M=5.05, SD=3.59) reported belonging to significantly higher income brackets than CACS parents (M=3.53, SD = 2.75), t (319) = -3.078, $p < .01$). The effect size for this difference was moderate (d = .48). Income ranges "5,000 or less' (n=48) and "15,001 to 20,000" (n = 47) were the two most common answer choices for CACS parents. The most common responses for LESA parents was "50,001 to 75,000" (n = 8) and "20,001 to 30,000" (n = 7). One explanation for this difference may be due to the fact that a greater proportion of LESA PSE were sampled than CACS; LESA PSE represented 40.9% (n = 18) of all of the LESA parents recruited (n = 44). The federal law governing Head Starts gives priority to PSE when enrolling higher income families into empty enrollment spots (Head Start for School Readiness Act, 2007). Therefore, having a greater proportion of PSE may explain this difference in income. However, a greater sample size from

the LESA population in general would be needed to explore this issue further and see if this discrepancy remains.

A chi-square test of significance showed that LESA and CACS samples also had significantly different racial diversity [(χ^2 (5) = 14.152, $p < .05$)]. The large majority of LESA participants who reported their races were white (90.7%; n = 39), one person was black, one was Asian/pacific islander and two were multiracial. In contrast, 62.3% (n = 187) of CACS participants were White, 18.3% (n = 57) Black, 11.3% (n = 34) Multiracial, 4% (n = 12) other, 3.7% (n = 11) Asian/Pacific Islander, one American Indian/Alaskan Native. Perhaps if a larger proportion of LESA parents were sampled this may increase racial parity between groups. However, it is also possible that the families served by LESA and CACS have notably different racial demographics. CACS is larger than LESA and serves families across multiple counties in Michigan with varying urbanicities and racial diversities, while LESA only services families in Livingston County (Capital Area Community Services, 2018; Livingston Educational Services Agency, 2018; United States Census Bureau, 2017). Other significance tests did not show any other significant differences based on location.

Group membership. General education samples and special education samples were also tested for mean differences between the same key demographic variables and no test showed a significant ($p < .05$) difference.

Disability type. Participants who endorsed having a child who receives special education were prompted to provide their child's disability classification. The exact wording was, "*If your child <u>does</u> receive Special Education services*, do you know which disability label they have? For example, Early Childhood Developmental Delay, Autism Spectrum Disorder, Speech/Language Impairment, Hearing Impairment, etc." and parents were to write-in or fill-in their response. Some participants' responses such as "Neurodevelopmental Language Disorder"

and “ADHD” were difficult to place in definite special education categories at they were not one of the designated Michigan Special Education classification categories (MARSE, 2018). Some parents also reported that they did not know the disability label. The majority of the parents who did provide an answer for this question wrote an answer similar to “speech”, “speech/language”, or “speech/language” impairment. More specifically, 42 out of the 78 from the special education group indicated a speech or language disability. Six parents referenced multiple disability categories such as “speech and sensory”, four parents wrote autism, three parents wrote early childhood developmental delay and the remaining responses received one endorsement. A total of 20 parents reported not knowing their child’s disability classification.

Outside Diagnosis

Parents were also prompted to write a response about whether they had been “told by a doctor, psychologist or other health professional that your child has a developmental diagnosis, learning difficulty, or a disability (for example ADD, ADHD, Autism, or something else)? If yes, what is the name of this issue. Thirty-nine parents endorsed that a doctor had told their child that they had a diagnosis, learning difficulty, or disability. The responses were varied and thus, were difficult to summarize. Out of 278 PGE, 10 endorsed having received an outside diagnosis (and denied that their children received special education).

Analysis Plan

Factor analysis and structural equation modeling were used to address the study’s research questions (see Table 5). First, the measures were assessed for validity and reliability. The portion of the Walker and colleagues (2005) survey that contained items about psychological and contextual variables underwent the most substantial analysis, as it has not been used with preschool populations; several items were adapted, removed, or added based on the outcomes of a focus group. The Family Involvement Questionnaire (FIQ) was developed for

use with Head Start populations. Therefore, its analyses were confirmatory. After a new measurement model was identified, structural equation modeling was used to examine beta coefficients to determine the amount of variance the psychological/contextual variables explained in the parent involvement variables. In addition, beta coefficient mean differences were analyzed between parents of students with and without disabilities.

Table 5

Data Analysis Methods by Research Question

1. a. Does the Walker and colleagues (2005) survey demonstrate evidence for construct validity and reliability?		
Measures	Variables	Data Analysis
Walker et al. (2005) measure of the psychological and contextual predictors of parent involvement (adapted for the current population)	Parental role construction Parental self-efficacy Perceptions of general school invitations Perceptions of specific child invitations Perceptions of specific teacher invitations Self-perceived time and energy Self-perceived knowledge and skills	Exploratory Factor Analysis
1. b. Does the FIQ demonstrate evidence of adequate reliability and validity?		
Measures	Variables	Data Analysis
FIQ (Fantuzzo, Tighe & Childs, 2000)	School-based involvement Home-based involvement Home-School Conferencing	Confirmatory Factor Analysis

Table 5 (cont'd)

1. c. Is there a more parsimonious factor structure to describe the measurement model?		
Measures	Variables	Data Analysis
Walker et al. (2005) measure of the psychological and contextual predictors of parent involvement (adapted for the current population) FIQ (Fantuzzo, Tighe & Childs, 2000)	Parental role construction Parental self-efficacy Perceptions of general school invitations Perceptions of specific child invitations Perceptions of specific teacher invitations Table 5 (cont') Self-perceived time and energy Self-perceived knowledge and skills School-based involvement Home-based involvement Home-School Conferencing	Hierarchical Factor Analysis
2. To what extent does the Revised Hoover-Dempsey theoretical model (Walker et al., 2005) predict parent involvement behaviors in Head Start populations?		
Measures	Variables	Data Analysis
Walker et al. (2005) measure of the psychological and contextual predictors of parent involvement (adapted for the current population) FIQ (Fantuzzo, Tighe & Childs, 2000)	Parental role construction Parental self-efficacy Perceptions of general school invitations Perceptions of specific child invitations Perceptions of specific teacher invitations Self-perceived time and energy	Structural Equation Modeling

Table 5 (cont'd)

	Self-perceived knowledge and skills School-based involvement Home-based involvement Home-School Conferencing	
3. What differences exist in the levels of predictors of parent involvement between parents of general education students and parents of preschoolers with disabilities?		
Measures	Variables	Data Analysis
Walker et al. (2005) measure of the psychological and contextual predictors of parent involvement (adapted for the current population) FIQ (Fantuzzo, Tighe & Childs, 2000)	Parental role construction Parental self-efficacy Perceptions of general school invitations Perceptions of specific child invitations Perceptions of specific teacher invitations Self-perceived time and energy Self-perceived knowledge and skills School-based involvement Home-based involvement Home-School Conferencing	Multigroup Structural Equation Modeling

Construct Validity

Psychological and contextual items. Multiple factor analyses were performed to assess the construct validity of the items from the Walker and colleagues' (2005) measure for its use with Head Start samples. Although the measure has support for its construct validity with elementary through high school age students (e.g., Green et al., 2007; Fishman & Nickerson,

2015), several items were changed, adapted, or added in this study for the measure to be appropriate with Head Start populations. Therefore, EFA was used to examine the construct validity of these changes. Although previous studies provide the further categorization of the psychological and contextual variables into three overarching domains: parents' motivational beliefs, parents' perceptions of invitations for involvement from others, and parents' perceived life context, there are no published studies that support this factor structure. For this reason, these categorizations were not included in the measurement model.

Each of the eight predictor variables underwent an exploratory factor analysis (EFA) using the statistical software program, MPlus (Múthen & Múthen, 2015). Separate EFAs were necessary because the model contains a large number of items (i.e. 89 across the current versions of all the measures) and a relatively small sample size for this number of items (Kline, 2016). The original measurement model supported a single factor for each predictor variable (Walker et al., 2005). However, due to the item changes and potential differences found in a preschool population, the current study's analysis allowed for the items within each subscale to fit onto one to three factors. Each variable's EFA was examined with the following fit indices: $\chi 2$ (Browne & Cudeck, 1993), root-mean-square error of approximation (RMSEA; Steiger, 2016), standardized root mean square residual (SRMR; Hu & Bentler, 1998) and comparative fit index (CFI; Hu & Bentler, 1998). There are several recommendations for each fit index regarding what constitutes a reasonable fit. For χ^2 it is generally recommended that the factor structure with the lowest χ^2 value is ideal (Kline, 2016). In terms of RMSEA and SRMR, values less than .08 are preferred (Hu & Bentler, 1995; Kline, 2016; Steiger, 2016). For CFI and TLI, values of .9 and above are considered good fit (Hu & Bentler, 1995; Wu, 2010). Also, eigenvalues (see Kaiser, 1960) and scree plots (Cattell, 1966) were used as further evidence of the factor structure. Identifying the number of eigenvalues greater than one are one suggestion of the number of

factors in a reasonable factor solution (Kaiser, 1960). Finally, geomin rotations were also examined (Browne, 2001). Geomin rotations are a type of oblique rotation of the factor matrix, which as opposed to orthogonal rotations, allow for the assumption that the factors are correlated with one another (Vogt, 2001). Geomin rotations provide information about which factors tend to perform similarly to one another. It is important to note the fit indices are merely providing additional evidence to support a claim, rather than indicating a definitive answer of good or bad fit. The result of these series of factor analyses provided information about the number of factors underlying each of the seven predictors.

After establishing the individual factor structure of each of the psychological/contextual variables, an additional hierarchical EFA was conducted to determine whether there was a more parsimonious model to describe the total number of items across the eight variables. The authors of the Hoover-Dempsey and Sandler theoretical model (Hoover-Dempsey & Sandler, 1995, 1997; Green et al., 2007, Walker et al., 2005) consistently place these eight psychological/contextual into the three categories of parents' motivational beliefs, parents' perceptions of invitations of involvement from others, and parents' perceived life context. However, there has yet to be factor analyses to validate this structure. Further categorization could be potentially useful for creating survey composites or summary scores; this could provide a more concise depiction of the data. This additional EFA allowed for 4 to 7 factors and the aforementioned fit indices and factor loadings were also examined.

The reliability of items was further examined through an item response theory framework (Embretson & Reise, 2000). This approach assumes that there is an underlying latent trait that is represented by both an individual's responses and the parameter estimate of the model. This can be achieved through examining the results of the EFA described in the previous paragraph; this EFA contains all of the items across the seven variables. Factor loadings provided information

about whether items that correspond to a latent trait behave similarly. It determined the items' fit on a person and item level.

Parent involvement items. The parent involvement variables in the theoretical model were measured using the Family Involvement Questionnaire (see Appendix H). As mentioned above, this measure has been used with Head Start populations with reasonable validity and reliability evidence (Fantuzzo, Tighe, & Childs, 2000; Ingram et al., 2007, McWayne et al., 2008; Waanders at al., 2007). Therefore, confirmatory factor analysis (CFA) was the appropriate approach to gather evidence to examine the measure's construct validity with the current sample. More specifically, a CFA was used to allow for confirmation of the factor structure of each of the home-based, school-based, and home-school conferencing subscales. The following fit indices were examined to assess model fit: χ^2 (Browne & Cudeck, 1993), root-mean-square error of approximation (RMSEA; Steiger, 2016), standardized root mean square residual (SRMR; Hu & Bentler, 1998), comparative fit index (CFI; Hu & Bentler, 1998).

Multigroup Structural Equation Modeling

The purpose of research question three was to evaluate group differences between PSE and PGE. Before this can occur, separate structural equation modeling analyses was attempted to evaluate the model's fit for each group; if the model did not support an adequate fit for each group, then comparing mean values between groups would be less meaningful. It was expected that the same model would fit across groups as there is not a strong rationale for why the Revised Hoover-Dempsey and Sandler model (Walker et al., 2005) would fit differently across groups. The psychological/contextual variables were exogenous variables, while the parent involvement variables were endogenous. Due to the limited expected sample size, trait level estimates that are derived from item level analysis represented each of the variables. In a larger sample size (i.e., 2000 or more), each item may be considered an observed variable. However, this sample size

was beyond the scope of the current study. The following fit indices were used: $\chi 2$ (Browne & Cudeck, 1993), root-mean-square error of approximation (RMSEA; Steiger, 2016), standardized root mean square residual (SRMR; Hu & Bentler, 1998), comparative fit index (CFI; Hu & Bentler, 1998).

Next, a multigroup SEM (MSEM) was used to detect mean differences between parents of students with disabilities and parents of students without disabilities. Multigroup structural equation modeling (MSEM) is a technique that can be used to estimate and compare the relationships between variables, as depicted by a theoretical model, between two or more groups (Kline, 2016). To perform this analysis, the specified path diagram informed by the measurement model was entered into MPlus (Múthen & Múthen, 2015) for each group. The mean structure parameter from each group was constrained and compared to a model when the means were not constrained. A chi-square difference test was used to determine whether the difference was significant at the $p < .05$ level.

Chapter III

RESULTS

Measurement Model

Predictor Variables

The items representing the eight predictor variables adapted from the Walker et al. (2005) measure underwent a series of factor analyses with MPlus 8 statistical analysis software (Múthen & Múthen, 2015). Each predictor variable was examined separately rather than all of the items combined due to a relatively small sample size for the number of items being examined. First, the number of factor solutions was assessed by observing the number of eigenvalues greater than one from an exploratory factor analysis (EFA). Next, items with goemin loadings that were significant at $p < .05$ were examined to assess for thematic congruence. Items that were significant on more than one value were categorized with other items that were most thematically similar. If the geomin rotations identified items that were not thematically similar within factors, an additional factor was sometimes added. The resulting factor solution underwent confirmatory factor analysis (CFA) and model fit indices were examined. Factor scores were saved to represent a summary score of each participants' response to the domains defined by the factors.

Role Activity Beliefs. The EFA for the ten Role Activity Beliefs items yielded two eigenvalues greater than one which provided evidence for a two-factor solution (Guttman, 1954). According to the geomin rotation, all items had significant ($p < .05$) loadings on at least one factor, and items one, six and eight were significant on both factors (see Table 7). Among the items that only loaded onto one factor, a thematic categorization emerged: (1) parents' perception of the role in their children's education and (2) parents' perceptions of their role within the school community. The first category represented items that pertained to a parent's

involvement that was specific to his or her own child's achievement. The second category contained items that pertained to parents' perceptions of their role within the school community. Item eight was assigned to parents' role in the community because it referred to interacting with other parents from the school community. Item six was also judged to align more with a parent's role within the school because of the general nature of the wording: "staying on top of things at school" as opposed to probing about an activity specifically relating to one's child. In sum, factor analyses provided evidence for two factors, or scales: (1) Parents' Perceptions of Their Role in Their Children's Education and (2) Parents' Perceptions of Their Role Within the School Community. Moving forward, these scales are referred to as Role in Children's Education and Role Within the School.

Table 6

Factor Loadings for Exploratory Factor Analysis With Geomin Rotation of Role Activity Beliefs (N = 350)

	Factor Loadings	
Item	Factor 1	Factor 2
1. I believe it is my responsibility to volunteer at the school.	**.147**	**.415**
2. I believe it is my responsibility to communicate with my child's teacher regularly.	**.439**	.100
3. I believe it is my responsibility to do learning activities at home such as LINKS, etc.	**.730**	-.058
4. I believe it my responsibility to make sure the school has what it needs.	-.049	**.720**
5. I believe it is my responsibility to support decisions made by the teacher.	.141	**.534**
6. I believe it is my responsibility to stay on top of things at school.	**.380**	**.371**
7. I believe it is my responsibility to explain at-home learning activities	**.745**	.035

Table 6 (cont'd)

8. I believe it is my responsibility to talk with other parents from my child's school	**.158**	**.582**
9. I believe it is my responsibility to make the school better	-.009	**.66**
10. I believe it is my responsibility to talk with my child about the school day	**.534**	-.030

Note: Geomin loadings significant at the .05 level are in bold

The psychometric properties of each subscale are depicted in Tables 6 and 7. The means of all the items on the Role in Children's education scale were between 5 and 6 representing a negatively skewed distribution and a tendency for respondents to endorse these items as being part of their role in their children's education. Question 10 was on average, rated particularly positively as no participant endorsed answers below a 4. Items in the Role Within the School scale were rated somewhat less positively as some of the item means were closer to the theoretical midpoint of the scale, 3.5, although all mean responses were greater than the midpoint. The item with the lowest mean was Item 8, suggesting that this belief is on average, less important to parents in this sample. The Role in Children's Education items yielded a Cronbach's alpha of .713 (Cronbach, 1951). For measures that are used to make decisions about groups of children, reliabilities greater than .60 are considered acceptable (Salvia, Ysseldyke & Bolt, 2013). The Role Within School scale also had an acceptable Cronbach's alpha score: .766

Table 7

Psychometric Properties of the Role in Children's Education Scale (n = 342)

Item	Mean	S.D.	Range		Cronbach's Alpha if Deleted
			Potential	Actual	
2. I believe it is my responsibility to communicate with my child's teacher regularly.	5.49	.69	1-6	1-6	.703
3. I believe it is my responsibility to do learning activities at home such as LINKS, etc.	5.42	.67	1-6	2-6	.604
7. I believe it is my responsibility to explain at-home learning activities	5.37	.69	1-6	2-6	.623
10. I believe it is my responsibility to talk with my child about the school day	5.64	.52	1-6	4-6	.667

Table 8

Psychometric Properties of the Role Within School Scale (n=328)

Item	Mean	S.D.	Range		Cronbach's Alpha if Deleted
			Potential	Actual	
1. I believe it is my responsibility to volunteer at the school.	4.42	1.06	1-6	1-6	.757

Table 8 (cont'd)

4. I believe it my responsibility to make sure the school has what it needs.	4.20	1.37	1-6	1-6	.710
5. I believe it is my responsibility to support decisions made by the teacher.	4.92	.905	1-6	1-6	.733
6. I believe it is my responsibility to stay on top of things at school.	5.16	.930	1-6	1-6	.749
8. I believe it is my responsibility to talk with other parents from my child's school	3.72	1.18	1-6	1-6	.716
9. I believe it is my responsibility to make the school better	5.64	.521	1-6	1-6	.716

The CFA of the two-factor solution generated two factor scores for each participant: one for the first factor (i.e. role in children's education) and one second factor (i.e., role within school). The CFA yielded a significant chi-square (χ^2) result: χ^2 (34, N = 350) = 121.642, $p <$ .01 indicating adequate fit, and all items loaded onto a factor at a significance of $p < .001$. Other fit indices were more borderline in terms of a good fit: RMSEA = .086 [90% CI = .070, .103], CFI = 0.89, TLI =0.85, SRMR = .06. Given these indices, scores produced by this scale were interpreted with caution. A larger sample size in a future study may help to clarify the fit of this factor structure.

Valence. The EFA for the six Valence items yielded one eigenvalue greater than one. This suggested that a one-factor solution was appropriate (Guttman, 1954). Factor loadings are

depicted in Table 8 and all geomin loadings were significant at the .05 level. Fit indices provided additional evidence for a one-factor solution: χ^2 (9, N = 336) = 70.080 (p < .05) CFI = .955, TLI =.926, and SRMR = 0.035. The RMSEA was .142 [90% CI = .112,.174] and above a value that would be considered a good fit for this index. However, there are some experts who argue that the RMSEA cut-off value of .08 for good fit is somewhat arbitrary (Kenny, Kaniskan & McCoach, 2015). RMSEA values are typically biased against smaller degrees of freedom, (such as the degrees of freedom in the current study) due to the small sample size and large number of items. Furthermore, non-normality can also negatively impact RMSEA and many of the variables are negatively skewed and thus, non-normal. For this reason, scholars advise using other evidence to assess model fit (Kenny, Kaniskan & McCoach, 2015). Given that the other fit indices satisfy acceptable cut-offs, analysis proceeded with the current factor solution.

Table 9

Factor Loadings for Exploratory Factor Analysis With Geomin Rotation of the Valence Scale (n = 336)

Item	Factor Scores
1. When I was a student, this is how I felt about school: (disliked/liked)	**.812**
2. When I was a student, my teachers: (were mean/were nice)	**.739**
3. When I was a student, my teachers: (ignored me/cared about me)	**.780**
4. When I was a student, my school experience was: (bad/good)	**.910**
5. When I was a student, I felt like: (an outsider/I belonged)	**.782**
6. When I was a student, my overall experience was a (failure/success)	**.826**

Note. Geomin rotations significant at the p < .05 level are in bold.

Additional psychometric properties are depicted in Table 9. The Cronbach's alpha for this scale was .916. Participants endorsed the full range of answers for the Valence scale. Responses were slightly negatively skewed meaning that on average, participants tended to feel positively toward their own school experiences. In sum, the Valence items supported a one-factor solution and therefore all six survey items represent the Valence scale.

Table 10

Psychometric Properties of the Valence Scale (n = 320)

			Range		
Item	Mean	S.D.	Potential	Actual	Cronbach's Alpha if Deleted
1. When I was a student, this is how I felt about school: (disliked/liked).	4.39	1.47	1-6	1-6	.901
2. When I was a student, my teachers: (were mean/were nice).	4.62	1.23	1-6	1-6	.907
3. When I was a student, my teachers: (ignored me/cared about me).	4.39	1.39	1-6	1-6	.902
4. When I was a student, my school experience was: (bad/good).	4.30	1.47	1-6	1-6	.887
5. When I was a student, I felt like: (an outsider/I belonged).	3.85	1.63	1-6	1-6	.908
6. When I was a student, my overall experience was a (failure/success).	4.52	1.39	1-6	1-6	.898

Parental Self-Efficacy. For Parental Self-Efficacy items, first, items that were reverse coded (e.g., I *don't* know how to help my child meet his or her developmental goals) were transformed so that like the other items, higher Likert item responses corresponded to a greater

endorsement of self-efficacy. For example, when a participant responded with a "2" on a reverse-coded item, indicating that they "disagree", this was transformed to a "5". Next, an EFA was performed with all seven self-efficacy items and yielded two eigenvalues greater than one, suggesting a two-factor solution. Table 10 depicts the geomin factor rotation loadings and each item loads on either Factor 1 or 2. Notably, item 4 and 6 both seem to pertain to very similar ideas and yet load onto separate factors. Item four is "I feel successful about my efforts to help my child learn" and item six is seemingly the reverse of this, "I don't know how to help my child learn". Once the latter items were coded, they were significantly correlated ($r = .231$, $p < .001$) with one another, though appear to covary in such a way that differentiates responses between participants.

Upon closer examination, the two factors in the self-efficacy domain were perfectly divided between the self-efficacy items that are reverse coded and those that are not. The raw data was reexamined to confirm that the reverse-coded items were recoded correctly. Perhaps the items loaded differently due to participants responding differently to the reverse coded nature of these questions rather than the content that the items pertain to. One explanation for this is that some participants had difficulty comprehending the reverse-coded items. Researchers have found that reverse coded items tend to lower item-total correlations, reliability, and have smaller factor loadings than items that are not reverse coded, which suggests that reverse-coded items may not be interpreted by participants as intended (Weijters & Baumgartner, 2012). Marsh and colleagues (1996) also found that within a large, national study, negatively worded items produced significant method effects, rather than follow a similar response pattern to the other items within their intended scales. Weiters and Baumergartner (2012) offer two reasons for confusion on reversal items: "careless responding", or failure to notice that the items is reversed, and "reversal ambiguity", or the notion a researcher uses a word meant to be an antonym, but participants do

not interpret as such (e.g., a researcher uses "relaxed" as an antonym for "stimulated", but participants do not make this same assumption). That said, similar to all other items on the survey in this study, the reverse coded items, once transformed, were negatively skewed and mean responses were between 4 and 6. If there was substantial confusion on the reverse coded items such that participants interpreted the items as not being reversed, one might expect a positively skewed and low average response pattern. It is possible that a minority of participants misinterpreted reverse-coded items that was large enough to divide the group of self-efficacy items into separate factors. There are no other reverse coded items in other domains, so it is not possible to compare these self-efficacy items with other reverse coded items. Given that the reverse-coded items tend to follow similar patterns to non-reverse coded items within the study (i.e., negatively skewed and a range from 1-6), this factor structure was deemed acceptable for the purposes of this study. Future iterations of the survey may choose to eliminate reverse-coded items.

Table 11

Factor Loadings for Exploratory Factor Analysis With Geomin Rotation of Parental Self-Efficacy Domain (N = 350)

	Factor Loadings	
Item	Factor 1	Factor 2
1. I know how to help my child do well in school.	.050	**.535**
2. I don't know if my child understands what I say to him/her.	**.666**	-.036
3. I don't know how to help my child meet his or her developmental goals.	**.717**	.077
4. I feel successful about my efforts to help my child learn.	-.008	**.791**
5. Other children have more influence on my child's developmental progress than I do.	**.623**	-.104

Table 11 (cont'd)

6. I don't know how to help my child learn.	**.660**	.023
7. I make a significant difference in my child's school performance.	.051	**.477**

Note: Geomin loadings significant at the .05 level are in bold

Items that loaded on Factor 1 were judged to represent parents' self-efficacy towards influencing their children's developmental progress. Factor 2 items appeared to represent parents' self-efficacy towards influencing their child's school performance. Items 4 and 6 query about similar ideas though loaded onto separate factors. Because a parent helping their child "learn" could thematically fit with *both* helping them with their school performance and developmental progress, these items were left with the factors they loaded onto according to the EFA. Both scales were positively skewed with answers spanning the entire potential answer set (see Tables 11 and 12). Developmental Progress Self-Efficacy had a Cronbach's alpha score of .745 and School Performance Self-Efficacy had a Cronbach's alpha score of .642 (Cronbach, 1951). There were no positive benefits to the alpha scores if items were to be removed from the scales.

Table 12

Psychometric Properties of the Developmental Progress Self-Efficacy Scale (n = 329)

			Range		
Item	Mean	S.D.	Potential	Actual	Cronbach's Alpha if Deleted
2. I don't know if my child understands what I say to him/her (reverse coded).	4.89	1.31	1-6	1-6	.697
3. I don't know how to help my child meet his or her developmental goals (reverse coded).	4.89	1.17	1-6	1-6	.655

Table 12 (cont'd)

5. Other children have more influence on my child's developmental progress than I do (reverse coded)	4.64	1.15	1-6	1-6	.718
6. I don't know how to help my child learn (reverse coded).	5.13	.964	1-6	1-6	.676

Table 13

Psychometric Properties of the School Performance Self-Efficacy Scale (n = 331)

			Range		
Item	Mean	S.D.	Potential	Actual	Cronbach's Alpha if Deleted
1. I know how to help my child do well in school.	5.19	.813	1-6	1-6	.573
4. I feel successful about my efforts to help my child learn.	5.09	.903	1-6	1-6	.454
7. I make a significant difference in my child's school performance.	4.95	.927	1-6	1-6	.596

Confirmatory factor analyses were performed with each factor and model fit indices provided additional evidence for the reliability of a two-factor solution. All fit indices satisfied traditional rules of thumb: χ^2 (13, N = 350) = 20.749 ($p < .05$), RMSEA = 0.041 (90% C.I. = 0.000, 0.073), CFI = .984, TLI = .975, and SRMR = .028. In sum, factor analyses of the self-efficacy domain items provided evidence for a 2-factor solution that corresponded to two self-efficacy scales: developmental progress self-efficacy and school performance self-efficacy.

General School Invitations. An EFA with all seven items yielded two eigenvalues greater than one suggesting that a two-factor solution may be the best fit. A two-factor solution was considered, but it was difficult to thematically justify dividing the items into two distinct

categories. Then, geomin factor loadings for a three-factor solution were examined, and a theme emerged by placing each item with the factor that had the highest loading for that item (see Table 13). Items 1 and 2 represented items that described parents' perceptions of school attitudes forming factor 1. The second factor corresponded to parents' perceptions of school invitations using items 3, 4 and 5. Item 7 loaded similarly on factors 1 and two but was ultimately paired with Item 6 on the third factor to describe parents' perceptions of conference invitations. A CFA of this factor solution yielded fit indices that fell into the commonly considered acceptable ranges: χ^2 (11, N = 350) = 22.573 (p < .01), RMSEA = .055 (90% C.I. = .021, .087), CFI = .990, TLI = .981 and SRMR = .027. In sum, factor analyses provided evidence for the following scales: Perception of School Attitudes, Perception of School Invitations and Perception of School Conference Invitations.

Table 14

Factor Loadings for Exploratory Factor Analysis with Geomin Rotation of General School Invitation Items (N = 350)

	Factor Loadings		
Item	Factor 1	Factor 2	Factor 3
1. Teachers at this school are interested and cooperative when they discuss my child.	**.939**	.002	-.236
2. I feel welcome at this school.	**.967**	-.158	.006
3. Parent activities are scheduled at this school so that I can attend.	-.001	**.744**	-.210
4. This school lets me know about meetings and special school events.	.144	**.766**	.009

Table 14 (cont'd)

5. This school tells me about parent activities, meetings, and special school events with enough time in advance.	.000	**.639**	.243
6. This school's staff contacts me promptly about any problems involving my child.	.255	-.007	**.638**
7. The teachers at this school keep me informed about my child's progress in school.	**.404**	.044	**.403**

Note: Geomin loadings significant at the .05 level are in bold

Tables 15, 16, and 17 depict additional psychometric data for each of the three scales. Items across all scales were negatively skewed as indicated by their mean scores, and respondents provided answers that spanned the full range of item response sets. The Perception of School Attitudes scale yielded a Cronbach's alpha score of .810, the Perception of School Invitations scale had an alpha of .789, and the Perceptions of Conference Invitations scale had an alpha of .781. Notably, the Cronbach's alpha score of the Perception of School Invitations scale would improve to .830 if Item 3 were removed. Despite the fact that this would improve the scale's internal consistency, removing this item was judged to negatively impact the scale's content validity. In addition, the internal consistency is still within the range of what is typically considered an acceptable Cronbach's alpha.

Table 15

Psychometric Properties of the Perception of School Attitudes Scale (n = 345)

Item	Mean	S.D.	Range		Cronbach's Alpha if Deleted
			Potential	Actual	
1. Teachers at this school are interested and cooperative when they discuss my child.	5.38	.72	1-6	1-6	n/a
2. I feel welcome at this school.	5.48	.72	1-6	1-6	n/a

Table 16

Psychometric Properties of the Perception of School Invitations Scale (n = 343)

Item	Mean	S.D.	Range		Cronbach's Alpha if Deleted
			Potential	Actual	
3. Parent activities are scheduled at this school so that I can attend.	4.98	.97	1-6	1-6	.830
4. This school lets me know about meetings and special school events.	5.32	.83	1-6	1-6	.635

Table 16 (cont'd)

5. This school tells me about parent activities, meetings, and special school events with enough time in advance.	5.14	.99	1-6	1-6	.670

Table 17

Psychometric Properties of the School Conference Invitations Perception Scale (n = 344)

			Range		
Item	Mean	S.D.	Potential	Actual	Cronbach's Alpha if Deleted
6. This school's staff contacts me promptly about any problems involving my child.	5.25	.91	1-6	1-6	n/a
7. The teachers at this school keep me informed about my child's progress in school.	5.33	.86	1-6	1-6	n/a

Specific Child Invitations. The EFA for the six Specific Child Invitations items yielded one eigenvalue greater than one. This suggested that a one-factor solution was appropriate. Factor loadings are depicted in Table 18 and all geomin loadings are significant at the .05 level. Fit indices provided additional evidence for a one-factor solution: χ^2 (5, N = 339) = 24.431 (p < .01), CFI = .947, TLI =.893, and SRMR = 0.045. The RMSEA was .110 [90% CI = .070,.154] and is above a value that would be considered a good fit for this index. However, as described earlier, more emphasis was placed on the other fit indices due to the small sample size.

Table 18

Factor Loadings for Exploratory Factor Analysis with Geomin Rotation of Specific Child Invitations Items (n = 339)

Item	Factor Scores
1. My child asked me to help explain something about our learning activities at home (for example, LINKS, Steps to Success, Nightly Reading).	**.486**
2. My child talked with me about the school day.	**.330**
3. My child asked me to attend a special event at school.	**.725**
4. My child asked me to help out at school.	**.813**
5. My child asked me to talk with his or her teacher.	**.647**

Note. Geomin rotations significant at the p < .05 level are in bold.

Additional psychometric properties are depicted in Table 19. The Cronbach's alpha for this scale was .744. The internal consistency of this scale would increase slightly from deleting item 2. However, deleting this item could compromise the validity of the scale. The content in item 2 was judged to add a unique and important component to the construct of specific child invitations. In addition, internal consistencies greater than .6 are still generally viewed as

acceptable for the purposes of this study's measure (Remler & Van Ryzin, 2011; Spector, 1992); therefore, this item was kept. Participants endorsed the full range of answers for the Child Invitations Scale. Item 5 was negatively skewed, suggesting that on average, parents reported that their child talked about their school day fairly frequently. Items 1 and 3 were relatively normally distributed, suggesting a range of responses. Finally, Item 5 was positively skewed, suggesting that on average, parents reported this type invitation fairly infrequently. In sum, the Specific Child Invitations domain supported a one-factor solution where all six items represented the Specific Child Invitations scale.

Table 19

Psychometric Properties of the Specific Child Invitations Scale (n = 323)

Item	Mean	S.D.	Range		Cronbach's Alpha if Deleted
			Potential	Actual	
1. My child asked me to help explain something about our learning activities at home (for example, LINKS, Steps to Success, Nightly Reading).	3.44	1.74	1-6	1-6	.719
2. My child talked with me about the school day.	5.25	1.32	1-6	1-6	.757
3. My child asked me to attend a special event at school.	3.13	1.76	1-6	1-6	.660
4. My child asked me to help out at school.	2.41	1.72	1-6	1-6	.647
5. My child asked me to talk with his or her teacher.	1.96	1.51	1-6	1-6	.694

Specific Teacher Invitations. The EFA for the six Specific Teacher Invitations items yielded one eigenvalue greater than one. This suggested that a one-factor solution was

appropriate. Factor loadings are depicted in Table 20 and all geomin loadings were significant at the .05 level. Fit indices provided additional evidence for a one-factor solution: χ^2 (5, N = 339) = 22.625 (p < .001), CFI = .956, TLI =.912, and SRMR = 0.038. The RMSEA was .101 [90% CI = .062,.146] and is above a value that would be considered a good fit for this index. However, as described earlier, more emphasis was placed on the other fit indices due to the small sample size.

Table 20

Factor Loadings for Exploratory Factor Analysis With Geomin Rotation of Specific Teacher Invitations Items (n = 339)

Item	Factor Scores
1. My child's teacher asked or expected me to do learning activities at home, such as LINKS, Steps to Success, or Nightly Reading with my child.	**.464**
2. My child's teacher asked me to talk with my child about the school day.	**.597**
3. My child's teacher asked me to attend a special event at school.	**.842**
4. My child's teacher asked me to help out at the school.	**.736**
5. My child's teacher contacted me (for example, sent a text, note, phoned, e-mailed).	**.408**

Note. Geomin rotations significant at the p < .05 level are in bold.

Additional psychometric properties are depicted in Table 21. The Cronbach's alpha for this scale was .742. Deleting item 5 would increase the internal consistency of the scale. However, deleting this item could compromise the validity of the scale. The content in item 5 was judged to add a unique and important component to the construct of general school invitations. In addition, internal consistencies greater than .6 are still generally viewed as acceptable for the purposes of this study's measure (Remler & Van Ryzin, 2011; Spector, 1992); therefore, this item was kept. Participants endorsed the full range of answers for the Specific

Teacher Invitations items. Only Item 1 was negatively skewed, indicating that on average, participants reported that this type of invitation occurred fairly frequently. Otherwise, the mean for the other items was below the scale's midpoint, 3.5, which represents fairly infrequent endorsement of these types of invitations. In sum, the Specific Teacher Invitations domain supported a one-factor solution such that all six items represent the Specific Teachers Invitations scale.

Table 21

Psychometric Properties of the Specific Teacher Invitations Scale (n = 320)

Item	Mean	S.D.	Range		Cronbach's Alpha if Deleted
			Potential	Actual	
1. My child's teacher asked or expected me to do learning activities at home, such as LINKS, Steps to Success, or Nightly Reading with my child.	4.12	1.72	1-6	1-6	.725
2. My child's teacher asked me to talk with my child about the school day.	3.13	1.97	1-6	1-6	.690
3. My child's teacher asked me to attend a special event at school.	2.69	1.53	1-6	1-6	.638
4. My child's teacher asked me to help out at the school.	2.10	1.39	1-6	1-6	.669
5. My child's teacher contacted me (for example, sent a text, note, phoned, e-mailed).	3.26	1.53	1-6	1-6	.752

Self-Perceived Time and Energy. The EFA for the Self-Perceived Time and Energy revealed one eigenvalue greater than one. However, fit indices for the one-factor solution were

beyond traditional cutoffs (see Table 22). Instead, the geomin rotations from the two-factor solution informed a two-factor solution that was thematically meaningful (see Table 23). One factor contained Items 1 and 3, which represented parents' communication-based time and energy. The other factor contained items 2, 4, and 5, which represented time and energy for involvement activities. This solution had stronger evidence for model fit, including a significant ($p < .01$) change in the chi-square statistic between models (see Table 22). In sum, the EFAs supported a two-factor solution representing Communication Time and Energy and Time and Energy for Involvement Activities.

Table 22

Select Model Fit Indices for Self-Perceived Time and Energy One and Two Factor Solutions

	χ^2	df	$\Delta\chi^2$	CFI/TLI	RMSEA (90% C.I.)
One-factor	78.237	5		.823/.647	.205 (.166, .246)
Two-factor	21.168	4	57.069**	.959/.896	.111 (.067,.159)

** $p < .001$

Table 23

Factor Loadings for Exploratory Factor Analysis With Geomin Rotation of Self-Perceived Time and Energy Domain (n = 350)

	Factor Loadings	
Item	Factor 1	Factor 2
1 I have enough time and energy to communicate well with my child about the school day.	**.907**	-.004
2. I have enough time and energy to help out at my child's school.	.138	**.550**
3. I have enough time and energy to communicate well with my child's teacher	**.542**	**.199**
4. I have enough time and energy to attend special events at school.	-.005	**.914**

Table 23 (cont'd)

5. I have enough time and energy to do learning activities at home such as LINKS, Steps to Success, and Nightly Reading with my child.	**.293**	**.401**

Note: Geomin loadings significant at the .05 level are in bold

Additional psychometric data are depicted in Tables 24 and 25. For the items on the Communication Time and Energy scale, responses were negatively skewed and no participants indicated a "1" for either question. These numbers suggest that on average, parents generally endorsed having time and energy for communication-related actions, whether it was with their child or the child's teacher. Items were also negatively skewed for the Time and Energy for Involvement scale and participants endorsed the full range of responses. Similarly, on average, these numbers suggest parents generally endorsed having time and energy for other involvement activities. The Communication Time and Energy Scale had a Cronbach's alpha of .711 and the Time and Energy for Involvement Activity Scale's alpha was .701.

Table 24

Psychometric Properties of the Communication Time and Energy Scale (n = 342)

			Range		
Item	Mean	S.D.	Potential	Actual	Cronbach's Alpha if Deleted
1. I have enough time and energy to communicate well with my child about the school day.	5.33	.726	1-6	2-6	n/a
3. I have enough time and energy to communicate well with my child's teacher.	5.22	.790	1-6	2-6	n/a

Table 25

Psychometric Properties of the Time and Energy for Involvement Activities (n = 342)

Item	Mean	S.D.	Range		Cronbach's Alpha if Deleted
			Potential	Actual	
2. I have enough time and energy to help out at my child's school.	4.15	1.31	1-6	1-6	.610
4. I have enough time and energy to attend special events at school.	4.42	1.21	1-6	1-6	.477
5. I have enough time and energy to do learning activities at home such as LINKS, Steps to Success, and Nightly Reading with my child.	4.93	.925	1-6	1-6	.702

A CFA of this two-factor solution revealed fit indices within acceptable ranges: χ^2 (4, N = 350) = 21.168 ($p < .001$) CFI = .959, TLI =.896, and SRMR = 0.038. The RMSEA was .111 [90% CI = .067,.159] and is above a value that would be considered a good fit for this index. However, as described earlier, more emphasis was placed on the other fit indices due to the small sample size.

Self-Perceived Knowledge and Skills. The EFA with the Knowledge and Skills domain items yielded two eigenvalues greater than one, suggesting that 2-factor solution fit best. The geomin loading depicted a considerable amount of overlap between the two factors (see Table 26). A model was examined where items were divided based on which factor contained the higher geomin rotation loading. The result was two distinct theoretical categories: (1) Parents' Awareness of Involvement Opportunities and (2) Parents Involvement Skills (see Tables 26 and 27). A CFA revealed fit indices that were somewhat below what is considerable an acceptable

value: χ^2 (19, N = 348) = 207.65 (p < .001), CFI = .857, TLI =.789, and SRMR = 0.076. A model was considered where factors were divided into three categories that were theoretically congruent: (1) School-based Involvement Knowledge and Skills: items 1, 2, and 8, (2) Home-School Conferencing Knowledge and Skills: items 3, 7, and (3) Home-Based Knowledge and Skills: items 4, 5, and 6. The resulting CFA fit indices did not markedly improve as they were still outside of recommended ranges: χ^2 (17, N = 348) = 191.06 (p < .001), CFI = .868, TLI =.782, and SRMR = 0.071. However, a change in chi-square test of significance did yield a significant result: $\Delta\ \chi^2$ (2, N = 348) = 16.59 (p < .05). Given that the other fit indices did not markedly improve to be within acceptable ranges, a two factor-model was chosen in favor of a more parsimonious predictor model (i.e. a total of 14 predictor factors rather than 15 factors).

Table 26

Factor Loadings for Exploratory Factor Analysis With Geomin Rotation of Knowledge and Skills Items (n = 348)

	Factor Loadings	
Item	Factor 1	Factor 2
1. I know about volunteering opportunities at my child's school.	**.779**	-.013
2. I know about special events at my child's school.	**.718**	**.174**
3. I know useful ways to contact my child's teacher.	**.388**	**.470**
4. I know how to communicate well with my child about the school day.	-.063	**.815**
5. I know how to explain learning activities at home such as LINKS, Steps to Success, and Nightly Reading to my child.	.002	**.746**

Table 26 (cont'd)

6. I know enough about the subjects of the learning activities at home such as LINKS, Steps to Success, and Nightly Reading to help my child.	-.009	**.738**
7. I know how to communicate well with my child's teacher.	**.234**	**.672**
8. I have the skills it takes to successfully help out at my child's school.	.078	**.685**

Note: Geomin loadings significant at the .05 level are in bold

Most responses spanned the full range of responses for each item and had a negatively skewed distribution (see Tables 27 and 28). On items 4 and 7, no one endorsed a "1". The Cronbach's alpha score for Parents' Awareness of Involvement Opportunities was .748 and the alpha score for Parents' Involvement Skills was .861. Deleting item 3 would boost the Cronbach's alphas for the Parents' Awareness of Opportunities scale, however, this potential deletion was judged to have a negative impact on the scale's content validity. In addition, internal consistencies greater than .6 are still generally viewed as acceptable for the purposes of this study's measure (Remler & Van Ryzin, 2011; Spector, 1992); therefore, this item was kept.

Table 27

Psychometric Properties of the Awareness of Involvement Opportunities (n = 341)

			Range		
Item	Mean	S.D.	Potential	Actual	Cronbach's Alpha if Deleted
1. I know about volunteering opportunities at my child's school.	4.66	1.17	1-6	1-6	.651
2. I know about special events at my child's school.	5.09	.91	1-6	1-6	.559

Table 27 (cont'd)

3. I know useful ways to contact my child's teacher.	5.33	.77	1-6	1-6	.754

Table 28

Psychometric Properties of the Involvement Skills (n = 340)

Item	Mean	S.D.	Range		Cronbach's Alpha if Deleted
			Potential	Actual	
4. I know how to communicate well with my child about the school day.	5.38	.64	1-6	2-6	.829
5. I know how to explain learning activities at home such as LINKS, Steps to Success, and Nightly Reading to my child.	5.28	.81	1-6	1-6	.827
6. I know enough about the subjects of the learning activities at home such as LINKS, Steps to Success, and Nightly Reading to help my child.	5.31	.74	1-6	1-6	.828
7. I know how to communicate well with my child's teacher.	5.34	.70	1-6	2-6	.837

Table 28 (cont'd)

8. I have the skills it takes to successfully help out at my child's school.	5.14	.87	1-6	1-6	.837

Dimension reduction. The series of factor analyses for each variable produced fourteen distinct scales. These scales were tested for a more parsimonious model by performing factor analyses with participants' factor scores for each scale. First, an EFA yielded five eigenvalues greater than one suggesting a five-factor solution. Table 29 depicts the geomin loadings from the five factor solution. These scores informed a five-factor theoretical model with the following organization: (1) Developmental Progress Self-Efficacy and School Performance Self-Efficacy, (2) Perception of School Invitations, School Conference Invitation Perceptions, and Perception of School Attitudes, (3) Role in Children's Education, Role Within School, Communication Time and Energy, and Time and Energy for Involvement, (4) Valence and Involvement Skills, and (5) Specific Child Invitations, Specific Teacher Invitations and Awareness of Opportunities. This model produced the following fit indices: RMSEA = .132 (90% C.I. = .121,.144), CFI = .864, TLI = .815, SRMR: .085. Given that the fit indices were outside of the range of acceptable cutoffs, other factor configurations that remained theoretically meaningful were attempted, but the software indicated that no convergence was found. The model was also tried with each participant group separately and fit indices moved further away from ideal ranges. For the purpose of this study, the fourteen scales produced by the measurement model were used to examine the relationships between the predictor variables and the outcome variables. Future studies with larger sample sizes may attempt to reduce the scale's dimensions or perhaps focus on a narrower range of constructs to produce more parsimonious summary scales.

Table 29

Geomin Factor Loadings for Predictor Factor Scores (n = 351)

	Factor Loadings				
Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Role in Children's Education	.008	.064	**.497**	.049	.074
Role Within School	**-.174**	**.203**	**.208**	.102	**.135**
Valence	.060	.007	**-.167**	**.189**	.050
Developmental Progress Self-Efficacy	**1.009**	.023	-.002	-.015	.000
School Performance Self-Efficacy	**.527**	-.013	**.298**	.051	.034
Perception of School Attitudes	-.018	**.826**	**.108**	-.012	-.018
Perception of School Invitations	.039	**.834**	-.016	-.006	-.007
School Conference Invitation Perceptions	.009	**1.051**	-.016	-.006	-.007
Specific Child Invitations	.041	**-.074**	.035	.132	**.655**
Specific Teacher Invitations	-.013	.069	-.015	-.056	**.851**
Communication Time and Energy	**.082**	**.160**	.140	**.654**	-.056
Time and Energy for Involvement	**-.067**	-.021	-.026	**.974**	.045
Awareness of Opportunities	-.018	**.318**	**.594**	.010	.047
Involvement Skills	.036	-.013	**1.029**	-.013	**-.042**

Note: Geomin loadings significant at the .05 level are in bold

Outcome Variables

The items from the Family Involvement Questionnaire (Fantuzzo, Tighe & Childs, 2000) underwent a confirmatory factor analysis. This measure was developed and validated with Head Start populations and therefore, it was expected that it would have a similar factor structure in other Head Start populations. The fit indices of the CFA indicated a fairly poor fit. The RMSEA was .076 [90% C.I. = (.072, .081)], χ^2 (524, N = 346) = 1577.04 (p < .001), CFI = .787, TLI = .772, SRMR = .109. An exploratory factor analysis was conducted to explore whether a different model may fit the FIQ data better. The results indicated that the data supported a seven-factor solution, as there were seven eigenvalues greater than one. However, looking at the various factor solutions, geomin rotations factors tended to cluster around the three scales. Table 30 depicts the 3-factor solution from the EFA; the 3-factor solution depicts all items clustered with their intended scales. A few items loaded onto more than one scale, but the largest loading tended to be with the factor containing the other items of their intended scale. For the sake of maintaining theoretical integrity and comparison with other studies that used the FIQ, the factor structure of the original measure was used despite its poor model fit.

Table 30

Factor Loadings for a 3-Factor Solution With Geomin Rotation of FIQ Items (n = 350)

	Factor Loadings		
Item	Factor 1	Factor 2	Factor 3
School1	**.514**	.074	.021
School2	**.304**	.120	.089
School3	**.690**	.009	.075
School4	**.450**	**.143**	-.039
School5	**.607**	.003	.093
School6	**.771**	-.015	-.051
School7	**.442**	-.002	.118
School8	**.247**	**.140**	.276
School9	**.471**	.108	.039
School10	**.360**	.107	.121

Table 30 (cont'd)

Home1	.111	**.780**	**-.215**
Home2	.100	**.784**	**-.252**
Home3	-.051	**.791**	-.071
Home4	-.003	**.637**	.021
Home5	-.001	**.776**	-.010
Home6	0.021	**.644**	.027
Home7	-.079	**.605**	.031
Home8	-.013	**.558**	**.152**
Home9	**-.200**	**.497**	.019
Home10	**-.168**	**.418**	**.187**
Home11	**-.165**	**.473**	**.131**
Home12	**-.157**	**.465**	.023
Home13	-.036	**.186**	**.438**
Conf1	0.020	.042	**.817**
Conf2	.033	.027	**.823**
Conf3	-.004	.081	**.748**
Conf4	**.160**	.004	**.744**
Conf5	.030	**.096**	**.797**
Conf6	.089	-.018	**.788**
Conf7	0.058	.113	**.329**
Conf8	**.123**	0.000	**.460**
Conf9	**.196**	-.037	**.448**
Conf10	**.201**	-.006	**.436**
Conf11	**.243**	-.094	**.408**

Note: Geomin loadings significant at the .05 level are in bold

Table 31 depicts additional psychometric data about each item. Each scale had an internal consistency above .7: School-Based Involvement was .786, Home- Based Involvement was .870, and Home-School Conferencing was .894, (Remler & Van Ryzin, 2011; Spector, 1992). In addition, parents' responses reflected the full range of answer choices. On average, parents tended to report participating in school-based activities less frequently than home-based and home-school conferencing activities.

Table 31

Psychometric Properties of the Family Involvement Questionnaire (Fantuzzo, Tighe & Childs, 2000) in the Current Population

				Range	
Item[a]	n	M	S.D.	Potential	Actual
School1	342	1.44	.778	1-4	1-4
School2	342	2.18	1.030	1-4	1-4
School3	340	1.30	.703	1-4	1-4
School4	333	1.84	1.121	1-4	1-4
School5	342	1.46	.771	1-4	1-4
School6	339	1.21	.586	1-4	1-4
School7	341	1.40	.735	1-4	1-4
School8	340	2.59	1.095	1-4	1-4
School9	336	1.47	.867	1-4	1-4
School10	334	2.16	1.019	1-4	1-4
Home1	340	3.30	0.720	1-4	1-4
Home2	340	3.31	0.727	1-4	1-4
Home3	344	3.24	0.781	1-4	1-4
Home4	344	2.93	0.871	1-4	1-4
Home5	341	3.11	0.757	1-4	1-4
Home6	342	2.94	0.912	1-4	1-4
Home7	341	3.44	0.678	1-4	1-4
Home8	344	3.15	0.848	1-4	1-4
Home9	343	3.53	0.665	1-4	1-4
Home10	342	3.14	0.873	1-4	1-4
Home11	343	3.54	0.669	1-4	1-4
Home12	343	3.51	0.704	1-4	1-4
Home13	342	3.08	1.025	1-4	1-4
Conf1	345	3.09	0.901	1-4	1-4
Conf2	345	2.71	1.075	1-4	1-4
Conf3	344	2.99	0.949	1-4	1-4
Conf4	346	2.77	1.034	1-4	1-4
Conf5	343	3.03	.917	1-4	1-4
Conf6	341	2.70	1.046	1-4	1-4
Conf7	345	3.54	.766	1-4	1-4
Conf8	344	2.41	1.149	1-4	1-4
Conf9	339	1.78	1.065	1-4	1-4
Conf10	346	2.34	1.020	1-4	1-4
Conf11	342	1.85	1.026	1-4	1-4

[a]These items are abbreviated for brevity. The first ten correspond to the school-based involvement, the next thirteen correspond to the home-based involvement items, and the final eleven are the home-conferencing items from the Family Involvement Questionnaire (Fantuzzo, Tighe & Childs, 2000)

Summary

Factor analysis and theoretical considerations lead to a measurement model with fourteen scales representing psychological and contextual predictors of parent involvement. The three scales outlined by the FIQ were maintained. Some of scales are the result of factor solutions that had weak model fit. However, almost all scales except School Performance Self-Efficacy yielded a Cronbach's alpha greater than .7, suggesting acceptable internal consistency reliability across scales (see Table 32). The current study's sample size limited the flexibility in improving fit and testing more parsimonious models. More specific responses to this study's measurement research questions are described below.

Table 32

Full Scale Characteristics

Predictor Scales	Number of Items	α
Role in Children's Education	4	.713
Role Within School	6	.766
Valence	6	.916
Developmental Progress Self-Efficacy	4	.745
School Performance Self-Efficacy	3	.642
Perception of School Attitudes	2	.810
Perception of School Invitations	3	.789

Table 32 (cont'd)

School Conference Invitation Perceptions	2	.781
Specific Child Invitations	5	.744
Specific Teacher Invitations	5	.742
Communication Time and Energy	2	.711
Time and Energy for Involvement	3	.701
Awareness of Opportunities	3	.748
Involvement Skills	5	.861
School-Based Involvement	10	.786
Home-Based Involvement	13	.870
Home-School Conferencing	11	.894

Research question 1a. Part *a* of research question one pertained to the construct validity and reliability of the measurement of the predictor variables. The Walker et al. (2005) measure had not been developed for Head Start samples and thus, was adapted. Head Start representatives provided feedback on how the questions' contents could better align with Head Start populations and several changes were made (see Appendix B). Participants' responses yielded fourteen separate content scales that were judged to have compelling statistical and theoretical evidence. In general, the domains from the Walker et al. (2005) measure were divided into more specific

categories; the measure went from eight Walker et al. (2005) domains to fourteen scales (see Figure 4).

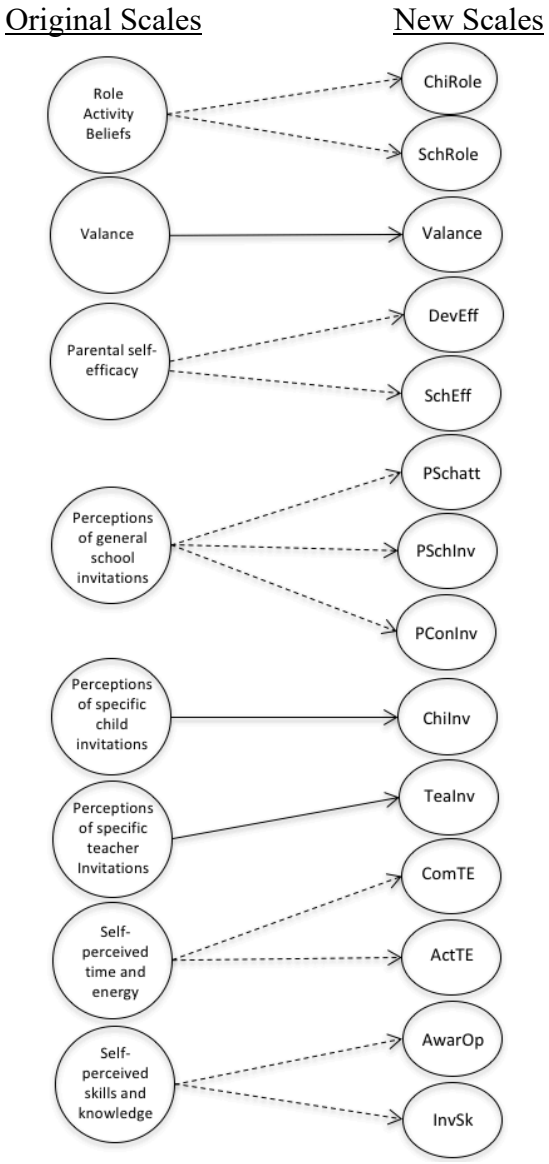


Figure 4. This figure depicts the division of the eight original Hoover-Dempsey and Sandler (1997, 2005) theoretical scales into the fourteen new scales used in this study. Dashed lines indicate a division of the original scale and solid lines indicate that the scale remained relatively unchanged (barring minor wording changes described earlier). ChiRole = Role in Children's Education, SchRole = Role Within School, DevEff = Developmental Progress Self-Efficacy, SchEff = School Performance Self-Efficacy, PSchatt = Perception of School Attitudes, PSchInv = Perception of School Invitations, PConInv=School Conference Invitation Perceptions, ChiInv=Specific Child Invitations, TeaInv=Specific Teacher Invitations, ComTE= Communication Time and Energy, ActTE=Time and Energy for Involvement, AwarOp=Awareness of Involvement Opportunities, InvSk= Involvement Skills.

Research question 1b. This research question pertained to the validity and reliability of the FIQ for use with the current study's sample. Despite the measure being developed with and for Head Start parents, there were issues with the measurement model's fit. However, the scales did yield Cronbach's alphas within the "acceptable" or "good" range (Cronbach, 1951). Also, each scale contains content that is important to the validity of the measure, so it is difficult to decide which, if any items to remove. Perhaps larger populations could help clarify if the FIQ needs updating as it was developed almost twenty years ago.

Research question 1c. This research question pertained to the potential for examining the statistical evidence for a more parsimonious model, such as grouping the fourteen scales into categories. Exploratory factor analysis of the factor scores derived from each of the fourteen scales provided evidence for a five-factor solution. Unfortunately, after making theoretical decisions to create five, mutually exclusive factors, the resulting model produced fit indices that suggested a fairly poor fit. Perhaps a larger sample size could further clarify a more parsimonious model for this group.

Prediction Model

The measurement model informed the variables in the prediction model. The fourteen scales were treated as fourteen exogenous variables that predicted the three, endogenous variables produced by the FIQ (see Figure 5). The model was tested with three sample variations: (1) parents of students receiving special education services, (2) parents of general education students, and (3) all participants combined. Model fit was assessed by parameter estimates and fit indices. Then, parameter and mean differences between the special education and general education groups were examined.

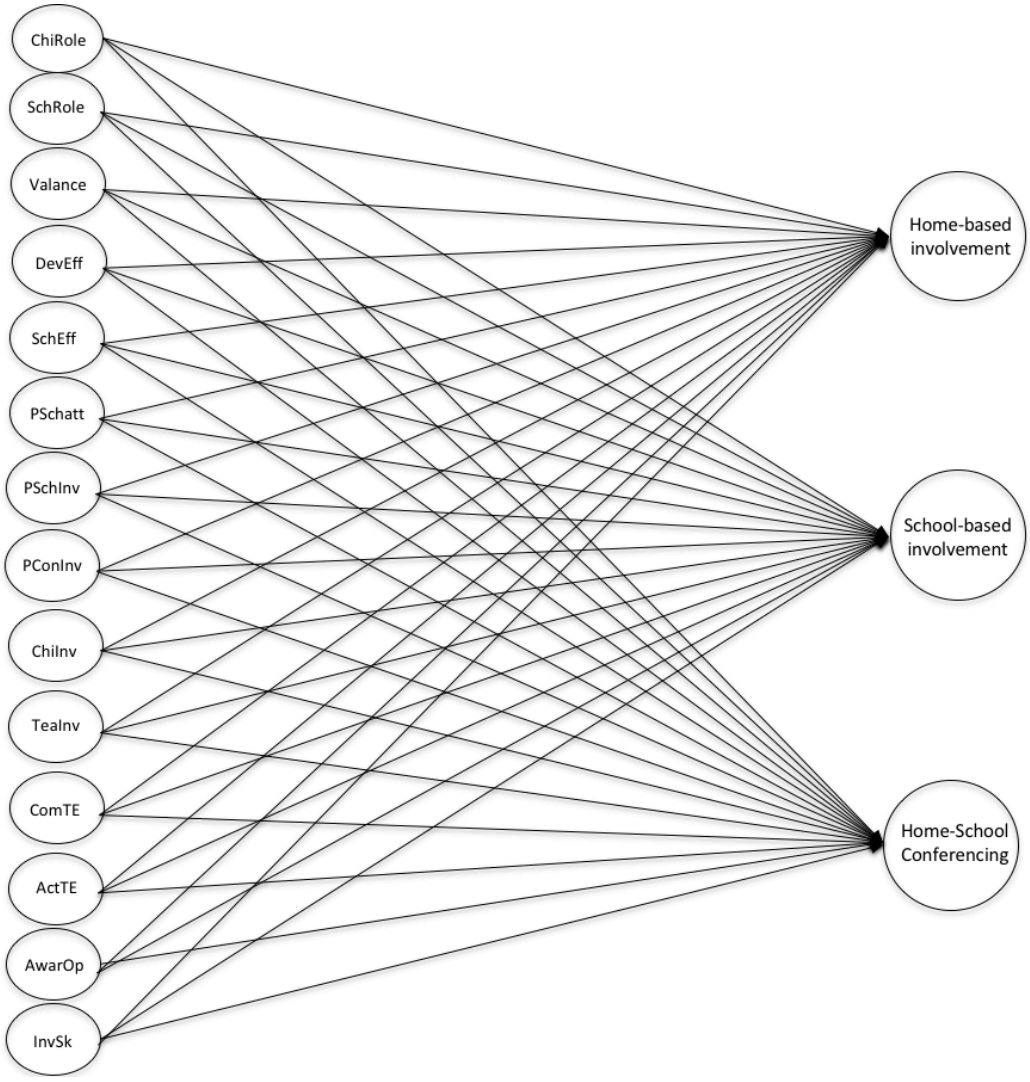


Figure 5. This figure depicts the template of the new prediction model that was tested with each sample group. ChiRole = Role in Children's Education, SchRole = Role Within School, DevEff = Developmental Progress Self-Efficacy, SchEff = School Performance Self-Efficacy, PSchatt = Perception of School Attitudes, PSchInv = Perception of School Invitations, PConInv=Perceptions of School Invitations, ChiInv=Specific Child Invitations, TeaInv=Specific Teacher Invitations, ComTE= Communication Time and Energy, ActTE=Time and Energy for Involvement, AwarOp=Awareness of Involvement Opportunities, InvSk= Involvement Skills.

Model Fit

The fit indices suggested that the prediction model fit was saturated for parents of students receiving special education (PSE), parents of students who are not in special education (PGE), and with both groups combined (see Table 33). A model is saturated when the variables

explain all of the variance in the outcome variables (Gifford, 2016). This finding is due to the large number of parameters in the model compared to the sample size (Múthen & Múthen, 2015). In turn, there is likely a lower number of variables that can explain a meaningful amount of the variance in the outcome variables. Saturation also means that model fit cannot be assessed. Nevertheless, beta coefficients can still be interpreted to examine the relationships between the variables.

Table 33

Model Fit Indices

	χ^2 (d_f)	*p*	RMSEA	CFI	TLI
Combined	0.000 (0)	.000	.000	.000	.000
G.E. Only	.000 (0)	.000	.000	1.000	1.000
S.E. Only	.000 (0)	.000	.000	1.000	1.000
MSEM	.000 (0)	.000	.000	1.000	1.000

Note. Combined = all participants included in the same model, G.E. Only = only participants who are parents of general education students, S.E. Only = only participants who are PSE, MSEM = multigroup structural equation model analysis with all participants.

Parameter Estimates

Unstandardized beta coefficients. Nine predictor variables had significant ($p < .05$) relationships with at least one of the outcome variables and five did not (see Table 34). The following variables were significant predictors ($p < .05$) of at least one outcome variable for either PSE or PGE, or when both groups were combined: Role Within School, Developmental Progress Self-Efficacy, School Performance Self-Efficacy, Perception of School Invitations, Specific Child Invitations, Specific Teacher Invitations, Communication Time and Energy, Time and Energy for Involvement, and Involvement Skills. Role in Children's Education, Valence, Perception of School Attitudes, Perceptions of Conference Invitations, and Awareness of Opportunities were not significantly predictive of Home Involvement, School Involvement, or Home-School Conferencing at the $p < .05$ level for any group. It is important to note that factor

scores, rather than raw scores, were used with the prediction model analyses. Therefore, beta coefficients represent a change in the outcome variables' factor scores, not Likert item scores.

Table 34

Unstandardized Beta Coefficients of Special Education (n = 75) and General Education Parents (n = 252)

	School-Based Involvement			Home-Based Involvement			Home-School Conferencing		
	S.E.	G.E.	Comb.	S.E.	G.E.	Comb.	S.E.	G.E.	Comb.
Role in Children's Education	-0.126	0.103	0.072	-0.146	0.186*	0.116	-0.372	0.171	0.023
Role Within School	0.203*	0.099*	0.129***	0.143	0.02	0.045	-0.035	0.104	0.147
Valence	-0.001	0.009	0	0.053	0.022	0.028	-0.001	-0.003	-0.001
Developmental Progress Self-Efficacy	-0.184***	-0.048	-0.095***	-0.148**	0.048	-0.007	-0.449***	-0.023	-0.143**
School Performance Self-Efficacy	0.207*	0.046	0.099	0.522***	0.201***	0.282***	0.754***	-0.07	0.127
Perception of School Attitudes	0.038	-0.052	-0.011	-0.289	0.046	-0.049	-0.357	0.067	-0.059
Perception of School Invitations	-0.261	0.021	-0.007	-0.098	-0.162	-0.14	-0.454	-0.406**	-0.368**
School Conference Invitation Perceptions	0.264	-0.014	0.005	0.297	0.045	0.077	0.56*	0.28	0.315

Table 34 (cont'd)

Specific Child Invitations	0.203***	0.098***	0.118***	0.108*	0.143***	0.121***	0.206**	0.197***	0.175***
Specific Teacher Invitations	0.225***	0.138***	0.15***	0.008	-0.001	0.012	0.129	0.168**	0.157***
Communication Time and Energy	0.01	-0.074	-0.067	0.198	0.109	0.097	-0.025	0.313**	0.157
Time and Energy for Involvement	0.048	0.119***	0.116***	0.028	0.034	0.054	-0.015	-0.072	-0.021
Awareness of Opportunities	0.013	0.059	0.042	0.01	-0.018	-0.002	0.109	0.155	0.16
Involvement Skills	-0.146	-0.079	-0.109	-0.025	0.136	0.145	0.555**	0.071	0.208

Note. S.E. = parents of special education students; G.E. = parents of general education students
* $p < .10$
** $p < .05$

Eliminating the variables without significant relationships ($p < .05$) from the model was considered. Several models were analyzed where these variables were deleted, one at a time. Unfortunately, the number of parameters was still too large to observe fit indices, and subsequently, meaningful changes in terms of chi-square estimates. Instead, changes in beta coefficients between the models were considered. Models excluding non-significant variables (i.e., Role in Children's Education, Valence, Perception of School Attitudes, School Conference Invitation Perceptions, and Awareness of Opportunities) did result in a shift in a number of beta coefficients such that a variable that was not significant at the $p < .05$ level, became significant, and variables that were not significant at the $p < .05$ for a certain group or outcome variable, became significant at the $p < .05$ level. These changes suggest that the five variables that were not found to be significantly predictive of the outcome variables may have an interaction effect with some of the other variables. That said, without examining change in chi-square indices, it is difficult to determine whether the changes in beta scores were significant at the $p < .05$, or whether it is attributable to chance. Given the potential for these non-significant variables to play an indirect role in predicting the outcome variables, they remained in the model.

Parents of students receiving special education services. The following three variables had a significant relationship ($p < .05$) with PSE's reported school-based involvement: Developmental Progress Self-Efficacy (b = -.184, S.E. = .055, $p < .01$), Specific Child Invitations (b = .203, S.E. = .047, $p < .001$) and Specific Teacher Invitations (b = .225, S.E. = .053, $p < .001$; see Figure 6.). For Home-Based Involvement, there was a significant ($p < .05$) relationship with Developmental Progress Self-Efficacy (b= -.148, S.E. = .075, $p < .05$) and School Performance Self-Efficacy (b = .522, S.E. = .156, $p <.01$). Finally, Developmental Progress Self-Efficacy (b = -.449, S.E. = .102, $p < .001$), School Performance Self-Efficacy (b = .754, S.E. = .210, $p < .001$), Specific Child Invitations (b = .206, S.E. = .087, $p < .05$) and

Involvement Skills (b = .555 S.E. = .282, $p < .05$) had a significant relationship with Home-School Conferencing. Notably, Developmental Progress Self-Efficacy had a significant ($p < .05$), negative relationship with the outcome variables such that as PSE tended to endorse a greater amount of a predictor variable, on average, their amount of involvement decreased. Otherwise the relationships were positive, suggesting that as the predictor variable value increased, so did the outcome variable. Overall, there were multiple, significant ($p < .05$) predictors of each of the outcome variables for the PSE group.

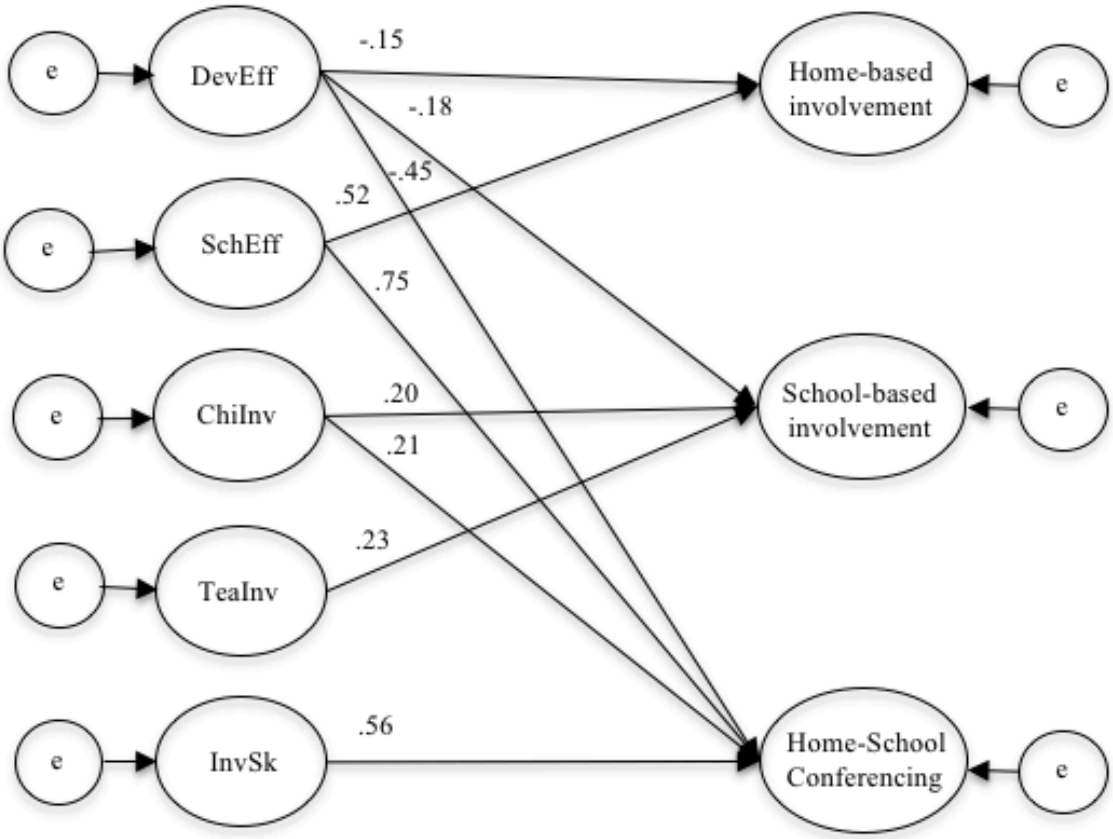


Figure 6. This figure depicts the beta coefficients of the pathways significant at least at the .05 level for the PSE group. DevEff = Developmental Progress Self-Efficacy, SchEff = School Performance Self-Efficacy, ChiInv=Specific Child Invitations, TeaInv=Specific Teacher Invitations, and InvSk= Involvement Skills. The follow variables without a significant relationship are not depicted: Role in Children's Education, Role Within School, Valence, Perceptions of School Invitations, Communication Time and Energy, Time and Energy for Involvement, Perception of School Attitudes, School Conference Invitation Perceptions and Awareness of Involvement Opportunities.

Parents of students in general education. Figure 7 depicts pathways significant at least at the .05 level. The following variables were significant predictors of School-Based Involvement for PGE: Specific Child Invitations (b = .098, S.E. = .033, $p < .01$) and Specific Teacher Invitations (b = .138, S.E. = .043, $p < .05$). Regarding Home-Based Involvement, School Performance Self-Efficacy (b=.201, S.E. = .074, $p < .01$) and Specific Child Invitations (b=.143, S.E. = .036, $p < .001$) were significant predictors. Finally, the following variables were significant predictors of Home-School Conferencing: Perceptions of School Invitations (b = -.406, S.E. = .100, $p < .01$), Specific Child Invitations (b = .197, S.E. = .064, $p < .01$), Specific Teacher Invitations (b = .168, S.E. = .065, $p < .05$), and Communication Time and Energy (b = .313, S.E. = .152, $p < .05$). All relationship were positive except Perceptions of School Invitations, suggesting that as participants endorsed higher levels of the variable, their involvement increased. For Perceptions of School Invitations, the higher participants rated Perceptions of School Invitations, the less Home-School Conferencing they reported.

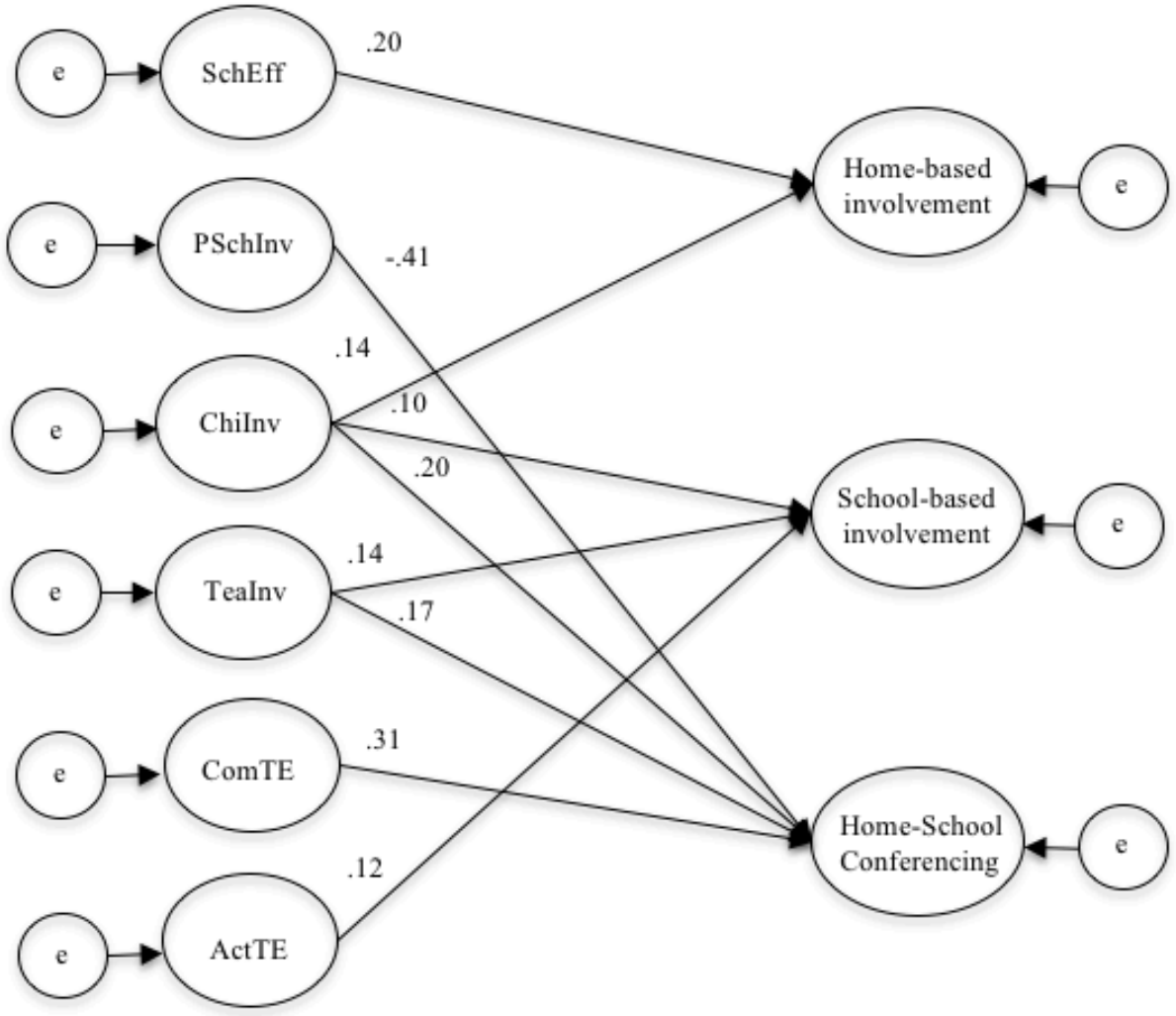


Figure 7. This figure depicts the beta coefficients of the pathways significant at least at the .05 level for the PGE group. SchEff = School Performance Self-Efficacy, PSchInv = Perception of School Invitations,, ChiInv=Specific Child Invitations, TeaInv=Specific Teacher Invitations, ComTE= Communication Time and Energy, ActTE=Time and Energy for Involvement and InvSk= Involvement Skills.. The follow variables without a significant relationship are not depicted: Role in Children's Education, Role Within School, Developmental Progress Self-Efficacy,Valence, Perception of School Attitudes, School Conference Invitation Perceptions and Awareness of Involvement Opportunities.

Standardized beta coefficients. One way to evaluate the strength of the relationships between the predictor and outcome variables is through standardizing the variables. Standardized beta coefficients indicate the average change in standard deviation in the outcome variables associated with each predictor variable (Kline, 2016). Table 35 depicts the models' standardized

beta coefficients using the pooled standard deviation to convert unstandardized values. The benefit of using the pooled standard deviation for both groups allows for comparison between groups while also accounting for each group's individual standard deviations (Agresti & Finlay, 2009). Acock (2014) suggests that standardized beta coefficients below 0.2 are considered weak, values between 0.3 and 0.5 are considerd moderate, and values greater than 0.5 are considered strong. The following pathway was a significant ($p < .05$), but weak predictor for PSE: Developmental Progress Self-Efficacy ($b = .-.179$). For PGE, there were four significant ($p < .05$), but weak pathways: Specific Child Invitations predicting Home-based Involvement and Home-School Conferencing and Specific Teacher Invitations and Communication Time and Energy predicting Home-School Conferencing. All other significant ($p < .05$) relationships were moderate to strong in size.

Table 35

Standardized Beta Coefficients of Special Education (n = 75) and General Education Parents (n = 252)

	School-Based Involvement		Home-Based Involvement		Home-School Conferencing	
	S.E.	G.E.	S.E.	G.E.	S.E.	G.E.
Role in Children's Education	-0.097	0.079	-0.074	0.096*	-0.153	0.071
Role Within School	0.236*	0.116*	0.110	0.015	-0.022	0.063
Valence	-0.004	0.026	0.102	0.040	-0.002	-0.003
Developmental Progress Self-Efficacy	-0.337***	-0.089	-0.179**	0.058	-0.444***	-0.021
School Performance Self-Efficacy	0.203*	0.045	0.338***	0.134	0.399***	-0.035
Perception of School Attitudes	0.049	-0.070	-0.247	0.043	-0.249	0.053
Perception of School Invitations	-0.333	0.029	-0.083	-0.132	-0.313	-0.281**
School Conference Invitation Perceptions	0.462	-0.020	0.343	0.046	0.528*	0.253
Specific Child Invitations	0.391***	0.189***	0.138*	0.180***	0.214**	0.201***
Specific Teacher Invitations	0.415***	0.253***	0.010	0.000	0.128	0.170***

Table 35 (cont'd)

Communication Time and Energy	0.011	-0.083	0.145	0.070	-0.015	0.186**
Time and Energy for Involvement	0.092	0.229***	0.035	0.036	-0.015	-0.078
Awareness of Opportunities	0.023	0.111	0.012	-0.016	0.105	0.142
Involvement Skills	-0.167	-0.096	-0.019	0.106	0.343**	0.056

Note. S.E. = parents of special education students; G.E. = parents of general education students
* $p < .10$
** $p < .05$
*** $p < .01$

Group pathway differences. Multigroup Structural Equation Modeling (MSEM) was used to test for significant differences between the groups' models. A separate analysis was run for each pathway between predictor and outcome variables with one pathway constrained. Constraining a pathway allows the model to keep that pathway's beta coefficient constant, or the same, between both groups (Múthen & Múthen, 2015). Then, the chi-squared information from this constrained model is compared to the chi-squared information from the original model without constraints. If the difference between the chi-squared coefficient and degrees of freedom between the models produces a significant *p*-value, then it suggests that the parameter estimate of this particular pathway is significantly different between groups (Werner & Schermelleh-Engel, 2010). In the case of the present study's model, the chi-square coefficient and degrees of freedom was 0, and thus, if a constrained model's chi-square coefficient is significant ($p < .05$), then this indicates that there is a significant difference between the group's pathways.

Table 36 depicts the chi-squared information of the pathways found to be significantly different ($p < .05$) between groups. Overall, most pathways were not found to be significantly ($p < .05$) different between groups; out of the 42 pathways, four were found to be significantly different ($p < .05$). The pathway between Developmental Progress Self-Efficacy was significantly different between groups for School-Based ($\Delta\chi^2 = 4.255$, $d_f = 1$, $p < .05$), Home-Based ($\Delta\chi^2 = 5.241$, $d_f = 1$, $p < .05$), and Home-School Conferencing ($\Delta\chi^2 = 11.454$, $d_f = 1$, $p < .001$). In addition, the pathway between School Performance Self-Efficacy and Home-School Conferencing was also significant between groups ($\Delta\chi^2 = 10.533$, $d_f = 1$, $p < .001$). For all of these differences, the pathway was a significant predictor for PSE, but not for PGE, suggesting that these pathways were more salient predictors for PSE than PGE.

Table 36

Select Pathway Differences between Groups

	χ^2	d_f
School on		
DevEff	4.255*	1
Home on		
DevEff	5.241*	1
Conf on		
Dev Eff	11.454***	1
SchEff	10.533**	1

Note. School = School-Based Involvement, ChiRole = Role in Children's Education, DevEff = Developmental Progress Self-Efficacy, Conf = Home-School Conferencing, SchEff = School Performance Self-Efficacy.
* $p < .05$
** $p < .01$
*** $p < .001$

Mean Differences

Mean differences were calculated with two approaches: comparing mean differences using independent sample *t*-tests with each scales' raw scores and comparing prediction models where means were constrained versus free to covary. First, means were calculated by obtaining a scale summary score through summing a participants' Likert item responses for a scale's corresponding items. For example, the Role in Children's Education scale contained four items and answer choices from 1-6. A summary for this scale would range from 4 to 24. Participants who did not provide a response for all of a scale's items were excluded from this analysis. Most of the variable means were similar between groups. Independent sample t-tests revealed three mean differences that were significant at the .05 level: Parents Role Beliefs Within the School, Developmental Progress Self-Efficacy and Home-School Conferencing (see Table 37).

Table 37

Mean Differences by Group

	S.E.		G.E.		
	N	M (S.D.)	N	M (S.D.)	Mean Difference
Role in Children's Education	76	21.68 (1.97)	261	21.99 (1.85)	.30
Role Within School	74	27.62 (4.10)	249	26.25 (4.57)	1.37*
Valence	75	25.43 (7.57)	256	25.86 (7.44)	.44
Developmental Progress Self-Efficacy	77	17.48 (4.27)	267	19.79 (3.54)	2.31***
School Performance Self-Efficacy	78	14.71 (2.54)	267	15.06 (2.25)	.36
Perception of School Attitudes	78	10.38 (1.72)	267	10.87 (1.41)	.48*
Perception of School Invitations	78	15.38 (2.23)	267	15.30 (2.53)	.08
School Conference Invitation Perceptions	78	10.31 (1.74)	267	10.54 (1.73)	.23
Specific Child Invitations	77	14.91 (6.10)	257	16.36 (5.54)	1.45
Specific Teacher Invitations	77	15.36 (5.41)	257	15.03 (5.86)	.34
Communication Time and Energy	78	10.36 (1.69)	267	10.48 (1.45)	.12
Time and Energy for Involvement	78	13.87 (2.92)	266	13.30 (2.84)	.57
Awareness of Opportunities	78	15.23 (2.21)	264	14.95 (2.52)	.28
Involvement Skills	78	26.28 (2.90)	265	26.46 (3.05)	.18
School-Based Involvement	78	16.64 (5.20)	262	16.76 (5.18)	.11

Table 37 (cont'd)

Home-Based Involvement	78	41.83 (6.98)	263	41.86 (6.31)	.03
Home-School Conferencing	78	31.08 (7.26)	263	28.48 (7.60)	2.60**

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

For Parental Role Beliefs Within School, PSE had a significantly ($p < .05$) higher mean score (M = 27.62, S.D. = 4.10) than PGE (M = 26.25, S.D. = 4.57). The Cohen's *d* effect size for this difference was .316 which falls within the small range (Cohen, 1961). This finding was further supported by comparing multigroup SEM models where one model assumes groups' means were the same (i.e. constrained) and with a model where the means were free to covary. This analysis resulted in a significant change in the chi-square value ($\Delta \chi^2 = 4.44$, $d_f = 1$, $p < .05$). That said, the Parents Role Beliefs Within School pathway was not significant at the $p < .05$ level for either PSE or PGE. This suggests that while the beta coefficients are different, this variable may not play a meaningful role in predicting involvement. Alternatively, Role Beliefs Within School may be a mediator or moderator for other variables within the model.

PGE had a significantly ($p < .05$) higher mean Developmental Self-Efficacy score (M = 19.79, S.D. = 3.54) than PSE (M =17.48, S.D. = 4.27). The effect size for this difference was .589 which falls on the high end of the medium range (Cohen, 1961). This finding was further supported by comparing multigroup SEM models where one model assumes groups' means were the same (i.e. constrained) and a model where the means were free to covary. This analysis resulted in a significant change in the chi-square value ($\Delta \chi^2 = 11.686$, $d_f = 1$, $p < .001$). It is important to note that the Developmental Self-Efficacy pathway was only significant (*p*

< .05) for the PSE group. The results suggest that there may be meaningful differences in Developmental Progress Self-Efficacy between groups.

Finally, PSE had a significantly ($p < .05$) higher home-school conferencing mean (M = 31.08, S.D. = 7.26) than PGE (M = 28.48, S.E. = 7.60). This difference had an effect size of .35, which also falls in the small range. Comparing models with and without constrained means was not possible for home-school conferencing because it was an outcome variable. Several variables were significant ($p < .05$) predictors of Home-School Conferencing across groups, which makes this mean difference potentially more meaningful.

Summary

Research question 2. Research question two pertained to whether a prediction model using the variables from the Revised Hoover-Dempsey Model (Walker et al., 2005) could be identified. The measurement model provided an adapted variable structure such that there were fourteen exogenous variables and three endogenous variables. Fit indices could not be calculated due to the model's saturation. In other words, the variables explained all of the variance in the outcome variables and the sample size was not large enough to handle the total number of parameter estimates. Theoretically, there is a more parsimonious model, but a larger sample is needed to identify such a model.

Model fit was attempted to be examined for PSE and PGE separately. Unfortunately, again model fit indices could not be calculated due to the model's saturation. However, beta coefficients were still interpretable. The results of a MSEM suggested that there were four pathways with significantly different ($p < .05$) beta coefficients: Developmental Progress Self-Efficacy predicting School-Based Involvement and Home-based Involvement, and Developmental Progress Self-Efficacy and School Performance Self-Efficacy predicting Home-

School Conferencing. Furthermore, some pathways were significant ($p < .05$) for one group, but not the other.

Research question 3. In terms of mean differences: three variables were identified to be significantly ($p < .05$) different across groups: Parents Role Beliefs Within the School, Developmental Progress Self-Efficacy, and Home-School Conferencing. It was hypothesized that special education parents would have lower reported levels of Parental Self-Efficacy, and this was partially true at least for self-efficacy in their ability to influence their children's developmental progress. PSE were also hypothesized to have lower average levels of perceived Time and Energy and Perceived General School Invitations. Instead, both groups had similar means in those domains. Finally, PSE were hypothesized to have lower reported Perceptions of General Invitations; this original variable was divided into three separate, new variables and none of the new variables were significantly different ($p < .05$) between groups.

Chapter IV.

DISCUSSION

Overview of the Study

The purpose of this study was to examine an adapted measure of psychological and contextual motivators of parent involvement among Head Start parents. Representatives from a mid-Michigan Head Start consortium informed changes to an existing quantitative survey of these parent involvement motivators for use with Head Start parents (Walker et al., 2005). Then, 351 Michigan Head Start parents completed the adapted survey and the Family Involvement Questionnaire (FIQ), a measure of Head Start parent involvement (Fantuzzo, Tighe & Childs, 2000). Responses were analyzed to identify a measurement model with evidence of validity and reliability. The resulting measurement model consisted of seventeen scales that represented fourteen scales of psychological and contextual predictors of parent involvement and three scales from the FIQ (Fantuzzo, Tighe & Childs, 2000). Each scale represented either a predictor or outcome variable and was used to create a prediction model for parents of children receiving special education (PSE) and parents of children who did not receive special education (PGE). Pathways of the identified prediction model differed slightly between groups of parents. In addition, there were multiple statistically significant mean differences among the variables between groups. Answers to each of this study's research questions, in addition to study limitations and implications, are discussed.

Reliability and Validity of Measures

Walker and Colleagues (2005) Questionnaire

The Walker and colleagues (2005) items were developed for use with elementary and older populations. Feedback from Head Start representatives on Walker and colleagues' (2005) measure of psychological/contextual predictors informed fifteen item changes to improve content

validity with Head Start populations (see Appendix B). These changes reflected potential differences in educational practices between elementary and Head Start parents, such as changing "homework" to parent-child activities assigned to be completed at home (i.e., "LINKS, Steps to Success, and Nightly Reading) and school event scheduling issues reported by Head Start parents. There were also several wording changes to improve the comprehension of items per the request of Head Start representatives. The final, adapted measure is presumably more appropriate and applicable to Head Start parents than the original measure.

After data collection, analyses in the current study yielded evidence for fourteen factors from the Walker and colleagues (2005) measure, as opposed to the original eight factors. The new scales represented a range of psychological and contextual variables including parents' beliefs about their role in two different involvement domains (i.e., involvement specific to their child, and role within school), valence towards one's own school experiences, two domains of self-efficacy (i.e. developmental progress and school performance), parental perceptions of three different aspects of general school invitation efforts (i.e., perceptions of school attitudes, school involvement invitations, and conference invitations), frequency of specific teacher and children invitations, time and energy for two types of involvement (i.e. communication and school activities), parental awareness of opportunities, and perceptions of involvement-related skills (for a complete list of the items in each scale, refer to the *Methods* section).

There are several reasons why a Head Start population may necessitate more specificity in the psychological and contextual predictors of involvement. First, an important caveat is the authors of the original measure developed it for older populations and used less sophisticated analyses to inform their 8-factor structure (Walker et al., 2005). That said, there still may be population-related reasons for the need for greater factor specificity in Head Start populations. For example, the parental self-efficacy construct was divided into two domains: developmental

progress and school performance. This division suggests that for Head Start samples, on average, parents may have slightly different role beliefs depending on whether an activity is school-based or school-related, or whether they are working directly with their child; a parent may feel differently about their ability to influence their child's developmental progress (e.g., meeting motor and speech developmental milestones) than improving their school performance (e.g., reading, math). Individuals' self-efficacy can vary based on a given task (Bandura, 1977). Perhaps for Head Start parents, school performance versus developmental progress efficacy are important domain distinctions. Young children are in a critical period of developmental progress where developmental milestones are more salient and developing more rapidly than in older populations (Shaffer, 2007). Parents may perceive this type of learning to be different than academic learning, and thus, have separate self-efficacy domains for each type.

Findings suggested another construct proposed by the Hoover-Dempsey and Sandler model (1995, 1997), Self-Perceived Time and Energy, was also better represented as two constructs: Communication Time and Energy and Time and Energy for School Involvement. Communication Time and Energy items queried about a parent's perceived time and energy for communicating with either his or her child's teacher, or with his or her child. Time and Energy for School Involvement pertained to participation in involvement actions either at home or school. Head Start parents may perceive themselves as having differing time and energy for these two types of involvement. One study found that attending parent-teacher conferences was the most common form of involvement among Head Start parents compared to other activities such as volunteering and fundraising (Ansari & Gershoff, 2016). Perhaps Head Start parents may perceive their time and energy differently depending on whether the activity is communication-related activities with their children and their children's teachers, or general involvement.

Parental Role Beliefs was a category that suggested Head Start parents may differentiate between child-centered activities and more general forms of involvement. Parental Role Beliefs was divided into Role in Children's Education and Role within School. Example items of Role in Children's Education were "I believe it is my responsibility to communicate with my child's teacher regularly" and "I believe it is my responsibility to explain at-home learning activities", while Role within School included items such as "I believe it is my responsibility to volunteer at the school". This division suggests that for Head Start samples, on average, parents may have slightly different role beliefs depending on whether it is regarding at-school involvement or activities, or whether they are directly working with their children. Certainly, parents can view their role as "parent" as different depending on the domain (Auerbach, 2007). Again, this is also supported by Ansari and Gershoff's (2016) findings that 83% of parents reported attending parent-teacher conferences (an activity specific to one's child) while 62% or less reported engaging in more *general* activities like volunteering, attending workshops, and attending policy council meetings that did not pertain to parents' specific children. The results suggest that when considering how a parent's role beliefs pertain to their involvement behaviors, it is important to specify the type of involvement their role might refer to.

Condensing the fourteen factors into more summative, second-order categories was attempted, but unsuccessful. Exploratory factor analysis (EFA) was performed as an effort to group the fourteen factor scores into categories, but a solution was not identified. The eight-factor solution from the Walker and colleagues (2005) article grouped scales into theoretical categories (i.e., Parents Motivational Beliefs, Perceptions of Involvement Invitations from Others, Parents' Perceived Life Context), but did not report statistical evidence that supported these groupings. In fact, Green, Walker and Hoover-Dempsey (2007) specifically mention that SEM analysis may not support the theoretical model: "If such techniques are used, care should

be taken; the Hoover-Dempsey and Sandler model of the parental involvement process was not set up to be investigated as a structural equation model... certain graphical representations in the model may not represent efforts to capture latent variables with manifest variables" (p. 542). They continue by emphasizing that the model was developed to "make sense of a wide area of research" and to guide future efforts to empirically examine the variables (p. 542). In other words, Hoover-Dempsey and colleagues' theoretical model does not necessarily imply that the variables form latent constructs, or categories, and the current study did not find evidence that these theoretical categories had empirical support. However, future studies with larger sample sizes may allow for the flexibility in analyses (i.e. perform EFA with all items rather than separate EFAs for each scale) to identify a model that supports grouping variables into higher-order, summative categories.

Family Involvement Questionnaire (Fantuzzo, Tighe & Childs, 2000)

The fit indices of the confirmatory FIQ factor structure indicated that a three-factor solution (i.e. school-based involvement, home-based involvement, and home-school conferencing) was a poor fit, which was surprising given that the FIQ was developed with and for Head Start parents. From a statistical perspective, there is a lack of previously published studies that used structural equation modeling with FIQ data and therefore, the current study's fit findings cannot be closely compared; it is unclear whether performing structural equation modeling with previous samples using the FIQ may have also indicated a poor fit. The data provided reasonable internal consistency evidence, however, but given the questionable model fit there may be other factors, and potentially other constructs, that are not captured by the three FIQ subscales.

Another reason for the relatively poor FIQ fit is that the FIQ was developed almost twenty years ago. Since the development of the FIQ, methods of communication in schools have

changed. Technology is rapidly evolving to create new methods, and potentially new constructs, of involvement. The FIQ may be due for an update to reflect these changes. Parents and teachers likely rely more frequently on electronic communication, including email and texting. According to Pew Research, 95% of American own a cell phone of some kind, and 77% own a smart phone (Pew, 2018). Owners of cell phones include the majority of those without a high school degree and those with an income below $30,000 (the percentage decreases for those with a "smartphone"). In addition, there are new opportunities to invite parents of preschool children to virtual training programs as a potential form of involvement (Hernandez et al., 2015).

Prediction Model

The measurement model derived from the validity analyses of Walker and colleagues (2005) and FIQ (200) items informed a prediction model consisting of seventeen variables (i.e., fourteen predictor and three outcome variables). While the quality of model fit was unable to be assessed due to saturation, the data provided information about the relationships between variables; some relationships were expected while others were unexpected. Furthermore, several group differences arose including the strength of the relationships between variables (i.e. pathways) and mean differences. Figure 8 depicts the similarities and differences in pathways and mean differences between groups for each form of involvement.

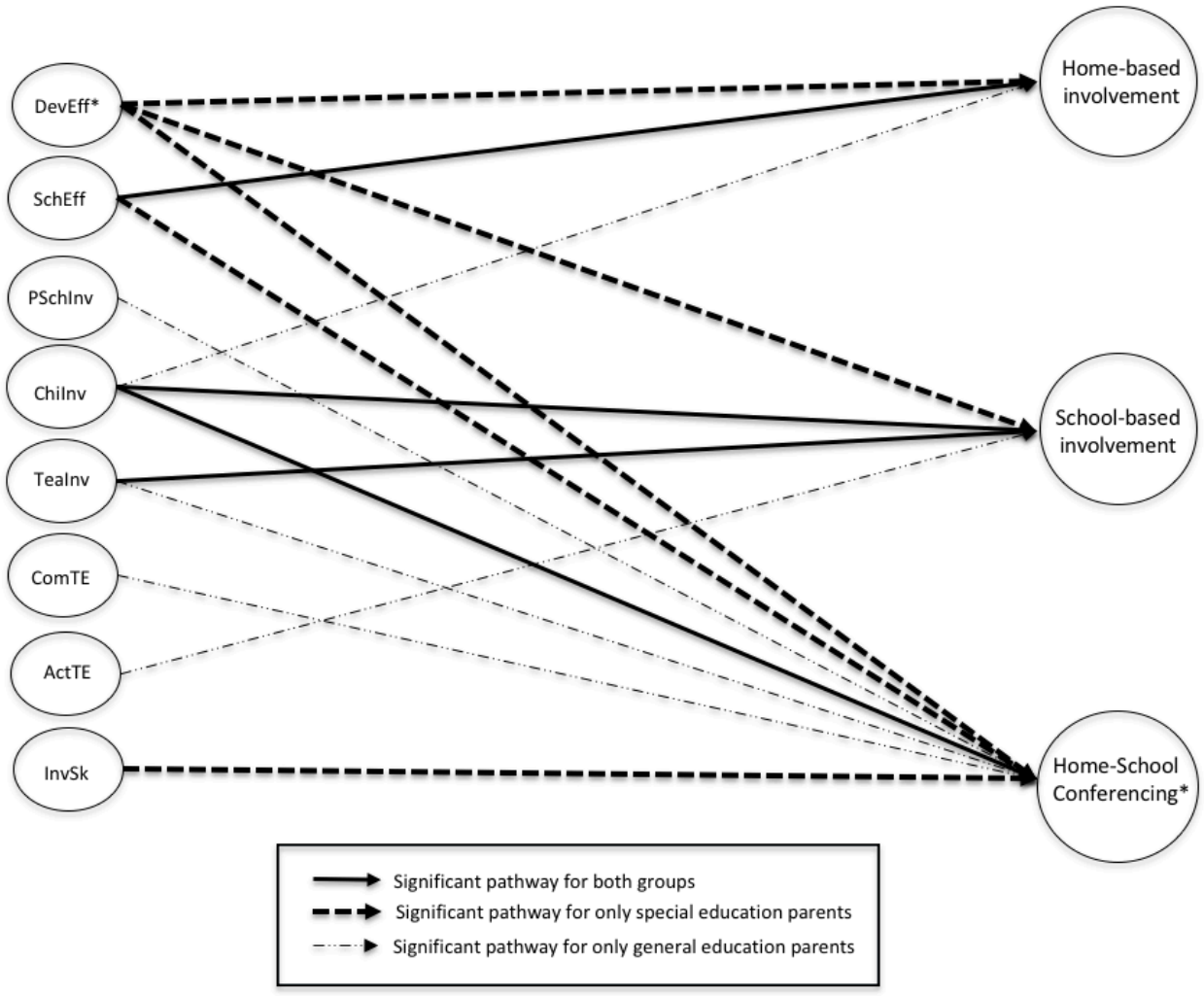


Figure 8. This figure depicts the seven predictor variables that had a significant relationship ($p < .05$) with one or more of the outcome variables for either group. DevEff = Developmental Progress Self-Efficacy, SchEff = School Performance Self-Efficacy, PSchInv = Perception of School Invitations, ChiInv=Specific Child Invitations, TeaInv=Specific Teacher Invitations, ComTE= Communication Time and Energy, ActTE=Time and Energy for Involvement and InvSk= Involvement Skills. An asterisk denotes significant ($p < .05$) mean differences between groups. The follow variables without a significant relationship are not depicted: Role in Children's Education, Role Within School, Valence, Perception of School Attitudes, School Conference Invitation Perceptions and Awareness of Involvement Opportunities.

Several pathways were particularly salient for both groups. Similar to previous research, child and teacher invitations were both fairly broad predictors across outcome variables (Fishman & Nickerson, 2015; Green et al., 2005). The salience of Specific Child Invitations for

this sample of Head Start children suggests that even preschool children, who may be verbally less advanced than their older counterparts, still talk to their parents about being involved. And these invitations appear to be important motivators of involvement. However, it is important not to overstate the prevalence of these invitations; the most common form of "invitations" reported was "my child talked to me about the school day", while other forms such as "my child asked me to attend a special event at school" reportedly occurred less often. Still, based on the results, when children speak to parents about certain involvement opportunities, it is associated with a range of parent involvement behaviors.

The salience of *teacher* invitations suggests that parents may be motivated by personal, specific invitations from their children's teachers. This finding aligns with research suggesting that the quality of the parent-teacher relationship is associated with positive impacts on children's adaptive functioning and parents' self-efficacy (Kim, Sheridan, Kwon & Koziol, 2013), and children's social competence and externalizing behaviors (Iruka, Winn, Kingsley & Orthodoxou, 2011). Researchers and practioners are moving beyond merely the frequency of parent-initated involvement behaviors to recognizing the importance of teacher efforts to include parents, including in decision-making and other integral roles within the school (McKenna & Millen, 2013; Sheridan, Knoche, Kupzyk, Edwards & Marvin, 2011).

While teacher invitations tended to predict *school*-based involvement, it may be less influential in encouraging learning efforts at home. One factor to consider for Head Start parents is the role of Head Start family home visits (U.S. Department of Health and Human Services, 2018c). During home visits, a Head Start staff person can facilitate home-based learning efforts. Perhaps Head Start goes beyond teacher invitations for at-home involvement by engaging *within* the home environment, and teacher invitations for home-based involvement are potentially less influential because others are doing this type of inviting (i.e. the home visitors). Future surveys

of Head Start engagement efforts should consider capturing home visiting as another factor that may promote parent home-involvement.

In contrast to Specific Teacher Invitations, School Performance Self-Efficacy predicted home-involvement for both groups. As parents' self-efficacy related to influencing their child's school performance increased, their home involvement tended to increase as well. School Performance Self-Efficacy included questions about parents' perceived effectiveness for influencing their children's *school performance*, such as "I know how to help my child do well in school" and "I make a significant difference in my child's school performance". School Performance Self-Efficacy findings do align with the theory that greater levels of self-efficacy are associated with higher levels of task initiation, or effort (Bandura, 1997, 2010).

On the other hand, *Developmental Progress* Self-Efficacy was a broad predictor at least for PSE, though as Developmental Progress Self-Efficacy *increased,* PSE's involvement tended to *decrease.* The Developmental Progress Self-Efficacy scale surveyed parents about the extent that they felt successful in their efforts to promote their children's *developmental progress*, such as "Other children have more influence on my child's developmental progress than I do (reverse coded)". This finding may indicate that when PSE feel less confident about their ability to help their children learn, they feel the need to seek school support via school-based involvement and home-school conferencing. Rispoli, Hawley and Clinton (2018) also observed an inverse relationship with involvement such that some Head Start PSE perceived teachers to be more likely to provide parental support when parents were less involved, which could indicate that teachers are trying to compensate for lower levels of involvement efficacy. However, it is not immediately clear why Developmental Progress Self-Efficacy would have a *negative* relationship with the outcome variables for PSE while School Performance Self-Efficacy had a *positive* relationship. One reason for this finding could be related to whether parents view children's

competencies as malleable or not. According to motivation scholars, when individuals view a skill as changeable through effort, they are more likely to put forth effort to attempt change (Hong, Chiu, Dweck & Sacks, 1997). Other skills are viewed as inherent, or fixed, and consequently are perceived as less likely to improve through effort. Parents may view school performance as a malleable trait in their children and believe they can make a difference in this domain and attempt to change it. In contrast, they may view developmental progress as relatively immune to parental intervention, and thus less confident that their involvement efforts will make a difference.

Interestingly, although Developmental Progress Self-Efficacy was not a significant predictor for PGE, parents in the general education group had significantly higher mean levels of Developmental Progress self-efficacy. This notion of Developmental Progress being less malleable may be even more relevant to parents of students with disabilities, such as developmental disabilities, who could perceive genetic or biological factors as more influential in their children's developmental progress rather than parental intervention or involvement. Developmental disabilities often stem from genetic, biological, or prenatal factors with symptoms that persist throughout one's lifetime, including impacting developmental progress (e.g., Down's syndrome, autism, Fetal Alcohol Syndrome; Centers for Disease Control, 2018). Future studies may explore parents' Developmental Progress Self-Efficacy among disability subgroups.

Perceptions of School Invitations, Communication Time and Energy, Time and Energy for Involvement and Involvement Skills were narrower predictors of involvement as they only predicted one form of involvement for one group. Figure 8 depicts pathways that were only significant for PGE and PSE, respectively. Perception of School Invitations items reflected the perceived convenience of the general school events or meetings that a parent might be invited to,

such as “Parent activities are scheduled at this school so that I can attend.” Parents’ Perceptions of School Invitations tended to predict lower frequencies of Home-School Conferencing among PGE. This may be is indicative of the fact that if parents are content with the scheduling and communication surrounding school events, then they do not feel the need to reach out to teachers to find out more about events. The lack of other significant findings is contrary to research linking scheduling conflicts and involvement among Head Start parents (Lamb & Parker, 2001). One explanation is the Home-School Conferencing items predominantly pertain to teachers speaking directly with parents, and if events are communicated in a broader dissemination approach, such as flyers in their children’s Friday folders and emails, then there is less of a need to speak directly with the teacher about this topic. That said, it is unclear why this would be the case for PGE, but not PSE. One consideration is that there was variation among the factors that predicted home-school conferencing across the PGE and PSE groups and therefore, other variables may have been more influential in predicting Home-School Conferencing for PSE and suppressed the impact of Perceptions of School Invitations variable. Alternatively, sample size discrepancies between groups may sometimes explain the absence of expected, significant relationships—pathway difference tests of significance did not indicate that the pathways were significantly different. A larger PSE sample size could reveal a relationship or trend otherwise undetected due to a lack of cases in the current sample.

Several variables were only a significant predictor for one form of involvement for one group. Communication Time and Energy was a significant predictor only for Home-School Conferencing, and the Time and Energy for Involvement variable only for School-Based Involvement for PGE. The significant relationship between these variables and involvement for PGE aligns with research citing scheduling conflicts and a general lack of time as a main barrier to being involved for low-income parents, including Head Start parents (Benson & Martin, 2003;

Lamb-Parker et al., 2001). However, the strength of this relationship was fairly weak in PGE and was not observed for any outcomes in PSE.

From a measurement perspective, both time and energy scales only contained two or three items each. Perhaps the limited number of items contributed to the lack of predictive power. The scale may need additional items to boost its construct validity, especially among PSE. One way to do this is elicit from parents what school-based activities they feel they do not have time and energy for. Previous research highlights factors that are competing for the time and energy of PSE, but it is unclear what *type* of involvement activities may be impacted by this theoretical lack of time and energy (Horridge et al., 2016; Rapee, Schiering & Hudson, 2009; Sonuga-Barke, Daley, Thompson, Laver-Bradbury & Weeks, 2001). For example, a 2001 study of Head Start parents only relied on parent perceptions of reported barriers without querying about specific types of activities these barriers interfered with (Lamb-Parker et al.) and Benson and Martin's (2003) investigation simply relied on one 9-point scale of involvement frequency. The current study queried about parents' time and energy in a number of areas: "communicate well with my child about the school day", "help out at my child's school", "communicate well with my child's teacher", "attend special events at school", and "do learning activities at home". However, involvement scholars highlight additional involvement opportunities such as parent participation in school decision making and engaging in community educational resources (Epstein, 2018), and the FIQ outcome measure (Fantuzzo, Tighe & Childs, 2000) included items pertaining to, "I take my child places in the community to learn special things" and "I schedule meetings with administration to talk about problems or gain information". Perhaps querying about whether parents having the time and energy for specific, additional forms of involvement may tap into the types of involvement activities parents are considering when they answer questions about their perceived time for involvement.

Another variable only significant for one outcome variable and one group was Involvement Skills: Involvement Skills predicted Home-School Conferencing for PSE. Items from this scale queried about a parents' perceived abilities to communicate, volunteer, and help with academic tasks at home (Involvement Skills). Most of the Home-School Conference items pertain to communicating with a child's teacher and therefore, it is not surprising that being an effective communicator with one's teacher would lead to more involvement in this domain. When individuals hold positive beliefs about their abilities, this tends to motivate behavior (Bandura, 1997). However, this was not the case for PGE. Perhaps because PSE reported engaging in significantly more Home-School Conferencing than PGE, the Involvement Skills variable was more relevant for PSE than PGE. Higher levels of Home-School Conferencing among PSE may relate to the fact that the Individuals with Disabilities Improvement Act, the federal law governing the special education process, mentions the terms "parents" in 364 instances, referring to ways that schools are to engage PSE (IDEIA, 2004). Examples include requiring parent consent to for an initial evaluation and to begin special education services, in addition to mandated efforts to include parents in meetings regarding the child and including parental input for projects intended to improve the education of children with disabilities. While Head Start agencies are also federally required to extend engagement opportunities to all parents (Office of Head Start, 2018), IDEIA (2004) outlines *additional* opportunities for PSE that create additional reasons why parents and teachers may be conferencing. That said, again, this difference between PGE and PSE was not found to be statistically, significantly different. Therefore, larger sample sizes are needed to provide stonger evidence regarding potential differences in involvement skills between groups.

It was hypothesized that PGE would report possessing higher levels of the original, "Perceived Knowledge and skills" variable. Instead both groups reported having similar mean

levels for both variables derived from the original variable (i.e., Involvement Skills and Awareness of Involvement Opportunities). Four of the six Involvement Skills items pertain specifically to parents helping their children learn and even at the individual level, both groups had comparable means. This finding suggests that although PSE may encounter potential additional learning challenges in their children due to disability, they perceive themselves to have similar awareness and skills to their PGE counterparts. Studies suggest that training programs targeting parents' skills can effectively increase PSE's knowledge and skills (McConachie & Diggle, 2007; Wade, Llewellyn & Matthews, 2008). Perhaps Head Start centers are providing PSE with training and resources to build their knowledge and skills for working with their children. Relatedly, the higher levels of Home-School Conferencing among PSE in general may be indicative of a reciprocal relationship between variables such that increased Home-School Conferencing also promotes Involvement Skills in PSE. The Getting Ready intervention is based on the premise that when parents and teachers exchange ideas, including effective strategies for the parent's specific child, this promotes social and academic competence in children (Kuhn, Marvin, Knoche, 2016; Sheridan et al, 2010). Perhaps parent-teacher interactions help supplement PSE's knowledge and skills for helping their children learn.

Another interesting finding was that the Role Within School variable provided potential evidence that there may be unidentified subgroups within the sample. This variable only had a significant relationship with Home-School Conferencing when both groups were combined, and suggests that there may be a theoretical group of parents that are unified by a construct other than their children's special education status. One possibility is parents of students with mild disabilities. There were ten parents in the current study who reported that a doctor or other health professional had told them that their children had a disability, but these parents denied that their children received special education services. This group, combined with parents of students in

special education who had milder disabilities, could be especially motivated to engage in home-school conferencing. The literature points to a few differences between parents of children with mild disabilities versus parents of children with more severe disabilities. Leyser and Kirk (2007) found that parents of children with mild disabilities were more likely to support inclusion for their children than parents of students with severe disabilities. In addition, Benson (2006) found that child symptom severity was associated with higher ratings of depression among parents of children with autism. Taking these findings into account, parents of students with mild disabilities may be more likely to see it as part of their roles to advocate for inclusion, and do so through home-school conferencing, and parents of students with more severe disabilities may be more depressed or overwhelmed, and thus, less motivated to subscribe to the role of participating within the school setting. Ultimately this could impact reported levels of home-school conferencing. Future studies should consider the severity of students' disabilities in the context of psychological and contextual predictors of involvement.

Study Limitations

There are a number of factors that may explain the absence of expected relationships between several of the variables. One explanation is that although a variable may not produce a significant result in isolation (i.e., controlling for all of the other variables), that variable could interact with other variables to contribute to variance in the outcome variables. For example, neither Role in Children's Education nor Role within School variables significantly predicted any of the outcome variables. Items from these scales included "I believe it is my responsibility to communicate with my child's teacher regularly", "I believe it is my responsibility to explain at-home learning activities" and "I believe it is my responsibility to volunteer at the school". The lack of a significant pathway runs contrary to the theory that individuals perform tasks that align with his or her conceptualization of his or her role (Biddle, 1986; Hoover-Dempsey & Sandler,

1995). Parents from both groups on average, endorsed that these activities were part of their roles, and both groups indicated frequent involvement across outcome variables, though neither of the role variables had a relationship with any of the outcome variables. Perhaps one's role is mediated or moderated by another factor such that despite viewing something as part of one's role as a parent, other factors may interfere. Other research methods, and in particular longitudinal designs (Menard, 2004), may elucidate potential interaction effects.

The current study was limited by the cross-sectional design, in general, because cross-sectional designs allow for the possibility of bidirectional relationships, or that the involvement outcome variables may influence future psychological or contextual predictors of involvement. The data was interpreted in the context of the theoretical model that depicts the contextual and psychological predictors as preceding the parent involvement behaviors (Hoover-Dempsey et al.,1995, 1997, 2005). However, experimental designs, such as studies examining the impact of an intervention targeting one of the psychological and contextual predictors on parent involvement behaviors, may draw more compelling causal conclusions.

Nonsignificant relationships between predictor and outcome variables may also be due to differences between Head Start samples and other populations. For example, the Valence scale queried parents about how they felt about their school experiences when they were students. The theoretical rationale is that parents' own positive or negative school experiences may influence their willingness to be involved in their children's school experiences (Lee & Bowen, 2006; Raty, 2003). According to the literature, individuals from low-income backgrounds, such as most Head Start parents, may be more likely to have had negative school experiences (Gorman, 1998), however, this was not the case in this sample. On average, parents tended to rate their school experiences more positive than negative and this did not appear to have a direct impact on involvement. One explanation for this is Head Start parents typically self-select into the program,

which could suggest that due to their own positive feelings towards school, they want their children to attend preschool (parents can decide whether or not to send their child to preschool). High levels of Valence in this group may preclude this variable from being detected as a predictor. Perhaps Valence may be a more meaningful predictor in a diverse sample of parents of low-income preschool-age children that includes both Head Start and non-Head Start parents.

Several limitations in the data collection process limit the generalizability of the data. First, it is best practice to conduct field pretesting with a measure before data collection occurs on a larger scale (Remler & Van Ryzin, 2011). Piloting allows for weaknesses in the measure to be remedied before the measure is used more widely. A pilot study was not part of the present measure due to resource constraints. The study's sample size also created several limitations that included not allowing for a factor analysis of all 89 items. Instead, items were divided into theoretical categories and underwent separate factor analyses that did not allow for items in separate categories to potentially be recategorized with one another. This limitation also created issues for identifying a more parsimonious model. There is the potential that if new categories were formed from all 89 items, they may have been more accurate and therefore, potentially have captured constructs that more closely fit this study's data. In addition, some of the scales had measurement weaknesses, such as low internal consistencies and model fit indices in the poor range. Finally, the development of more specific constructs from the original measure meant that some scales contained as few as two items; a small number of items might not adequately survey a construct. These issues mean that the findings from these scales should be interpreted with caution.

Several characteristics of the sample also impact generalizability. First, the relatively small sample size for this study's type of analysis and discrepancy in sample size is not negligible. Pathways that were not significant in the current study could become more

pronounced and reach the level of significance with a larger sample. There is also the potential that a larger PSE sample would produce beta estimates and means more similar to PGE, eliminating group differences; it is important to note that while some relationships were statistically significant for group and not the other, many relationships were not significantly *different between groups* at the $p < .05$ level. Furthermore, when comparing groups, it is preferable to have relative parity in sample size to produce results that are presumably estimating differences due to group membership rather than due to the smaller group's potential lack of adequate representation. The current study did not attempt weighted sample techniques, as this was beyond the scope of this study. Future studies that have greater sample parity or use weighted sampling techniques may strengthen evidence for the validity of the results. This study's sample also included data across Head Start programs and consortiums. There may be program or consortium differences, such as approaches to eliciting parent involvement, that could impact the relationships between variables. More specifically, the PSE group was 23.1% (n=18) from LESA and 77.0% (n = 60) from CACS, while just 9.7% (n=26) of the PGE group were from LESA and 90.3% (n=242) were from CACS. Given the relatively high proportion of LESA PSE parents, it is possible that the pathway or group differences observed were due to characteristics inherent to consortium sites rather than children's special education statuses. Similarly, there were some demographic differences observed between consortium samples and to a lesser extent, PGE and PSE parents, which also have the potential to confound the results. Existing literature depicts demographic characteristics, such as income and race, as sometimes associated with involvement levels, which suggests that again, there is a chance that some of the differences observed may be better explained by characteristics associated with demographics rather than children's special education statuses (Oswald, Zaidi, Cheatham & Brody, 2017).

Finally, it is important to consider which parents completed this study's survey. Response rates were below 50% indicating that most parents from the two consortiums sampled did not complete a survey. Despite frequent and diverse recruitment methods and incentive opportunities, parents who participated in this study may be parents who are also more likely to participate in involvement activities. Schilpzand, Sciberras, Efron, Anderson and Nicholson (2015) attempted to address this conundrum when evaluating parent involvement through conducting a randomly controlled trial of "enhanced" methods of recruitment. They found that response rates increased when researchers targeted multiple stakeholders, parents were sent a pre-notification postcard to alert parents to expect an upcoming survey, materials were personalized and attractive, and school staff were instructed to complete graphs that charted how many surveys were completed at one's school, and share these graphs with administrators. These findings provide guidance for reaching a more diverse group of parents in future research.

Implications and Future Directions

Measurement

The measure from this study in its current form may be appropriate for providing descriptive, broad depictions of Head Start parent involvement-related behaviors. The reliability analyses suggest that the measure should not be used in isolation to make important Head Start programmatic decisions, but it may supplement other forms of data collection to describe a sample of Head Start parents and inform involvement promotion efforts. The results suggest that the survey is for parents of children who do and do not receive special education, but that it is important to ask parents about their children's special education status to consider this in the context of their responses. Furthermore, because new scales, and potentially new constructs, were identified in this study, additional exploration is needed to explore whether the new scale's items are capturing all aspects of this construct (i.e., construct validity). Finally, similar to other

measurement research, the reverse-coded items yielded a suspicious pattern that suggests that item responses may have been impacted by misinterpretation of these items (Marsh et al., 1996; Weijters & Baumgartner, 2012). The developers of the original Revised Hoover-Dempsey and Sandler model measure fail to provide a rationale for their use of reverse coded items in just one domain, or for the items' usefulness (Walker et al., 2005). Future measurement of these constructs should carefully consider whether reverse-coded items are necessary.

Research

This study represents one of the first investigations of the Hoover-Dempsey and Sandler (1997; 2005) model using structural equation modeling. The results reveal a need for advanced statistics to explore the empirical basis for the theoretical model. Some constructs, including theoretical categories home constructs, did not have statistical support at least with this Head Start sample. The data also suggest that there are likely complex interactions between the variables that may provide a more sophisticated understanding of the interplay of the variables. The current study was limited by sample size, though future research, potentially largescale, nationally representative data, may be able to address these questions.

Researchers should also consider isolating portions of the measurement model to more closely examine the validity of constructs, such as through qualitative interviews and focus groups. The division of the original scales into as little as two items provide evidence for the presence of additional constructs, but more items are needed to create potentially more complete representation of each construct. An in-depth examination of individual constructs from this study's seventeen factor model could further clarify constructs.

Another consideration that was not captured in this study was special education-specific involvement. It is well established that parents of students who receive special education have additional, unique opportunities for involvement that were not surveyed in this study (Fisherman

& Nickerson, 2015; IDEIA, 2004). The findings from the current study of *general* parent involvement activities suggest that there may be differential parent involvement needs based on whether a parent's child received special education. Likewise, forms of special education-specific involvement could involve a different set of motivators or impact the extent that a parent can participate in general involvement opportunities available to all parents (as was surveyed in this study).

Finally, the next phase in this field of research is to identify interventions that can effectively promote the factors that help motivate parents to be involved. Programs exist to address primarily the knowledge and skills domain, including strategies to teach parents skills for how to help their children learn (Drouin, 2009; Fishel & Ramirez, 2005; St. Clair, Jackson & Zweilback, 2012). There is room for growth in other areas that appear particularly important such as increasing specific teacher and children invitations.

Practice

Measurement issues aside, there are still potential implications for practice. First, psychological and contextual factors appear to be linked to parent involvement in Head Start samples. Parent involvement remains an important factor in the promotion of positive children's outcomes, including potentially helping to close the achievement gap between students from low-income backgrounds and their higher income counterparts (Arnold, Zeljo, Doctoroff & Ortiz, 2008; Penner, 2016). Head Start policies clearly reflect parent involvement as a priority and outline strategies to promote involvement (U.S. Department of Health and Human Services, 2018b). In fact, Head Start has intentionally made the shift from the term *involvement* to *engagement* to focus on an increased emphasis on an equal partnership between teachers and parents. On their website, the Office of Head Start provides a model for family engagement, including a spectrum of strategies ranging from the systems level to parent-teacher relationships.

Their most recent guide is *Building Partnerships: Guide to Developing Relationships with Families.* (U.S. Department of Health and Human Services, 2018a). It is encouraging to see that there is mention of strategies that target salient motivational variables from this study, parental school-performance self-efficacy, as seen in their section on "Supporting Parental Competence" (p. 16), and emphasizing "communicating clearly and consistently" (p. 3), or extending specific teacher invitations, as another key component to promoting involvement with parents. The guide also aids in how to assess familial contextual factors that could play a role in parents' time and energy for involvement, which aligns with the preliminary findings from this study that this is also an important priority in promoting involvement. In many ways, the Office of Head Start has responded to the literature that suggests that it is important to go beyond simply acknowledging that parent involvement is important; they provide guidance and training to target many of the factors that are shown to promote involvement.

Head Start centers may also consider taking a more targeted approach to involvement promotion. This might include using data to screen their population for areas of involvement need and target these areas with specific motivational factors that are shown to promote this type of involvement. It will be important for centers to consider whether a parent is part of PGE or PSE as the current study suggests that there are sometimes differences in the most optimal psychological or contextual factor to target. One example is if centers were seeking to increase home-school conferencing among all parents, they might target PSE involvement skills and also focus on improving the convenience of home-school conferencing for PGE. However, each of the three forms of parent involvement had least one contextual or psychological variables that was predictive for both groups: School Performance Self-Efficacy predicted Home-Based Involvement, Specific Child and Specific Teacher Invitations predicted School-Based Involvement, and Specific Child Invitations predicted Home-School Conferencing for both

groups. Centers seeking to increase one or more form of involvement for either group may choose to target one of these psychological or contextual variables for efficiency purposes. In general, identifying areas of involvement need and targeting specific motivational factors could maximize time and resources to produce results.

Finally, it is recommended that beyond applying evidence-based practices, it will be important to continue to elicit feedback from Head Start parents themselves to determine whether strategies are effective for one's own program and for each family. Even the present study relied on examining a sample of Head Start parents at the level of trends and mean differences (rather than at the individual level), but it is important to consider families on an individual basis and acknowledge that not every family will require the same approach.

APPENDICES

APPENDIX A

Demographic Questionnaire

Primary Caregiver General Information
Directions: Please answer the following questions.

1. **Are you a primary caregiver for the child (a family member that spends the most time caring for the child, or a person in the main parental role)? Please circle your answer below.**
   a. Yes
   b. No
   c. Don't know

   *** If your answer is "no" or "don't know", then you cannot complete this survey. However, you may still enter the drawing. There are details about the drawing on the last page of this packet.*

2. **What is your gender?**
   a. Female
   b. Male
   c. Other: _____

3. **How would you describe your relationship to your child in Head Start? For example, mother, father, grandparent, aunt, legal guardian, etc.?**

   _____

4. **Do you have a child that has an Individualized Education Program (IEP) at Head Start? For example, does your child receive speech services or special education? Please circle your answer below.**
   a. Yes (*go to* ***question 6***)
      **** If you responded "Yes", please think about this child as you fill out the rest of the questions.**
   b. No (*go to* ***question 5***)
   c. Don't Know (*go to* ***question 5***).

5. **How many Head Start children are you the primary caregiver for? Please write this number in the space provided below:**

   _____

   **** If you are the primary caregiver to more than one child attending Head Start, please think about your *oldest* child who attends Head Start as you fill out these questions.**

6. ***If your child does receive Special Education services*, do you know which disability label they have? For example, Early Childhood Developmental Delay, Autism Spectrum Disorder, Speech/Language Impairment, Hearing Impairment, etc.**
   a. Yes

If yes, what is the name of this disability: _____

b. No

c. Does not apply (my child does not receive Special Education services).

7. Have you ever been told by a doctor, psychologist or other health professional that your child has a developmental diagnosis, learning difficulty, or a disability (for example, ADD, ADHD, Autism, or something else)? If yes, what is the name of this issue?

_____

8. How many children and adults currently live in your household? _____

9. Please circle the *one* range that best represents your family's total income in the last 12 months. This amount should include your income and the income of everyone living with you. <u>Also, be sure to include the amount of money you receive from jobs, public assistance programs, and any other form of income.</u>

$5,000 or less	$5,001 to $10,000	$10,001 to $15,000	$15,001 to $20,000
$20,001 to $25,000	$25,001 to $30,000	$30,001 to $35,000	$35,001 to $40,000
$40,001 to $50,000	$50,001 to $75,000	More than $75,000	I don't know.

10. Are you of Spanish, Hispanic, or Latino origin? Please circle your answer below.

a. Yes

b. No

c. Don't Know

11. What is your race? Please circle your answer below. You may circle more than one if you like.

White	Black	Asian/Pacific Islander	American Indian/Alaskan Native	Other: _____

12. About how many total <u>hours per week</u> do you usually work for pay or income, counting all jobs? Please write this here:

— —

13. What is the highest level of education you received? Please circle your answer below.

Less than a High School Diploma	High School Diploma/GED	Some college but no degree	Associate's or Bachelor's Degree	Graduate Degree

APPENDIX B

Item Changes from the original Walker et al. (2005) Survey

Scale	**Item from Walker et al. (2005) Survey**	**Adapted item for use with Head Start populations**
Parental Role Construction	I believe it is my responsibility to help my child with homework.	I believe it is my responsibility to do learning activities at home such as LINKS, Steps to Success, and Nightly Reading with my child.
Parental Role Construction	I believe it is my responsibility to explain tough assignments to my child.	I believe it is my responsibility to explain at-home learning activities to my child such as LINKS, Steps to Success and Nightly Reading to my child.
Parental Self-Efficacy	I don't know if I'm getting through to my child.	I don't know if my child understands what I say to him/her.
Parental Self-Efficacy	I don't know how to help my child make good grades in school.	I don't know how to help my child meet his or her developmental goals.
Parental Self-Efficacy	Other children have more influence on my child's grades than I do.	Other children have more influence on my child's developmental progress than I do.
General School Invitations	<no item>	This school lets me know about parent activities, meetings and special school events with enough time in advance.
Specific Child Invitations	My child asked me to help explain something about his or her homework.	My child asked me to help explain something about our learning activities at home (for example LINKS, Steps to Success, Nightly Reading).
Specific Teacher Invitations	My child's teacher asked or expected me to help my child with homework.	My child's teacher asked or expected me to do learning activities at home (for example LINKS, Steps to Success, Nightly Reading).
Specific Teacher Invitations	My child's teacher asked or expected me to supervise my child's homework.	<omitted>
Perceived Time and Energy	I have enough time and energy to help my child with homework.	I have enough time and energy to do learning activities at home such as LINKS, Steps to

		Success and Nightly Reading to my child.
Perceived Time and Energy	I have enough time and energy to supervise my child's homework.	<omitted>
Perceived Time and Energy	I have enough time and energy to communicate effectively with my child about the school day.	I have enough time and energy to communicate well with my child about the school day.
Perceived Time and Energy	I have enough time and energy to communicate effectively with my child's teacher.	I have enough time and energy to communicate well with my child's teacher.
Perceived Knowledge and Skills	I know how to explain things to my child about his or her homework	I know how to explain learning activities at home such as LINKS, Steps to Success and Nightly Reading to my child.
Perceived Knowledge and Skills	I know how to supervise my child's homework.	<omitted>

APPENDIX C

Walker and Colleagues Hoover-Dempsey and Sandler Model Survey
(Walker, Wilkins, Dallaire, Sander & Hoover-Dempsey, 2005)

Parental Role Construction for Involvement in the Child's Education
Part 1: Role Activity Beliefs. Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about the *current school year* as you consider each statement.

Response Format: 1 = Disagree very strongly; 2=Disagree; 3=Disagree just a little; 4= Agree just a little; 5= Agree; 6 = Agree very strongly

I believe it is my responsibility to…

1. volunteer at the school
2. communicate with my child's teacher regularly
3. help my child with homework
4. make sure the school has what it needs
5. support decisions made by the teacher
6. stay on top of things at school
7. explain tough assignments to my child
8. talk with other parents from my child's school
9. make the school better
10. talk with my child about the school day

Part 2: Valence toward School
People have different feelings about school. Please mark the number on each line below that best describes your feelings about your school experiences when you were a student

My school:	disliked	1	2	3	4	5	6	liked
My teachers:	were mean	1	2	3	4	5	6	were nice
My teachers:	ignored me	1	2	3	4	5	6	cared about me
My school experience:	bad	1	2	3	4	5	6	good
I felt like:	an outsider	1	2	3	4	5	6	I belonged
My overall experience:	failure	1	2	3	4	5	6	success

Parental Self-Efficacy for Helping the Child Succeed in School
Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about the *current school year* as you consider each statement.

Response format: 1 = Disagree very strongly; 2=Disagree; 3=Disagree just a little; 4= Agree just a little; 5= Agree; 6 = Agree very strongly

1. I know how to help my child do well in school.
2. I don't know if I'm getting through to my child. (reversed)
3. I don't know how to help my child make good grades in school (reversed)
4. I feel successful about my efforts to help my child learn.
5. Other children have more influence on my child's grades than I do (reversed).

6. I don't know how to help my child learn (reversed).
7. I make a significant difference in my child's school performance

Parents' Perceptions of General Invitations for Involvement from the School
Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about the *current school year* as you consider each statement.

Response format: 1 = Disagree very strongly; 2=Disagree; 3=Disagree just a little; 4= Agree just a little; 5= Agree; 6 = Agree very strongly

1. Teachers at this school are interested and cooperative when they discuss my child.
2. I feel welcome at this school.
3. Parent activities are scheduled at this school so that I can attend.
4. This school lets me know about meetings and special school events.
5. This school's staff contacts me promptly about any problems involving my child.
6. The teachers at this school keep me informed about my child's progress in school.

Parents' Perceptions of Specific Invitations for Involvement from the Child
Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.

Response format: 1 = Never; 2=1 or 2 times; 3=4 or 5 times; 4= once a week; 5=a few times a week; 6 = daily

Items

1. My child asked me to help explain something about his or her homework
2. My child asked me to supervise his or her homework
3. My child talked with me about the school day
4. My child asked me to attend a special event at school
5. My child asked me to help out at school
6. My child asked me to talk with his or her teacher

Parents' Perceptions of Specific Invitations for Involvement from the Teacher
Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.

Response format: 1 = Never; 2=1 or 2 times; 3=4 or 5 times; 4= once a week; 5=a few times a week; 6 = daily

Items

1. My child's teacher asked me or expected me to help my child with homework.
2. My child's teacher asked me or expected me to supervise my child's homework.
3. My child's teacher asked me to talk with my child about the school day
4. My child's teacher asked me to attend a special event at school
5. My child's teacher asked me to help out at the school
6. My child's teacher contacted me (for example, sent a note, phoned, e-mailed).

Parents' Perceived Life Context

Please indicate how much you AGREE or DISAGREE with each of the following statements with regard to the *current school year*:

Response format: 1 = Never; 2=1 or 2 times; 3=4 or 5 times; 4= once a week; 5=a few times a week; 6 = daily

Time and Energy

I have enough time and energy to…

1. Communicate effectively with my child about the school day.
2. Help out at my child's school
3. Communicate effectively with child's teacher
4. Attend special events at school
5. Help my child with homework
6. Supervise my child's homework

Knowledge and Skills

1. I know about volunteering opportunities at my child's school
2. I know effective ways to contact my child's teacher
3. I know how to communicate effectively with my child about the school day
4. I know how to explain things to my child about his or her homework
5. I know enough about the subjects of my child's homework to help him or her.
6. I know how to communicate effectively with my child's teacher
7. I know how to supervise my child's homework
8. I have the skills to help out at my child's school

APPENDIX D

Original Survey Cover Letter

ID: _____

Dear Parent or Primary Caregiver,

My name is Marianne Clinton and I am a student at Michigan State University working together with Capital Area Community Services to conduct research about what it is like to be a parent of a child who attends Head Start.

In this envelope, you will find a survey with questions for the *primary caregiver of a child attending Head Start*.

- For this survey, a *primary caregiver* is a family member of a Head Start child who spends the most amount of time taking care of that child.
- If you are not the *primary caregiver* of a child attending Head Start, then you cannot complete this survey. However, we would appreciate it if you would provide this packet of information to someone who is a primary caregiver of a child attending Head Start for them to complete.

You are also invited to enter a drawing to win one of fifteen, $25 Meijer gift cards (details are on the final page of this packet).

If you would like to complete the survey:

1. Provide an answer to each of the questions (if you do not feel comfortable answering a question, then you do not have to answer it).
2. Include your contact information on the last page to enter the drawing.
3. Put your completed survey in the stamped white envelope.
4. Place this envelope in a mailbox.

If it is easier, *instead* of filling out the paper version of this survey, you can follow this link to complete the survey online: https://msu.co1.qualtrics.com/jfe/form/SV_eMbwLcbXu1g9XVP . Type this link into your web browser and you will be brought to a web page with directions for how to complete the survey online.

Please note:

- Participation is voluntary: you may choose not to participate at all, or you may refuse to participate in certain procedures or answer certain questions or discontinue your participation at any time without consequence.
- If you do choose to complete the survey, your responses will remain confidential. This means that your child's teacher, and any other Head Start staff person, will not know that the responses you share belong to you.
- If you choose to complete the survey, your responses (but not your name) might be shared with others to describe Head Start parents in general.

Also, enclosed in this envelope is a $1 bill for you to keep. This is a thank you for taking the time to open this envelope! Please fill out only one survey.

Please complete your survey by Friday, March 31, 2017*

Sincerely,

Marianne C Clinton

Marianne Clinton

My Contact information
Counseling/Ed. Psych/Spec Ed Dept.
Michigan State University
447 Erickson Hall
East Lansing, MI 48824
Email: clinto21@msu.edu

APPENDIX E

Parent Experiences Survey

Part 1: Put a checkmark (√) or (X) in a colored box to show how much you **AGREE** or **DISAGREE** with each of the following statements. Please think about the ***current school year*** as you consider each statement.

	Disagree very strongly	*Disagree*	*Disagree just a little*	*Agree just a little*	*Agree*	*Agree very strongly*
I believe it is my responsibility to volunteer at the school.						
I believe it is my responsibility to communicate with my child's teacher regularly.						
I believe it is my responsibility to do learning activities at home such as LINKS, Steps to Success, and Nightly Reading with my child.						
I believe it is my responsibility to make sure the school has what it needs.						
I believe it is my responsibility to support decisions made by the teacher.						
I believe it is my responsibility to stay on top of things at school.						
I believe it is my responsibility to explain at-home learning activities to my child such as LINKS, Steps to Success, Nightly reading my child.						
I believe it is my responsibility to talk with other parents from my child's school.						
I believe it is my responsibility to make the school better.						
I believe it is my responsibility to talk with my child about the school day.						
I know how to help my child do well in school.						
I don't know if my child understands what I say to him/her.						
I don't know how to help my child meet his or her developmental goals.						
I feel successful about my efforts to help my child learn.						
Other children have more influence on my child's developmental progress than I do.						
I don't know how to help my child learn.						
I make a significant difference in my child's school performance.						
Teachers at this school are interested and cooperative when they discuss my child.						
I feel welcome at this school.						
Parent activities are scheduled at this school so that I can attend.						
This school lets me know about meetings and special school events.						
This school tells me about parent activities, meetings, and special school events with enough time in advance.						
This school's staff contacts me promptly about any problems involving my child.						
The teachers at this school keep me informed about my child's progress in school.						
I have enough time and energy to communicate well with my child about the school day.						
I have enough time and energy to help out at my child's school.						
I have enough time and energy to communicate well with my child's teacher.						

Put a checkmark (√) or (X) in a colored box to show how much you AGREE or DISAGREE with each of the following statements. Please think about the ***current school year*** as you consider each statement.

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
I have enough time and energy to attend special events at school.						
I have enough time and energy to do learning activities at home such as LINKS, Steps to Success, and Nightly Reading with my child.						
I know about volunteering opportunities at my child's school.						
I know about special events at my child's school.						
I know useful ways to contact my child's teacher.						
I know how to communicate well with my child about the school day.						
I know how to explain learning activities at home such as LINKS, Steps to Success, and Nightly Reading to my child.						
I know enough about the subjects of the learning activities at home such as LINKS, Steps to Success, and Nightly Reading to help my child.						
I know how to communicate well with my child's teacher.						
I have the skills it takes to successfully help out at my child's school.						

Part 2: Read each item and put a checkmark (√) or (X) in a colored box to show how often you do that activity.

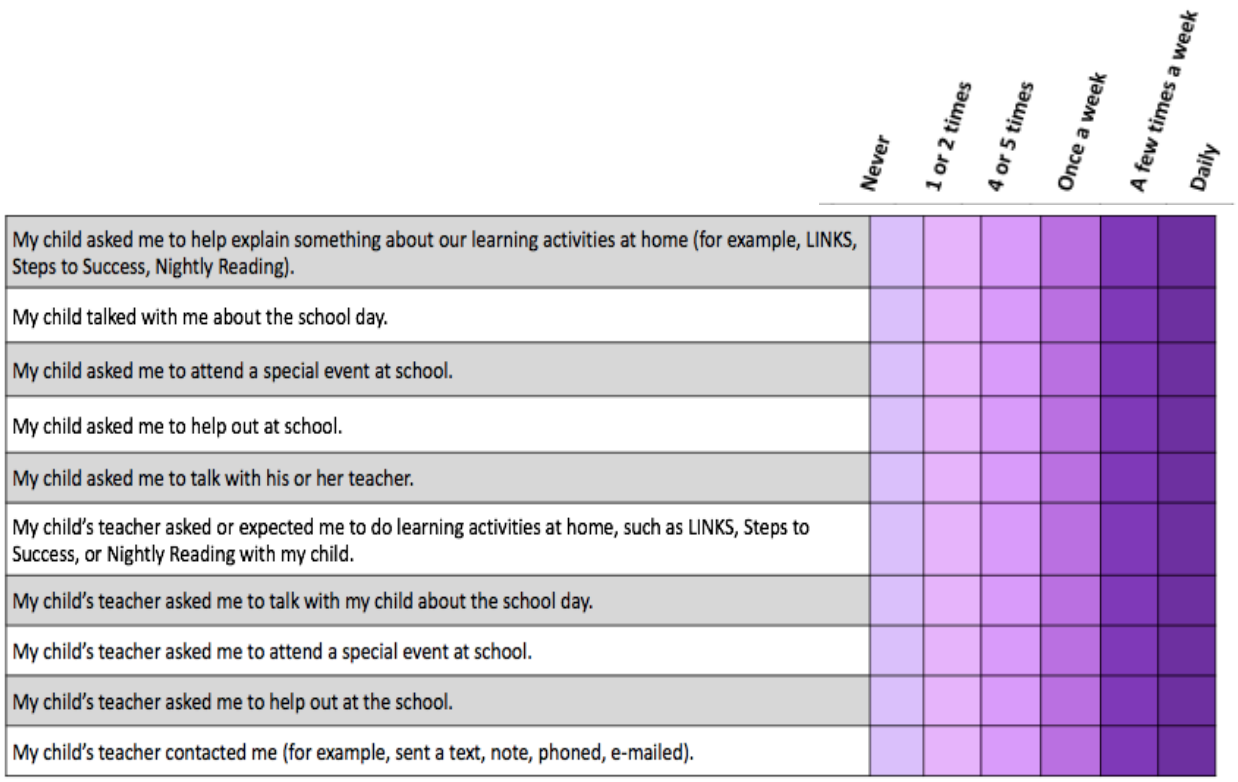
	Rarely	Sometimes	Often	Always
I volunteer in my child's classroom.				
I participate in parent and family social activities with the teacher.				
I participate in planning classroom activities with the teacher.				
I go on class trips with my child.				
I talk with other parents about school meetings and events.				
I participate in planning school trips for my child.				
I meet with other parents from my child's class outside of school.				
I hear teachers tell my child how much they love learning.				
I participate in fundraising activities in my child's school.				
I feel the parents in my child's classroom support each other.				
I spend time working with my child on number skills.				
I spend time working with my child on reading/writing skills.				

Read each item and put a checkmark (√) or (X) in a colored box to show how often you do that activity.

	Rarely	Sometimes	Often	Always
I talk to my child about how much I love learning new things.				
I bring home learning materials for my child (videos, etc.).				
I spend time with my child working on creative activities.				
I share stories with my child about when I was in school.				
I see that my child has a place for books and school materials.				
I take my child places in the community to learn special things (i.e., zoo, museum).				
I maintain clear rules at my house that my child should obey.				
I talk about my child's learning efforts in front of relatives.				
I review my child's school work.				
I keep a regular morning and bedtime schedule for my child.				
I praise my child for school work in front of the teacher.				
I talk to the teacher about how my child gets along with his/her classmates at school.				
I talk with my child's teacher about classroom rules.				
I talk to my child's teacher about his/her difficulties at school.				
I talk with my child's teacher about school work to practice at home.				
I talk to my child's teacher about my child's accomplishments.				
I talk to my child's teacher about his/her daily routine.				
I attend conferences with the teacher to talk about my child's learning or behavior.				
The teacher and I write notes about my child or school activities.				
I schedule meetings with administration to talk about problems or gain information.				
I talk with my child's teacher on the telephone.				
I talk with my child's teacher about personal or family matters.				

Continue to the next page →

Part 3: Put a checkmark (√) or (X) in a colored box to show HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.



	Never	1 or 2 times	4 or 5 times	Once a week	A few times a week	Daily
My child asked me to help explain something about our learning activities at home (for example, LINKS, Steps to Success, Nightly Reading).						
My child talked with me about the school day.						
My child asked me to attend a special event at school.						
My child asked me to help out at school.						
My child asked me to talk with his or her teacher.						
My child's teacher asked or expected me to do learning activities at home, such as LINKS, Steps to Success, or Nightly Reading with my child.						
My child's teacher asked me to talk with my child about the school day.						
My child's teacher asked me to attend a special event at school.						
My child's teacher asked me to help out at the school.						
My child's teacher contacted me (for example, sent a text, note, phoned, e-mailed).						

Part 4: People have different feelings about school. Please circle the number on each line below that best describes your feelings about <u>your school experiences when you were a student</u>.

When I was a student, this is how I felt about school:	**disliked**	1	2	3	4	5	6	**liked**
When I was a student, my teachers:	**were mean**	1	2	3	4	5	6	**were nice**
When I was a student, my teachers:	**ignored me**	1	2	3	4	5	6	**cared about me**
When I was a student, my school experience was:	**bad**	1	2	3	4	5	6	**good**
When I was a student, I felt like:	**an outsider**	1	2	3	4	5	6	**I belonged**
When I was a student, my overall experience was a	**failure**	1	2	3	4	5	6	**success**

APPENDIX F

Survey Cover Letter Version Two

Dear Parent or Primary Caregiver,

My name is Marianne Clinton and I am a graduate student at Michigan State University. I am working with Livingston Educational Service Agency to learn more about what is it like to be a parent of a child at Head Start. I am very interested in your experience because your child gets *special education services*.

This envelope has a survey with questions for you to answer. There are three ways for you to answer these questions:

1. Use a pen or pencil to fill out the survey that is in this envelope. The survey begins on page 3 of this packet. Then, put this survey in the white envelope. Next, place it in a mailbox.

2. You can call me to schedule a time to answer the survey questions over the phone: (908) 400-5324.

3. You can go to a website and answer the questions on a computer, cell phone or tablet:
https://msu.co1.qualtrics.com/jfe/form/SV_eMbwLcbXu1g9XVP

You can also enter a drawing to win a **Meijer gift card**! Details about how to do this are on page 9 of this packet and on the website. And the **$1 bill** is for you to keep as a thank you for opening this envelope!

Surveys are due by January 15th

Thank you for your help!

Marianne Clinton

APPENDIX G

Sample Reminder Letter

Dear Parent or Primary Caregiver,

Happy New Year!

This is a friendly reminder that if you haven't done so already, please do your **Head Start Parent Experiences Survey**. I am still hoping to hear from everyone about their experiences as a parent of child who attends Head Start. Your responses are important and may help Head Start meet parents' needs!

The chance to win a **Meijer gift card** is also ending soon! Please respond by **January 31st** to enter the drawing.

There are three ways to do the survey:

1. Complete the paper survey that was mailed to you in a yellow envelope.

2. You can call me to schedule a time to answer the survey questions over the phone: (908) 400-5324.

3. You can go to a website and answer the questions on a computer, cell phone or tablet:
https://msu.co1.qualtrics.com/jfe/form/SV_eMbwLcbXu1g9XVP

Thank you for your time!

Sincerely,
Marianne Clinton

APPENDIX H

Coding Manual

	Standard	**Special Cases**
GENERAL	Don't know = 999 Two answers = 999 In between answers = 999 Missing = 998 Does not apply = 997 (Void = 996)	Likert item questions: "n/a" = 998
Question 1	Yes = 1 No = 0 Don't Know = 999	
Question 2	Female = 0 Male = 1 (No one said "other")	
Question 3	0 = Mother 1 = Father 2 = Grandmother 3 = Grandfather 4 = Aunt 5 = Uncle 6 = Foster mother 7 = Foster father 8 = Legal guardian 9 = Cousin 10 = step parent1	"Grandmother" + "Legal guardian" = grandmother "parents (dad + mom)" = 1 (indicated a male was filling out the survey) "Aunt (adopted parent)" = 4 "Adopted mother" = mother "Foster mother/aunt" = 6 <e.g., "excellent"> = 998 "Grandmother" + "foster mom" = 2 "Grandparent" + <gender indicated in Question 2> = Grandmother or grandfather
Question 4	Yes = 1 No = 0 Don't know = 999	
Question 5	Copy exact answer	*Question 4* = YES + Question 5= blank = 997 *Question 4* = YES + Question 5 = <> = <> Question 4 = NO or DON'T KNOW + Question 5 = blank = 998
Question 6	Yes = 1 No = 997 Does not apply = 997	** If "Yes" to Question 4, code as the following: A (yes) = 1 B (no) = 0 C (don't know) = 999) Blank = 998 --- "No" = 997 "No" + "Does not apply" = 997 "Blank" = 998 for 6 and 6a <Circles answer> = enter what they circled

		<Circles answer> + writes in a different answer = enter both "Yes" + (name of disability missing) = 998 for 6a
Question 7	Copy exact answer UNLESS →	"No" = 997 (*except MA-9-5) "Blank" = 997 "N/A" = 997 "Not at this time" = 997 <Circles answer> = enter what they circled
Question 8	<Single number> = copy exact number	Add together adult and child counts: e.g., "2a, 2c" = 4
Question 9	0 – 5,000 or less 1 – 5,0010 to 10,000 2 – 10,001 to 15,000 3- 15,001 to 20,000 4 – 20,001 to 25,000 5 – 25,001 to 30,000 6 – 30,001 to 35,000 7 – 35, 001 to 40,000 8 – 40,001 to 50,000 9 – 50,001 to 75,0004 10 – More than 75,000	
Question 10	Yes = 1 No = 0 Don't know = 999	
Question 11	0 = white 1 = black 2 = Asian 3 = American 4 = Other 5 = multi-racial (SELECTS TWO OR MORE CHOICES)	*Look for pink ink to instruct how to code special cases
Question 12	Copy exact answer <Blank> = 998	"Husband works ~50 = 998" "40 – 50" = 45 "35 to 40" = 37.5 "40-60" = 50 Indicates hours for "mom" and "dad" → pick the person who's filling out the survey

Question 13	0 = Less than high school 1 = High school diploma/GED 2 = Some college but no degree 3 = Associate's degree/Bachelor's degree 4 = Graduate Degree	
Part 1-3 (Likert items)	1= Disagree very strongly 2 = Disagree 3 = Disagree just a little 4 = Agree just a little 5 = Agree 6 = Agree very strongly	Participant wrote in "n/a" and did not provide an answer = 998 In between answers = 999
Part 4 (Likert items)	1= Disagree very strongly 2 = Disagree 3 = Disagree just a little 4 = Agree just a little 5 = Agree 6 = Agree very strongly	Circled words = 998 Participant wrote in "n/a" and did not provide an answer = 998 In between answers = 999

APPENDIX I

Survey Items of New Scales

Items adapted from the original Walker and colleagues (2005) questionnaire)
1. Role in Children's Education I believe it is my responsibility to communicate with my child's teacher regularly. I believe it is my responsibility to do learning activities at home such as LINKS, etc. I believe it is my responsibility to explain at-home learning activities I believe it is my responsibility to talk with my child about the school day
2. Role Within School I believe it is my responsibility to volunteer at the school. I believe it my responsibility to make sure the school has what it needs. I believe it is my responsibility to support decisions made by the teacher. I believe it is my responsibility to stay on top of things at school. I believe it is my responsibility to talk with other parents from my child's school I believe it is my responsibility to make the school better
3. Valence When I was a student, this is how I felt about school: (disliked/liked) When I was a student, my teachers: (were mean/were nice) When I was a student, my teachers: (ignored me/cared about me) When I was a student, my school experience was: (bad/good) When I was a student, I felt like: (an outsider/I belonged) When I was a student, my overall experience was a (failure/success)
4. Developmental Progress Self-Efficacy I don't know if my child understands what I say to him/her (reverse coded). I don't know how to help my child meet his or her developmental goals (reverse coded). Other children have more influence on my child's developmental progress than I do (reverse coded) I don't know how to help my child learn (reverse coded).
5. School Performance Self-Efficacy I know how to help my child do well in school. I feel successful about my efforts to help my child learn. I make a significant difference in my child's school performance.
6. Perception of School Attitudes Teachers at this school are interested and cooperative when they discuss my child. I feel welcome at this school.

7. Perception of School Invitations Parent activities are scheduled at this school so that I can attend. This school lets me know about meetings and special school events. This school tells me about parent activities, meetings, and special school events with enough time in advance.
8. Perception of School Conference Invitations This school's staff contacts me promptly about any problems involving my child. The teachers at this school keep me informed about my child's progress in school.
9. Specific Child Invitations My child asked me to help explain something about our learning activities at home (for example, LINKS, Steps to Success, Nightly Reading). My child talked with me about the school day. My child asked me to attend a special event at school. My child asked me to help out at school. My child asked me to talk with his or her teacher.
10. Specific Teacher Invitations My child's teacher asked or expected me to do learning activities at home, such as LINKS, Steps to Success, or Nightly Reading with my child. My child's teacher asked me to talk with my child about the school day. My child's teacher asked me to attend a special event at school. My child's teacher asked me to help out at the school. My child's teacher contacted me (for example, sent a text, note, phoned, e-mailed).
11. Communication Time and Energy I have enough time and energy to communicate well with my child about the school day. I have enough time and energy to communicate well with my child's teacher.
12. Time and Energy for Involvement I have enough time and energy to help out at my child's school. I have enough time and energy to attend special events at school. I have enough time and energy to do learning activities at home such as LINKS, Steps to Success, and Nightly Reading with my child.
13. Awareness of Involvement Opportunities I know about volunteering opportunities at my child's school. I know about special events at my child's school.

I know useful ways to contact my child's teacher.
14. Involvement Skills I know how to communicate well with my child about the school day. I know how to explain learning activities at home such as LINKS, Steps to Success, and Nightly Reading to my child. I know enough about the subjects of the learning activities at home such as LINKS, Steps to Success, and Nightly Reading to help my child. I know how to communicate well with my child's teacher. I have the skills it takes to successfully help out at my child's school.
Family Involvement Questionnaire (Fantuzzo et al., 2000)
School-based Involvement
I volunteer in my child's classroom. I participate in parent and family social activities with the teacher. I participate in planning classroom activities with the teacher. I go on class trips with my child. I talk with other parents about school meeting. I participate in planning school trips for my child. I meet with other parents from my child's class outside of school. I hear teachers tell my child how much they love learning. I participate in fundraising activities in my child's school I feel the parents in my child's classroom support each other.
Home-based Involvement
I spend time working with my child on number skills. I spend time working with my child on reading/writing skills. I talk to my child about how much I love learning new things. I bring home learning materials for my child (videos, etc.) I spend time with my child working on creative activities. I share stories with my child about when I was in school. I see that my child has a place for books and school materials. I take my child places in the community to learn special things (i.e., zoo, museum). I maintain clear rules at my house that my child should obey. I talk about my child's learning efforts in front of relatives. I review my child's school work. I keep a regular morning and bedtime schedule for my child I praise my child for school work in front of the teacher.
Home-school Conferencing
I talk to the teacher about how my child gets along with his/her classmates at school. I talk with my child's teacher about classroom rules I talk to my child's teacher about his/her difficulties at school.

I talk with my child's teacher about school work to practice at home.
I talk to my child's teacher about my child's accomplishments.
I talk to my child's teacher about his/her daily routine.
I attend conferences with the teacher to talk about my child's learning or behavior.
The teacher and I write notes about my child or school activities.
I schedule meetings with administration to talk about problems or gain information.
I talk with my child's teacher on the telephone.
I talk with my child's teacher about personal or family matters.

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