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Parent Involvement in Children's Schooling: An Investigation of Measurement Equivalence across Ethnic Groups

Heather Marie Scott

University of South Florida, hmscott2@mail.usf.edu

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Parent Involvement in Children's Schooling:
An Investigation of Measurement Equivalence across Ethnic Groups

by

Heather M. Scott

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
Department of Educational Measurement and Research
College of Education
University of South Florida

Major Professor: Jeffrey D. Kromrey, Ph.D.
John M. Ferron, Ph.D.
Robert F. Dedrick, Ph.D.
Judith Becker Bryant, Ph.D.

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DEDICATION

To my parents, Elloney and Richard, for all of their love, support, and inspiration throughout this journey. Thank you for always encouraging me to believe in myself, to have confidence in my abilities, and to know that I can do anything if I put my mind to it.

To my brothers, Rick and Tim, my sister, Celine, my sister-in-law, Carmela, my brother-in-law, Mike, and my six nieces, Cristina, Breanna, Rowan, Delane, Vanessa, and Daniella, thank you for all of your love, for the fun and laughter that we share when we are together, and for always keeping my spirits lifted, especially when I was feeling completely overwhelmed.

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ABSTRACT

Epstein et al.'s Theory of Overlapping Spheres of Influence focuses on the interaction and communication, or partnerships, among families, schools, and the community to bring the three closer together. The theory works in conjunction with Epstein's typology of parental involvement, which focuses on six types of involvement that are instrumental to a child's development and his/her school and educational success. These serve as the framework for the study and support the construct of parent's involvement in children's schooling.

The purpose of the current study was to conduct further validation analyses of an inventory designed to measure the construct of parent involvement in their children's schooling through the investigation of measurement invariance to determine if the measurement properties of the inventory varied by race/ethnicity. The study compared the responses of 126 Hispanic parents/guardians with 116 White/non-Hispanic parents/guardians to investigate if these two groups were interpreting the items on the inventory in the same manner. The inventory was administered to a sample of parents/guardians of children in grades 3 through 5 in a local school district.

Findings indicated that the measurement model was misspecified for the White/non-Hispanic group and the Hispanic group and further measurement invariance testing was not conducted. Exploratory factor analyses were conducted in order to investigate which models would best fit the data for both groups. Feedback also was

obtained from parents/guardians about the clarity of the inventory, which revealed their confusion with the response scale and the wording of particular items. In addition, they supplied issues or aspects of parent involvement that they found important but missing from the inventory. Results from the psychometric analyses and qualitative feedback indicated that the inventory requires modification and further psychometric investigation. In addition, caution should be exercised for anyone who may be considering utilizing the inventory. Results of the study were interpreted in terms of contributions to the parent involvement literature, as well as recommendations for the improvement of the inventory.

CHAPTER 1

INTRODUCTION

Parents' interactions with and involvement in their children's lives can influence children in many ways. Researchers who have studied child-rearing often address parenting in terms of parenting styles (e.g., authoritarian, authoritative, permissive, and neglectful) (Baumrind, 1966, 1989, 1991; Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Steinberg, 1996) as well as dimensions of parenting (e.g., acceptance versus rejection, firmness versus leniency, and autonomy versus control) (Baumrind 1971, 1989; Lamborn et al., 1991; Steinberg, 1996). Parenting styles and dimensions of parenting can influence the degree of a child's feelings of being loved and supported by their parents, their behavior, and their sense of individuality (Smits et al., 2008).

Additionally, research has shown how children's attitudes towards education/school and motivation to learn, as well as their academic achievement can be affected by particular parenting styles and practices. These styles and dimensions assist in informing about parents' influences over children and their overall development. One aspect of a child's development in which these styles and dimensions help inform is how the parenting practices influence the child's educational achievement, as well as the child's attitude towards school and motivation to learn. For instance, it has frequently been found that children from indulgent and neglectful homes are relatively disengaged from school, whereas children from authoritative homes do well in school and children

from authoritarian homes are competent in areas of achievement (Lamborn et al., 1991; Pittman & Chase-Lansdale, 2001; Simons & Conger, 2007).

Unlike theories of parenting styles and dimensions that focus on overarching parenting practices, some theories focus solely on particular aspects of parenting practices. For example, Epstein et al.'s (2002) Theory of Overlapping Spheres of Influence and Epstein's (2006) typology of parental involvement focus on partnerships among families, schools, and the community, as well as six types of involvement that are instrumental to children's development and their school and educational success. The importance of parental involvement in areas of children's schooling, for instance parent-teacher communications and assistance with homework, has increased within the last few years. This increase in importance of involvement may be due in part to the passing of the No Child Left Behind Act (NCLB) (2001) which emphasizes accountability and the role of parents in their children's education. According to the U.S. Department of Education's (2010) Section 1118 *Parental Involvement* of the NCLB Act, funds will be given to educational agencies to implement "programs, activities, and procedures", in conjunction with input from parents, "for the involvement of parents in programs" (Part A — Improving Basic Programs Operated by Local Educational Agencies, Sec. 1118.

Parental Involvement, para. 1). Under NCLB Title I, parental involvement is defined as,

the participation of parents in regular, two-way, and meaningful communication involving student academic learning and other school activities, including ensuring—

- that parents play an integral role in assisting their child's learning;
- that parents are encouraged to be actively involved in their child's education at school;

- that parents are full partners in their child’s education and are included, as appropriate, in decision-making and on advisory committees to assist in the education of their child; and
- that other activities are carried out, such as those described in section 1118 of the ESEA (Parental Involvement). [*Section 9101(32), ESEA.*] (Parental Involvement: Title I, Part A. Non-Regulatory Guidance, p. 3)

The No Child Left Behind Act recognizes the vital role parents play in the learning and achievement of their children and emphasizes school-parent partnerships that promote the social, emotional, and academic growth of children. This recognition of the importance of parental involvement is then passed down to the school districts, school administrations, teachers, and finally to the parents themselves. Steinberg (1996) purports two notions about parent involvement: (a) Parents become more involved when their children do well in school, and (b) parent involvement leads to student success.

Understanding the role of parent involvement in children’s learning and achievement can be expanded by indicating the type of involvement parents demonstrate. The two main types of involvement studied are school-based involvement and home-based involvement (Pomerantz, Moorman, & Litwack, 2007). Descriptions of school-based involvement include parents’ communication with teachers, attendance at school meetings, and volunteering in the school. Helping children with homework is one example of home-based involvement. Although research has been conducted on both types of involvement, there appears to be more research conducted in regards to school-based involvement rather than home-based involvement (Pomerantz, Moorman, & Litwack, 2007).

Parent involvement instruments range from large nationally recognized measures, such as the Longitudinal Study of American Youth (LSAY) (LSAY, 2010), to author-developed measures, designed for administration with large nationally representative

populations and/or small distinct populations. With some large surveys, only a small portion of the questions may pertain to parent involvement, for example the National Survey of Children's Health (NSCH) (Centers for Disease Control and Prevention, 2010). Instruments in other large studies have been developed to measure a variety of types of family or parent involvement, for instance the Family-School Partnership Lab Scales: Parent and Student Questionnaires (Hoover-Dempsey & Sandler, 2005), the Parent and School Survey (PASS) (Ringenberger, Funk, Mullen, Wilford, & Kramer, 2005), and the Parent Survey on Family and Community Involvement in the Elementary and Middle Grades (Sheldon & Epstein, 2007). Most studies on parent or family involvement, whether large or small, garner information on many general forms of involvement (e.g., school outreach to involve families, attitude about the school, general family involvement in the home or outdoor activities, parents' responsibilities and skills, social networks with other parents and adults) or on one particular aspect of parent involvement (e.g., homework, parent-teacher communication).

Further, studies often develop and employ measures with a narrow population in mind (e.g., preschool children, low-income urban children, at-risk children). In his meta-analysis of parent involvement research, Jeynes (2003) found that numerous studies focused only on "parental involvement generally or on certain aspects of parental involvement" as well as "certain groups of students in certain situations" (p. 203). Consequently, it is difficult for educators and parents to know which aspects of parent involvement are the most important for children's academic achievement and which ones would assist many different types of students in varying situations.

An example of an author-developed instrument designed for use with a specific population is the multivariate scale called the Family Involvement Questionnaire (FIQ) that was developed and validated by Fantuzzo, Tighe, and Childs (2000). This scale was designed for use with primary caregivers of urban students in pre-kindergarten, kindergarten, and first grade—children enrolled in Head Start, CDC, kindergarten, or first grade programs—to improve cultural validity. The purpose of the study was to investigate family participation in early childhood education and to “reflect the multiple dimensions of involvement represented in Epstein’s (1995) classification system” (p. 368).

Although many studies utilize a majority of participants from predominantly White, middle-class backgrounds, research has also been conducted comparing groups of participants in terms of socioeconomic level and/or race/ethnicity. Although there were only a small number of studies that examined racial group differences, Jeynes (2003) conducted analyses to calculate the overall effect sizes of parent involvement on children’s academic achievement for minority groups (i.e., African American, Latinos, Asian American). He found that parent involvement had a positive effect on the academic achievement of minority groups in the studies examined.

Although researchers often investigate differences between or among different population subgroups (e.g., gender, socioeconomic status, race/ethnicity), it is not as prevalent for researchers to further evaluate an instrument they are developing and employing in order to determine if the measurement properties of the instrument are equivalent for these subgroups. Although the Fantuzzo, Tighe, and Childs’ (2000) study was cited 18 times from 2002 – 2009, the full FIQ was used in only one of these studies

and two studies used a subset of the items from the inventory. No further psychometric analyses were conducted on the instrument in any of the studies; specifically, in terms of determining whether the measurement properties (e.g., the same factors are associated with the identical items across groups, the equality of factor loadings across groups) of the instrument were equivalent across cultural subgroups (e.g., White, Black, Hispanic).

A method researchers use to determine if the measurement properties of an instrument are equivalent across subgroups (e.g., racial/ethnic, gender, age) is to evaluate the measurement invariance (also called measurement equivalence). Measurement invariance is important in the test development process, especially when the instrument will be administered to a heterogeneous population (Brown, 2006). The measurement properties of the instrument should be equivalent for all participating subgroups, such as gender and race. If the measurement properties are not equivalent, items on the instrument will not be measuring the underlying construct similarly and will be biased towards one of the groups (Brown, 2006). Items contained in an instrument may be biased if the content or language, or the item structure or format is unfamiliar to subgroups. For instance, an item may be language biased if it employs terms that are not commonly used in different geographic locations or cultures, or that may have different connotations in different geographic locations or cultures. As a result, the scores will not be representative of participants' abilities or perceptions.

Theoretical Framework

Epstein et al.'s Theory of Overlapping Spheres of Influence and Epstein's typology of parental involvement serve as the framework for the study and support the construct of parents' involvement in children's schooling. Epstein et al.'s theory focuses

on the interaction and communication, or partnerships, among families, schools, and the community to bring the three closer together. This theory works in conjunction with Epstein's typology of involvement, which focuses on six types of involvement that are instrumental to a child's development and his/her school and educational success.

Statement of the Problem

Although the scores of an instrument, such as a survey, may exhibit evidence of validity for a particular sample of participants when analyzed with a method such as exploratory factor analysis, the results of further, different validation techniques may not exhibit that same evidence of validity. This may be true when analyzed with a more demographically diverse sample of participants who belong to various racial/ethnic or sociodemographic groups. The racial/ethnic or sociodemographic group to which an individual belongs could have an impact on the manner in which questions on an instrument are interpreted and what responses are given.

The current study further investigated the validity of scores from an inventory developed by Watkins (1997) with a different and diverse sample of participants, namely White/non-Hispanic and Hispanic parent/guardians. The inventory was selected because it was determined to have a comprehensive coverage of the construct of parent involvement in children's schooling. This instrument also was chosen because it does not measure a broad coverage of various forms of parent involvement or a distinct population or topic area that are found with many inventories. It was also designed for use with elementary school-aged children. The inventory incorporated different aspects of parent involvement in schooling (i.e., involvement within the home, the child's learning of information and understanding tasks, awareness of the evaluation of the child on tasks

and involvement with the child's performance on tasks, and amount of communication the teacher has with the parent about the child's schooling) with several items representing each sub-factor, rather than just focusing on one particular aspect of parent involvement, such as helping with homework or volunteering in the school, and using few items to represent that factor.

The sample for Watkins' study consisted of 183 parents (one parent of each child) of children in Grades 2 through 5 in a Midwestern elementary school located in a university community. Eighty-eight percent of the respondents were mothers, 9% were fathers, and 2% were legal guardians. Of these participants, 77% were White and 18% were Black. The educational levels of the parents were as follows: 43% completed college, 32% reported some college study, 14% completed high school, and 6% attended some high school. No distinctions were made for 2-year or 4-year degree programs or for those with or pursuing advanced degrees. The sample for the current study as compared to the previous study is intended to be more racially/ethnically as well as sociodemographically diverse. Conducting further validation methods allowed for the determination of whether or not the measurement properties of the instrument varied across different racial/ethnic groups.

Purpose

The purpose of the study was to expand on the validation of scores from an inventory designed to measure the construct of parent involvement in their children's schooling. There was no previous validation of the instrument, such as an exploratory factor analysis, conducted to investigate the construct validity of the inventory. The author of the inventory calculated Cronbach's alphas for each of the sub-factors to

examine the internal reliability of the instrument. Since the development of the inventory, the research has been cited approximately 62 times, but no further psychometric analyses have been conducted on the instrument to determine whether the instrument is functioning similarly across different cultural groups. The current study conducted further validation analyses of the parent involvement inventory through the use of measurement invariance to determine if the measurement properties of the inventory varied by race/ethnicity.

Research Questions

The following are the research questions answered by this study:

1. To what extent do the measurement properties (e.g., factor structure, reliability) of the parent involvement in children's schooling inventory vary by race/ethnicity, specifically White/non-Hispanic and Hispanic?
2. To what extent are there similarities and differences across the two races/ethnicities (i.e., White/non-Hispanic and Hispanic parents or guardians) for items on the inventory that are found to be confusing?
3. To what extent are there similarities and differences across the two races/ethnicities (i.e., White/non-Hispanic and Hispanic parents or guardians) for other important issues or aspects of parent involvement in children's schooling that parents or guardians find to be missing from the inventory?

Overview of Research Design

The study was a validation study of an inventory designed to measure parent involvement in children's schooling. The study compared the responses of Hispanic parents/guardians with White/non-Hispanic parents/guardians to investigate if these two

groups were interpreting the items on the inventory in the same manner. It involved the administration of the inventory to a sample of parents/guardians of children in grades 3 through 5 in a local school district. There was no randomization of participants into groups (because the children were already established in classrooms) and none of the variables were manipulated. Schools attended by the children were selected from different socioeconomic areas based on the percent of students on free or reduced lunch, the proportion of students who were non-native speakers of English (ELL), and school size to ensure that children from all economic groups were represented. In addition, the schools selected for inclusion in the study were chosen based on the diversity of the school (i.e., schools containing the largest estimated number of Hispanic students) to ensure comparable representation of White/non-Hispanic and Hispanic parents/guardians. Further, interviews were conducted with three Hispanic parents to obtain feedback as to their comprehension of and the completeness of the inventory.

Importance of the Study

Research studies on parent involvement are typically conducted in relationship to aspects such as academic achievement, homework, or parent-teacher communication, rather than a comprehensive inquiry into a few areas of parent involvement in school. The research conducted by Steinberg (1996) found that the most worthwhile form of parent involvement that makes a small but significant difference in student achievement was physical involvement in the child's school, such as "attending school programs, extracurricular activities, teacher conferences, and 'back to school' nights" (p. 125).

The inventory used in the current study was created by Watkins (1997) for research he was conducting on parent involvement. Since it was first developed, at least

62 national and international journal articles and dissertations from 1999 to 2011 have cited findings from the study, but none have conducted further psychometric analyses on the instrument to determine whether the instrument is functioning similarly across different racial/ethnic groups. Because the inventory may be used in the future with possibly more diverse populations, more psychometric analyses need to be conducted. Items may function differently for different demographic groups. Further, Standard 7.1 in the *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999) states that relevant subgroups of the population should also be examined for differences in test scores when previous research of similar types of tests has found test score differences across subgroups. Because differences were found in similar types of inventories, the scores of the subgroups of the population for the instrument being examined may also differ. The current study was a validation of the scores of a previously developed instrument, of which the results will add to the evidence of the validity of the instrument and its use with different populations, as well as add to the current literature and research conducted in this area.

Limitations

Parents or guardians may have received the survey from their children in various ways, such as being automatically given the survey when the child got home from school, when asking the child about school and jogging the child's memory about the survey, or the parent may have simply gone through the child's backpack of his or her own volition to see what the child brought home from school. They may also have had different reasons for answering the survey. For instance, the parents or guardians may be very

involved in their children's lives and felt a propensity to answer the survey, they may have believed it was their obligation to answer the survey because it dealt with school issues and the child brought it home from school, or they may have understood the importance of research and that the results may have a beneficial impact on their or other children in the future. A major limitation of the research was that a large number of parents or guardians did not complete the inventory. Additionally, because the parents or guardians completed the inventory privately in their homes, they may have responded in a manner in which they believed was looked upon more favorably by the researcher. For instance, parents or guardians may state they often assist their children with their homework when, in fact, they do not.

Another limitation is that only two categories of race/ethnicity were being compared rather than a full spectrum of races/ethnicities. Further, analyses were not conducted on other demographic groups, such as parent/guardian or child gender, or socioeconomic status. Finally, only parent-reported data were obtained; neither child-reported nor teacher-reported data were collected. Because of these limitations, comparisons were unable to be conducted among the various parties to determine whether the inventory was functioning similarly for these groups.

Definition of the Terms

Parent involvement. Parental attitudes towards and involvement in their children's learning activities in the home and at school (Edwards & Alldred, 2000).

Parent. An individual who is considered a primary caregiver of the child, for instance biological mother or father, adoptive mother or father, foster mother or father, grandmother or grandfather, aunt, uncle, or any other legal guardian of the child.

Measurement invariance. Measurement invariance (also called measurement equivalence) is the evaluation of measurement properties across populations, such as different cultural groups, demographic groups (e.g., gender, ethnicity), how a group responds over time (e.g., to an intervention or experimental manipulation), or different rating sources “rating the same target on identical performance dimensions” (Vandenberg & Lance, 2000, p. 5).

Hispanic. According to the U.S. Census Bureau (2010), individuals of Hispanic or Latino ethnicity are defined on the 2000 Census as “those people who classified themselves in one of the specific Spanish, Hispanic, or Latino categories listed on the Census 2000 questionnaire – ‘Mexican, Mexican Am., Chicano,’ ‘Puerto Rican,’ or ‘Cuban’ -as well as those who indicate that they are ‘other Spanish/Hispanic/Latino.’ Persons who indicated that they are ‘other Spanish/Hispanic/Latino’ include those whose origins are from Spain, the Spanish-speaking countries of Central or South America, the Dominican Republic or people identifying themselves generally as Spanish, Spanish-American, Hispanic, Hispano, Latino, and so on. Origin can be viewed as the heritage, nationality group, lineage, or country of birth of the person or the person's parents or ancestors before their arrival in the United States. People who identify their origin as Spanish, Hispanic, or Latino may be of any race. Thus, the percent Hispanic should not be added to percentages for racial categories. Tallies that show race categories for Hispanics and nonHispanics separately are available.” All Hispanic groups will be administered the survey and will be asked to indicate how they classify themselves (i.e., Mexican, Puerto Rican). If there appears to be an overwhelming majority of individuals classifying themselves into a particular group(s) (e.g., Mexican), consideration will be

given to include only the data from this group(s) in the analyses and to exclude the remaining Hispanic groups. Otherwise, data from all Hispanic classifications will be included in the analyses.

CHAPTER 2

REVIEW OF THE LITERATURE AND THEORETICAL BASIS

This literature review is organized into five sections. The first section discusses parenting styles, such as authoritarian or permissive, and types of dimensions (e.g., acceptance versus rejection). Next, Epstein's theory and typology of parental involvement is described. The third section details parent involvement and its various representations; for instance, homework and home learning activities, parent-teacher communication, and cultural distinctions. This will be followed with an analysis of previously developed instruments. Finally, validity and measurement invariance will be discussed.

Introduction

When considering the interactions between children and the individuals and environments around them (i.e., parents and school), one has to consider that these interactions are influencing the knowledge he or she is acquiring as well as the manner in which the child perceives him- or herself and the behaviors he or she is exhibiting. One can surmise that the involvement of these different environments influences children's behavior, perceptions, and how well they do in school.

There are a variety of definitions for the term parent involvement cited in numerous studies. These definitions range from Epstein's (1995) typology of parental involvement, that includes six types of involvement, to definitions citing particular

aspects of parental involvement such as school-related activities with their children at home (e.g., helping with homework) (Shumow & Miller, 2001; Singh et al., 1995; Sui-Chu & Willms, 1996), parent-teacher communications (Deslandes, Royer, Turcotte, & Bertrand, 1997), parental expectations regarding their children's educational attainment (Keith et al., 1998), attendance at parent meetings organized by the school (Shaver & Walls, 1998), how often parents volunteer at school (Okpala, Okpala, & Smith, 2001) or participate in school activities (Izzo, Weissberg, Kaspro, & Fendrich, 1999; Miedel & Reynolds, 1999). For the purposes of the current study, parental involvement is defined as parental attitudes towards and involvement in their children's learning activities in the home and at school (Edwards & Alldred, 2000).

Most research on parent involvement in children's schooling is in relation to aspects such as academic achievement, homework, or parent-teacher communication. Many of the instruments developed gather information on many general forms of involvement (e.g., attitude about the school, general family involvement in the home or outdoor activities, parents' responsibilities and skills) or on one particular aspect of parent involvement (e.g., parent-school communication). Further, studies may develop and employ measures with a narrow population in mind (e.g., high school students, at-risk) as well as use a majority of participants from predominantly White, middle-class backgrounds. After doing their main analyses to answer an overarching research question, researchers may then conduct further analyses on the data to determine if there were any gender, socioeconomic status, and/or race/ethnicity effects. Fewer research studies have been conducted with the central purpose of comparing ethnic subgroups of populations.

Parenting Styles and Dimensions

Unlike the current study, which is based on a theory related to a particular aspect of parent involvement, other studies conducted in relation to parent involvement often refer to parenting styles or dimensions when examining the theoretical background behind parental involvement (e.g., Cooper, Lindsay, & Nye, 2000). As stated previously, these styles and dimensions assist in informing about parents' influences over children and their overall development. It has been documented through research that parents have different ways of interacting with their children, especially in terms of the manner in which parents set rules for, discipline, or monitor the child and his or her behavior. These ways of interacting have been described as parenting styles as well as dimensions of parenting.

The central parenting styles described in many research studies include authoritarian, authoritative, permissive, and, to a somewhat lesser degree, rejecting-neglectful (Baumrind, 1966, 1971, 1989, 1991). These four styles are defined by Baumrind (1991) in the following manner:

- *Authoritarian* – “parents are demanding and directive, but not responsive. They are obedience- and status-oriented, and expect their orders to be obeyed without explanation. They provide an orderly environment, and a clear set of regulations, and monitor their children’s activities carefully” (p. 62).
- *Authoritative* – “parents are both demanding and responsive. They monitor and impart clear standards for their children’s conduct. They are assertive, but not intrusive or restrictive. Their disciplinary methods are supportive rather than

punitive. They want their children to be assertive as well as socially responsible, and self-regulated as well as cooperative” (p. 62).

- *Permissive* – “or nondirective parents are more responsive than they are demanding. They are nontraditional and lenient, do not require mature behavior, allow considerable self-regulation, and avoid confrontation” (p. 62).
- *Rejecting-neglecting* – “or disengaged parents are neither demanding nor responsive. They do not structure and monitor, and are not supportive, but may be actively rejecting or else neglect their childrearing responsibilities altogether” (p. 62).

Other styles, similar to permissive and neglectful, that are described in research include indulgent and disengaged, respectively (Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Steinberg, 1996). These and other studies have determined that the most advantageous style of parenting for children’s development is authoritative. With this form of parenting, the parent is firm and sets limits, but provides the child with reasoning for their decisions. Additionally, the parent is supportive and encourages the child’s autonomy.

Research also has looked at the maternal and paternal differences in parenting styles in both adolescents and late adolescents (e.g., McGillicuddy-De Lisi & De Lisi, 2007; McKinney & Renk, 2008). Milevsky, Schlechter, Netter, and Keehn (2007) studied the classification of four parenting styles and the variation in high school students’ adjustment as a function of maternal and paternal parenting styles. The authors found that both maternal and paternal authoritative parenting related to higher life-

satisfaction and self-esteem and to lower depression. It was also discovered that maternal permissive parenting may be more detrimental than paternal permissive parenting.

Types of dimensions described in research studies include acceptance versus rejection, firmness versus leniency, and autonomy versus control (Baumrind 1989; Lamborn et al., 1991; Steinberg, 1996) as well as parental support, behavioral control, and psychological control (Bean, Bush, McKenry, & Wilson, 2003). Bean, Bush, McKenry, and Wilson (2003) explored the relationship between these three dimensions and adolescent functioning, specifically self-esteem and academic achievement, of 75 African American and 80 European American public high school students in the Midwestern United States. The adolescents completed demographic questions that ascertained the children's family structure, the Parent Behavior Measure (PBM) ("a 34-item, self-report measure of adolescent perceptions of several supportive and controlling dimensions of behavior that parents direct at adolescents", p. 528), 8 items from the Rosenberg Self-Esteem Scale (measures one's self-worth or positive evaluation of self), and one self-report item that asked the adolescents about their academic performance, specifically to indicate which item best represented their grades over the past year (e.g., "mostly As"). Bivariate correlations between the parenting and youth variables showed that maternal support and academic achievement, maternal support and self-esteem, and paternal psychological control and self-esteem were all positively correlated for both African American and European American samples. All three parental and maternal parenting dimensions were significantly related to self-esteem for European American youth, as were all three maternal parenting dimensions for academic achievement. When factored in with sociodemographic predictor variables, the results were somewhat

different. For instance, lower self-esteem was reported by African American adolescents from single-parent families than from two-parent families. Further, older African American children achieved higher academic marks than younger African American children.

Smits et al. (2008) examined the relationships between three dimensions of perceived parenting (support, behavioral control, and psychological control) and three adolescent identity styles (information-oriented, normative, and diffuse-avoidant). The participants consisted of Dutch-speaking Belgian college students ($n = 168$) and middle to late adolescents ($n = 506$), for a total of 674 participants aged 15 to 22 years (mean of 17.9 years). All of the adolescents and most of the college students lived at home with their parents. The college students who did not live at home returned home for the weekend and, therefore, had frequent contact with their parents. Participants completed the Identity Style Inventory (ISI-3) and the Child Report of Parent Behavior Inventory (CRPBI), which measure identity styles and parenting dimensions, respectively. Items on the CRPBI were rated separately for mothers and fathers. Results indicated that the information-oriented and the normative identity styles were positively predicted by perceived parental support. These styles also were positively predicted by perceived parental psychological control, for the information-oriented identity style, and by perceived maternal behavioral control, for the normative identity style. The diffuse-avoidant identity style was positively predicted by perceived parental psychological control, with the association being somewhat more pronounced for males. Further, perceived behavioral control was negatively related to the diffuse-avoidant identity style,

with the association being most pronounced for maternal ratings and with paternal behavioral control being less predictive for older adolescents.

Theories and research such as these examine overall parental involvement and the comprehensive development of the child. They assist in explaining how different parenting styles and dimensions affect various aspects of the child's life, from academic success to emotional adjustment. Other researchers focus on particular aspects of parent involvement in their studies, for instance involvement with their children's personal lives. They base their research on theories primarily related with that specific form of parental involvement. Similar to these latter studies that focus on particular aspects of parent involvement, the current study focuses on parental involvement in children's schooling and the theoretical background associated with this form of involvement, specifically Epstein's theory and typology of parental involvement.

Epstein's Theory and Typology of Parental Involvement

Joyce L. Epstein developed the Theory of Overlapping Spheres of Influence, which details the interaction and communication, or partnerships, among families, schools, and the community to bring the three closer together. The theory is comprised of an external model of overlapping spheres of influence and an internal model of overlapping spheres of influence. Within this theory, the family, the school, and the community are "the three major contexts in which students learn and grow" (Epstein et al., 2002, p. 8). The external model acknowledges that these major contexts "may be drawn together or pushed apart" and that there are some practices that they "conduct separately and some that they conduct jointly to influence children's learning and development" (p. 8). The internal model "shows where and how complex and essential

interpersonal relations and patterns of influence occur between individuals at home, at school, and in the community” (p. 8). This internal model can be further broken down to the institutional level (e.g., families being invited to an event by the school) and the individual level (e.g., parent-teacher conference).

According to Epstein, students are located at the core of the model because they are the key instrumental factor in their development as well as with their school and educational success. The combination of activities conducted by all three areas of the partnership influence the success of the student through guidance, motivation, and engagement. Reciprocally, the student is a key factor in the success of the family, school, and community partnership. For instance, the main source of information parents receive about school is from the student.

Six types of involvement were differentiated by Epstein (2006) and work in conjunction with the Theory of Overlapping Spheres of Influence. These types of involvement are described as follows:

- 1. Parenting.** Offer families assistance with parenting and childrearing skills, in understanding child development, and in setting home conditions that support children as students at each age and grade level. Administrators should assist educators in understanding families.
- 2. Communicating.** Keep families up-to-date on school programs and student progress through effective school-to-home and home-to-school communications.
- 3. Volunteering.** To support children and school programs, improve outreach, training, and schedules to involve families as volunteers and improve family attendance at events at school and in other locations.
- 4. Learning at home.** Offer suggestions and techniques to involve families in learning activities with their children at home.
- 5. Decision making.** Include families as participants in school decisions, governance, and advocacy through PTA/PTO, school councils, committees, and other parent organizations.

6. Collaborating with the community. Coordinate resources and services for families, children, and the school with businesses, agencies, and other groups. Provide services to the community. For examples, young children might entertain senior citizens or plant flowers to beautify a park (p. 40).

A framework for these types of involvement consisting of sample practices, challenges, redefinitions, results for students, results for parents, and results for teachers has developed from various studies and from work conducted by educators and families in primary and secondary schools. This framework “helps educators develop more comprehensive programs of school and family partnerships and also helps researchers locate their questions and results in ways that inform and improve practice” (Epstein et al., 2002, p. 12).

Parent Involvement

Many research studies conducted on parent involvement tend to focus on topics such as child’s academic achievement, teachers increasing parental involvement, mathematics or reading involvement of parents, teachers’ perceptions, or early literacy and learning models, initiatives, or projects developed to increase teacher and parental involvement. For instance, Baker, Kessler-Sklar, Piotrkowski, and Parker (1999) studied teachers’ accounts of parents’ involvement in kindergartners’ and first graders’ education. The sample consisted of a total of 190 teachers (Kindergarten, $n = 123$; first grade, $n = 67$) from 65 schools, with a range of 1 to 13 teachers participating from each school. Most of the parents (77.3%) being rated were minorities and 58.4% of them participated in either Head Start or the Home Instruction Program for Preschool Youngsters (HIPPY). Parents were rated by the teachers for their involvement in their children’s education using the researcher-developed 24-item scale called the Parent

Involvement Survey—Teacher form (PIS-T). The PIS-T consisted of three subsections: (a) 15 items regarding the types of parent involvement activities outside of school premises that teachers felt were important, (b) 3 items assessing teachers' perception of parents' overall initiation, responsiveness, and interest in relation to the school, and (c) 6 items assessing teachers' knowledge of parent participation on the school premises. The frequencies of involvement for the first two subsections were rated on a five-point scale of never (0), rarely (1), sometimes (2), frequently (3), or always (4), and the final six items were rated on a three-point scale of never (0), once (1), or more than once (2). The researchers found that teachers had little knowledge of parents' involvement in matters outside of school, such as discussing school topics with children or taking children to the library or to cultural events. The types of involvement teachers did have some knowledge about were those activities that were directly observable by the teacher, for instance calls to the teacher and volunteering in the classroom.

Conversely, there have been few studies completed that gauged parents' perceptions of their involvement in their children's lives. Often, the perception of parental involvement is taken primarily from the child or teacher perspective (e.g., Manz, Fantuzzo, & Power, 2004). A study that takes the parents' views of children's educational attainment into consideration was conducted by Englund, Luckner, Whaley, and Egeland (2004). The participants were 187 firstborn children (female, $n = 85$; male, $n = 102$) and their mothers, who ranged in age at the time of their children's births from 12 years to 34 years. The mothers were all low income at the time of recruitment and 59% of them were single parents. The researchers gathered data on mother's education, mother's quality of instruction (assessed through a videotaped laboratory procedure),

child's IQ (assessed using an abbreviated version of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)), parental expectations (assessed at Grades 1 and 3 during a semistructured interview with parent), parental involvement with school (assessed at Grades 1 and 3 through interviews with teachers at each grade level), and child's achievement (assessed with teacher rating of child's overall academic progress). A path analysis model was developed as well as correlations conducted to examine the relations among the variables. They discovered that mothers who attained a higher level of education had higher expectations for their first graders' educational achievement and were more involved in their first graders' school. Further, children's attainment of high academic achievement in first grade then led to parents having higher expectations and being more involved, as well as to the children attaining higher academic achievement in third grade.

Another study was conducted by Gutman and McLoyd (2000). These researchers investigated how African American parents living in poverty managed their children's education at home, school, and in the community. This management was examined in relation to children's academic success or academic problems. African American participants of one school district were extracted from a larger longitudinal study conducted in southeastern Michigan. The 62 participants chosen for the study were those who were living at or below the poverty threshold and who remained in the school district for both the fifth- and sixth-grade years. A subsample of high-achieving and low-achieving students was then selected from the sample of 62 participating families at or below the poverty threshold for a total of 34 participants (17 high-achieving students, 17 low-achieving students). Data were collected through interviews conducted with parents

in their homes. Parents first were asked a series of open-ended questions about their strategies for encouraging their children's educational goals, then they were asked what they thought the school could do to help their child achieve these goals, and finally parents were asked specific questions about the types of activities in which their children were involved. A list of codes was developed for the data analysis, and similarities and differences between the codes of parents of both high-achieving and low-achieving students were compared. Specific code frequencies and interview text attached to the codes were examined. It was discovered that parents of high achievers were more involved at their children's school, used more strategies when helping with schoolwork at home, engaged in more supportive conversations, and had their children participate in more activities within the community that supported their achievement than parents of low achievers. One could surmise that these parents may have been more involved because, as with the Englund, Luckner, Whaley, and Egeland (2004) study, the parents' had higher expectations of their children because of the children's higher academic achievement. The results of this research may also have been somewhat different if taken from the children's or the teachers' perspectives. Parents may believe they are being very involved in their child's life, especially if their available time for involvement is lacking because of work or other matters, when in fact the child or the teacher may view the involvement in a different manner. They may believe the involvement of the parent could be improved both at home and at school.

In addition to research being conducted from perspectives other than the parents or on topics such as how to get parents involved, research also has been carried out on a combination of different types of parental involvement. Manz, Fantuzzo, and Power

(2004) examined home-based involvement, school-based involvement, and home-school communication with low-income urban elementary students. The participants were the parents of children in grades one through five. The study extended the research on the Family Involvement Questionnaire for Early Childhood (FIQ-EC), whose item wording and response format were based on Epstein's (1995) framework of involvement. A series of one-way MANOVAs were conducted and revealed that parents with a high school diploma, as compared to those who did not complete high school, showed increased home-school communication and home-based involvement. Additionally, single- and two-parent families displayed more home-school communication than extended kin or foster families. Decreased home-school communication and home-based involvement also were reported in households with five or more children. Further, greater home-school communication was reported by families of boys than families of girls. This study illustrates that more parent involvement is demonstrated when parents have at least a high school diploma, are of immediate family relation (single- or two-parent family), and have less than five children.

Unlike studies that research multiple forms of parent involvement concurrently, other research has examined singular aspects of parental involvement. For instance, studies or programs have investigated the involvement of fathers, parents' help with homework, parents' participation in school activities, as well as communications between parents and teachers. These researchers were interested in examining one particular form of parent involvement which they were interested in or deemed important.

Involvement of fathers. Some programs are developed and instituted for the main reason of getting fathers involved in children's care and education. Levine,

Murphy, and Wilson (1993) developed a guide for early childhood programs to assist them in getting fathers involved. The book is connected with a program called The Fatherhood Project and is essentially divided into four sections: (a) discusses why male involvement is important, provides tools for programs to assess the extent of male involvement currently taking place in their programs, and provides goals to set for the future; (b) provides strategies for programs to implement; (c) presents fourteen model programs that span broad racial and ethnic groups, as well as geographic areas; and (d) provides resources for individuals to develop their curricula and programs. The authors realized that many researchers and practitioners viewed involvement solely as a woman's issue rather than seeing it as a family issue. They posit this view needs to change because fathers also have an interest in children's lives and contribute to their care and education.

Similarly, Levine and Pitt (1995) further delved into male involvement in children's lives through the promotion of responsible fatherhood. Their book is designed for both private and public use and also is connected with The Fatherhood Project. It is "based on an 18-month national search to identify promising approaches to working with fathers and families" (p. 7). The authors first provide a context for understanding society's growing interest in fatherhood as well as specific information such as the two trends of fatherhood (father absence and father involvement), how father involvement affects children, the risks of father absence, the benefits of father involvement, how father involvement affects fathers, and how father involvement affects mothers. The merits of marriage and employment then are discussed as well as the personal responsibility that fathers, and those in the community, must take in establishing and maintaining connections between fathers and children. Finally, community strategies (prevent,

prepare, establish, involve, support) are examined through the actions of various programs around the United States and what they have done to elicit father involvement. These types of programs recognize that fathers often are not taken into consideration in the development of their children because typically it is believed that the mother is the more prominent influence. They acknowledge that fathers have just as much a stake in the care and education of their children as do mothers and their influence needs to be addressed.

Homework and home learning activities. Assistance with homework and home learning activities is becoming more prevalent in research related to parental involvement. Researchers realize the importance of this form of parental involvement for children's academic achievement. Bailey (2006) studied parents' involvement with their second-grade children, who were academically at-risk readers, during completion of Interactive Homework Assignments (IHA). Participants were 84 second grade students with achievement gaps in reading and 84 parents of second graders from three schools in southeastern Alabama. The breakdown of the student participants into groups was as follows: School One participants ($n = 26$) were assigned to the experimental group because their parents were trained how to interact with them during the completion of IHA, School Two participants ($n = 27$) were in the experimental control group because they completed IHA but their parents were not trained how to interact with them during the completion of this work, and School Three participants ($n = 31$) were assigned to the control group because they did not receive IHA and because their parents were not trained how to interact with them during the completion of reading homework. Thirteen of the 26 parents from School One attended the IHA workshops and received training;

however, all the parents were in constant contact with the researcher so they could ask questions and receive support. The training given to these parents instructed them on how to interact with their children during IHA in order to determine the impact of their assistance on children's abilities to draw inferences from reading selections. Parents from School Two did not receive training or interact with the researcher, but they did receive IHA training packets. Parents from School Three did not participate in the training nor did they receive training packets or IHA; however, they did participate in a parental involvement forum and met monthly with the researcher to discuss questions submitted to the research team. Data were collected through pre- and post-parent surveys, the Parent Checklist of Behaviors (used by parents during the child's completion of homework), pre- and post-inference tests, student diaries, and IHA rubrics. It was found that parent training over a four-week period improved students' abilities to draw inferences. The study also added support to previous research for the "claims that strategies to involve parents in the completion of homework improve parental involvement and student achievement" (p. 161).

Studies also have investigated the relationship between mothers' involvement and children's homework. Pomerantz, Wang, and Ng (2005) investigated mothers' affect while interacting with and assisting their children with homework. Participants were 109 mother-child dyads (63 mother-daughter, 46 mother-son) taking part in the University of Illinois School Engagement Project. Mothers ranged in age from 24 to 53 years and had a modal income of \$40,000 to \$60,000. The children ranged in age from 8 to 12 years and 83% were European American. Data collection was conducted with the children and mothers in two waves 6 months apart. During the first wave, mothers and children took

part in daily phone interviews over the course of two weeks. The interviews were conducted separately at the end of the day after the children had finished homework and asked participants about their interactions (i.e., whether child had homework, mother's assistance with homework, mother's positive and negative affect, mother's perception of child homework behavior). In addition, sets of questionnaires were completed during both waves of data collection. The questionnaires completed by the children assessed child motivational functioning and child emotional functioning. Three sets of analyses were conducted: (a) "an analysis of variance (ANOVA) and a mixed-model multivariate analysis of variance (MANOVA) to provide a preliminary description of mean-level variation at the dyad level as a function of children's gender and grade in school as well as the wave of the study" (pp. 418-419), (b) hierarchical linear modeling (HLM) "to examine the extent to which mothers' affect varies as a function of the homework context" (p. 419), and (c) a series of multiple regression analyses to investigate "the implications of mother's affect for children's motivational and emotional functioning" (p. 419). The researchers found that mothers' assistance with homework decreased as the children progressed through school grades. Mothers reported that the children showed more persistence than helplessness when completing homework. Additionally, child motivational functioning was found to be more positive for girls than boys and emotional functioning was reported to be more positive than negative for the children. In terms of mothers' affect, negative affect increased on days when assistance with homework was high, yet they did not report dampened positive affect, especially while interacting in a fun and loving way with their children during homework assistance. The negative affect appeared to reflect the mothers' perceptions of the children's helplessness in completing

the homework. Yet, on days with heightened assistance, mothers not only reported more helplessness, but also more persistence. Further, mothers' heightened negative affect on days when they assisted with homework and failed to maintain their positive affect was predictive of children's poor emotional and motivational functioning six months later. However, mothers' maintenance of their positive affect appeared "to protect the academically helpless children against future impairments in children's motivational and emotional functioning" (p. 425). These studies show that not only can it be beneficial for the child academically for parents to be involved in their children's homework, but the mothers' affect also appears to have an effect on homework assistance and children's behavior.

Parent participation in school activities. As stated in the U.S. Department of Education's (2010) Section 1118 *Parental Involvement* of the NCLB Act, "parents are encouraged to be actively involved in their child's education at school" (Parental Involvement: Title I, Part A. Non-Regulatory Guidance, p. 3). Studies have been conducted which deal with teacher, parent, or student reports of parents' participation in school activities. Miedel and Reynolds (1999) studied the association between parent reports of involvement in early childhood and indicators of later school achievement. Teacher ratings of parent involvement also were investigated to confirm the results of parent reported involvement. Participants of the study were part of the Chicago Longitudinal Study (CLS), which "investigated the relation between parent retrospective reports of participation in early childhood intervention and children's reading achievement in kindergarten and eighth grade as well as rates of grade retention and special education placement through age 14" (p. 383). Of the 1,050 active CLS

participants, 704 completed a 64-item survey either by phone ($n = 597$) or by mail ($n = 107$). A majority (94%) of the participants were a parent (a majority of those being the mother), and the remaining individuals being some other relation such as grandmother, aunt, or uncle, or a legal guardian or a foster parent. The survey measured participants' answers to items "about their child's early childhood education and current education, their involvement in their child's education, their expectations for their own future and their child's future, current problems facing their family and neighborhood, and general background questions" (pp. 384-385). Teacher ratings or parent participation also were used to determine the robustness of the models. Outcome measures included the Iowa Test of Basic Skills (ITBS) Early Primary Battery (Form 7 Level 5) to measure Kindergarten reading achievement, the ITBS Level 13/14 to measure eighth-grade reading achievement, rate of grade retention, and special education placement. "Hierarchical regression analysis was used to investigate whether ratings of parent involvement were significantly associated with the outcome variables controlling for several explanatory factors" (pp. 389-390) and "Logistic regression analysis was used to determine if parent involvement was associated with rate of grade retention and special education placement" (p. 390). The researchers found children's reading achievement to be higher, their grade retention to be lower, and their years in special education up to age 14 to be fewer when parents' reports of participating in school and the number of activities in which they participated were higher.

Parent-teacher communication. Communication between the parent and the teacher is another form of parental involvement. Much information can be discovered for both the parent and the teacher through their communication with one another. For

example, parents can discover how their children are doing academically, if the teacher has concerns for the child's learning ability or displayed behavior (physical or emotional), and any school events or activities of which they should be aware. Similarly, the teacher can recognize how engaged the parents are in the child's education, their level of concern for the child's academic success, if the parents are willing to assist the child at home academically, and if the parents are willing to volunteer their services for school events or activities. Deslandes, Royer, Turcotte, and Bertrand (1997) studied the influence of parental involvement in schooling and parenting style on the academic achievement of 525 secondary III students aged 14 to 16 (equivalent to ninth grade in the American educational system). Measures utilized in the study included school achievement, which was measured by the year-end point averages (i.e., school grades), parenting style, which was measured by the scores from three Likert-style subscales based on the parenting styles (warmth-acceptance, behavioral control, and psychological autonomy-granting) developed by Steinberg et al. (1992), and parent involvement in schooling, which was measured with a scale developed by Epstein, Connors, and Salinas (1993) that includes 20 parental involvement activities, broken down by at home and at school. The psychometric qualities of the instruments were examined by conducting factor analyses using a principal components procedure, first to study the structure of the parenting-style measure and then with the items included in the parental involvement measure. The data then were analyzed using stepwise regression procedures. It was found that communication with the teachers and students' school grades were negatively correlated. An explanation provided for this finding was that communication between

the teacher and the parents may only take place when the student is having problems in school.

Research on Group Differences

Although Jeynes (2003) discovered in his meta-analysis of parent involvement studies that there were only a small number of studies that examined racial group differences, he did find that parent involvement had a positive effect on the academic achievement of minority groups in the studies examined. Yan and Lin (2005) investigated the predictive ability of three components of parent involvement (family obligations, parent information networks, and family norms) on mathematics achievement by race and ethnicity (i.e., Caucasian American, African American, Hispanic American, Asian American). Data from a sample of 19,386 students in grade 12 from the National Education Longitudinal Study: 1988 (NELS:88) were utilized for the study because it “provided broad coverage of numerous types of family involvement” (p. 121). It was found that there was a statistically significant difference between Caucasian American parents and minority parents. Caucasian American parents were more engaged in their children’s schooling. Although high frequencies revealed that African American parents called the school more often to inquire about their children, Hispanic American and African American set more rules for their children, and Asian Americans had higher educational expectations for their children. There also were statistically significant gains in mathematics scores for all four races.

Occasionally, parents’ involvement can produce unexpected changes in a school or school district that may benefit students and parents, but also may have adverse effects on the students or the parents. Gordon and Nocon (2008) examined changes that

occurred within a predominantly middle- to upper-middle-class school that were brought about by the interactions and involvement of parents. There was a continual socioeconomic and ethnic-related achievement gap within the school which was being addressed by the school community. As a result, the parents were instrumental in the decision-making process to terminate the school's Spanish bilingual education program and to develop new strategies for managing students identified as qualifying for the gifted and talented program, thereby setting up frameworks for segregation of the middle-class and the bused-in low-income Latino students in the school. The authors were most concerned with the consequences from the involvement of the parents in these proceedings. For their case study of these events and the ensuing effects, Gordon and Nocon examined all the pertinent public documents (i.e., school site council minutes, district and school reports, newsletters, articles, field notes, correspondence) collected during the 1990s and through archival research. The researchers discovered that the activism of the middle-class parents to not have their children in bilingual classrooms and to obtain better gifted education and resources for the gifted children, and the activism of the low-income Latino parents to have their children removed from the inclusive Spanish-speaking classrooms and integrated into the English-speaking classrooms, produced further segregation of the two populations in the school as well as the removal of the Spanish bilingual education program and Spanish-speaking staff and aides that/who provided support to the Latino students and parents.

Cultural distinctions. Differences in involvement can be further examined by considering how family involvement of individuals of Hispanic, Latino, or Spanish origin could produce differences in how items on a questionnaire are interpreted. Ryan, Casas,

Kelly-Vance, Ryalls, and Nero (2010) studied ethnicity and cultural orientation as predictors of parents' views of and involvement in children's education. Measures assessed parents' orientations to Latino and non-Latino White American cultures (e.g., the extent to which they thought in the Spanish [English] language, had Latino [White American] friends, and identified as Latino [American]), the importance of children's academic and social success in school, and parents' and others' involvement in their children's education. A total of 104 parents (90% mothers) and their children participated, a majority of whom were of low socioeconomic status. Of these parents, 71% were Latino (of which, 80% were from Mexico) and 28.9% were non-Latino (of which, 16.4% were White and 12.5% were other minority). The children were enrolled in an elementary school's dual-language program that served children from kindergarten through fourth grade. The researchers found that Latino parents considered academic success (e.g., getting good grades, learning math, and getting the right answers) to be more important than social success (e.g., showing respect for teachers, following directions, and playing well with others), whereas non-Latino White parents valued social success more than academic success. In addition, parents who exhibited a stronger White American orientation did not value social and academic success as strongly as parents who exhibited a stronger Latino orientation. Further, both Latino and non-Latino White parents reported greater involvement outside of school. Finally, parents who had a stronger White American cultural orientation indicated being more involved than significant others in their children's education, whereas significant others were recorded as being involved by parents with a stronger Latino cultural orientation.

Because of the differences in what Latino versus non-Latino parents considered important—in terms of social versus academic success—as well as their greater involvement outside of school rather than within the school, Hispanic/Latino parents may believe that particular aspects of family involvement in which they engage are missing from the survey. Further, Hispanic parents may not consider other aspects of parent involvement mentioned on the survey as important and, therefore, may not be as involved in those aspects.

In their qualitative study, Quiócho and Daoud (2006) examined commonly held myths about Latino parents' involvement in their children's education. The study recounted the experiences of teachers, students, and parents involved in educational programs within two underperforming elementary schools in southern California. Interviews and observations served as the primary forms of data collection. The majority of interviews were conducted with 70 Latino parents (50 at School A; 20 at School B) and 78 teachers (75 at School A; 3 at School B). Other individuals interviewed included 16 instructional aides (10 at School A; 6 at School B), three custodial workers (School B), and two office secretaries (School B). Results of the interviews revealed that teachers, administrators, and staff members perceived the involvement of Latino parents in their children's education to be minimal and that speaking Spanish was a barrier for parents assisting their children academically. For instance, they believed that Latino parents were unreliable and refused to volunteer in the classroom, that they did not support the school's homework policy because they did not assist with homework, they did not value schooling as much as other parents, and that Latino parents were unskilled and unprofessional. Conversely, interviews with the Latino parents revealed concern and

interest in their children's education. The parents wished for assistance for their children in learning the academic content, assistance for themselves in understanding the assignments given to their children, improved communication (i.e., timely and frequent) between the school and the home, teachers' respect for and friendliness to the children, access to core science and social studies curriculums for their children, and partnerships with the schools to assist their students' learning (e.g., access to books in Spanish so that the parents could assist their children in understanding school assignments only taught in English). Trends in the classroom observation data indicated the incongruity in the school personnel's and the parents' views of the English learners' lives. Results of this study revealed a large discrepancy in perceptions between school personnel and Latino parents. Consequently, myths surrounding the Latino parents began to be dispelled by school personnel and parents suggested ways in which to improve communication and involvement.

The disparate perceptions originally held by the school personnel and the Latino parents appeared to result in inequitable treatment and opportunities for the Latino children and parents. Because similar forms of inequitable treatment and opportunities may be occurring in other schools and districts around the country, Hispanic/Latino parents may interpret items on the survey in a different manner from non-Hispanic parents. As with the study by Ryan, Casas, Kelly-Vance, Ryalls, and Nero (2010), Hispanic parents may believe that particular aspects of family involvement in which they engage are missing from the survey and they may not consider other aspects of parent involvement included in the inventory as important. As a result, these parents may not be as involved in those aspects as parents of other cultures.

Summary

Much research that deals with overall parental involvement employs theories such as parenting styles or dimensions. These researchers investigate the types of parenting styles themselves or relate them to specific forms of parent involvement that they are investigating, such as differences between maternal and paternal involvement (e.g., McGillicuddy-De Lisi & De Lisi, 2007; McKinney & Renk, 2008). The construct of parent involvement in children's schooling in the current study is based on Epstein's Theory of Overlapping Spheres of Influence, which details the interaction and communication, or partnerships, among families, schools, and the community to bring the three closer together, and her six types of parental involvement.

When examining research studies conducted on parental involvement, it appears that many focus solely on one specific type of involvement such as teachers' perceptions of parent involvement (e.g., Baker, Kessler-Sklar, Piotrkowski, & Parker, 1999), parents' reviews of children's educational attainment (e.g., Englund, Luckner, Whaley, & Egeland, 2004), parents' management of children's education (e.g., Gutman & McLoyd, 2000), or assistance with homework (e.g., Bailey, 2006). Many of the instruments developed garner information on many general forms of involvement or on one particular aspect of parent involvement. Studies may develop and employ measures with a narrow population in mind as well as use a majority of participants from predominantly White, middle-class backgrounds. Researchers may conduct further analyses on the data to determine if there were any gender, socioeconomic status, and/or race/ethnicity effects. Fewer research studies have been conducted with the central purpose of comparing racial group differences or cultural differences.

Analysis of Previously Developed Instruments

When conducting research studies that involve the use of an instrument, researchers tend to use previously developed instruments, an assemblage of more than one instrument, or an instrument they have devised themselves. The use of a particular instrument may depend, for instance, upon the quality and availability of previously developed instruments as well as how well the previously developed instruments pertain to the domain or construct of interest. If the researchers are not able to match a previously developed instrument to the domains or constructs they are trying to measure, then the researchers may be inclined to generate their own instrument by piecing together items from more than one instrument or by creating an original instrument with items they have personally created.

Previously developed instruments may range from nationally recognized instruments developed by major institutions or governmental agencies to author-developed instruments created by an individual or a group of individuals. In relation to the construct of interest for the current study, parent involvement in children's schooling, a fairly exhaustive search was conducted for instruments that would adequately measure this construct.

Journal articles, online resources, and the ETS collection of over 25,000 tests and measurement devices from approximately 1960 to the present were investigated for appropriate instruments to measure the constructs of the study. Searches in the ETS collection are conducted in the same manner as searching electronic databases such as ERIC (Cambridge Scientific Abstracts) or PsycINFO (EBSCO); one may enter key words or phrases, authors' names, titles, and so forth. Any tests or measurement devices

that match the search terms will be listed for perusal. Hundreds of instruments were discovered during the search, especially in the ETS collection, and they were reviewed to identify instruments that appeared to match the constructs of the study. These instruments were then further scrutinized for their correspondence with the constructs.

The investigation of instruments that would adequately measure parent involvement in children's schooling was difficult. It was discovered that approximately 27 instruments were designed for administration to children or teachers (e.g., Teacher Report of Parent Involvement – Short Form, located in the University of South Florida library's ETS microfiche collection), with about 16 designed for administration to parents or guardians. Further, approximately 31 instruments inquired about school experiences, such as academic motivation (Entwistle, 1968) or expectations (Ang & Huan, 2006), or behavior issues (Anderson, Jr., Bashaw, Kim, & Leton, 1969; Kim, Anderson, & Bashaw, 1968) rather than parent involvement in children's schooling. Finally, approximately 29 instruments were inaccessible and, therefore, unable to be examined for correspondence with and appropriateness for the construct of interest.

Of the instruments examined, the inventory by Watkins (1997) was determined to have a comprehensive coverage of the construct of parent involvement in children's schooling for this study. This instrument also was chosen because it does not measure a broad coverage of various forms of parent involvement (e.g., general home and outdoor activities, parenting skills) or a distinct population or topic area (e.g., children in Head Start programs, homework) that are found with many inventories. It was also designed for use with elementary school-aged children. The inventory incorporated different aspects of parent involvement in schooling (i.e., involvement within the home, the child's

learning of information and understanding tasks, awareness of the evaluation of the child on tasks and involvement with the child's performance on tasks, and amount of communication the teacher has with the parent about the child's schooling) with several items representing each sub-factor, rather than just focusing on one particular aspect of parent involvement, such as helping with homework or volunteering in the school, and using few items to represent that factor.

Watkins created the instrument compiled from items he created and from ones created by Ames and Archer (1988) and Ames, Tanaka, Khoju, and Watkins (1993), which he modified for his research. Watkins' instrument was divided into four scales: Parent Mastery Orientation Scale (5-point Likert-type scale ranging from *Not at all* to *A lot*); Parent Performance Orientation Scale (5-point Likert-type scale ranging from *Not at all* to *A lot*); Parent Involvement Scale (5-point Likert-type scale with five items ranging from *Not often* to *Very often* and two items ranging from *Very little time* to *A great deal of time*); and Parent-Perceived Amount of Teacher Communications (5-point Likert-type scale ranging from *Not enough* (1) to *Enough* (3) to *More than enough* (5)). The five items in the Parent Mastery Orientation Scale address aspects such as how often the parent encourages the child to try to find reasons to fix mistakes he/she makes, how often the parent pays close attention to the child's improvement in his/her school learning, and how often the parent encourages the child to feel successful for simply working hard on his/her homework. The six items in the Parent Performance Orientation Scale address aspects such as how often the parent asks the child what grade he/she received on a test or paper, how often the parent congratulates the child when he/she does better than others, and how often the parent tells the child he/she can get good grades if he/she works

hard enough. The seven items in the Parent Involvement Scale address how often the parent interacts with the child verbally or physically, for instance helping the child with math, talking about what the child learned in school, or discussing the child's schoolwork with him/her. The items in the Parent-Perceived Amount of Teacher Communications address whether or not the teacher communicated enough with the parent in eight specific ways, such as sending home activities for the parent and child to work on, telling the parent about the child's strengths and positive qualities, and sending the parent notes or newsletters to keep him/her informed about the classroom.

Cronbach's alphas were examined for each scale. The mastery orientation scale had a coefficient alpha of .67 and the performance orientation scale had a coefficient alpha of .78. Coefficient alphas for the parent involvement scale and the parent-perceived amount of teacher communication scale were .86 and .92, respectively. In addition to obtained parents' perceptions about communication, teachers' perceptions also were attained through the administration of a parallel set of communication items. The correlation between the two scales was .05 (*ns*).

Summary

Journal articles, online resources, and the ETS collection of over 25,000 tests and measurement devices were investigated for appropriate instruments to measure the construct of parent involvement in children's schooling. Instruments examined varied in content and types of questions asked. The search for instruments to measure the construct of parent involvement in children's schooling was difficult. After an extensive search, the instrument by Watkins (1997) was considered to be adequate for the current study.

Validity and Measurement Invariance

Validity

The validity of an instrument's scores may be investigated in a variety of ways during the instrument's development and use. As stated in the *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999), the validation of an instrument is a fundamental concern in interpreting an instrument's scores in relation to the construct the instrument is intended to measure and the scores' relevance to the proposed use. There are a variety of sources of validity "evidence that might be used in evaluating a proposed interpretation of test scores for particular purposes" (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, p. 11). Sources of validity evidence include content validity (i.e., "based on professional judgments about the relevance of the test content to the content of a particular behavioral domain of interest and about the representativeness with which item or task content covers that domain") (Messick, 1993, p. 17), criterion-related validity (i.e., "based on the degree of empirical relationship, usually in terms of correlations or regressions, between the test scores and criterion scores") (Messick, 1993, p. 17), and construct validity (i.e., based on an integration of any evidence that bears on the interpretation or meaning of the test scores) (Messick, 1993). The source of validity evidence that was evaluated in the current study is construct validity. Specifically, the internal structure of the survey was examined to determine if two racial/ethnic subgroups of survey takers differ in their responses to each particular item.

Measurement Invariance

Although researchers often investigate differences between or among different population subgroups (e.g., gender, race), it is not as common for researchers to further evaluate an instrument they are developing in order to determine if the measurement properties of the instrument are equivalent for these subgroups. Measurement invariance is important in the development of an instrument for determining if the measurement properties of the instrument are equivalent for all participating subgroups. If items measuring the underlying construct are not comparable across subgroups, then the instrument is considered to be biased (Brown, 2006).

A method in which to test the construct validity of an instrument is with confirmatory factor analysis (CFA). “CFA can test whether evidence of construct validity is invariant across 2 or more population groups as well as whether group comparisons of sample estimates reflect true group differences and are not contaminated by group-specific attributes that are unrelated to the construct of interest” (Gregorich, 2006, p. S78). Three forms of invariance procedures are used to test the measurement invariance framework: Configural invariance, metric invariance, and scalar invariance. When conducting a multi-group CFA to examine the equivalence of the structural parameters across groups, a baseline model is first tested for each group without any equality constraints. This baseline model is used to evaluate configural invariance, where the same factors are associated with the identical items across the groups (Brown, 2006; Gregorich, 2006). Figure 1 illustrates the model of the factorial structure of the parent involvement inventory. Next, the equality of the factor loadings across the groups is examined (also called metric invariance) (Brown, 2006; Gregorich, 2006). This form of

invariance offers support that the same factors have the same meaning across the groups. Finally, the equality of the indicator intercepts (i.e., scalar invariance) across the groups is evaluated. Uniform DIF is present “when only the item difficulty parameter differs across groups” (Gonzalez-Roma, Tomas, Ferreres, & Hernandez, 2005, p. 150). Nonuniform DIF is present “when the item discrimination parameter differs across groups, whether or not the item difficulty parameter remains invariant” (Gonzalez-Roma, Tomas, Ferreres, & Hernandez, p. 150).

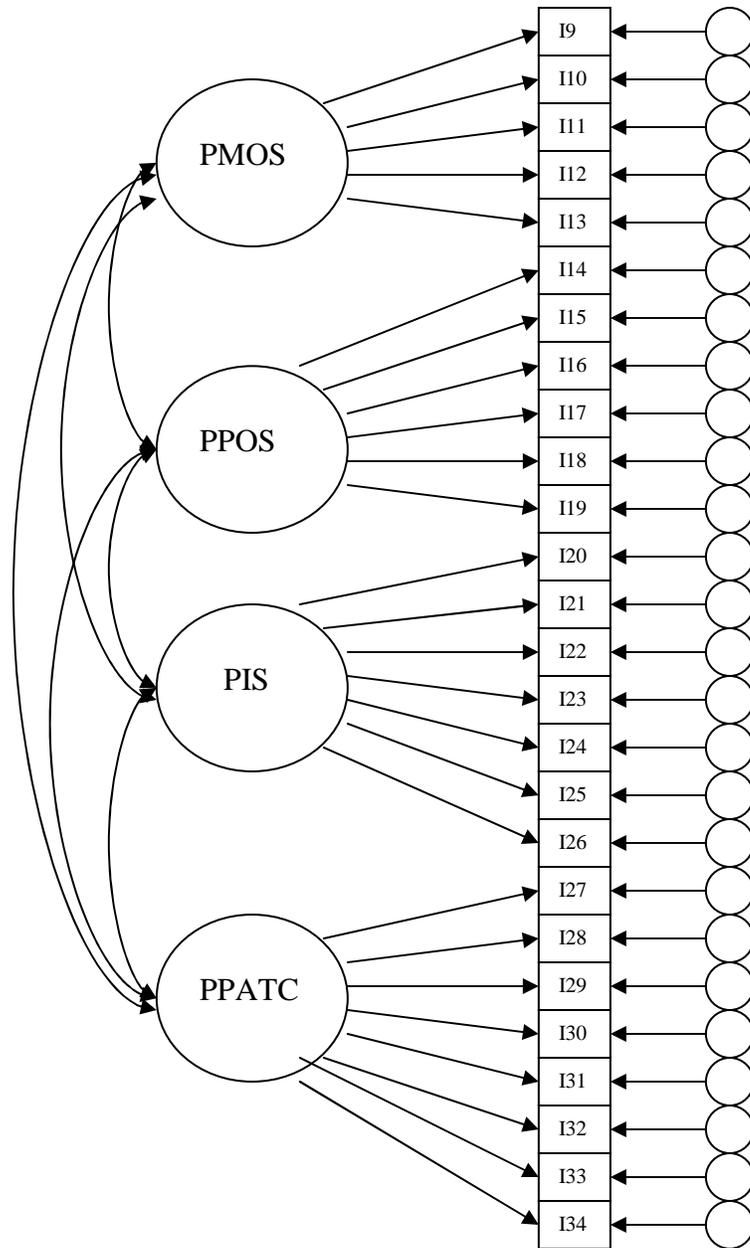


Figure 1. The model of the factorial structure of the parent involvement inventory. PMOS = Parent Mastery Orientation Scale, PPOS = Parent Performance Orientation Scale, PIS = Parent Involvement Scale, and PPATC = Parent-Perceived Amount of Teacher Communication.

Maximum likelihood estimation is used to estimate the parameters. The parameters are assessed for goodness of fit through examination of the chi square (χ^2), root mean square error of approximation (RMSEA), standardized root mean-square residual (SRMR), and comparative fit index (CFI) values. These fit statistics are evaluated to assess the fit of a model(s) to the observed data. Adequate cutoff criteria are specified for given fit indexes in order to minimize Type I error rate (i.e., the probability of rejecting the null hypothesis when it is true) and Type II error rate (i.e., the probability of failing to reject the null hypothesis when it is false) (Hu & Bentler, 1999). The chi square assesses the overall model fit or whether there is a significant difference between the observed correlation matrix and the implied correlation matrix (Schumacker & Lomax, 2004; Stevens, 2002). A non-significant chi square with a *p*-value of $> .05$ indicates acceptable fit (Raykov & Marcoulides, 2000). The RMSEA is a standardized measure of error of approximation that assesses the fit of the hypothesized model to the population. It is a measure of lack of fit per degree of freedom (Stevens, 2002). An RMSEA value of $< .06$ indicates good fit (Hu & Bentler, 1998, 1999). The SRMR is “the average difference between the predicted and observed variances and covariances in the model, based on standardized residuals” (Garson, 2009). An SRMR value of $< .08$ indicates good fit (Hu & Bentler, 1998, 1999). Finally, the CFI compares the fit of the hypothesized model to a baseline or null model, which assumes the latent variables in the model are uncorrelated. It determines the amount by which the fit is improved through the use of the hypothesized model compared to the null model (Stevens, 2002). A CFI of $> .90$ is considered adequate fit (Hair, Black, Babin, & Anderson, 2010).

Summary

The validation of an instrument's scores may be measured in a variety of ways during the instrument's development and use. Sources of validity evidence include content validity, criterion-related validity, and construct validity. The source of validity evidence that will be evaluated in the current study is construct validity.

Measurement invariance is an important aspect in the development of an instrument. It is used to determine if the measurement properties of the instrument are equivalent for all participating subgroups. Three types of invariance procedures may be used to test the measurement invariance framework: Configural invariance, metric invariance, and scalar invariance. Maximum likelihood estimation is used to estimate the parameters. The parameters are assessed for goodness of fit through examination of the chi square (χ^2), root mean square error of approximation (RMSEA), standardized root mean-square residual (SRMR), and comparative fit index (CFI) values.

CHAPTER 3

METHOD

Purpose

The purpose of the study was to expand on the validation of scores from an inventory designed to measure the construct of parent involvement in their children's schooling. There was no previous validation of the instrument, such as an exploratory factor analysis, conducted to investigate the construct validity of the inventory. The author of the inventory calculated Cronbach's alphas for each of the sub-factors to examine the internal reliability of the instrument. Since the development of the inventory, the research has been cited approximately 62 times, but no further psychometric analyses have been conducted on the instrument to determine whether the instrument is functioning similarly across different cultural groups. The current study conducted further validation analyses of the parent involvement inventory through the use of measurement invariance to determine if the measurement properties of the inventory varied by race/ethnicity.

Research Questions

The following are the research questions answered by this study:

1. To what extent do the measurement properties (e.g., factor structure, reliability) of the parent involvement in children's schooling inventory vary by race/ethnicity, specifically White/non-Hispanic and Hispanic?

2. To what extent are there similarities and differences across the two races/ethnicities (i.e., White/non-Hispanic and Hispanic parents or guardians) for items on the inventory that are found to be confusing?
3. To what extent are there similarities and differences across the two races/ethnicities (i.e., White/non-Hispanic and Hispanic parents or guardians) for other important issues or aspects of parent involvement in children's schooling that parents or guardians find to be missing from the inventory?

Research Design

The study was a validation study of an inventory designed to measure parent involvement in children's schooling. The study compared the responses of Hispanic parents/guardians with White/non-Hispanic parents/guardians to investigate if these two groups were interpreting the items on the inventory in the same manner. It involved the administration of the inventory to a sample of parents/guardians of children in grades 3 through 5 in a local school district. There was no randomization of participants being placed into groups (because the children were already established in classrooms) and none of the variables were manipulated. However, elementary schools attended by the children were randomly selected from different socioeconomic areas based on the percent of students on free or reduced lunch, the proportion of students who were non-native speakers of English (ELL), and school size to ensure that children from all economic groups were represented. In addition, the elementary schools selected for inclusion in the study were chosen based on the diversity of the school (i.e., schools containing a large number of Hispanic students) to ensure comparable representation of White/non-Hispanic and Hispanic parents/guardians. Further, interviews were conducted with three Hispanic

parents to obtain feedback as to their comprehension of and the completeness of the inventory.

Sample

The children from three schools contained within every classroom per grade level per school (anticipated number of children per classroom, $n = 20$) were given inventories to bring home to their parents. The participants were instructed through a cover letter (see Appendix A) that the information they provided would be anonymous and that their participation was completely voluntary. The schools attended by the children were randomly selected from different socioeconomic areas based on the percent of students on free or reduced lunch, the proportion of students who were non-native speakers of English (ELL), and school size to ensure that children from all economic statuses were represented. The separation of schools into the three socioeconomic levels was based on the free or reduced-priced lunch levels indicated in the U.S. Department of Education, Institute of Education Sciences' (2007) *National Assessment of Title I Final Report Volume I: Implementation*: high socioeconomic = 0 – 35%, middle socioeconomic = 36 – 74%, low socioeconomic = 75 – 100%. After the separation into socioeconomic levels, there were 33 schools in the high socioeconomic level, 43 schools in the middle socioeconomic level, and 63 schools in the low socioeconomic level.

Because there were disproportionate numbers of schools across the socioeconomic levels with low school enrollment (i.e., below 550) and high school enrollment (i.e., above 916), schools were sampled from the school size range of 550 – 916. After schools below and above this range were eliminated, there were 12 schools in the high socioeconomic level, 33 schools in the middle socioeconomic level, and 15

schools in the low socioeconomic level. In addition, the schools selected for inclusion in the study were chosen based on the diversity of the school (i.e., schools containing the largest estimated number of Hispanic students) to ensure comparable representation of White/non-Hispanic and Hispanic parents/guardians. According to the 2000 U.S. Census (2010), the breakdown of the county by race was as follows: Caucasian = 77.1%; African American = 15.8%; Asian American = 2.7%; Hispanic American = 18%; and Other = 7.2%. Subsequent to this last exclusionary criterion, there were five schools in the high socioeconomic level, seven schools in the middle socioeconomic level, and five schools in the low socioeconomic level. One school from each SES level was selected through simple random sampling using the random sampling function in Microsoft Excel 2003.

In addition to the distribution of inventories, three interviews were conducted. Interviews were carried out with a convenience sample of three Hispanic mothers in order to obtain more in-depth explanations that added to the data obtained from the written responses to the open-ended items on the distributed inventories.

The sample consisted of a total of 275 parents or guardians (including the three individuals who were interviewed) of public elementary school children in grades 3 through 5 in a county in central west-coast Florida. A minimum of 200 (100 White/non-Hispanic, 100 Hispanic) parents or guardians was considered an acceptable minimum sample size. Of the 275 parents/guardians who responded to the survey, 116 were White/non-Hispanic and 126 were Hispanic. The majority of respondents for the White/non-Hispanic group were mothers ($n = 95$, 82%) as were the majority for the Hispanic group ($n = 104$, 83%). Table 1 displays the breakdown of respondents'

relationships to the children by ethnic group. As shown in Table 1, multiple respondents were selected or written on three of the surveys.

Table 1
Respondents' Relationships to the Children by Ethnic Group

Relationship to Child	N	White/ non-Hispanic (N = 116)	Hispanic (N = 126)
		n (%)	n (%)
Mother	199	95 (82)	104 (83) ^a
Father	29	13 (11)	16 (13)
Step-mother	1	---	1 (1)
Step-father	1	---	1 (1)
Grandmother	3	3 (3)	---
Grandfather	1	---	1 (1)
Other	5	3 (3)	2 (2)
Adoptive parent	1	1	---
Foster parent	1	1	---
Aunt (guardian)	3	1	2
Step-grandfather	1	1	---
Multiple Respondents	3	2 (2)	1 (1)
Mother and father	1	1	---
Mother and step-mother	1	1	---
Brother, mother, and father	1	---	1

^aData from three of the 104 Hispanic mothers were obtained during interviews.

Respondents' total number of children ranged from having one child to having five or more, with a large proportion having one (White/non-Hispanic: $n = 19$, 16% ; Hispanic: $n = 31$, 25%), two (White/non-Hispanic: $n = 51$, 44%; Hispanic: $n = 43$, 34%), or three (White/non-Hispanic: $n = 26$, 22%; Hispanic: $n = 33$, 26%) children. Fewer

parents/guardians reported having four (White/non-Hispanic: $n = 13$, 11%; Hispanic: $n = 17$, 13%) or five or more (White/non-Hispanic: $n = 7$, 6%; Hispanic: $n = 2$, 2%) children.

The ages of the children about whom the respondents were completing the survey were 7 years (White/non-Hispanic: $n = 1$, 1%), 8 years (White/non-Hispanic: $n = 14$, 12% ; Hispanic: $n = 19$, 15%), 9 years (White/non-Hispanic: $n = 36$, 31% ; Hispanic: $n = 37$, 29%), 10 years (White/non-Hispanic: $n = 29$, 25% ; Hispanic: $n = 49$, 39%), and 11 years old (White/non-Hispanic: $n = 34$, 29% ; Hispanic: $n = 20$, 16%). Two individuals in the White/non-Hispanic group (2%) and one individual in the Hispanic group (1%) marked two age categories (9 and 10, 9 and 11, and 8 and 11, respectively), indicating they each had two children who fit into the specified age requirements of the study.

There were a total of 116 female children and 123 male children about whom the survey was completed. Of the 116 females, 49 (42%) were in the White/non-Hispanic group and 67 (54%) were in the Hispanic group. Of the 123 males, 66 (57%) were in the White/non-Hispanic group and 57 (46%) were in the Hispanic group. There was one respondent in the White/non-Hispanic group and one respondent in the Hispanic group who marked both *Female* and *Male* for the gender of their children. These individuals had also selected more than one age category, indicating they each had two children who fit into the specified age requirement of the study.

The Hispanic, Latino/a, or Spanish origin of the respondents in the Hispanic group varied across the four categories. Eleven (8%) of the 126 respondents were Mexican, Mexican American, Chicano/a; 51 (40%) were Puerto Rican; 15 (12%) were Cuban, and 49 (39%) were of another Hispanic or Latino/a origin. The origin of the

respondents who selected another Hispanic or Latino/a origin were quite diverse. A breakdown of the respondents' diversity in origin is presented in Table 2.

Table 2
Breakdown of Other Hispanic or Latino/a Origins

Hispanic or Latino/a Origin	<i>N</i>
Colombian	7
Dominican	2
Honduran	2
Panamanian	2
Spanish	2
Venezuelan	2
Brazilian	1
Central & South American	1
Costa Rican	1
Costa Rican, Central American	1
Dominican & Cuban	1
Ecuador	1
El Salvador	1
Peruvian	1
Spanish (Northern Spain)	1
Venezuelan / American	1
Venezuelan / Puerto Rican	1

A majority of the respondents in the Hispanic group reported their race as White ($n = 84, 67\%$). The remaining respondents indicated their race to be Black or African American ($n = 8, 6\%$), American Indian or Alaska Native ($n = 1, 1\%$), or Other ($n = 39, 31\%$). Races indicated by those who selected *Other* were somewhat disparate (see Table 3).

Table 3
Breakdown of Other Races

Races	<i>N</i>
Hispanic	18
Latino/a	3
Multiracial	3
Cuban	1
Hispanic American	1
Human	1
Indigenous	1
Portuguese & African	1
Puerto Rican	1
Spanish	1

The highest level of education reported by respondents was quite varied for both the White/non-Hispanic group and the Hispanic group. Educational levels ranged from graduate degrees to individuals only having an elementary education (see Table 4). As shown in Table 4, there was a greater percentage of White/non-Hispanic respondents who attained a Bachelor’s degree than Hispanic respondents, whereas there were a greater percentage of individuals in the Hispanic group than in the White/non-Hispanic group who achieved some college or a high school diploma. There were similar percentages of respondents in both groups who attained a Graduate degree or an Associate’s degree.

Table 4
Respondents' Highest Level of Education by Ethnic Group

Highest Level of Education	N	White/ non-Hispanic (N = 116)	Hispanic (N = 126)
		n (%)	n (%)
Graduate degree	28	15 (13)	13 (10)
Bachelor's degree	56	38 (33)	18 (14)
Associate's degree	44	20 (17)	24 (19)
Some college	64	23 (20)	41 (33)
High school diploma	42	16 (14)	26 (21)
Other	7	3 (3)	4 (3)
12 th grade	1	---	1
11 th grade	1	---	1
3 rd grade	1	1	---
Business school	1	---	1
Elementary school	1	---	1
Licensed Nurse	1	1	---
Vocational	1	1	---
Multiple degrees	1	1 (1)	---
Bachelor's degree / Associate's degree ^a	1	1	---

^a The two degrees were selected on a survey that had multiple responders, indicating one degree corresponded to the mother and the other corresponded to the father.

Although respondents were represented at all income levels, there was some disparity between the groups as to where the majority of respondents from each group fell within the range of income levels. For the White/non-Hispanic group, the majority (67%) of respondents' total annual household income was within three income levels ranging between \$45,000 and \$149,999. For the Hispanic group, the majority (76%) of respondents' total annual household income was within four income levels ranging

between \$15,000 and \$74,999. Table 5 displays the breakdown of respondents' total annual household income by ethnic group.

Table 5
Respondents' Total Annual Household Income by Ethnic Group

Total Annual Household Income	<i>N</i>	White/ non-Hispanic (<i>N</i> = 108) <i>n</i> (%)	Hispanic (<i>N</i> = 124) <i>n</i> (%)
Less than \$10,000	9	3 (3)	6 (5)
\$10,001 to \$14,999	9	3 (3)	6 (5)
\$15,000 to \$24,999	25	2 (2)	23 (19)
\$25,000 to \$34,999	29	7 (6)	22 (18)
\$35,000 to \$44,999	34	14 (13)	20 (16)
\$45,000 to \$74,999	50	22 (20)	28 (23)
\$75,000 to \$99,999	39	26 (24)	13 (10)
\$100,000 to \$149,999	29	25 (23)	4 (3)
\$150,000 to \$199,999	5	4 (4)	1 (1)
\$200,000 or more	3	2 (2)	1 (1)

When the percentages for each income level for the two groups in the sample were compared with estimated percentages for the county—obtained from the U.S. Census Bureau's (2011) 2009 American Community Survey (ACS) 1-Year Estimates—the percentages were fairly comparable for approximately half the levels for both groups (see Table 6). Three of the levels (\$35,000 to \$44,999; \$75,000 to \$99,999; \$100,000 to \$149,999) for the White/non-Hispanic group had percentages that were somewhat higher than the 2009 ACS estimates, whereas the remaining levels were somewhat lower than the estimates. Similarly, four of the income levels (\$15,000 to \$24,999; \$25,000 to \$34,999; \$35,000 to \$44,999; \$75,000 to \$99,999) for the Hispanic group had

percentages that were somewhat higher than the 2009 ACS estimates, whereas the remaining levels were somewhat lower than the estimates. The only income level that was equivalent in the current sample and the ACS estimates was the \$200,000 or more income level for the Hispanic group.

Table 6
Comparison of Percentages per Income Level by Ethnic Group between the Current Study and the 2009 ACS Estimates

Total Annual Household Income	2009 ACS Estimates White/non-Hispanic (N = 280,712)	White/non-Hispanic (N = 108)	2009 ACS Estimates Hispanic (N = 87,527)	Hispanic (N = 124)
Less than \$10,000	5	3	11	5
\$10,001 to \$14,999	5	3	6	5
\$15,000 to \$24,999	10	2	14	19
\$25,000 to \$34,999	10	6	13	18
\$35,000 to \$44,999	9	13	12	16
\$45,000 to \$74,999	25	20	25	23
\$75,000 to \$99,999	13	24	9	10
\$100,000 to \$149,999	13	23	7	3
\$150,000 to \$199,999	5	4	2	1
\$200,000 or more	5	2	1	1

Instrumentation

The main inventory was created by Watkins (1997), and the demographic section and two open-ended items were added by the current author (see Appendix B). There are a total of 36 items on the inventory. Items in the demographic section included the following: relationship to child, total number of children, age of child, gender of child, whether or not the parent/guardian is of Hispanic, Latino, or Spanish origin, race of parent/guardian, highest level of education, and total annual household income. The main inventory was comprised of 26 closed-ended items representing the main construct of *Parent Involvement*. The readability of the items on the main inventory was assessed using Microsoft Word 2007. The Flesch-Kincaid grade level index was 7.5, indicating that respondents need a seventh- to eighth-grade reading level to understand the inventory. The Flesch Reading Ease score was 70.4 (values range from 0 to 100; the closer the score is to 100, the easier the content is to comprehend). The sub-factors of the main construct and their definitions (as defined by the current author) are presented in Table 7.

The four sub-factors of the main inventory were mapped with Epstein's six types of involvement. The sub-scales mapped with three of the six types of involvement: Parenting (offer families assistance with parenting and childrearing skills, in understanding child development, and in setting home conditions that support children as students), Communicating (keep families up-to-date on school programs and student progress through effective school-to-home and home-to-school communications), and Learning at Home (offer suggestions and techniques to involve families in learning activities with their children at home). The three types of involvement that did not have

associated items from the inventory were Volunteering (to support children and school programs, improve outreach, training, and schedules to involve families as volunteers and improve family attendance at events at school and in other locations), Decision Making (include families as participants in school decisions, governance, and advocacy through PTA/PTO, school councils, committees, and other parent organizations), and Collaborating with the Community (coordinate resources and services for families, children, and the school with businesses, agencies, and other groups; provide services to the community). Although there were no items mapping with these three types of involvement, suggestions could be made by the respondents in the current study for additions to the survey for aspects of parent involvement that are missing from the inventory that would map onto these types of involvement. The mapping of the four sub-factors with Epstein’s types of involvement is displayed in Figure 2.

Table 7
Factors of the Main Construct

Main Factor with Sub-factors	Definitions of the Sub-factors	Number of Items per Factor (N = 26)
Parent Involvement		
Parent Involvement Scale	The involvement a parent has with the child’s schooling that takes place at home	7
Parent Mastery Orientation Scale	The parent’s involvement with the child’s learning of information and understanding tasks	5
Parent Performance Orientation Scale	The parent’s awareness of the evaluation of the child on tasks and involvement with the child’s performance on tasks	6
Parent-Perceived Amount of Teacher Communication	The amount of communication the teacher has with the parent about the child’s schooling	8

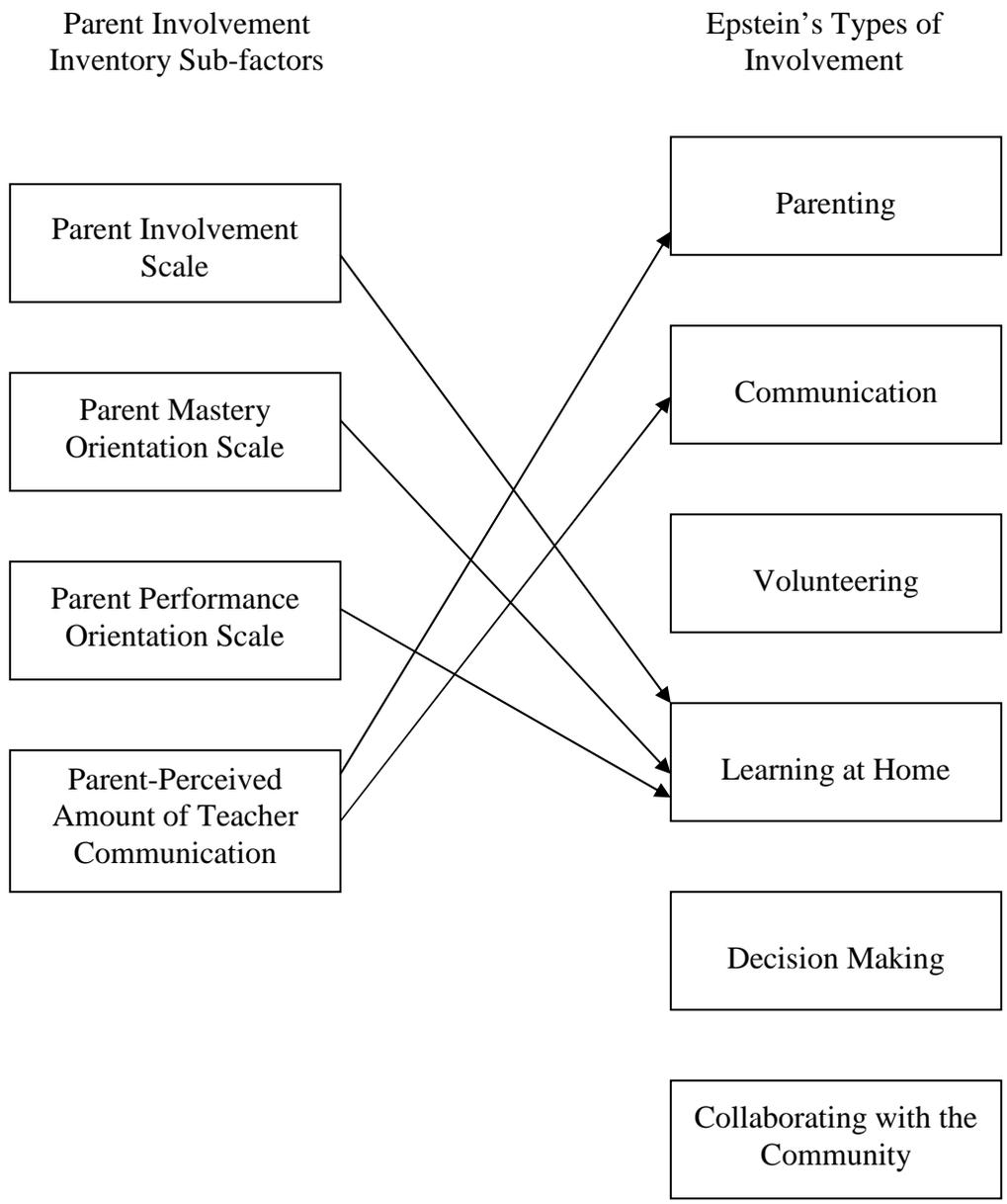


Figure 2. The mapping of the four sub-factors with Epstein's six types of involvement.

The final two open-ended items requested feedback on the items contained within the inventory and to list other issues or aspects of parent involvement in children's schooling that the respondents believed were important but were missing from the inventory. The final two open-ended items were included on the inventory to augment the face-to-face interviews with a larger number of responses to these topics.

In addition to the distribution of an English language version of the inventory, a Spanish version was also created at the request of the school district (see Appendix E). The English language version of the inventory was translated into Spanish for the researcher by a graduate student whose first language was Spanish. This version of the inventory was distributed to students whose parents only speak and read Spanish and cannot speak or read English. Although a Spanish version of the inventory was distributed ($N = 50$ were returned), only data from the English version of the inventory were included in the current study. The reason for the inclusion of only the English version was because the Spanish version was a requirement by the school district and did not go through the typical rigorous process of translation, back-translation, and expert review of the translated survey by several individuals. The graduate student who translated the documents was from Puerto Rico. During her translation of the documents, she indicated that particular words could be translated in two different ways. One of the word choices was what was typically said in Puerto Rico and the other term was what she said was more universal in the Spanish language. The words that were more universal in the Spanish language were the terms that were used in the translated documents.

Data Collection Procedures

A representative from the Office of Assessment and Accountability in the county school district in which the study was conducted was contacted by the researcher to obtain answers to logistical inquiries pertaining to the study. Answers were obtained for the appropriate manner in which to gain access to the schools, the appropriate individuals to be contacted in order to conduct research in the school district and for gaining access to the schools, the proper forms to be completed to conduct research in the schools, and the best manner in which to administer the surveys for the parents to complete. Further, a fifth grade school teacher and the school district's Supervisor of the Programs for English Language Learners were contacted by the researcher to obtain answers to inquiries pertaining to outreach to and involvement of parents/guardians from different cultures, ELL liaisons and resource teachers for the schools, ways to increase return rates, and other ways in which the surveys could be administered (e.g., events, activities). Questions also were asked about obtaining access to schools and classrooms from principals and teachers as well as in relation to the students bringing the surveys home to parents/guardians. Prior to the collection of data, the county school district form requesting permission to conduct research in the schools was completed for the study and submitted to the county for approval. In addition, the application for review of the study was submitted for approval to the university Institutional Review Board (IRB). Upon approval to conduct the study from the county school district and the IRB, school principals were contacted to gain access to the schools and classrooms for administration of the inventory.

Principals from three elementary schools (School A, School B, and School C), one in each socioeconomic area (low, middle, high), initially were telephoned by the researcher and messages were left either on the principals' voicemails or with their secretaries stating the reason for the phone call and a request for a return phone call. After receiving no return phone calls after approximately five days, subsequent phone calls were made to the three schools. Upon continued lack of return communication, further phone calls were made with messages left and emails were sent to the principals before direct communication was achieved with the principal or a school representative about the distribution of inventory packets. A fourth school (School D) was contacted and messages left during the interim when phone messages and emails to School C were not being returned. Upon a final phone call to School C, the researcher was able to speak with the principal's secretary and was given permission to deliver surveys for distribution. School D was not contacted again by the researcher.

The principals from Schools A, B, and C approved the distribution of inventory packets to the third, fourth, and fifth grade students in their schools. Upon approval, inventories were delivered to the front offices of the schools on January 20, 2011 (School A), January 28, 2011 (School B), and February 4, 2011 (School C). None of the three principals whose schools were sampled for the study would allow the researcher access to the classrooms and the students. Rather, the researcher was instructed by each principal or school representative to deliver surveys to the school's front office. The front office staff dispensed the surveys to the teachers who then distributed them to the students in their classrooms.

The principal at School A provided an estimated number of students per classroom for each grade level (i.e., grade 3 = 18 students, grade 4 = 22 students, grade 5 = 22 students) as well as the number of classes per grade level (i.e., grade 3 = eight classes, grade 4 = six classes, grade 5 = six classes). Individual envelopes containing the English version of the survey and a cover letter explaining the study were bundled with the requisite number of packets per class and grade level. Because there was a small percentage of parents/guardians at the school who spoke and read only Spanish, the principal instructed the researcher to include 20 packets of the Spanish version of the survey and the cover letter. The principals at School B and School C did not provide estimated numbers of students per class or grade. The researcher estimated the numbers of surveys needed for these schools based on the prior years' number of students taking the FCAT (Florida Comprehensive Assessment Test), which was available on the Florida Department of Education website. These estimated numbers of surveys to be delivered were verified with the principals and modified as appropriate in order to ensure that each school was provided with a sufficient amount. School B received 250 English inventory packets and 200 Spanish inventory packets. School C received 216 English inventory packets and a much larger number of Spanish inventory packets. An original estimate of the number of Spanish inventory packets needed was 240; however, the principal suggested delivering more envelopes containing the Spanish version of the inventory so the amount was amended to 330 inventory packets. It is unknown how many surveys (English version or Spanish version) were actually distributed to the students by the three schools.

Along with the delivery of the survey packets, stickers (bundled in groups of 10) were provided with the inventory packets for teachers at the schools to hand out to the children to thank them for their time and assistance. In addition, stacks of letters to the teachers also were provided for distribution along with the inventory packets and stickers for the children. The letter to the teachers was a modified version of the cover letter to the parents (see Appendix F). This modified letter was addressed to the teachers and explained the purpose of the study, the documents enclosed within the envelopes, that there were two versions of the survey, and asked for their assistance in distributing the envelopes to their students and requesting that the students bring them home to their parents.

Data were collected through the distribution of envelopes containing the inventory to the children in the specified classrooms. Bright fuchsia paper with a short message stating “To Parent / Guardian, Please Read the Papers inside this Envelope” was attached to the fronts of the envelopes in order to catch the eyes of the parents/guardians and encourage them to read the enclosed documents. Included with the inventory was a document containing an explanation of the study and that their responses were completely anonymous and that there was no benefit for or risk to them for helping with the study (see Appendix A). In addition, Spanish language versions of the short message attached to the fronts of envelopes (i.e., “Para Padres / Encargados, Por favor Lea los Papeles dentro de este Sobre”) and the cover letter (see Appendix D) that accompanied the inventory were translated from the English versions of the documents. Consent was recognized if the parent completed and returned the inventory. A pre-stamped, self-

addressed envelope was included for the parent or guardian to return the completed inventory.

In addition to the distribution of inventories, interviews were conducted with three Hispanic mothers to obtain more in-depth explanations that added to the data obtained from the written responses to the open-ended items on the distributed inventories. During the interviews, the researcher asked the interviewees to provide feedback about the inventory while they were completing it. Specifically, the interviewees were asked to provide feedback for items that they considered confusing, to explain issues or aspects of parent involvement in children's schooling that they believed were important but were missing from the inventory, and any other perceptions they had about aspects of the inventory in general. The interviewees were asked to sign a consent form (see Appendix C) prior to the interview being conducted and no identifying information (i.e., interviewee's name) was used in the study.

Data Analysis

Both quantitative and qualitative analyses were conducted on the obtained data. Data for the 26 items in the main inventory were first analyzed through descriptive statistics (i.e., mean, standard deviation, skewness, kurtosis) by group assignment (i.e., White/non-Hispanic; Hispanic) using SAS version 9.2 (SAS Institute Inc., 2009). Confirmatory factor analyses (CFA) utilizing maximum likelihood (ML) estimation were conducted on the items of the inventory using MPlus 6.0 (Muthen & Muthen, 2007). ML estimation is the most widely used method of estimation in applied CFA research (Brown, 2006). Cronbach's alphas were obtained for each sub-factor of the inventory for

the White/non-Hispanic parents/guardians and Hispanic parents/guardians using SAS version 9.2 (SAS Institute Inc., 2009).

The confirmatory factor model was assessed for goodness of fit through examination of the chi square (χ^2), root mean square error of approximation (RMSEA), standardized root mean-square residual (SRMR), and comparative fit index (CFI) values. These fit statistics were evaluated to assess the fit of a model to the observed data. The chi square assesses the overall model fit or whether there is a significant difference between the observed correlation matrix and the implied correlation matrix (Schumacker & Lomax, 2004; Stevens, 2002). The RMSEA is a standardized measure of error of approximation that assesses the fit of the hypothesized model to the population. It is a measure of lack of fit per degree of freedom (Stevens, 2002). The SRMR is “the average difference between the predicted and observed variances and covariances in the model, based on standardized residuals” (Garson, 2009). Finally, the CFI compares the fit of the hypothesized model to a baseline or null model, which assumes the latent variables in the model are uncorrelated. It determines the amount by which the fit is improved through the use of the hypothesized model compared to the null model (Stevens, 2002). Although the χ^2 was examined, the other fit indices were relied on more to evaluate model fit (Brown, 2006).

The measurement model underlying the inventory included four correlated factors or subscales, and each item only loaded onto one factor. When investigating measurement invariance, a baseline model is initially used to evaluate each group without any equality constraints (configural invariance). For this first model, the number of factors and the pattern of fixed and free parameters across racial/ethnic group (i.e.,

White/non-Hispanic and Hispanic) is the same. Model 1 is evaluated with the least restricted solution. If satisfactory fit is obtained in both groups with Model 1, then subsequent models are evaluated using nested chi square (χ^2) methods with more restrictive constraints. The second model evaluates the equality of the factor loadings across the groups (metric invariance). For Model 2, the factor loadings are set equal across racial/ethnic group and the change in χ^2 ($\Delta\chi^2$) relative to the change in degrees of freedom (Δdf), as compared to Model 1, is examined. This test measures whether the factors have the same meaning across different groups. Finally, the third model evaluates the equality of the indicator intercepts (scalar invariance) across racial/ethnic group. The intercepts are set equal across racial/ethnic group and the $\Delta\chi^2$ relative to the Δdf , as compared to Model 2, is examined. This test measures whether the two groups would show equivalent observed scores.

Finally, responses to the two open-ended items were examined. Feedback provided for items that were considered confusing were examined for consensus and for possible future modifications to the inventory. The written responses were coded to generate themes (Miles & Huberman, 1994) for important issues or aspects of parent involvement in children's schooling that were missing from the inventory. The researcher and another graduate student coded the written responses. Any disagreements in coding were discussed between the coders for resolution. Inter-coder agreement was estimated. The percentage of agreement was calculated with the following equation (Miles & Huberman, 1994, p. 64):

$$\text{reliability} = \frac{\text{number of agreements}}{\text{total number of agreements} + \text{disagreements}}$$

IRB and the Protection of Human Subjects

Research studies conducted through universities by professors, faculty, or students for various research activities, dissertations, or theses must be submitted to and approved by the Institutional Review Board (IRB) prior to any research being conducted. This requirement is particularly important when research utilizes human beings as participants. The purpose of the IRB and its approval is to guarantee the protection of the rights and welfare of human subjects in research. IRB approval is necessary for the current study because it is a dissertation and because of its inclusion of human participants.

CHAPTER 4

RESULTS

Descriptive Statistics

Data for the 26 items in the main inventory were first analyzed through descriptive statistics (i.e., mean, standard deviation, skewness, kurtosis) by group assignment (i.e., White/non-Hispanic; Hispanic) using SAS version 9.2 (SAS Institute Inc., 2009). Means for the White/non-Hispanic group ranged from 3.09 to 4.67 on a 5-point Likert-type scale. The distributions for a majority of the items appeared to be approximately normal with skewness and kurtosis values between -1 and 1. The skewness value for item 18 was small but the distribution was platykurtic. Distributions for items 9, 11, 15, 19, 20, 21, and 24 were negatively skewed with values ranging from -1.04 to -2.10. Further, the distributions for items 9, 11, 12, 15, 19, and 20 were leptokurtic. The marked skewness and kurtosis of the distributions for several of the items indicated univariate non-normality of the data. This univariate non-normality implied that the assumption of multivariate normality was violated. Mardia's tests of multivariate skewness and multivariate kurtosis were run using SAS version 9.2. Results of the tests for multivariate skewness and kurtosis for the White/non-Hispanic group were statistically significant (skewness = 4353, $p < .0001$; kurtosis = 5.97, $p < .0001$), verifying that there was multivariate non-normality of the data. A summary of the descriptive statistics for the White/non-Hispanic group is presented in Table 8.

Table 8

Descriptive Statistics of the Items for the White/non-Hispanic Group

Item	<i>N</i>	Mean	<i>SD</i>	Skewness	Kurtosis
9. I encourage my child to try to find the reason for the mistakes he or she makes.	114	4.31	0.72	-1.26	3.34
10. I encourage my child to do extra work to learn new things.	116	3.63	1.05	-0.44	-0.30
11. I pay close attention to my child's improvement in his or her school learning.	116	4.56	0.69	-1.44	1.31
12. I try to find out from my child what he or she wants to learn about.	116	3.97	0.96	-0.74	0.23
13. I encourage my child to feel successful for simply working hard on his or her homework.	116	4.39	0.74	-0.90	-0.15
14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	116	3.66	1.32	-0.54	-0.91
15. I pay close attention to the grades my child receives.	116	4.67	0.59	-1.63	1.62
16. When my child is making a lot of mistakes on a task, I encourage him or her to try a different task.	116	3.16	1.20	0.00	-0.95
17. I congratulate my child when he or she does better than others.	114	3.70	1.30	-0.84	-0.38
18. I often tell my child that he or she can do better than others if he or she tries hard enough.	115	3.09	1.46	-0.05	-1.33
19. I often tell my child he or she can get good grades if he or she works hard enough.	116	4.49	0.86	-1.81	2.94

Item	<i>N</i>	Mean	<i>SD</i>	Skewness	Kurtosis
20. How often do you talk to your child about what he or she is learning in school?	116	4.56	0.75	-2.10	5.29
21. How often do you review and discuss with your child the graded assignments and work he or she brings home?	116	4.21	0.96	-1.04	0.34
22. How often do you help your child with math?	116	3.73	1.33	-0.75	-0.63
23. How often do you help your child with reading?	116	3.65	1.30	-0.64	-0.72
24. How often do you talk with your child about your expectations regarding his or her homework?	116	4.40	0.85	-1.21	0.42
25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?	116	3.45	1.20	-0.43	-0.55
26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day?	116	3.31	1.27	-0.37	-0.82
27. Sent home activities for my child and me to work on together.	116	3.21	0.97	0.38	0.15
28. Gave me reports or notes about my child's progress.	116	3.42	1.06	-0.15	-0.38
29. Asked me to help my child with his or her schoolwork.	114	3.24	0.94	0.21	0.24
30. Told me about my child's strengths and positive qualities.	116	3.44	1.14	-0.26	-0.59
31. Gave me ideas about how to help my child learn.	114	3.19	0.99	0.04	0.04
32. Sent me a folder of my child's classwork with comments.	115	3.39	1.22	-0.29	-0.72

Item	<i>N</i>	Mean	<i>SD</i>	Skewness	Kurtosis
33. Kept me informed about what my child was learning.	115	3.22	1.18	-0.08	-0.59
34. Sent me newsletters or notes to keep me informed about the classroom.	115	3.17	1.23	-0.09	-0.72

Means for the Hispanic group ranged from 2.96 to 4.77. The distributions for items 10, 12, 25, 26, 27, 28, 29, 30, 31, 32, 33, and 34 appeared to be approximately normal with skewness and kurtosis values between -1 and 1. The skewness value for item 16 was small but the distribution was platykurtic. The distributions for items 9, 11, 13, 14, 15, 17, 18, 19, 20, 21, 22, 23, and 24 were negatively skewed with values ranging from -1.04 to -3.15. Further, the distributions for items 9, 11, 13, 14, 15, 19, 20, 21, and 24 were leptokurtic. The marked skewness and kurtosis of the distributions for many of the items indicated univariate non-normality of the data. This univariate non-normality implied that the assumption of multivariate normality was violated. Mardia's tests of multivariate skewness and multivariate kurtosis were run to determine if the data were multivariate non-normal. Findings from the tests for multivariate skewness and kurtosis for the Hispanic group were statistically significant (skewness = 5198, $p < .0001$; kurtosis = 14.54, $p < .0001$), confirming that there was multivariate non-normality of the data. A summary of the descriptive statistics for the Hispanic group is presented in Table 9.

Table 9

Descriptive Statistics of the Items for the Hispanic Group

Item	<i>N</i>	Mean	<i>SD</i>	Skewness	Kurtosis
9. I encourage my child to try to find the reason for the mistakes he or she makes.	125	4.30	0.90	-1.38	1.89
10. I encourage my child to do extra work to learn new things.	126	4.01	0.99	-0.77	-0.21
11. I pay close attention to my child's improvement in his or her school learning.	126	4.69	0.63	-2.65	9.68
12. I try to find out from my child what he or she wants to learn about.	126	4.14	0.88	-0.71	-0.06
13. I encourage my child to feel successful for simply working hard on his or her homework.	126	4.56	0.70	-1.59	2.09
14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	126	4.10	1.12	-1.34	1.32
15. I pay close attention to the grades my child receives.	126	4.77	0.48	-1.95	3.10
16. When my child is making a lot of mistakes on a task, I encourage him or her to try a different task.	125	3.37	1.45	-0.42	-1.18
17. I congratulate my child when he or she does better than others.	126	4.07	1.28	-1.22	0.30
18. I often tell my child that he or she can do better than others if he or she tries hard enough.	126	3.92	1.35	-1.15	0.08
19. I often tell my child he or she can get good grades if he or she works hard enough.	126	4.67	0.76	-3.15	11.57

Item	<i>N</i>	Mean	<i>SD</i>	Skewness	Kurtosis
20. How often do you talk to your child about what he or she is learning in school?	126	4.48	0.79	-1.67	3.08
21. How often do you review and discuss with your child the graded assignments and work he or she brings home?	126	4.32	0.86	-1.27	1.39
22. How often do you help your child with math?	125	4.00	1.24	-1.04	0.03
23. How often do you help your child with reading?	125	3.97	1.24	-1.05	0.05
24. How often do you talk with your child about your expectations regarding his or her homework?	126	4.50	0.80	-1.63	2.07
25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?	126	3.84	1.08	-0.67	-0.08
26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day?	126	3.86	1.09	-0.61	-0.50
27. Sent home activities for my child and me to work on together.	126	2.99	1.12	0.02	-0.32
28. Gave me reports or notes about my child's progress.	126	3.44	1.06	-0.14	-0.31
29. Asked me to help my child with his or her schoolwork.	126	3.00	1.19	-0.12	-0.60
30. Told me about my child's strengths and positive qualities.	126	3.33	1.26	-0.29	-0.80
31. Gave me ideas about how to help my child learn.	126	2.96	1.23	-0.03	-0.71
32. Sent me a folder of my child's classwork with comments.	126	3.28	1.22	-0.18	-0.88

Item	<i>N</i>	Mean	<i>SD</i>	Skewness	Kurtosis
33. Kept me informed about what my child was learning.	126	3.13	1.23	-0.02	-0.89
34. Sent me newsletters or notes to keep me informed about the classroom.	126	3.11	1.25	-0.16	-0.84

As shown in Figure 3, the item means for the two groups appear to be fairly similar for the 26 items on the inventory.

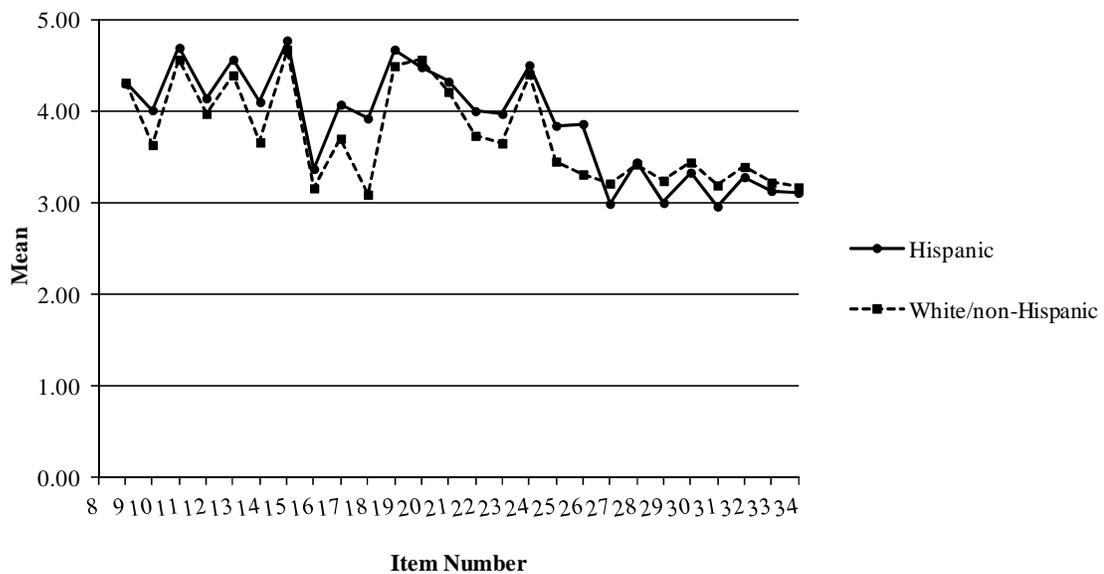


Figure 3. A comparison of the item means for the White/non-Hispanic group and the Hispanic group.

Cronbach's alphas were obtained for each sub-factor of the model for the White/non-Hispanic group data and the Hispanic group data using SAS version 9.2 (SAS Institute Inc., 2009) in order to examine the internal reliability of the scales. The resulting Cronbach's alphas were compared with the alphas obtained by Watkins (1997) (see Table 10) for each of the sub-factors. The coefficient alphas of three (PMOS, PIS, PPATC) of the four scales across the studies/groups were similar. However, the alphas

of the PPOS scale for the two groups in the current study were lower than the coefficient alphas obtained in the Watkins study.

Table 10

Comparison of Cronbach's Alphas for the Four Sub-factors for the Watkins Study and the Current Study

Sub-factor	Number of Items	Cronbach's Alphas		
		Watkins Study	White/non-Hispanic Group	Hispanic Group
PMOS	5	.67	.65	.68
PPOS	6	.78	.57	.68
PIS	7	.86	.82	.84
PPATC	8	.92	.91	.87

Note. PMOS = Parent Mastery Orientation Scale; PPOS = Parent Performance Orientation Scale; PIS = Parent Involvement Scale; PPATC = Parent-Perceived Amount of Teacher Communication.

Confirmatory Factor Analysis

A confirmatory factor analysis (CFA) utilizing maximum likelihood (ML) estimation was conducted on the items of the inventory for the White/non-Hispanic group using MPlus 6.0 (Muthen & Muthen, 2007). This was the baseline model with which the Hispanic group was compared. The chi-square and fit indices (i.e., CFI, RMSEA, SRMR) were examined to ascertain the fit of the model. Upon examination of these indices, it was determined that the fit of the model was poor. The chi-square was statistically significant ($\chi^2 = 538.33, p < .001$), indicating poor fit, and the values for the CFI (0.80), RMSEA (0.09), and SRMR (0.10) were not within the adequate cut-off criteria specifications. As a result of the non-normality of the data and the poor fit of the model, CFAs also were conducted using maximum likelihood estimation with robust standard errors (MLR), maximum likelihood with robust standard error and a mean-

adjusted chi-square (MLM), and weighted least squares mean and variance adjusted (WLSMV) with defining the variables as categorical in order to determine if the fit of the model improved as a result of these estimation techniques. Analyses utilizing these other estimation techniques resulted in continued poor fit of the model.

Subsequently, further analyses were run using ML estimation in order to determine the source of the bad fit (e.g., items loading on more than one factor, correlation of item errors). Determination of bad fit was ascertained through the examination of the modification indices. Modification indices signify the approximate amount that the chi-square will decrease when the parameters are freely estimated as part of the model (Brown, 2006). High modification indices (> 3.84) are signs of locations of bad fit. The chi-square critical value of 3.84 (with 1 degree of freedom) is the value that should be exceeded at $p = .05$ in order to free the parameter and improve model fit (Brown, 2006). First, the modification indices were reviewed to determine if there were any items loading on more than one factor. Item 20 appeared to be loading on two factors with somewhat high modification indices (i.e., 10.87, 6.88). Next, the modification indices were examined to determine if there were any correlated errors between the items. A number of items (see Table 11) appeared to have correlated errors.

Table 11

Items with Correlated Errors for the White/non-Hispanic Group

Item Pairs	Modification Index
Pair 1: 26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day? 25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?	24.04
Pair 2: 21. How often do you review and discuss with your child the graded assignments and work he or she brings home? 20. How often do you talk to your child about what he or she is learning in school?	20.75
Pair 3: 29. Asked me to help my child with his or her schoolwork. 27. Sent home activities for my child and me to work on together.	20.66
Pair 4: 15. I pay close attention to the grades my child receives. 14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	14.55
Pair 5: 15. I pay close attention to the grades my child receives. 11. I pay close attention to my child's improvement in his or her school learning.	13.55
Pair 6: 25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day? 20. How often do you talk to your child about what he or she is learning in school?	9.16
Pair 7: 30. Told me about my child's strengths and positive qualities. 28. Gave me reports or notes about my child's progress.	8.93
Pair 8: 34. Sent me newsletters or notes to keep me informed about the classroom. 13. I encourage my child to feel successful for simply working hard on his or her homework.	8.72

Item Pairs	Modification Index
Pair 9: 32. Sent me a folder of my child's classwork with comments. 29. Asked me to help my child with his or her schoolwork.	8.41
Pair 10: 28. Gave me reports or notes about my child's progress. 25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?	8.13
Pair 11: 26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day? 23. How often do you help your child with reading?	8.07
Pair 12: 23. How often do you help your child with reading? 22. How often do you help your child with math?	7.67
Pair 13: 24. How often do you talk with your child about your expectations regarding his or her homework? 12. I try to find out from my child what he or she wants to learn about.	7.64
Pair 14: 29. Asked me to help my child with his or her schoolwork. 26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day?	7.41
Pair 15: 29. Asked me to help my child with his or her schoolwork. 14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	6.45
Pair 16: 23. How often do you help your child with reading? 21. How often do you review and discuss with your child the graded assignments and work he or she brings home?	6.43
Pair 17: 32. Sent me a folder of my child's classwork with comments. 27. Sent home activities for my child and me to work on together.	6.05

Item Pairs	Modification Index
Pair 18: 33. Kept me informed about what my child was learning. 10. I encourage my child to do extra work to learn new things.	5.96
Pair 19: 24. How often do you talk with your child about your expectations regarding his or her homework? 11. I pay close attention to my child's improvement in his or her school learning.	5.95
Pair 20: 28. Gave me reports or notes about my child's progress. 14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	5.94
Pair 21: 25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day? 21. How often do you review and discuss with your child the graded assignments and work he or she brings home?	5.85
Pair 22: 24. How often do you talk with your child about your expectations regarding his or her homework? 19. I often tell my child he or she can get good grades if he or she works hard enough.	5.69
Pair 23: 27. Sent home activities for my child and me to work on together. 16. When my child is making a lot of mistakes on a task, I encourage him or her to try a different task.	5.64
Pair 24: 28. Gave me reports or notes about my child's progress. 10. I encourage my child to do extra work to learn new things.	5.52
Pair 25: 31. Gave me ideas about how to help my child learn. 9. I encourage my child to try to find the reason for the mistakes he or she makes.	5.34
Pair 26: 20. How often do you talk to your child about what he or she is learning in school? 15. I pay close attention to the grades my child receives.	5.32

Item Pairs	Modification Index
Pair 27: 24. How often do you talk with your child about your expectations regarding his or her homework? 9. I encourage my child to try to find the reason for the mistakes he or she makes.	5.14

A CFA also was conducted on the items of the inventory for the Hispanic group. The chi-square and fit indices were examined to ascertain the fit of the model. Upon examination of these indices, it was determined that the fit of the model was poor. The chi-square was statistically significant ($\chi^2 = 652.15, p < .001$), indicating poor fit, and the values for the CFI (0.72), RMSEA (0.10), and SRMR (0.11) were not within the adequate cut-off criteria specifications. Further analyses were conducted to determine if item 20 was showing similar tendencies to load on more than one factor, as seen with the White/non-Hispanic group. The modification indices were reviewed to determine if there were any items loading on more than one factor. Unlike the White/non-Hispanic group, item 20 did not load on more than one factor. However, item 14 and item 15 appeared to be loading on two factors with high modification indices (i.e., 11.32 and 7.70; and 26.74 and 14.21, respectively).

Due to item 20's tendency to load on more than one factor for the White/non-Hispanic group, analyses then were run with item 20 removed in order to ascertain if the model for the White/non-Hispanic group had adequate fit. Upon examination of the fit indices, it was determined that the fit of the model was somewhat poorer with item 20 removed. The chi-square was statistically significant ($\chi^2 = 590.82, p < .001$), indicating poor fit, and the values for the CFI (0.71), RMSEA (0.11), and SRMR (0.11) were not

within the adequate cut-off criteria specifications. As a result, it was decided that item 20 should remain within the model. Because of the poor fit of the baseline model, it was respecified by freeing the parameters of items with correlating errors that were greater than 3.84. The model was respecified by successively freeing the parameters of items with correlating errors in descending order (i.e., starting with the largest modification index) until adequate model fit was achieved.

Upon respecification of the model for the White/non-Hispanic group (see Figure 4), adequate fit was achieved. The chi-square was statistically significant ($\chi^2 = 340.89$, $p < .001$), indicating poor fit; however, the values for the CFI (0.94), RMSEA (0.05), and SRMR (0.08) were all within the adequate cut-off criteria specifications. As previously stated, these latter fit indices were relied upon more for evaluating model fit.

The standardized loadings for the PMOS sub-factor ranged from 0.13 to 0.78, with a mean of 0.51 and a median of 0.54. Standardized loadings for the PPOS sub-factor ranged from 0.07 to 1.01, with a mean of 0.41 and a median of 0.32. The standardized loadings for the PIS sub-factor ranged from 0.37 to 0.81, with a mean of 0.61 and a median of 0.68. Standardized loadings for the PPATC sub-factor ranged from 0.50 to 0.92, with a mean of 0.75 and a median of 0.80. There were only two items across the four sub-factors that were not statistically significant at $p < .05$, item 9 “I encourage my child to try to find the reason for the mistakes he or she makes” on the PMOS subscale and item 15 “I pay close attention to the grades my child receives” on the PPOS subscale. The correlations between the factors are presented in Table 12.

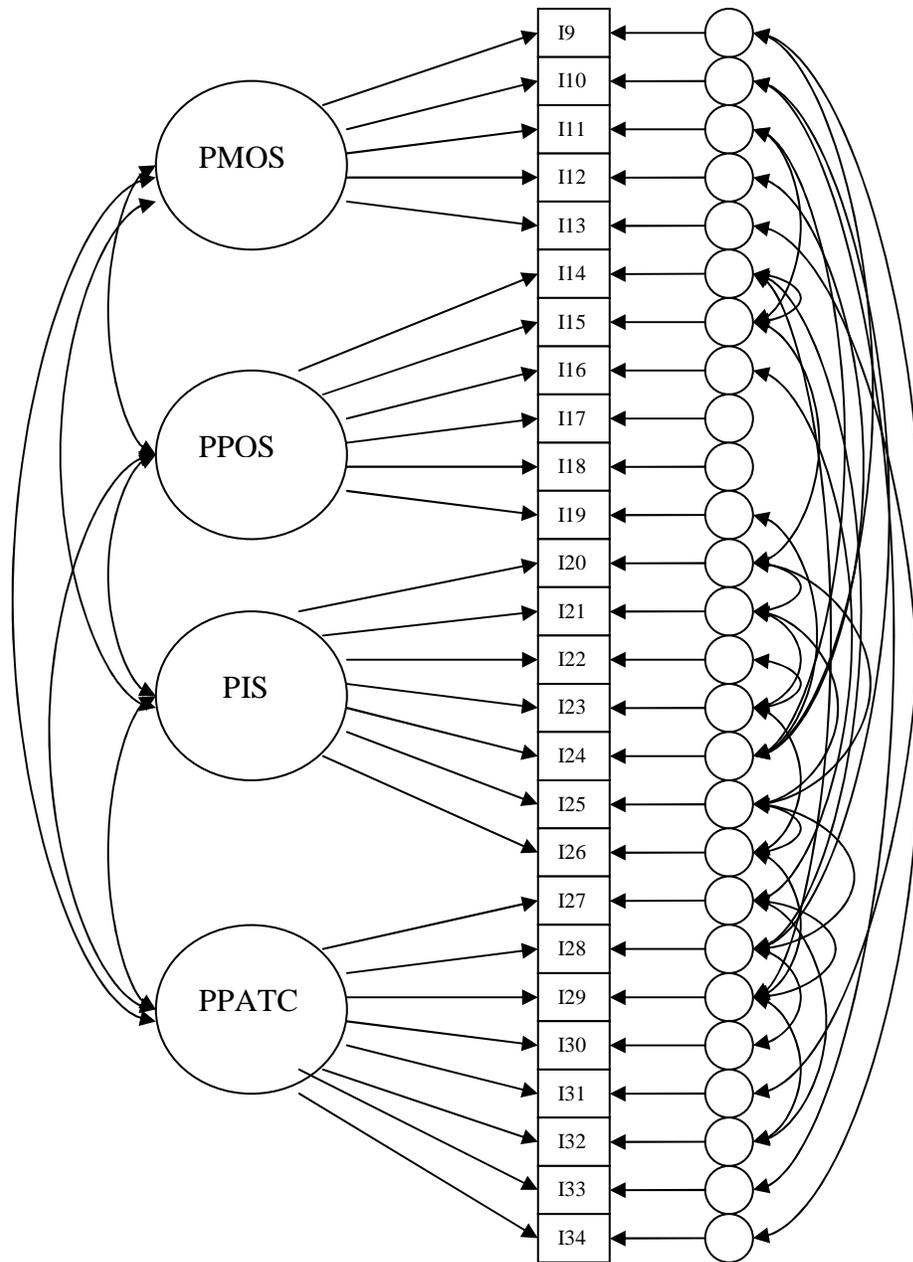


Figure 4. The respecified model for the White/non-Hispanic group.

Note. PMOS = Parent Mastery Orientation Scale; PPOS = Parent Performance Orientation Scale; PIS = Parent Involvement Scale; PPATC = Parent-Perceived Amount of Teacher Communication

Table 12

CFA Inter-factor Correlations for the White/non-Hispanic Group

	PMOS	PPOS	PIS	PPATC
PMOS	---			
PPOS	-.04	---		
PIS	.36	.34	---	
PPATC	.45	.03	.30	---

Note. PMOS = Parent Mastery Orientation Scale; PPOS = Parent Performance Orientation Scale; PIS = Parent Involvement Scale; PPATC = Parent-Perceived Amount of Teacher Communication.

In addition, the variances for the PMOS, PPOS, PIS, and PPATC sub-factors were 0.01, 0.11, 0.10, and 0.28, respectively.

Once adequate fit was established with the White/non-Hispanic group's model, the data for the Hispanic group were fit to this respecified model in order to determine if the model was functioning in a similar manner and if the fit also was adequate for this group. The chi-square was statistically significant ($\chi^2 = 534.66$, $p < .001$), indicating poor fit, and the values for the CFI (0.80), RMSEA (0.09), and SRMR (0.10) were not within the adequate cut-off criteria specifications. The poor fit for the Hispanic group indicated that this model was misspecified for this group.

Due to the tendency of items 14 and 15 to load on more than one factor in the baseline model for the Hispanic group, analyses then were run with item 15 removed in order to ascertain if the model for the Hispanic group had adequate fit. Only item 15 was removed because the modification indices were somewhat higher than the modification indices for item 14. Upon examination of the fit indices, it was determined that the fit of the model was poorer with item 15 removed. The chi-square was statistically significant ($\chi^2 = 709.56$, $p < .001$), indicating poor fit, and the values for the CFI (0.62), RMSEA

(0.11), and SRMR (0.13) were not within the adequate cut-off criteria specifications. Next, both items 14 and 15 were removed from the model in order to determine if the model had adequate fit. An examination of the fit indices showed that the fit was even poorer with both items removed. The chi-square was statistically significant ($\chi^2 = 718.00, p < .001$), indicating poor fit, and the values for the CFI (0.54), RMSEA (0.12), and SRMR (0.12) were not within the adequate cut-off criteria specifications. As a result, it was decided that items 14 and 15 should remain within the model.

The baseline model for the Hispanic group was respecified by freeing the parameters of items with correlating errors that were greater than 3.84. The model was respecified by successively freeing the parameters of items (see Table 13) with correlating errors in descending order (i.e., starting with the largest modification index) until adequate model fit was achieved.

Table 13
Items with Correlated Errors for the Hispanic Group

Item Pairs	Modification Index
Pair 1: 18. I often tell my child that he or she can do better than others if he or she tries hard enough. 17. I congratulate my child when he or she does better than others.	50.39
Pair 2: 19. I often tell my child he or she can get good grades if he or she works hard enough. 14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	27.82
Pair 3: 31. Gave me ideas about how to help my child learn. 29. Asked me to help my child with his or her schoolwork.	19.46

Item Pairs	Modification Index
Pair 4: 24. How often do you talk with your child about your expectations regarding his or her homework? 19. I often tell my child he or she can get good grades if he or she works hard enough.	18.14
Pair 5: 26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day? 25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?	18.02
Pair 6: 33. Kept me informed about what my child was learning. 32. Sent me a folder of my child's classwork with comments.	14.03
Pair 7: 23. How often do you help your child with reading? 22. How often do you help your child with math?	13.96
Pair 8: 18. I often tell my child that he or she can do better than others if he or she tries hard enough. 15. I pay close attention to the grades my child receives.	13.95
Pair 9: 24. How often do you talk with your child about your expectations regarding his or her homework? 15. I pay close attention to the grades my child receives.	11.46
Pair 10: 15. I pay close attention to the grades my child receives. 14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	9.92
Pair 11: 19. I often tell my child he or she can get good grades if he or she works hard enough. 17. I congratulate my child when he or she does better than others.	9.66
Pair 12: 31. Gave me ideas about how to help my child learn. 30. Told me about my child's strengths and positive qualities.	9.58

Item Pairs	Modification Index
Pair 13: 22. How often do you help your child with math? 13. I encourage my child to feel successful for simply working hard on his or her homework.	9.12
Pair 14: 34. Sent me newsletters or notes to keep me informed about the classroom. 33. Kept me informed about what my child was learning.	8.84
Pair 15: 33. Kept me informed about what my child was learning. 31. Gave me ideas about how to help my child learn.	8.77
Pair 16: 24. How often do you talk with your child about your expectations regarding his or her homework? 14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	8.27
Pair 17: 28. Gave me reports or notes about my child's progress. 27. Sent home activities for my child and me to work on together.	7.66
Pair 18: 34. Sent me newsletters or notes to keep me informed about the classroom. 28. Gave me reports or notes about my child's progress.	7.62
Pair 19: 28. Gave me reports or notes about my child's progress. 9. I encourage my child to try to find the reason for the mistakes he or she makes.	7.46
Pair 20: 24. How often do you talk with your child about your expectations regarding his or her homework? 23. How often do you help your child with reading?	7.43
Pair 21: 12. I try to find out from my child what he or she wants to learn about. 11. I pay close attention to my child's improvement in his or her school learning.	7.40

Item Pairs	Modification Index
Pair 22: 27. Sent home activities for my child and me to work on together. 26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day?	7.13
Pair 23: 29. Asked me to help my child with his or her schoolwork. 28. Gave me reports or notes about my child's progress.	7.05
Pair 24: 25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day? 20. How often do you talk to your child about what he or she is learning in school?	6.97
Pair 25: 30. Told me about my child's strengths and positive qualities. 28. Gave me reports or notes about my child's progress.	6.85
Pair 26: 17. I congratulate my child when he or she does better than others. 14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	6.77
Pair 27: 15. I pay close attention to the grades my child receives. 11. I pay close attention to my child's improvement in his or her school learning.	6.56
Pair 28: 31. Gave me ideas about how to help my child learn. 23. How often do you help your child with reading?	6.19
Pair 29: 28. Gave me reports or notes about my child's progress. 10. I encourage my child to do extra work to learn new things.	6.13
Pair 30: 30. Told me about my child's strengths and positive qualities. 9. I encourage my child to try to find the reason for the mistakes he or she makes.	5.88

Item Pairs	Modification Index
Pair 31: 34. Sent me newsletters or notes to keep me informed about the classroom. 29. Asked me to help my child with his or her schoolwork.	5.73
Pair 32: 14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received. 11. I pay close attention to my child's improvement in his or her school learning.	5.70
Pair 33: 30. Told me about my child's strengths and positive qualities. 26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day?	5.65

Upon respecification of the model for the Hispanic group (see Figure 5), adequate fit was achieved. The chi-square was statistically significant ($\chi^2 = 378.99, p < .001$), indicating poor fit; however, the values for the CFI (0.91), RMSEA (0.06), and SRMR (0.08) were all within the adequate cut-off criteria specifications.

The standardized loadings for the PMOS sub-factor ranged from 0.44 to 0.60, with a mean of 0.52 and a median of 0.50. Standardized loadings for the PPOS sub-factor ranged from 0.29 to 0.56, with a mean of 0.45 and a median of 0.52. The standardized loadings for the PIS sub-factor ranged from 0.58 to 0.73, with a mean of 0.65 and a median of 0.66. Standardized loadings for the PPATC sub-factor ranged from 0.33 to 0.88, with a mean of 0.65 and a median of 0.68. All of the items across the four sub-factors were statistically significant at $p < .05$. The correlations between the factors are presented in Table 14. In addition, the variances for the PMOS, PPOS, PIS, and PPATC sub-factors were 0.29, 0.34, 0.21, and 0.13, respectively.

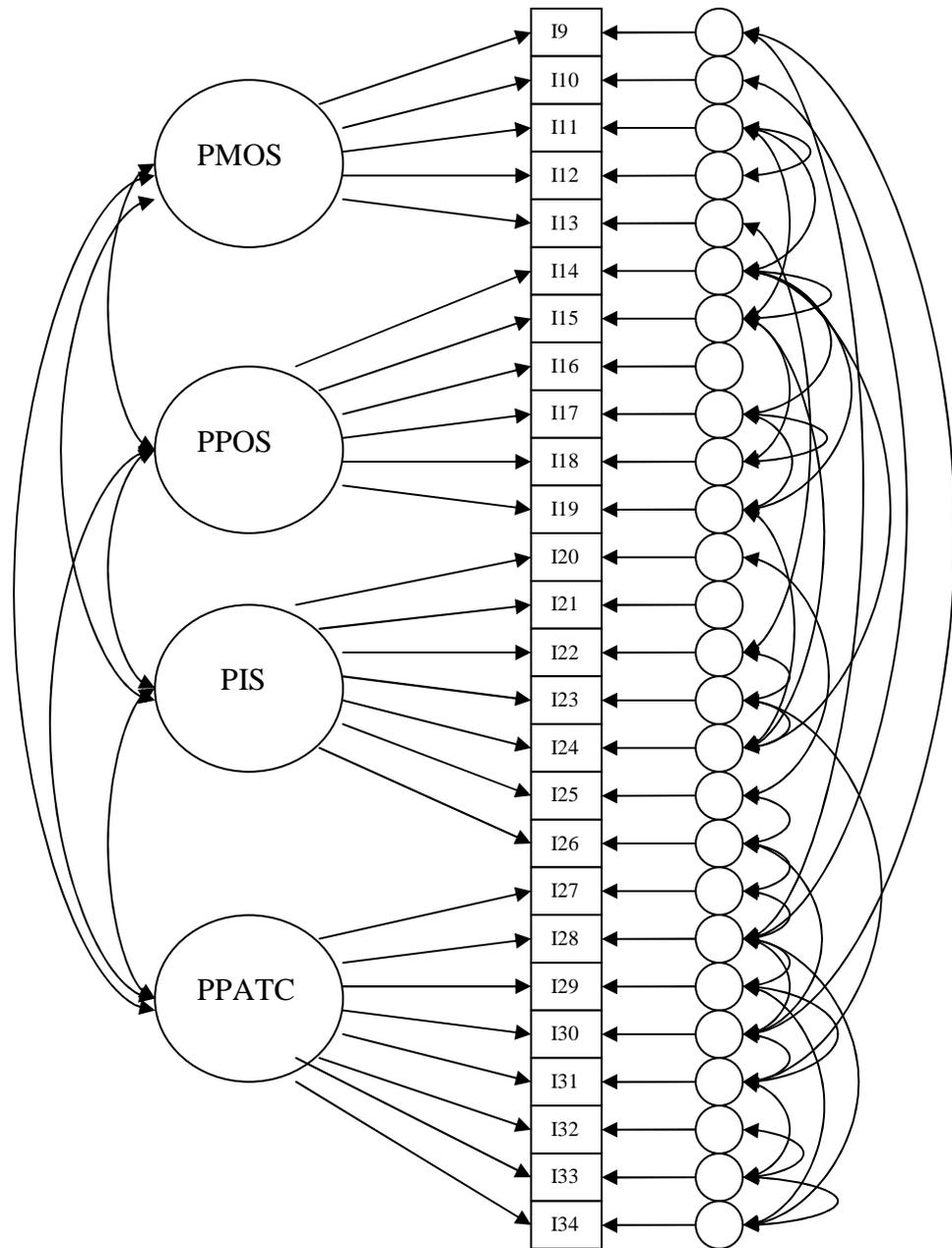


Figure 5. The respecified model for the Hispanic group.

Note. PMOS = Parent Mastery Orientation Scale; PPOS = Parent Performance Orientation Scale; PIS = Parent Involvement Scale; PPATC = Parent-Perceived Amount of Teacher Communication.

Table 14
CFA Inter-factor Correlations for the Hispanic Group

	PMOS	PPOS	PIS	PPATC
PMOS	---			
PPOS	.68	---		
PIS	.71	.40	---	
PPATC	.05	.14	.18	---

Note. PMOS = Parent Mastery Orientation Scale; PPOS = Parent Performance Orientation Scale; PIS = Parent Involvement Scale; PPATC = Parent-Perceived Amount of Teacher Communication.

Due to the misspecification of the models, further measurement invariance testing was not conducted. Consequently, exploratory factor analyses were conducted on the data for both groups in order to investigate what measurement models would fit the data best.

Exploratory Factor Analysis

Exploratory factor analyses (EFA) using the principal axis factoring method with a promax rotation were conducted by group assignment (i.e., White/non-Hispanic; Hispanic) on the items of the inventory using SAS version 9.2 (SAS Institute Inc., 2009). The promax rotation was used because the factors were correlated with one another. The factor analyses first were run to allow the factors to be freely estimated from the data for each group. A review was conducted of the eigenvalues using the Kaiser rule (eigenvalues > 1) (Kaiser, 1960), the percentage of total variance represented by the set of factors (at least 70%; Stevens, 2002), the scree plot, and the interpretability of the factors and their factor loadings for each group in order to determine if the data were being represented with an acceptable number of factors. A cut-off value of 0.40 was

decided for the factor loading values of the identified factors, as suggested by Stevens (2002).

Cronbach's alphas were obtained for each sub-factor that resulted from the EFA for the White/non-Hispanic group data and the Hispanic group data using SAS version 9.2 (SAS Institute Inc., 2009) in order to examine the internal reliability of the scales. A scale with an alpha of .70 or above is considered to have acceptable internal reliability, although an alpha of .60 is deemed acceptable in exploratory research (Hair, Black, Babin, & Anderson, 2010). In addition, the item-to-total correlations of the individual items were reviewed. The item-to-total correlations illustrate whether the inclusion of an item in the scale (factor) causes the alpha to decrease, remain constant, or increase. Item-to-total correlations that cause the alpha to decrease or remain constant appear to strongly correlate with other items in the scale and one would, therefore, keep these items within the scale. However, items with item-to-total correlations that cause the alpha to increase appear to make the scale more reliable. These items would be reviewed for possible removal from the scale.

White/non-Hispanic Group. An eight factor model initially was generated for the White/non-Hispanic group. Upon review of the eigenvalues (ranging from -0.29 to 6.01), the percentage of variance represented by the set of factors, the scree plot, and the interpretability of the factors and their factor loadings, it was determined that the data could be interpreted with fewer factors. Assessment of the retention criteria revealed that four factors (eigenvalues = 1.25, 1.62, 2.90, 6.01) could be retained when examining the eigenvalues greater than one (to which the corresponding variance represented by the set of factors was equal to 82%, which was considered acceptable), and four factors when

scrutinizing the scree plot (see Figure 6). Further, a parallel analysis (Horn, 1965) of the eigenvalues was run. In a parallel analysis, the eigenvalues obtained from the EFA are compared to eigenvalues that one would expect to obtain from random data. When examining the eigenvalues for retention, the eigenvalues extracted from the actual data should be greater than the obtained random data eigenvalues. As shown in Table 15, the eigenvalues obtained from the EFA are larger than the obtained random data eigenvalues.

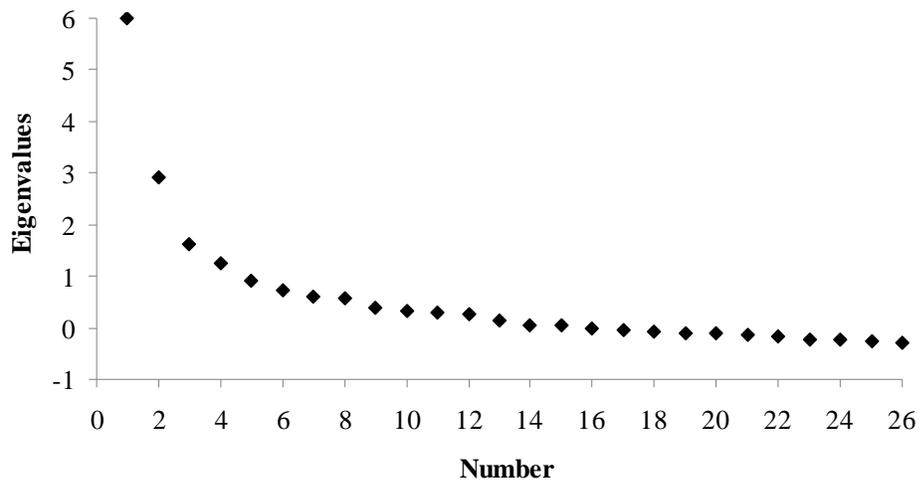


Figure 6. The scree plot for the White/non-Hispanic group.

Table 15

Comparison of Eigenvalues for the White/non-Hispanic Group

EFA Eigenvalues	Random Data Eigenvalues
6.01	1.23
2.91	1.03
1.62	0.91
1.25	0.82

A final decision was made to include four factors in the analysis due to the uniformity of the retention criteria and because this number of factors allowed for the best interpretability of the factors and their factor loadings. The four resulting factors closely resembled the original sub-factors of the inventory (i.e., Parent Mastery Orientation Scale [PMOS], Parent Performance Orientation Scale [PPOS], Parent Involvement Scale [PIS], Parent-Perceived Amount of Teacher Communication [PPATC]) and their associated items; having only minor discrepancies.

The inter-factor correlations for the four identified factors ranged from .04 to .33 (see Table 16). The low correlations indicated that the factors can be seen as separate scales (i.e., multidimensionality of the inventory).

Table 16
Inter-factor Correlations for the White/non-Hispanic Group

	Factor 1 (PPATC)	Factor 2 (PIS)	Factor 3 (PMOS)	Factor 4 (PPOS)
Factor 1 (PPATC)	---			
Factor 2 (PIS)	.25	---		
Factor 3 (PMOS)	.33	.21	---	
Factor 4 (PPOS)	.04	.25	.13	---

Note. PPATC = Parent-Perceived Amount of Teacher Communication; PIS = Parent Involvement Scale; PMOS = Parent Mastery Orientation Scale; PPOS = Parent Performance Orientation Scale.

As a result of having factor loadings lower than the cutoff value of 0.40, items that were loading on more than one factor, and due to the interpretability of the items with the factors in which they loaded the highest, four of the items were removed from

the analysis. These four items were: item 9 “I encourage my child to try to find the reason for the mistakes he or she makes.”, item 16 “When my child is making a lot of mistakes on a task, I encourage him or her to try a different task.”, item 20 “How often do you talk to your child about what he or she is learning in school?”, and item 24 “How often do you talk with your child about your expectations regarding his or her homework?” The item pattern loadings on the four factors for the White/non-Hispanic group are presented in Table 17. The structure coefficients are displayed in Appendix G.

Table 17

Item Pattern Loadings for Exploratory Factor Analysis with Promax Rotation on the Four Factors for the White/non-Hispanic Group

Item	Factor 1 (PPATC)	Factor 2 (PIS)	Factor 3 (PMOS)	Factor 4 (PPOS)
33. Kept me informed about what my child was learning.	0.90	-0.04	0.02	0.06
34. Sent me newsletters or notes to keep me informed about the classroom.	0.84	-0.003	-0.08	0.0003
30. Told me about my child’s strengths and positive qualities.	0.83	-0.12	0.08	0.01
28. Gave me reports or notes about my child’s progress.	0.80	0.01	-0.02	-0.14
31. Gave me ideas about how to help my child learn.	0.76	-0.11	0.10	-0.04
32. Sent me a folder of my child’s classwork with comments.	0.72	0.09	-0.02	0.11
27. Sent home activities for my child and me to work on together.	0.65	0.14	-0.16	-0.04
29. Asked me to help my child with his or her schoolwork.	0.53	0.10	-0.06	0.04
25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?	-0.02	0.88	-0.03	-0.06

Item	Factor 1 (PPATC)	Factor 2 (PIS)	Factor 3 (PMOS)	Factor 4 (PPOS)
26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day?	0.08	0.80	-0.09	0.12
22. How often do you help your child with math?	-0.09	0.77	0.02	-0.05
23. How often do you help your child with reading?	0.02	0.63	0.24	0.02
21. How often do you review and discuss with your child the graded assignments and work he or she brings home?	0.13	0.41	0.36	-0.05
11. I pay close attention to my child's improvement in his or her school learning.	-0.07	0.14	0.65	-0.14
13. I encourage my child to feel successful for simply working hard on his or her homework.	-0.06	0.05	0.53	-0.01
12. I try to find out from my child what he or she wants to learn about.	0.19	-0.08	0.53	0.02
10. I encourage my child to do extra work to learn new things.	0.05	0.05	0.47	0.20
15. I pay close attention to the grades my child receives.	-0.15	-0.09	0.44	0.20
24. How often do you talk with your child about your expectations regarding his or her homework?	0.07	0.29	0.39	0.01
9. I encourage my child to try to find the reason for the mistakes he or she makes.	-0.08	-0.02	0.36	-0.05
20. How often do you talk to your child about what he or she is learning in school?	0.09	0.28	0.33	0.08
18. I often tell my child that he or she can do better than others if he or she tries hard enough.	0.04	0.25	-0.14	0.67
14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	-0.04	-0.27	0.12	0.60
17. I congratulate my child when he or she does better than others.	-0.05	0.21	-0.11	0.53

Item	Factor 1 (PPATC)	Factor 2 (PIS)	Factor 3 (PMOS)	Factor 4 (PPOS)
19. I often tell my child he or she can get good grades if he or she works hard enough.	0.04	-0.05	0.26	0.48
16. When my child is making a lot of mistakes on a task, I encourage him or her to try a different task.	0.17	0.07	0.01	0.18

Note. PPATC = Parent-Perceived Amount of Teacher Communication; PIS = Parent Involvement Scale; PMOS = Parent Mastery Orientation Scale; PPOS = Parent Performance Orientation Scale.

The first factor was identified as Parent-Perceived Amount of Teacher Communication (PPATC) and contained items 27, 28, 29, 30, 31, 32, 33, and 34. The items in this factor involve the amount of communication the teacher has with the parent about the child's schooling. The second factor, Parent Involvement Scale (PIS), relates to the involvement the parent has with the child's schooling that takes place at home. The PIS contained items 21, 22, 23, 25, and 26. The third factor was designated as Parent Mastery Orientation Scale (PMOS) and included items 10, 11, 12, 13, and 15. This factor concerns the parent's involvement with the child's learning of information and understanding tasks. The fourth and final factor was the Parent Performance Orientation Scale (PPOS). The items within this factor (i.e., items 14, 17, 18, 19) relate to the parent's awareness of the evaluation of the child on tasks and involvement with the child's performance on tasks. A comparison of the items between the original sub-factors and the sub-factors identified in the EFA show similarities in item to factor association (see Table 18).

Table 18

Comparison of Items between the Original Sub-factors and the Exploratory Factor Analysis Sub-factors for the White/non-Hispanic Group

Sub-factors	Original Sub-factor Items	EFA Sub-factor Items
PMOS	9, 10, 11, 12, 13	10, 11, 12, 13, 15
PPOS	14, 15, 16, 17, 18, 19	14, 17, 18, 19
PIS	20, 21, 22, 23, 24, 25, 26	21, 22, 23, 25, 26
PPATC	27, 28, 29, 30, 31, 32, 33, 34	27, 28, 29, 30, 31, 32, 33, 34

Note. PMOS = Parent Mastery Orientation Scale; PPOS = Parent Performance Orientation Scale; PIS = Parent Involvement Scale; PPATC = Parent-Perceived Amount of Teacher Communication. Original = Watkins (1997).

Cronbach's alphas were obtained for each sub-factor of the inventory in order to examine the internal reliability of the factor score estimates. The results displayed in Table 19 indicate that the coefficient alpha of the PPATC scale, $\alpha = .91$, was high and that 9% of the observed variance was due to measurement error. One can conclude that the scores from this scale were reliable. The coefficient alpha of the PIS scale, $\alpha = .84$, was high. The measurement error for this scale totaled 16%, which allows one to determine that this scale provided reliable scores. The PMOS scale had a coefficient alpha of .68, which was moderate. Although this alpha was slightly below the level of .70, considered acceptable internal reliability, it was close to this cut-off and was above an alpha of .60, deemed acceptable in exploratory research. The amount of variance due to measurement error for this scale was 32%, which indicated that scores from this scale were less reliable. The coefficient alpha of the PPOS scale, $\alpha = .63$, was moderate, indicating the least reliable scores among the four sub-scales. The amount of error variance was equal to 37%. These Cronbach's alphas were fairly similar to the alphas

obtained for the PPATC, PIS, PMOS, and PPOS sub-factors in the original model; specifically, .91, .82, .65, and .57, respectively.

In reviewing the item-to-total correlations and Cronbach's alphas if the item is removed from the scale of the individual items within the PPATC scale ($\alpha = .91$), the alpha decreased when six of the items were removed individually from the scale. These decreased alphas ranged from .88 to .90 for items 33, 34, 30, 28, 31, and 32. The other two items, 27 and 29, caused no change in the alpha when they were individually removed from the scale. Table 20 shows the item-to-total correlations and the Cronbach's alphas for the items in the PPATC scale.

Table 19
Cronbach's Alphas for the Four Sub-factors for the White/non-Hispanic Group

Sub-factor	Number of Items	Cronbach's Alpha	Range of Item-to-Total Correlations
PPATC	8	.91	.49 to .85
PIS	4	.84	.41 to .73
PMOS	5	.68	.29 to .58
PPOS	4	.63	.29 to .60

Note. PPATC = Parent-Perceived Amount of Teacher Communication; PIS = Parent Involvement Scale; PMOS = Parent Mastery Orientation Scale; PPOS = Parent Performance Orientation Scale.

Table 20

Item-to-Total Correlations and Cronbach's Alphas if the Item is Removed from the Scale for the Parent-Perceived Amount of Teacher Communication Scale for the White/non-Hispanic Group

Item	Item-to-Total Correlation	Cronbach's Alpha if Item Removed
33. Kept me informed about what my child was learning.	.85	.88
34. Sent me newsletters or notes to keep me informed about the classroom.	.76	.89
30. Told me about my child's strengths and positive qualities.	.79	.89
28. Gave me reports or notes about my child's progress.	.75	.89
31. Gave me ideas about how to help my child learn.	.71	.89
32. Sent me a folder of my child's classwork with comments.	.68	.90
27. Sent home activities for my child and me to work on together.	.58	.91
29. Asked me to help my child with his or her schoolwork.	.49	.91

When examining the item-to-total correlations and Cronbach's alphas if the item is removed from the scale of the individual items in the PIS scale ($\alpha = .84$), the alpha decreased when four of the five items were removed individually from the scale, items 25, 26, 22, and 23 (see Table 21). Item 21 caused the alpha to increase when it was individually removed from the scale.

Table 21

Item-to-Total Correlations and Cronbach's Alphas if the Item is Removed from the Scale for the Parent Involvement Scale for the White/non-Hispanic Group

Item	Item-to-Total Correlation	Cronbach's Alpha if Item Removed
25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?	.73	.77
26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day?	.73	.78
22. How often do you help your child with math?	.67	.79
23. How often do you help your child with reading?	.65	.80
21. How often do you review and discuss with your child the graded assignments and work he or she brings home?	.41	.86

Table 22 shows the item-to-total correlations and Cronbach's alphas if the item is removed from the scale for the individual items in the PMOS scale ($\alpha = .68$). The alpha decreased when four of the five items were removed individually from the scale, items 11, 13, 12, and 10. Item 15 caused the alpha to increase when it was individually removed from the scale.

In reviewing the item-to-total correlations and Cronbach's alphas if the item is removed from the scale in Table 23 of the individual items within the PPOS scale ($\alpha = .63$), the alpha decreased when items 18, 17, and 19 were removed individually from the scale. Item 14 increased the alpha when it was individually removed from the scale.

Table 22

Item-to-Total Correlations and Cronbach's Alphas if the Item is Removed from the Scale for the Parent Mastery Orientation Scale for the White/non-Hispanic Group

Item	Item-to-Total Correlation	Cronbach's Alpha if Item Removed
11. I pay close attention to my child's improvement in his or her school learning.	.58	.57
13. I encourage my child to feel successful for simply working hard on his or her homework.	.40	.65
12. I try to find out from my child what he or she wants to learn about.	.54	.58
10. I encourage my child to do extra work to learn new things.	.39	.65
15. I pay close attention to the grades my child receives.	.29	.69

Table 23

Item-to-Total Correlations and Cronbach's Alphas if the Item is Removed from the Scale for the Parent Performance Orientation Scale for the White/non-Hispanic Group

Item	Item-to-Total Correlation	Cronbach's Alpha if Item Removed
18. I often tell my child that he or she can do better than others if he or she tries hard enough.	.60	.41
14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	.29	.65
17. I congratulate my child when he or she does better than others.	.42	.55
19. I often tell my child he or she can get good grades if he or she works hard enough.	.35	.60

One can conclude from the analysis of the data from these four subscales that an item that caused the alpha to decrease appeared to strongly correlate with other items in the scale and, therefore, these items would be kept within the scale. Items that caused no change in the alpha when removed from the scale would also be kept within the scale. Further, an item that caused the alpha to increase appears to make the scale more reliable. These items would be reviewed for possible removal from the scale.

Hispanic Group. An eight factor model initially was generated for the Hispanic group. Upon review of the eigenvalues (ranging from -0.28 to 5.65), the percentage of variance represented by the set of factors, the scree plot, and the interpretability of the factors and their factor loadings, it was determined that the data could be interpreted with fewer factors. Assessment of the retention criteria revealed that four factors (eigenvalues = 1.13, 1.89, 3.35, 5.65) could be retained when examining the eigenvalues greater than one (to which the corresponding variance represented by the set of factors was equal to 82%, which was considered acceptable), and four factors when scrutinizing the scree plot (see Figure 7). Further, a parallel analysis of the eigenvalues was run. As previously stated, when examining the eigenvalues for retention, the eigenvalues extracted from the actual data should be greater than the obtained random data eigenvalues. As displayed in Table 24, the eigenvalues obtained from the EFA are larger than the obtained random data eigenvalues. A final decision was made to include four factors in the analysis due to the uniformity of the retention criteria and because this number of factors allowed for the best interpretability of the factors and their factor loadings.

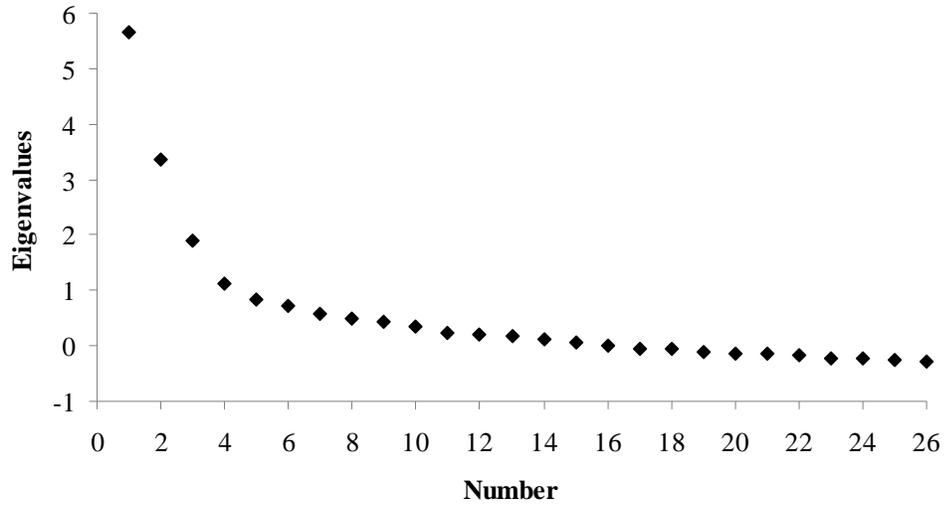


Figure 7. The scree plot for the Hispanic group.

Table 24

Comparison of Eigenvalues for the Hispanic Group

EFA Eigenvalues	Random Data Eigenvalues
5.65	1.17
3.35	0.98
1.89	0.87
1.13	0.78

The inter-factor correlations for the four identified factors ranged from .07 - .44 (see Table 25). The low correlations indicated that the factors can be seen as separate scales (i.e., multidimensionality of the inventory).

Table 25
Inter-factor Correlations for the Hispanic Group

	Factor 1 (PPATC)	Factor 2 (PMOS)	Factor 3 (PIS)	Factor 4 (PPOS)
Factor 1 (PPATC)	---			
Factor 2 (PMOS)	.17	---		
Factor 3 (PIS)	.15	.44	---	
Factor 4 (PPOS)	.08	.21	.07	---

Note. PPATC = Parent-Perceived Amount of Teacher Communication; PMOS = Parent Mastery Orientation Scale; PIS = Parent Involvement Scale; PPOS = Parent Performance Orientation Scale.

As a result of having factor loadings lower than the cutoff value of 0.40, items that were loading on more than one factor, and due to the interpretability of the items with the factors in which they loaded the highest, three of the items were removed from the analysis. These three items were: item 16 “When my child is making a lot of mistakes on a task, I encourage him or her to try a different task.”, item 20 “How often do you talk to your child about what he or she is learning in school?”, and item 27 “Sent home activities for my child and me to work on together.” The item pattern loadings on the four factors for the Hispanic group are presented in Table 26. The structure coefficients are displayed in Appendix H.

Table 26

Item Pattern Loadings for Exploratory Factor Analysis with Promax Rotation on the Four Factors for the Hispanic Group

Item	Factor 1 (PPATC)	Factor 2 (PMOS)	Factor 3 (PIS)	Factor 4 (PPOS)
33. Kept me informed about what my child was learning.	0.89	-0.01	-0.08	0.01
34. Sent me newsletters or notes to keep me informed about the classroom.	0.83	0.01	-0.06	0.01
31. Gave me ideas about how to help my child learn.	0.80	-0.09	0.17	0.02
32. Sent me a folder of my child's classwork with comments.	0.76	-0.04	-0.02	-0.04
30. Told me about my child's strengths and positive qualities.	0.67	0.13	-0.10	-0.01
28. Gave me reports or notes about my child's progress.	0.61	0.18	0.01	-0.13
29. Asked me to help my child with his or her schoolwork.	0.48	-0.13	0.36	0.09
27. Sent home activities for my child and me to work on together.	0.36	-0.10	0.31	0.05
15. I pay close attention to the grades my child receives.	0.08	0.67	-0.10	0.02
24. How often do you talk with your child about your expectations regarding his or her homework?	-0.02	0.62	0.14	0.02
11. I pay close attention to my child's improvement in his or her school learning.	0.10	0.57	0.03	0.04
12. I try to find out from my child what he or she wants to learn about.	-0.04	0.53	-0.07	0.15
10. I encourage my child to do extra work to learn new things.	-0.06	0.49	0.11	-0.04
21. How often do you review and discuss with your child the graded assignments and work he or she brings home?	0.06	0.45	0.28	-0.08
9. I encourage my child to try to find the reason for the mistakes he or she makes.	-0.03	0.44	0.16	0.02

Item	Factor 1 (PPATC)	Factor 2 (PMOS)	Factor 3 (PIS)	Factor 4 (PPOS)
13. I encourage my child to feel successful for simply working hard on his or her homework.	-0.02	0.44	0.08	0.18
20. How often do you talk to your child about what he or she is learning in school?	-0.15	0.38	0.34	-0.13
23. How often do you help your child with reading?	0.02	-0.004	0.80	0.11
22. How often do you help your child with math?	-0.11	0.11	0.78	-0.06
26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day?	0.09	0.07	0.74	0.02
25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?	0.10	0.13	0.63	-0.03
18. I often tell my child that he or she can do better than others if he or she tries hard enough.	-0.08	-0.10	0.07	0.82
17. I congratulate my child when he or she does better than others.	-0.02	-0.02	-0.05	0.73
19. I often tell my child he or she can get good grades if he or she works hard enough.	0.04	0.28	-0.08	0.51
14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	0.06	0.34	-0.01	0.43
16. When my child is making a lot of mistakes on a task, I encourage him or her to try a different task.	0.02	0.06	0.15	0.33

Note. PPATC = Parent-Perceived Amount of Teacher Communication; PMOS = Parent Mastery Orientation Scale; PIS = Parent Involvement Scale; PPOS = Parent Performance Orientation Scale.

The first factor was identified as Parent-Perceived Amount of Teacher Communication (PPATC) and contained items 28, 29, 30, 31, 32, 33, and 34. The items in this factor involve the amount of communication the teacher has with the parent about the child's schooling. The second factor was designated as Parent Mastery Orientation Scale (PMOS) and included items 9, 10, 11, 12, 13, 15, 21, and 24. This factor concerns the parent's involvement with the child's learning of information and understanding tasks. The third factor, Parent Involvement Scale (PIS), relates to the involvement the parent has with the child's schooling that takes place at home. The PIS contained items 22, 23, 25, and 26. The fourth and final factor was the Parent Performance Orientation Scale (PPOS). The items within this factor (i.e., items 14, 17, 18, 19) relate to the parent's awareness of the evaluation of the child on tasks and involvement with the child's performance on tasks. A comparison of the items between the original sub-factors and the sub-factors identified in the EFA show similarities in item to factor association (see Table 27).

Table 27

Comparison of Items between the Original Sub-factors and the Exploratory Factor Analysis Sub-factors for the Hispanic Group

Sub-factors	Original Sub-factor Items	EFA Sub-factor Items
PMOS	9, 10, 11, 12, 13	9, 10, 11, 12, 13, 15, 21, 24
PPOS	14, 15, 16, 17, 18, 19	14, 17, 18, 19
PIS	20, 21, 22, 23, 24, 25, 26	22, 23, 25, 26
PPATC	27, 28, 29, 30, 31, 32, 33, 34	28, 29, 30, 31, 32, 33, 34

Note. PMOS = Parent Mastery Orientation Scale; PPOS = Parent Performance Orientation Scale; PIS = Parent Involvement Scale; PPATC = Parent-Perceived Amount of Teacher Communication. Original = Watkins (1997).

Cronbach's alphas were obtained for each sub-factor of the inventory in order to examine the internal reliability of the scales. The results displayed in Table 28 indicate that the coefficient alpha of the PPATC scale, $\alpha = .88$, was high and that 12% of the observed variance was due to measurement error. One can conclude that the scores from this scale were reliable. The PMOS scale had a coefficient alpha of .79, which was fairly high. The amount of variance due to measurement error for this scale was 21%, which made this scale a reliable scale. The coefficient alpha of the PIS scale, $\alpha = .85$, was high. The measurement error variance for this scale totaled 15%, which allows one to determine that this scale was a reliable measure. The coefficient alpha of the PPOS scale, $\alpha = .72$, was fairly high, which made this scale fairly reliable. The amount of error variance was equal to 28%. These Cronbach's alphas were somewhat similar to the alphas obtained for the PPATC, PMOS, PIS, and PPOS sub-factors in the original model; specifically, .87, .68, .84, and .68, respectively.

Table 28
Cronbach's Alphas for the Four Sub-factors for the Hispanic Group

Sub-factor	Number of Items	Cronbach's Alpha	Range of Item-to-Total Correlations
PPATC	7	.88	.47 to .80
PMOS	8	.79	.45 to .55
PIS	4	.85	.67 to .71
PPOS	4	.72	.44 to .60

Note. PPATC = Parent-Perceived Amount of Teacher Communication; PMOS = Parent Mastery Orientation Scale; PIS = Parent Involvement Scale; PPOS = Parent Performance Orientation Scale.

In reviewing the item-to-total correlations and Cronbach's alphas if the item is removed from the scale of the individual items within the PPATC scale ($\alpha = .88$), the alpha decreased when six of the items were removed individually from the scale. These decreased alphas ranged from .84 to .87 for items 33, 34, 31, 32, 30, and 28. Item 29 caused no change in the alpha when it was individually removed from the scale. Table 29 shows the item-to-total correlations and the Cronbach's alphas for the items in the PPATC scale.

Table 29

Item-to-Total Correlations and Cronbach's Alphas if the Item is Removed from the Scale for the Parent-Perceived Amount of Teacher Communication Scale for the Hispanic Group

Item	Item-to-Total Correlation	Cronbach's Alpha if Item Removed
33. Kept me informed about what my child was learning.	.80	.84
34. Sent me newsletters or notes to keep me informed about the classroom.	.74	.85
31. Gave me ideas about how to help my child learn.	.76	.85
32. Sent me a folder of my child's classwork with comments.	.66	.86
30. Told me about my child's strengths and positive qualities.	.64	.86
28. Gave me reports or notes about my child's progress.	.57	.87
29. Asked me to help my child with his or her schoolwork.	.47	.88

Table 30 shows the item-to-total correlations and Cronbach's alphas if the item is removed from the scale for the individual items in the PMOS scale ($\alpha = .79$). The alpha decreased when all eight items were removed individually from the scale.

Table 30

Item-to-Total Correlations and Cronbach's Alphas if the Item is Removed from the Scale for the Parent Mastery Orientation Scale for the Hispanic Group

Item	Item-to-Total Correlation	Cronbach's Alpha if Item Removed
15. I pay close attention to the grades my child receives.	.55	.76
24. How often do you talk with your child about your expectations regarding his or her homework?	.52	.76
11. I pay close attention to my child's improvement in his or her school learning.	.51	.76
12. I try to find out from my child what he or she wants to learn about.	.46	.77
10. I encourage my child to do extra work to learn new things.	.46	.77
21. How often do you review and discuss with your child the graded assignments and work he or she brings home?	.50	.76
9. I encourage my child to try to find the reason for the mistakes he or she makes.	.45	.77
13. I encourage my child to feel successful for simply working hard on his or her homework.	.48	.77

When examining the item-to-total correlations and Cronbach's alphas if the item is removed from the scale of the individual items in the PIS scale ($\alpha = .85$), the alpha decreased when all four items were removed individually from the scale (see Table 31).

Table 31

Item-to-Total Correlations and Cronbach's Alphas if the Item is Removed from the Scale for the Parent Involvement Scale for the Hispanic Group

Item	Item-to-Total Correlation	Cronbach's Alpha if Item Removed
23. How often do you help your child with reading?	.71	.80
22. How often do you help your child with math?	.68	.82
26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day?	.71	.81
25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?	.67	.82

In reviewing the item-to-total correlations and Cronbach's alphas if the item is removed from the scale in Table 32 of the individual items within the PPOS scale ($\alpha = .72$), the alpha decreased when all four items were removed individually from the scale.

Table 32

Item-to-Total Correlations and Cronbach's Alphas if the Item is Removed from the Scale for the Parent Performance Orientation Scale for the Hispanic Group

Item	Item-to-Total Correlation	Cronbach's Alpha if Item Removed
18. I often tell my child that he or she can do better than others if he or she tries hard enough.	.60	.60
17. I congratulate my child when he or she does better than others.	.48	.67
19. I often tell my child he or she can get good grades if he or she works hard enough.	.51	.66
14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	.44	.70

One can conclude from the analysis of the data from these four subscales that an item that caused the alpha to decrease appeared to strongly correlate with other items in the scale and, therefore, these items would be kept within the scale. In addition, the items from the four subscales that caused no change in the alpha when removed would be kept in the scales. The results obtained for the White/non-Hispanic group and the Hispanic group follow what is generally recommended when assessing the relationship between individual items and the Cronbach's alpha if the item were removed. Items that cause the alpha to decrease or that cause no change in the alpha when removed from the scale would generally be kept within the scale. Further, items that cause the alpha to increase appear to make the scale more reliable and, therefore, would be reviewed for possible removal from the scale.

Open-Ended Items

In addition to answering the 26 items on the main inventory, respondents were asked to provide feedback on two open-ended items. Responses to the items were analyzed for units of meaning, and themes were generated. They then were independently coded by two separate coders. The percentage of inter-coder agreement was calculated using the equation by Miles and Huberman (1994) for the two groups for both items. In addition, Cohen's kappa was calculated for inter-coder agreement on the data for both groups for the two items. For the first open-ended item (*Were any of the items on the parent involvement inventory confusing to you? If you answered "Yes", please provide the item number(s) below and explain why it was confusing.*), the inter-coder agreements were 88% for the White/non-Hispanic group and 96% for the Hispanic group. The Cohen's kappa for the White/non-Hispanic group was 0.59, indicating

moderate agreement between the coders, and the Cohen's kappa for the Hispanic group was 0.64, indicating substantial agreement between the coders. Inter-coder agreements for the second open-ended item (*Please list other issues or aspects of parent involvement in children's schooling that you believe are important and that were missing from the inventory that you just took.*) were calculated to be 81% for the White/non-Hispanic group and 90% for the Hispanic group. The Cohen's kappa for the White/non-Hispanic group was 0.58, indicating moderate agreement between the coders, and the Cohen's kappa for the Hispanic group was 0.61, indicating substantial agreement between observers. Disagreements in coding were addressed between the two coders for resolution.

Some of the parents responded to the open-ended items with extraneous information that did not address aspects of parent involvement that were confusing or missing from the inventory. For instance, a parent described how his/her child is an honors student, whereas another wrote the "food at school and its healthy content". One parent explained how she and her husband provide good home support, are older parents, and that "Younger single parents work/date/other things that need to be put on the back burner for their child's success." Other parents provided feedback for items that were general comments related to what was asked in the question.

Items on the inventory that were confusing. The first open-ended item asked if the respondents found any of the items on the parent involvement inventory to be confusing. If so, they were requested to provide the item number(s) and an explanation as to why it was confusing. Table 33 presents the number of each group who commented on each item.

Table 33

Number of Respondents by Group Who Commented on Each Item

Item	White, non-Hispanic Group (<i>N</i> = 116) <i>n</i> (%)	Hispanic Group (<i>N</i> = 126) <i>n</i> (%)
General comments	8 (7)	6 (5)
Response scale	---	1 (1)
5. Are you of Hispanic, Latino/a, or Spanish origin?	---	2 (2)
6. What is your race?	---	3 (2)
8. What is your total annual household income?	---	1 (1)
9. I encourage my child to try to find the reason for the mistakes he or she makes.	---	---
10. I encourage my child to do extra work to learn new things.	---	---
11. I pay close attention to my child's improvement in his or her school learning.	---	---
12. I try to find out from my child what he or she wants to learn about.	---	---
13. I encourage my child to feel successful for simply working hard on his or her homework.	1 (1)	1 (1)
14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	3 (3)	1 (1)
15. I pay close attention to the grades my child receives.	---	1 (1)
16. When my child is making a lot of mistakes on a task, I encourage him or her to try a different task.	1 (1)	4 (3)
17. I congratulate my child when he or she does better than others.	9 (8)	3 (2)
18. I often tell my child that he or she can do better than others if he or she tries hard enough.	8 (7)	3 (2)
19. I often tell my child he or she can get good grades if he or she works hard enough.	---	2 (2)
20. How often do you talk to your child about what he or she is learning in school?	---	---
21. How often do you review and discuss with your child the graded assignments and work he or she brings home?	---	1 (1)

Item	White, non-Hispanic Group (<i>N</i> = 116) <i>n</i> (%)	Hispanic Group (<i>N</i> = 126) <i>n</i> (%)
22. How often do you help your child with math?	2 (2)	3 (2)
23. How often do you help your child with reading?	3 (3)	1 (1)
24. How often do you talk with your child about your expectations regarding his or her homework?	---	1 (1)
25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?	2 (2)	2 (2)
26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day?	3 (3)	2 (2)
27. Sent home activities for my child and me to work on together.	4 (3)	---
28. Gave me reports or notes about my child's progress.	2 (2)	2 (2)
29. Asked me to help my child with his or her schoolwork.	4 (3)	---
30. Told me about my child's strengths and positive qualities.	2 (2)	2 (2)
31. Gave me ideas about how to help my child learn.	3 (3)	---
32. Sent me a folder of my child's classwork with comments.	2 (2)	2 (2)
33. Kept me informed about what my child was learning.	2 (2)	1 (1)
34. Sent me newsletters or notes to keep me informed about the classroom.	2 (2)	3 (2)

Comparison of the two groups. The responses of the two groups were investigated to determine if similar items were found to be confusing across the groups. Although a few of the items were reported to be somewhat confusing, respondents across the groups often commented in reaction to what was being asked in the questions. For instance, when asked about newsletters or notes being sent home by the teacher, parents

conveyed their views about the content of the newsletters and notes being sent home and not about their confusion with the wording of the item or with what was being asked in the question.

First, the general statements made by respondents in the groups were reviewed. None of the comments across the groups indicated confusion with the inventory. Instead, the comments included having questions on the inventory for the child to answer and remarks about reviewing homework or tests. Two of the three respondents from the White/non-Hispanic group who reported that there was nothing confusing on the inventory supplied further comments:

- “Nothing confusing - my child does his homework by himself and gets A's in math & reading ...”
- “Nothing is confusing at all. I believe parent are their children's first teachers and if only we will spend sometime [sic] teaching and helping our kids together we can produce excellent students and future leaders.”

An observation made by a respondent in the White/non-Hispanic group and a respondent in the Hispanic group was that the questions appear to just “skim the surface” and not “paint the 'real' picture” of parent involvement. It was suggested that some of the items could be discussed further in an open-ended format.

Only one person across the two groups alluded to a problem with the response scale of the inventory. This person from the Hispanic group confessed that it is difficult to answer the questions when there are no middle response choices (e.g., *Somewhat, A little*). In relation to items in the demographic section of the inventory, two parents in the Hispanic group had difficulty in answering item 5 (*Are you of Hispanic, Latino/a, or*

Spanish origin?) and three parents in the Hispanic group had difficulty with answering item 6 (*What is your race?*). However, none of the parents in the White/non-Hispanic group cited these items as being challenging to answer. In regards to asking parents to mark their total annual household income level (item 8, *What is your total annual household income?*), two respondents (one in the White/non-Hispanic group; one in the Hispanic group) were unsure what parent's income had to do with parent involvement or a child's progress.

Of the 26 items in the main inventory, item 13 (*I encourage my child to feel successful for simply working hard on his or her homework.*) was the first item that respondents provided comments about. A respondent from the White/non-Hispanic group and a respondent from the Interview group had different concerns related to this item. The parent from the White/non-Hispanic group responded about the child feeling successful for understanding the homework and not just for doing it. The parent from the Interview group pronounced that it was hard to answer the question because it depended on the type of homework on which the child was working.

Three parents from the White/non-Hispanic group and one parent from the Hispanic group commented about what was asked in item 14 (*When my child brings home a test or paper he or she completed, I ask first what grade he or she received.*). Two of the White parents reported that they ask their child how s/he did, whereas the third parent does not ask the grade if the child brings home the test on which the parent can see the written grade. The following is the verbatim response provided by this parent:

- “I do not have to ask about the grade if my son brings home a test or paper. The teachers write the grade or add comments and I can visually see the grade. I discuss with him based on that.”

The parent from the Hispanic group stated that the teacher returns all of the graded work at the end of the week rather than daily. This parent flips through the packet to ascertain if there was a problem on a test or assignment. Only one person (in the Hispanic group) addressed item 15 (*I pay close attention to the grades my child receives*). This parent complained that the teacher never marks in the child’s binder that s/he is not doing well in school and that s/he is getting all of the answers wrong on tests/homework.

Several respondents across the two groups had reactions to item 16 (*When my child is making a lot of mistakes on a task, I encourage him or her to try a different task*). Three parents in the Hispanic group were confused with what was being asked in the question. They were uncertain as to whether the item meant that the child was supposed to find a different way to complete the task or to completely give up on the task and move on to something else. Another parent (an interviewee) declared that she tries to show her child different ways of doing the work, but the child closes him/herself off to the parent and the new way of completing the work. A parent in the White/non-Hispanic group insisted that s/he assists the child with the mistake and does not let him/her give up and do something else. The following is a verbatim comment provided by a parent in the Hispanic group:

- “16 --> I was unsure of what you were asking. Were you suggesting that if my child made mistakes on a task I encourage him to move on to something else and

give up or to find a different way of completing the task? I answered as if you were suggesting to give up on the task due to errors.”

Of the parents who provided feedback to item 17 (*I congratulate my child when he or she does better than others.*), the majority across the two groups replied that they congratulate their child when s/he does well, but they are not concerned with other children nor do they congratulate their child for doing better than others. Following are a sample of the comments (verbatim in quotation marks) in relation to parents’ concern with item 17:

- Hispanic group, stated during an Interview: She does not think parents should congratulate their children for doing better than others, but rather for doing a good job. She teaches her children not to be disrespectful of others but to help others if they need help.
- White/non-Hispanic group: “I always encourage my child to do well & try harder. The questions appeared to sound as if it were a competition amongst other students. I encourage my child for himself. We never discuss other students grades or if "Little Johnny" did better than him.”

Similar responses were given for item 18 (*I often tell my child that he or she can do better than others if he or she tries hard enough.*). The majority of the 11 respondents in the White/non-Hispanic group and the Hispanic group avowed that they encourage their child to do his/her best and work hard, and they congratulate their child when s/he does well. However, they do not compare their child to others or congratulate their child for doing better than others. Parents in both groups also proclaimed that the questions

implied competition amongst students. Following are comments in relation to parents' concern with item 18:

- Hispanic group: "... #18 - I would never encourage my child to do better than another child or congratulate him if he did better than another child. I encourage my child to do the best he can & try his hardest everyday to do his best. I encourage him to concentrate on himself, learning, comprehending, & completing his work on time & correctly."
- White/non-Hispanic group: "I do tell my child to try hard that he will do better - but I don't encourage the "Better than Others." I don't think they should be concerned about others grades."

Two respondents from the Hispanic group provided comments in relation to what was asked in item 19 (*I often tell my child he or she can get good grades if he or she works hard enough.*). One parent explained that this item was about personal reward. In addition, s/he indicated that children are motivated differently and that even though s/he does not like competition, her child is driven by knowing that she has excelled among her peers. An interviewed parent acknowledged that she does tell this to her child.

One interviewed person from the Hispanic group questioned how one would answer item 21 (*How often do you review and discuss with your child the graded assignments and work he or she brings home?*) if the child is not bringing home tests and papers every day. Moreover, she remarked that she always asks what her child has learned today. None of the parents were confused with item 22 (*How often do you help your child with math?*), but five parents from across the two groups made statements in relation to what was asked in the item. The content of these statements included that they

do not often need to help their children with this subject because they do not need assistance, it depends on the child, Dad, and that math is a big problem.

Three parents in the White/non-Hispanic group and one parent in the Hispanic group provided comments in relation to item 23 (*How often do you help your child with reading?*). The parents from the White group all acknowledged that they do not often need to help their children with reading because they do not need assistance. The parent (an interviewee) from the Hispanic group does not help too much with reading because she thinks that she confuses her children since English is her second language. An interviewed parent from the Hispanic group was confused by the word “expectations” in item 24 (*How often do you talk with your child about your expectations regarding his or her homework?*). She explained that expectations could be interpreted as either expectations for the child's grades and their achievement or expectations that they will complete their homework.

Parents across the two groups provided similar statements about items 25 (*In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?*) and 26 (*How much time do you (or someone in your home) spend checking/correcting his or her homework each day?*). These comments included that their children complete homework independently, that the wording of the question makes it appear as if the parent spends a great deal of time working with the child because the child makes mistakes when, in fact, the amount that the parent works with the child depends on the child's comprehension of the task, and that providing specific time periods for the question would be better because the amount of time spent

helping the child differs for each family. Following are verbatim comments provided by respondents from each group:

- Hispanic group, stated during an Interview in response to items #25 and #26:
Time is relative, so it would be better to have specific time periods such as the number of hours. It is different for each family for how much time is spent working with the child and checking their work.
- White/non-Hispanic group: "...my child does his homework by himself and gets A's in math & reading - that's why #25 & 26 were answered that way - he doesn't need my help!"

Additional comments were made about item 26 by a parent in the White group and a parent in the Hispanic group. These parents reported that they review their children's work, but they do not correct the mistakes. The child has to examine his/her work to make the corrections to the errors made.

Parents in the White/non-Hispanic group provided feedback in relation to item 27 (*Sent home activities for my child and me to work on together.*). No feedback was given by the Hispanic group for this item. Of these parents, only one was confused by what was asked in the question. This respondent stated that the item was confusing to answer because s/he does not want the teacher sending home homework for him/her to work on with his/her child. S/he should choose what s/he works on with his/her child. Comments made by other respondents included that the parent does not expect the teacher to inform him/her of what his/her child is learning, and his/her child's teacher is "superior" and is not overboard on communication. Further, a parent reported that his/her child brings home a lot of homework, even on the weekends. This parent does not believe a child

should be encumbered with homework on the weekends. The following is the verbatim response from this parent:

- “In prep for 6th grade my child is bringing home a lot of homework. He is even required to do homework Friday night and one day of the weekend. Each day of the week he is bringing home 3-5 pages of homework plus a front and back reading log, and read for 30 minutes. He is trying so hard to keep up that he is exasperated [sic] when I want to reinforce what he has learned for the day and on the weekend. By the time he finishes homework he is giving 1/2 focus and interest in the reading. I understand the grind during the week, but the weekend is for young minds to rest, rejuvenate and have free thinking time filled with play and creativity. Thanks.”

Two parents in the Hispanic group and two parents in the White/non-Hispanic group commented on item 28 (*Gave me reports or notes about my child's progress.*).

The parents in the White group stated that the parent does not expect the teacher to inform him/her of what his/her child is learning and his/her child's teacher is “superior” and is not overboard on communication. The parents (both interviewees) in the Hispanic group remarked that they do not receive notes from the teacher about their children's progress. The only notes that they receive from the teacher are when their child is misbehaving or if the child has not handed in a homework assignment. One of the parents exclaimed that she only finds out about her child's progress when she receives the child's report card. She further elucidated that she wished the elementary schools had the eSembler, which is used by the middle and high schools. The eSembler is an online gradebook that parents can access in order to monitor and keep informed about their

children's grades and progress in school. This parent stated that she can go online to monitor her other children's progress to see how well they are doing, but this service is not available for elementary school children so she cannot monitor the youngest child's progress.

Only parents in the White/non-Hispanic group provided statements about item 29 (*Asked me to help my child with his or her schoolwork.*). Their statements included that his/her child always completes homework independently, the teacher does not ask him/her to help because s/he encourages students to do their own work, s/he does not expect the teacher to inform him/her of what his/her child is learning, and his/her child's teacher is "superior" and is not overboard on communication. Parents across the two groups provided feedback in relation to item 30 (*Told me about my child's strengths and positive qualities.*). The parents in the White group indicated that s/he does not expect the teacher to inform him/her of what his/her child is learning, and his/her child's teacher is "superior" and is not overboard on communication. One of the respondents from the Hispanic group reported that the teachers appear to prefer to discuss weaknesses over strengths and that this lowers the child's self-esteem and confidence. The other parent (an interviewee) conveyed that the teachers only inform her about her child's strengths and positive qualities during the parent-teacher conferences at the beginning of the year.

Three respondents in the White/non-Hispanic group provided feedback in relation to item 31 (*Gave me ideas about how to help my child learn.*). No feedback was given by parents in the Hispanic group for this item. Responses by these three parents were "N/A," that s/he does not expect the teacher to inform him/her of what his/her child is learning, and his/her child's teacher is "superior" and is not overboard on

communication. Parents from both groups responded to what was asked in item 32 (*Sent me a folder of my child's classwork with comments.*). The respondents in the White group indicated that s/he does not expect the teacher to inform him/her of what his/her child is learning, and his/her child's teacher is "superior" and is not overboard on communication. Of the two interviewed parents from the Hispanic group, one indicated that she only receives notes about classwork and behavior (i.e., when the child does not turn in homework or s/he misbehaves) and the other parent reported that when she receives a packet of papers, the teacher makes comments on the top of the papers to the child. Nothing is sent home directed towards the parents about what is going on with the child.

Respondents from the White/non-Hispanic group and the Hispanic group provided comments about item 33 (*Kept me informed about what my child was learning.*). The parents in the White group remarked that s/he does not expect the teacher to inform him/her of what his/her child is learning, and his/her child's teacher is "superior" and is not overboard on communication. The parent from the Hispanic group avowed "...I don't get enough notice about what they are learning. I just find out by the homework he brings home..." Finally, parents across the two groups responded to what was asked in item 34 (*Sent me newsletters or notes to keep me informed about the classroom.*). The respondents in the White group remarked that s/he does not expect the teacher to inform him/her of what his/her child is learning, and his/her child's teacher is "superior" and is not overboard on communication. The three parents from the Hispanic group provided similar statements regarding this item. One declared that "...this teacher only sends home weekly progress report. never class news or class wish lists. no parent

involvement in this class.” The other two parents (interviewees) related that the newsletters and notes that they receive from the teacher are about the whole school in general and not about the classroom or specific happenings taking place in the classroom.

Issues or aspects of parent involvement missing from the inventory. The second open-ended item on the parent involvement inventory asked respondents to list other issues or aspects of parent involvement in children’s schooling that they believed were important and that were missing from the inventory. In addition to aspects of parent involvement in children’s schooling that parents believed were missing from the inventory, respondents provided comments about issues that they believed teachers and schools needed to address or amend as well as general comments related to what was asked in the inventory. Only pertinent responses related to issues of parent involvement in children’s schooling that were missing from the inventory were examined.

White/non-Hispanic group. Other issues or aspects provided by the respondents in the White/non-Hispanic group addressed both demographic items missing from the inventory as well as questions related to various forms of parent involvement in children’s schooling. A demographic item that was suggested by four respondents as being important and missing from the inventory was parents’ work schedule (e.g., hours of day worked, multiple jobs, more than one parent working). Several other demographic aspects were recommended for inclusion on the inventory. These aspects were:

- Type of household (i.e., single parent family, dual)
- Does the child have learning disabilities?
- Child's birth order

- Does the parent know the child's school schedule (i.e., what days are P.E. / Music) so that intelligent questions can be asked?
- Is the parent(s) present in the house when the child gets home from school?
- Primary type of contact preferred by the parent from the teacher or school (e.g., phone, email, face-to-face)

The two most often cited issues of parent involvement in children's schooling that parents ($n = 7$ for both issues) thought were missing from the inventory were volunteering and being involved in the classroom or school (e.g., go to parties, work in the school, visit often), as well as the level of help needed by the child (i.e., child does not need help, child needs some help, child struggles). Further issues of parent involvement proposed by respondents included:

- Is there an online grading system for parents to check children's grades and see where they are having problems?
- Does the parent drop off and pick up the child from school?
- PTA/SAC involvement
- Taking the child to the library to supplement learning at school
- What happens over the summer breaks
- The amount of time the child spends on homework and projects
- The amount of time the child spends on homework versus watching TV and playing video games
- The amount of time the child spends on extra education
- Parents' time and/or willingness to work on projects with child

- Amount of homework to help in troubled areas / daily listing of homework sent home to inform parents of what topics require attention
- How often do parents contact the teachers
- Has parent sought external help for the child (e.g., tutoring)
- In addition to asking how often parents help with math / reading, asking why not as much time is needed helping and correcting homework
- Teaching children study skills / habits
- Teaching children test-taking skills
- Child's relationship with the teacher
- Parents' relationship with the teacher
- How to incorporate lessons from school with home life (e.g., ways a trip to the grocery store could be a teaching opportunity)
- Is parent meeting the child's need for help
- The amount of principal involvement
- Child's level of academic achievement

Hispanic group. Other issues or aspects provided by the respondents in the Hispanic group addressed both demographic items missing from the inventory as well as questions related to various forms of parent involvement in children's schooling. Two demographic items that were suggested by three respondents each as being important and missing from the inventory were parents' work schedule (e.g., both parents working) and types of communication preferred by parents (e.g., email, progress reports, conferences, report cards, award assemblies, website, weekly report). A number of other demographic aspects were recommended for inclusion on the inventory. These aspects were:

- Are the parents good role models?
- Parent's marital status
- Parents' skills & abilities—some parents cannot help their children because they do not understand the homework, they cannot read, or they do not have the educational level to help their children
- Is the child in ESE?
- Is the child involved in extracurricular activities?
- Does the child get to school on time?
- Does the child have good time management?
- Does the parent work or help the child in another language?
- How does working with the child in another language affect communication with the child's work?
- Inventory should consider both parents and not just one parent—“...Each parent brings their own strengths and talents to the rearing of this child so what one lacks the other makes up for.”

The most often cited issues of parent involvement in children's schooling that parents thought were missing from the inventory were communication with/from the teacher (e.g., about tests, class activities; $n = 5$), the frequency with which the teacher sends the child home with classroom practices, examples, or textbooks on the day's lessons to complete homework tasks and so parents can help at home ($n = 4$), Does the parent volunteer in the school/classroom ($n = 3$), and Does the parent seek out tutors/tutoring programs or the child see a tutor? ($n = 3$). Further issues of and questions about parent involvement proposed by respondents included:

- Does the teacher provide information for how to supplement at home when no homework is assigned?
- Do the schools provide more to enrich the children instead of taking away enriching programs?
- Is the child willing to work with the parent?
- Does working with the child bring the child and the parent closer together or farther apart?
- Does your child share their achievements and challenges?
- Is there more than one person that helps with homework?
- Does the teacher have a mentor?
- Does the school have mentors?
- Does the parent pass on pressure to the child because of lack of time?
- Does the parent feel that this is the age of accountability and children should do the work themselves?
- Has the parent already placed the child at Harvard in his/her mind?
- Are the teachers sensitive to the needs or feelings of children with learning disabilities?
- Does the principal engage and mix with the students to build their confidence and trust?
- Are the teachers required to have and utilize the school website/personal website?
- Is the teacher website a more effective and efficient communication for parents to use over the planners?
- Does the parent have a good relationship with the teacher and feel involved?

- Does the teacher tell parents about what they are teaching?
- Does the teacher tell parents about what difficulties the child is having with the units being taught so that parents can better support the student's learning at home?
- Does the teacher send test review sheets home?
- Does the school have monthly meetings for parents to discuss concerns in an open forum?
- Is there mentoring for students?
- Do parents know who the child's friends are?
- Do parents know how the child interacts with his/her peers?
- Is there a website or examples for math problems?
- Attendance at school functions
- Fundraising involvement
- PTA involvement
- Is homework differentiated based on students' needs?
- Is the parent provided with ideas on how to help the child learn better?
- The amount of activities the teacher sends home for the child and the parent to work on together
- Are parents provided with a lesson plan for the semester that contains the dates of tests and topics?
- Do the teachers inform the parent of what is happening in and what child is learning in other curricular activities (e.g., music, PE)?

- Does the school inform the parents about other school programs that are available (e.g., gifted)?
- How does and when can parents become more involved in the school—nothing specific is provided by the school on the volunteer form

Comparison of groups. The responses of the White/non-Hispanic and Hispanic groups were scrutinized to determine if similar new item content for inclusion on the inventory were suggested by the groups. First the demographic suggestions proposed by both groups were evaluated and four aspects/issues were found to be comparable across the two groups. These aspects/issues were parents' work schedule, the types of communication preferred by the parent, parent's marital status/type of household (i.e., single parent, dual), and is the child in ESE/does the child have disabilities.

Issues of parent involvement in children's schooling that parents thought were important and missing from the inventory next were examined. Five analogous issues were recommended by respondents across the two groups. These five issues were volunteering in the classroom/school, does the parent seek tutors/tutoring programs for child, PTA involvement, the parent's relationship with the teacher, and is there a school or teacher website for parents to access to retrieve information about their child.

Mapping of the Sub-factors with Epstein's Types of Involvement

As previously stated, the four sub-factors of the main inventory were mapped with Epstein's six types of involvement. Mapping of the sub-factors entailed identifying and matching items within the sub-factors with the type of involvement they represented, based on the descriptions of the six types of involvement. The sub-scales mapped with three of the six types of involvement: Parenting (offer families assistance with parenting

and childrearing skills, in understanding child development, and in setting home conditions that support children as students), Communicating (keep families up-to-date on school programs and student progress through effective school-to-home and home-to-school communications), and Learning at Home (offer suggestions and techniques to involve families in learning activities with their children at home). The three types of involvement that did not have associated items from the inventory were Volunteering (to support children and school programs, improve outreach, training, and schedules to involve families as volunteers and improve family attendance at events at school and in other locations), Decision Making (include families as participants in school decisions, governance, and advocacy through PTA/PTO, school councils, committees, and other parent organizations), and Collaborating with the Community (coordinate resources and services for families, children, and the school with businesses, agencies, and other groups; provide services to the community).

Upon analysis of the responses to the item asking participants to please list other issues or aspects of parent involvement in children's schooling that they believed were important and that were missing from the inventory, several of the issues or aspects of parent involvement mentioned aligned with the original three types of involvement with which the inventory mapped, but also addressed the three types of involvement that did not initially map with the inventory's sub-scales. The revised mapping of the four sub-factors and the new items with Epstein's types of involvement is displayed in Figure 8. The following are examples of item suggestions and the types of involvement for which they matched:

- Parenting
 - Teaching children study skills / habits
 - Is the parent provided with ideas on how to help the child learn better?
- Communicating
 - Does the school inform the parents about other school programs that are available (e.g., gifted)?
 - Amount of homework to help in troubled areas / daily listing of homework sent home to inform parents of what topics require attention.
- Learning at Home
 - How to incorporate lessons from school with home life (e.g., ways a trip to the grocery store could be a teaching opportunity)
 - Does the teacher provide information for how to supplement at home when no homework is assigned?
- Volunteering
 - Does the parent volunteer in the school/classroom?
 - Attendance at school functions
- Decision Making
 - PTA/SAC involvement
 - Fundraising involvement
- Collaborating with the Community
 - Has parent sought external help for the child (e.g., tutoring)

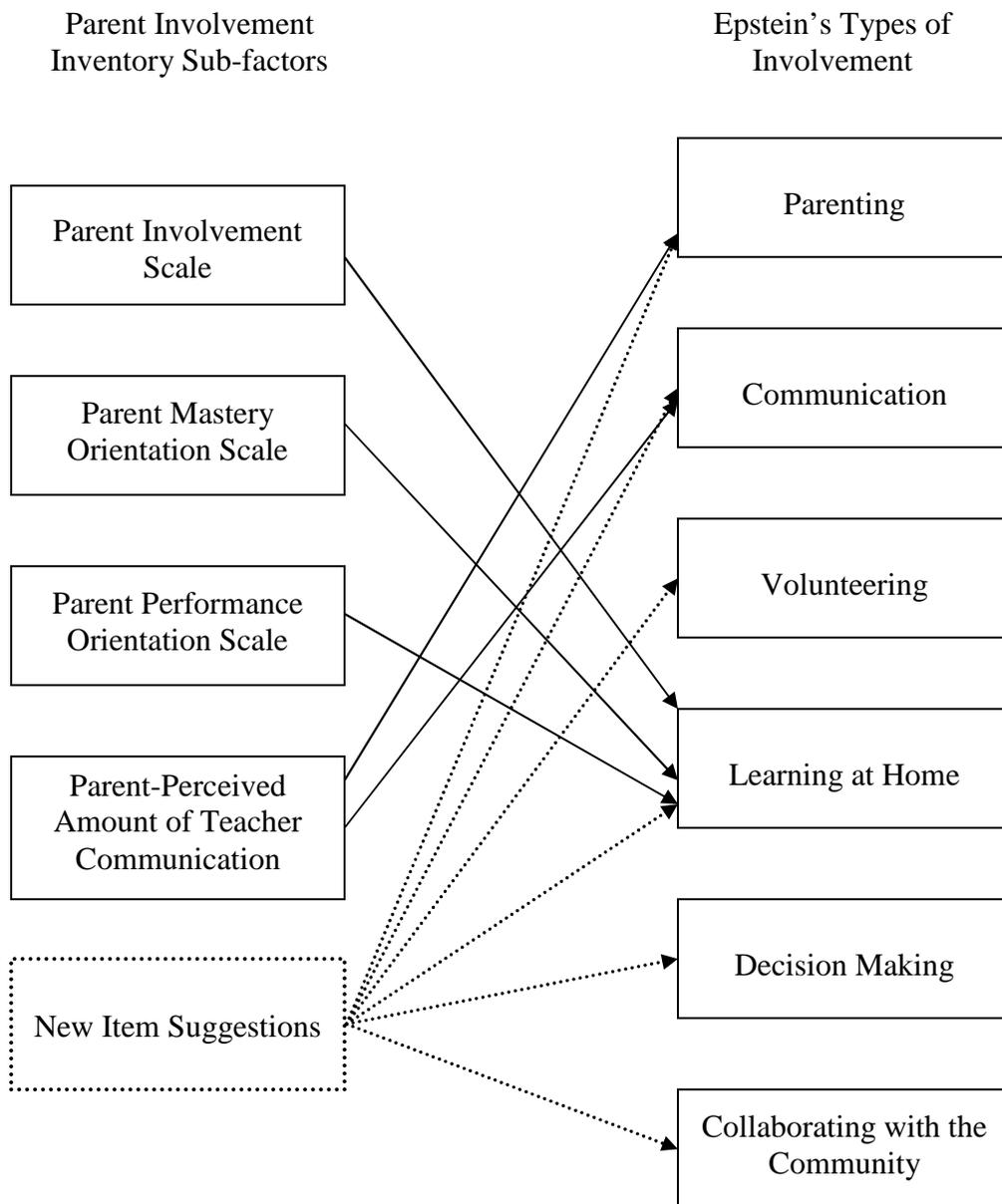


Figure 8. The revised mapping of the four sub-factors and the new items with Epstein's six types of involvement.

Summary

Descriptive statistics for the two groups showed marked skewness and kurtosis of the distributions for a number of items, which indicated univariate non-normality of the data. Multivariate normality tests also were run, which verified that there was multivariate non-normality of the data. Confirmatory factor analysis (CFA) and examination of the chi-square and fit indices revealed poor fit of the model for the White/non-Hispanic group. Further analyses showed item 20 appeared to be loading on more than one factor. In addition, several items appeared to have correlated errors.

A CFA also was conducted on the items of the inventory for the Hispanic group. The resulting fit of the model was poor. Unlike the White/non-Hispanic group, item 20 did not load on more than one factor. However, item 14 and item 15 appeared to be loading on two factors.

Due to item 20's tendency to load on more than one factor for the White/non-Hispanic group, analyses then were run with item 20 removed in order to ascertain if the model for the White/non-Hispanic group had adequate fit. Upon examination of the fit indices, it was determined that the fit of the model was somewhat poorer with item 20 removed. As a result, it was decided that item 20 should remain within the model. The baseline model for the White/non-Hispanic group was respecified and adequate fit was achieved.

Once adequate fit was established with the White/non-Hispanic group's model, the data for the Hispanic group was fit to this respecified model. However, the model fit was poor, which indicated that the model was misspecified for this group. Due to the tendency of items 14 and 15 to load on more than one factor in the baseline model for the

Hispanic group, analyses then were run with item 15 removed in order to ascertain if the model for the Hispanic group had adequate fit. Upon examination of the fit indices, it was determined that the fit of the model was poorer with item 15 removed. Next, both items 14 and 15 were removed from the model in order to determine if the model had adequate fit. An examination of the fit indices showed that the fit was even poorer with both items removed. As a result, it was decided that items 14 and 15 should remain within the model. The baseline model for the Hispanic group was respecified and adequate fit was achieved. Due to the misspecification of the models for both groups, further measurement invariance testing was not conducted.

Subsequent exploratory factor analyses identified that four factors best represented the models for the two groups. Resulting factors closely resembled the original sub-factors of the inventory and their associated items; having only minor discrepancies. Cronbach's alphas obtained for each sub-factor of the inventory for both groups revealed acceptable internal reliabilities for factor score estimates.

Feedback obtained for the first open-ended item of the inventory revealed that respondents found several items as well as a general feature of the inventory (i.e., response scale options) to be confusing or troubling because of terms used in the items. Respondents also believed that item feedback could be expanded upon with an open-ended format or by obtaining student feedback. Parents provided other issues or aspects of parent involvement in children's schooling that they believed were important and that were missing from the inventory. These issues/aspects included parents' work schedule, is the child in ESE/have disabilities, volunteering in the classroom/school, PTA

involvement, and is there a school or teacher website for parents to access to retrieve information about their child.

CHAPTER 5

DISCUSSION

The purpose of the current study was to conduct further validation analyses of an inventory designed to measure the construct of parent involvement in children's schooling through the investigation of measurement invariance to determine if the measurement properties of the inventory varied by race/ethnicity. The study compared the responses of Hispanic parents/guardians with White/non-Hispanic parents/guardians to investigate if these two groups were interpreting the items on the inventory in the same manner. Research participants were parents/guardians of children in grades 3 through 5 in a local school district. The following were the research questions investigated in this study:

1. To what extent do the measurement properties (e.g., factor structure, reliability) of the parent involvement in children's schooling inventory vary by race/ethnicity, specifically White/non-Hispanic and Hispanic?
2. To what extent are there similarities and differences across the two races/ethnicities (i.e., White/non-Hispanic and Hispanic parents or guardians) for items on the inventory that are found to be confusing?
3. To what extent are there similarities and differences across the two races/ethnicities (i.e., White/non-Hispanic and Hispanic parents or guardians) for other important issues or aspects of parent involvement in children's schooling that parents or guardians find to be missing from the inventory?

Summary of Findings

Data were obtained from 126 Hispanic parents/guardians and 116 White/non-Hispanic parents/guardians of public elementary school children in grades 3 through 5. Results from the study revealed that the descriptive statistics for the two groups showed marked skewness and kurtosis of the distributions for a number of items indicating univariate non-normality of the data. Further statistical analyses were conducted and confirmed multivariate non-normality of the data. Confirmatory factor analysis (CFA) and examination of the chi-square and fit indices (i.e., RMSEA, SRMR, CFI) revealed poor fit of the model for the White/non-Hispanic group. As a result of the non-normality of the data and the poor fit of the model, CFAs also were conducted using maximum likelihood estimation with robust standard errors (MLR), maximum likelihood with robust standard error and a mean-adjusted chi-square (MLM), and weighted least squares mean and variance adjusted (WLSMV) with defining the variables as categorical in order to determine if the fit of the model improved as a result of these estimation techniques. Analyses utilizing these other estimation techniques resulted in continued poor fit of the model.

Subsequently, further analyses were run using ML estimation in order to determine the source of the bad fit (e.g., items loading on more than one factor, correlation of item errors). Determination of bad fit was ascertained through the inspection of the modification indices. Modification indices greater than 3.84 signified locations of bad fit. Examination of the modification indices showed item 20 appeared to be loading on more than one factor. In addition, several items appeared to have correlated errors. A plausible reason for these correlated errors is content-related issues,

such as overlap in item content. For instance, Byrne (1992) tested for invariant factorial structure across gender of the Maslach Burnout Inventory (MBI) for elementary and secondary teachers. She discovered very high correlated errors for three pairs of items per group. These errors were due to content-related problems associated with the MBI; specifically, items asking the same thing, but in a different manner.

Because of the predisposition for item 20 to load on more than one factor for the White/non-Hispanic group, a CFA also was conducted on the items of the inventory for the Hispanic group. The resulting fit of the model was poor. Unlike the White/non-Hispanic group, item 20 did not load on more than one factor. However, item 14 and item 15 appeared to be loading on two factors.

Upon removal of item 20, analyses for the White/non-Hispanic group showed that the fit of the model was somewhat poorer with item 20 removed. As a result, it was decided that item 20 should remain within the model. The baseline model for the White/non-Hispanic group was respecified and adequate fit was achieved. Once adequate fit was established with the White/non-Hispanic group's model, the data for the Hispanic group was fit to this respecified model. However, the model fit was poor, which indicated that the model was misspecified for this group. Due to the tendency of items 14 and 15 to load on more than one factor in the baseline model for the Hispanic group, analyses then were run with item 15 removed in order to ascertain if the model for the Hispanic group had adequate fit. Only item 15 was removed because the modification indices were somewhat higher than the modification indices for item 14. Upon examination of the fit indices, it was determined that the fit of the model was poorer with item 15 removed. Next, both items 14 and 15 were removed from the model

in order to determine if the model had adequate fit. An examination of the fit indices showed that the fit was even poorer with both items removed. As a result, it was decided that items 14 and 15 should remain within the model. The baseline model for the Hispanic group was respecified and adequate fit was achieved. Due to the misspecification of the models for both groups, further measurement invariance testing was not conducted.

Subsequent exploratory factor analyses identified that four factors best represented the models for the two groups. Resulting factors closely resembled the original sub-factors of the inventory and their associated items; having only minor discrepancies. Cronbach's alphas obtained for each sub-factors of the inventory for both groups revealed acceptable internal reliabilities for factor score estimates.

Feedback obtained for the first open-ended item of the inventory revealed that respondents found several items to be confusing or troubling because of terms used in the items. The feedback from the respondents signified that these items on the inventory should be reworded. For instance, parents were interpreting what was being asked in item 16 (*When my child is making a lot of mistakes on a task, I encourage him or her to try a different task*) in different ways. The respondents were unsure if the item meant that they encouraged the child to completely give up on the task or to try a different way of doing the task. This item could be reworded in a manner such as, *When my child is making a lot of mistakes on a task, I show him or her a different way of doing the task* or *When my child is making a lot of mistakes on a task, I encourage him or her to try a different way of doing the task*. Two other examples (items 17 and 18) with which parents expressed concern were items that compared the child's performance with the

performance of others and insinuated competition among students. The parents stated that they only care about their own child and do not compare their child with others. The phrase “better than others” could be removed and these items reworded in the following manner: *I congratulate my child when he or she does well in school and I often tell my child that he or she can do well in school if he or she tries hard enough.* Parents also had contention with the fact that items did not take the independent child who does not need assistance into consideration.

Further, respondents found response scale options of the inventory to be confusing. Identifiers (e.g., *Somewhat, A little*) for the middle response options of the Likert-type scales should be added so that parents understand the differences in the levels of agreement. In addition, the response options for items asking, for instance, about how much time parents spend helping their child or reviewing homework, should be modified to provide specific time periods from which the respondents can choose, such as the number of hours. Moreover, parents believed that item feedback could be expanded upon with an open-ended format for some of the items or by obtaining student feedback.

Taken as a whole, the items with correlating errors, the respecification of two different measurement models (one for each group), the inability to conduct further measurement invariance testing, and parents/guardians’ confusion with the response scale and particular items exemplifies the severity of the misspecification of the baseline model. Further, differences in the measurement properties of the two models may be indicative of discrepancies existing in parents’ interpretations of items, such as with item 16 (*When my child is making a lot of mistakes on a task, I encourage him or her to try a different task*). Parents from each group also may have responded to the items in

dissimilar ways depending on the child and his/her amount of assistance needed. For example, a parent may have responded with *Not Often* rather than *Very Often* to *How often do you help your child with math?* because the child does not need assistance and not because the parent does not want to help the child. In addition, differences in the measurement properties of the two models may signify the inventory's possible bias across racial/ethnic groups. As conveyed by Brown (2006), if items measuring the underlying construct are not comparable across subgroups, then the instrument is considered to be biased.

Parents provided other issues or aspects of parent involvement in children's schooling that they believed were important and that were missing from the inventory as well as demographic items that parents/guardians believed were missing from the inventory. These issues/aspects that were suggested by respondents included parents' work schedule, is the child in ESE/does the child have disabilities, parent's marital status/type of household, volunteering in the classroom/school, PTA involvement, does the parent seek tutors/tutoring programs for the child, and is there a school or teacher website for parents to access to retrieve information about their child. Issues suggested by respondents from one or both groups in the current study coincided with concerns and interest in children's education revealed in the research conducted by Quioco and Daoud (2006). Corresponding issues included assistance for themselves in understanding the assignments given to their children and improved communication between the school and home. Moreover, Lopez' (1993) findings revealed that Mexican-American parents believed that parent involvement could be enhanced by offering more activities that involve parents, encouraging parents to participate, communicating more with parents,

offering more programs, and cooperating with parents. Anglo-American parents gave similar suggestions for enhancing parent involvement. These suggestions were encouraging parents to participate, offering more programs, cooperating with parents, and placing fewer demands on parents.

Suggestions for other aspects of parent involvement in children's schooling provided by respondents mapped with the six types of involvement differentiated by Epstein (2006): Parenting, Communicating, Learning at Home, Volunteering, Decision Making, and Collaborating with the Community. These suggestions illustrate the connection among students, the family, the school, and the community as detailed in Epstein et al.'s Theory of Overlapping Spheres of Influence (2002). As previously stated, the combination of activities conducted by the family, the school, and the community influence the success of the student through guidance, motivation, and engagement. Accordingly, the student is a key factor in the success of the family, school, and community partnership.

Limitations

One of the major limitations of the study was the lack of previous psychometric evidence available for the instrument. When creating a new survey or inventory, it is essential for researchers to ensure that the construct validity of the instrument has been investigated. Further, Brown (2006) contends that "*Measurement invariance* evaluation is an important aspect of test development" (p. 4). The inventory that was used in the current study was created by Watkins (1997) for research he was conducting on parent involvement. There was no previous validation of the instrument, such as a pilot study with a small group of individuals or an exploratory factor analysis of the data, conducted

to investigate the construct validity of the inventory. The only analyses conducted by Watkins (1997) were the calculations of Cronbach's alphas for each of the sub-factors to examine the internal reliability of the instrument. Although it is important to measure the internal reliability of the instrument through the evaluation of the Cronbach's alphas, it is extremely important to conduct additional psychometric analyses on the measurement properties of the inventory in order to determine if the instrument is valid and functioning in a similar manner across various ethnic and sociodemographic groups. As presented in the current study, respondents were confused by the wording of several of the items on the inventory as well as with the response scales, and they believed the questions only skimmed the surface of parent involvement in children's schooling.

If further psychometric analyses had been completed by Watkins (1997) and feedback received from respondents as to the clarity of the items and the response scales, other issues or aspects of parent involvement that should be included, and the presentation of the overall instrument, the results of the current study may have been different. For instance, there may not have been misspecification of the models for the White/non-Hispanic group and the Hispanic group. Issues uncovered in the current study such as items having correlated errors and confusion with the wording of some of the items could have been discovered and the inventory modified and improved.

One of the methodological limitations to the study was that it was unknown how many inventories were distributed to the students by the schools, which resulted in the inability to determine a response rate. Only estimates were provided for the number of students encompassing the targeted grade levels. It is not known if these estimates were approximately correct, too low, or too high. Further, although the surveys may have been

distributed to the teachers' inboxes in the schools' front offices, the teachers themselves may not have handed out the surveys to the students for some reason, such as forgetting to hand them out or misplacing them. Moreover, evidence was uncovered of at least one teacher in a lower grade level (i.e., Kindergarten) inadvertently being given surveys to pass out to his/her students. An email was received by the researcher from a Kindergarten teacher requesting more surveys. The researcher emailed the teacher back explaining that the intended grade levels were grades 3-5. Additionally, five surveys marked with ages lower than the targeted sample were received in the mail by the researcher. Because of these few number of surveys received, one could presume that these surveys were from parents/guardians of students in this teacher's classroom. Even though the cover letter addressed to the teachers explained what the target grade levels were, any teachers in lower grade levels who possibly were given surveys to distribute may have just skimmed the document and handed out the inventory packets to their students. If they did notice that the packets were not intended for their grade level, the teachers may have simply thrown the packet bundles away or given them back to the front office.

An additional methodological limitation was that the students may not have given their parents or guardians the inventory packets. The inventory could have been thrown away or lost by either the student or the parent/guardian. Additionally, the parents/guardians may not have had the time or inclination to complete the inventory. Moreover, parents who completed the survey may be more involved, in general, in their children's lives than those who did not complete the inventory, making the sample biased

towards parents who are more involved. These possibilities may have played a role in the study's sample size not being larger.

Another limitation was that the data were treated as an independent sample of parents instead of them being clustered in a hierarchical structure. Individuals who are nested in groups, for instance students within classrooms and within schools, share similarities or values on variables as opposed to randomly selected individuals (Li, Duncan, Harmer, Acock, & Stoolmiller, 1998; Raudenbush & Bryk, 2002). The observations may have been correlated because of clustering within classrooms and schools. However, the data collection strategies did not allow for identification of the clusters.

In addition, the current study could not investigate if the measurement properties of the inventory varied by ethnic group, while also controlling for relations such as socioeconomic status (SES). Ethnicity and SES are often confounded, which makes it difficult to distinguish whether observed differences are due to ethnic background or to socioeconomic differences. For instance, if there are fewer high SES Hispanic parents and fewer low SES White/non-Hispanic parents, then statements made about these groups will be skewed.

A final limitation to the study was that only data from the English version of the inventory were included in the current study. The Spanish version was a requirement by the school district and did not go through a rigorous process of translation, back-translation, and expert review of the translated survey by more than one person. Because the person who translated the documents indicated that there was more than one way to translate some of the terms in the documents, particular phrases in the translated

documents may have had different meanings for different individuals depending on what country they were from and which dialect of the Spanish language they spoke. This possible discrepancy in translation could have had an effect on how parents interpreted and responded to the items on the inventory.

Implications

The results obtained from this research provide important findings of further validity evidence of the inventory and its use with different racial/ethnic populations as well as adding to the body of research on parent's involvement in children's schooling. The data indicated that the measurement model was misspecified for the two groups, White/non-Hispanic and Hispanic. The models needed to be respecified and exploratory factor analyses conducted in order to investigate which models would best fit the data for both groups. These resultant findings indicate that caution should be exercised by researchers, school districts, and other individuals who may be considering administering the inventory to parents and guardians of school-aged children. In addition, parents/guardians reported that they were confused about the wording of some of the items, they believed responses to items could have been explained further in an open-ended format or different response options employed for them to provide better and more accurate responses, and they provided suggestions for items that they believed were important and missing from the inventory.

The results also may be used to demonstrate the importance of conducting pretesting and psychometric analyses on newly developed instruments; analyses that were not conducted by Watkins (1997). For instance, the inventory could have been reviewed, critiqued, and discussed by a small sample of three to five individuals in a focus group

for possible revisions and then pilot tested with a larger sample. Further, Watkins (1997) should have conducted an exploratory factor analysis of the data to investigate the underlying factor structure of the measure. As stated in the *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education, 1999), the validation of an instrument is a fundamental concern in interpreting an instrument's scores in relation to the construct the instrument is intended to measure and the scores' relevance to the proposed use.

In addition, the mapping of the four sub-factors of the inventory and the new items suggested by respondents with Epstein's types of involvement demonstrated the applicability of Epstein's model. The model details six types of involvement that work in conjunction with the theory, which specifies that the combination of activities conducted by the family, the school, and the community influence the development and educational success of the student. Issues or aspects of parent involvement mentioned by parents in response to the item asking them to please list other issues or aspects of parent involvement in children's schooling that they believed were important and that were missing from the inventory (e.g., volunteering in the classroom/school, seeking external assistance for the child) aligned with all six of Epstein's types of involvement. These other issues or aspects of parent involvement that were recommended by the participants along with the issues that were already included on the inventory illustrate the interaction among the three areas of the partnership and demonstrate the connection between parents' views and Epstein's model.

Although geared towards the primary caregivers of urban students in pre-kindergarten, kindergarten, and first grade who were enrolled in programs such as Head Start and CDC, an example of an instrument that encompasses all six of Epstein's types of involvement is the Family Involvement Questionnaire (FIQ) (Fantuzzo, Tighe, & Childs, 2000). This instrument appears to include some aspects similar to ones mentioned by respondents in the current study that were missing from the inventory. In order to embody all six types of involvement like the FIQ, the inventory in the current study would need to be modified to include item suggestions made by the respondents that they believed to be important.

Directions for Future Research

The misspecification of the models for both groups, the inability to conduct further measurement invariance testing, the results from the EFAs, and the feedback obtained from the respondents in this study demonstrated that the inventory on parent's involvement in children's schooling requires modification and further psychometric investigation. Future research should begin with modification of the inventory. Findings from the EFAs showed that the resulting factors for the two groups closely resembled the original sub-factors of the inventory and their associated items. However, four items for the White/non-Hispanic group and three items for the Hispanic group were removed from the EFA analyses due to having factor loadings lower than the cutoff value of 0.40, items that were loading on more than one factor, and due to the interpretability of the items with the factors in which they loaded the highest. In addition, one item for the White/non-Hispanic group and three items for the Hispanic group loaded on factors in which they were not originally assigned. These results in conjunction with the feedback

from the respondents illustrate that items on the inventory need to be reviewed for rewording or possible deletion. Some items also should be amended to an open-ended format or to include an open-ended portion asking respondents to further explain their response choices. Moreover, new items should be included on the inventory based on the suggestions provided by the respondents.

The response scales for the items also need to be revised to eliminate confusion so that parents/guardians understand the differences in the levels of agreement. Labels (e.g., *Somewhat, A little*) for the middle response options of the Likert-type scales need to be added. Furthermore, the response options for items asking how much time parents spend helping their child or reviewing homework need to provide specific time periods from which the respondents can choose, such as the number of hours.

Upon modification, the inventory should be administered to a racially/ethnically and socioeconomically diverse sample of parents/guardians. Due to the potential confounding of respondents' differences in ethnicity and socioeconomic status, larger and more comparable (i.e., stratified) samples across the ethnicities and socioeconomic statuses could be obtained. In order to ensure that a greater number of parents respond to the inventory, schools could be contacted prior to the beginning of the school year in order to ascertain dates of parent nights, PTA meetings, or outreach initiatives to ethnic minorities during the school year that could be attended by the researcher to speak with parents and administer the surveys; small incentives could be given for completing the inventory; notes could be provided to the students to bring home to the parents reminding them to complete the survey; or the inventories could be administered at a greater number of schools. The data would then be examined through quantitative and qualitative

analyses (e.g., psychometric analyses, feedback about the clarity of the items on the inventory). Once the data suggest that the properties of the inventory are invariant across racial/ethnic groups, the inventory would be suitable for administration to racially/ethnically diverse groups.

Future research would entail the administration of the validated inventory to a large sample of parents/guardians to attain their perspectives on parent's involvement in children's schooling. Moreover, the validated inventory could be utilized by school systems and could prove to be a valuable tool for them to gauge the level of parent involvement in children's schooling.

Conclusions

Epstein et al.'s Theory of Overlapping Spheres of Influence focuses on the interaction and communication, or partnerships, among families, schools, and the community to bring the three closer together. The theory works in conjunction with Epstein's typology of parental involvement, which focuses on six types of involvement that are instrumental to a child's development and his/her school and educational success. The current study compared the responses of Hispanic parents/guardians with White/non-Hispanic parents/guardians to investigate if these two groups were interpreting items on an inventory designed to measure the construct of parent involvement in children's schooling in the same manner. Results from the study indicated that the measurement model was misspecified for the White/non-Hispanic group and the Hispanic group and further measurement invariance testing was unable to be conducted. Exploratory factor analyses were conducted in order to investigate which models would best fit the data for both groups. Feedback also was attained from parents/guardians about the clarity of the

inventory, which revealed their confusion with the response scale and the wording of particular items. In addition, they supplied issues or aspects of parent involvement that they found important but missing from the inventory.

The findings from the current study are important contributions to the parent involvement literature. Parents/guardians provided valuable feedback as to the types of parent involvement in children's schooling that they considered important, which mapped with all of Epstein's six types of involvement. This feedback can be used by researchers to better inform studies they are conducting on parent involvement in education, by school districts that are trying to gauge the types and/or amount of involvement in children's schooling displayed by or sought by parents/guardians, and by other individuals who may be interested in parent involvement in children's schooling. Moreover, the results are important contributions to the construct validity and measurement invariance literature. Because of the misspecification of the model, caution should be exercised for anyone who may be considering utilizing the inventory in their research or schools. Lastly, the findings demonstrate the importance of conducting psychometric analyses for evidence of the construct validity of newly constructed instruments.

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APPENDIX A
LETTER OF INTRODUCTION



Please Help with my Study

“Your Involvement in Your Child’s Schooling”

Title of Research Study: Parent Involvement in Children’s Schooling: An Investigation of Measurement Equivalence across Ethnic Groups (IRB #Pro00002885)

I am doing a research study about parents’ involvement in their children’s schooling. This study is part of my work at the University of South Florida. The first few questions ask for some basic information about you and your family. The next set of questions ask about what you say and do in helping your child to learn at home. The third section asks about communication between you and your child’s teacher. Finally, you are asked for your opinions about the survey.

You are not being asked for your name, so the information you write on the survey will be anonymous. No one will know that the answers came from you. You will not directly benefit from helping with this study. However, by helping you will add to our knowledge of children’s lives. There are no risks for helping with this type of study.

If you have more than one child, please choose **ONLY one** of your children and fill the survey out while thinking about only him or her. The child must be in grade 3, 4, or 5 (around 8 to 11 years old). The survey will take only 10 – 15 minutes to complete. Please use the enclosed pre-addressed stamped envelope to mail the survey back to me. By completing the enclosed survey, you are agreeing to participate in the research.

If you have any questions, please feel free to contact me by phone at (813) 974-6064 or by email at hmscott2@mail.usf.edu. If I do not answer the phone, please leave a message. If you have questions about your rights as a participant in this study, general questions, or have complaints, concerns or issues you want to discuss with someone outside the research, call the USF IRB at (813) 974-5638.

I really appreciate you helping with this study.

Thank you,

Heather Scott
Doctoral Student, Department of Measurement and Research

APPENDIX B
PARENT INVOLVEMENT INVENTORY

8. What is your total annual household income?
- Less than \$10,000
 - \$10,001 to \$14,999
 - \$15,000 to \$24,999
 - \$25,000 to \$34,999
 - \$35,000 to \$44,999
 - \$45,000 to \$74,999
 - \$75,000 to \$99,999
 - \$100,000 to \$149,999
 - \$150,000 to \$199,999
 - \$200,000 or more

For the following items, please respond according to *what you typically say and do* in helping your child learn at home, *not what you necessarily believe is right*. Please fill in the circle that shows how often you say or do the following things.

Item	Not at All					A lot
9. I encourage my child to try to find the reason for the mistakes he or she makes.	<input type="radio"/>					
10. I encourage my child to do extra work to learn new things.	<input type="radio"/>					
11. I pay close attention to my child's improvement in his or her school learning.	<input type="radio"/>					
12. I try to find out from my child what he or she wants to learn about.	<input type="radio"/>					
13. I encourage my child to feel successful for simply working hard on his or her homework.	<input type="radio"/>					
14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	<input type="radio"/>					
15. I pay close attention to the grades my child receives.	<input type="radio"/>					
16. When my child is making a lot of mistakes on a task, I encourage him or her to try a different task.	<input type="radio"/>					

Item	Not at All				A lot
17. I congratulate my child when he or she does better than others.	<input type="radio"/>				
18. I often tell my child that he or she can do better than others if he or she tries hard enough.	<input type="radio"/>				
19. I often tell my child he or she can get good grades if he or she works hard enough.	<input type="radio"/>				

For the following items, please respond according to *what you typically say and do* in helping your child learn at home, *not what you necessarily believe is right*. Please fill in the circle that shows how often you say or do the following things.

Item	Not Often				Very Often
20. How often do you talk to your child about what he or she is learning in school?	<input type="radio"/>				
21. How often do you review and discuss with your child the graded assignments and work he or she brings home?	<input type="radio"/>				
22. How often do you help your child with math?	<input type="radio"/>				
23. How often do you help your child with reading?	<input type="radio"/>				
24. How often do you talk with your child about your expectations regarding his or her homework?	<input type="radio"/>				

Item	Very little Time				A great deal of Time
25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?	<input type="radio"/>				
26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day?	<input type="radio"/>				

Teachers communicate with and involve parents in a variety of ways. As far as *you* are concerned, did your child's teacher communicate with you enough in the following ways this school year?

Item	Not Enough		Enough		More than Enough
27. Sent home activities for my child and me to work on together.	<input type="radio"/>				
28. Gave me reports or notes about my child's progress.	<input type="radio"/>				
29. Asked me to help my child with his or her schoolwork.	<input type="radio"/>				
30. Told me about my child's strengths and positive qualities.	<input type="radio"/>				
31. Gave me ideas about how to help my child learn.	<input type="radio"/>				
32. Sent me a folder of my child's classwork with comments.	<input type="radio"/>				
33. Kept me informed about what my child was learning.	<input type="radio"/>				
34. Sent me newsletters or notes to keep me informed about the classroom.	<input type="radio"/>				

APPENDIX C
INTERVIEW CONSENT FORM

Please Help with my Study

“Your Involvement in Your Child’s Schooling”

Title of Research Study: Parent Involvement in Children’s Schooling: An Investigation of Measurement Equivalence across Ethnic Groups (IRB #Pro00002885)

I am doing a research study about parents’ involvement in their children’s schooling. This study is part of my work at the University of South Florida. If you agree to participate, you will be interviewed. During this interview, you will be asked to take a survey and to give your opinions about it. The first few questions of the survey ask for some basic information about you and your family. The next set of questions ask about what you say and do in helping your child to learn at home. The third section asks about communication between you and your child’s teacher. While you are taking the survey, you will be asked to let the researcher know if you do not understand a question or if there are things you think should be on the survey that are not.

You are not being asked to write your name on the survey and what you say during the interview will be confidential. No one will know that the answers came from you. You will not directly benefit from helping with this study. However, by helping you will add to our knowledge of children’s lives. There are no risks for helping with this type of study.

If you have more than one child, please choose **ONLY one** of your children and fill the survey out while thinking about only him or her. The child must be in grade 3, 4, or 5 (around 8 to 11 years old). The interview will take only 10 – 15 minutes.

Certain people may need to see your study records. By law, anyone who looks at your records must keep them completely confidential. The only people who will be allowed to see these records are: The USF Institutional Review Board (IRB) and its related staff who have oversight responsibilities for this study, and the Department of Health and Human Services (DHHS).

If you have any questions, please feel free to contact me by phone at (813) 974-6064 or by email at hmscott2@mail.usf.edu. If I do not answer the phone, please leave a message. If you have questions about your rights as a participant in this study, general questions, or have complaints, concerns or issues you want to discuss with someone outside the research, call the USF IRB at (813) 974-5638.

Please read and sign below if you agree to be interviewed and complete the survey. I really appreciate you helping with this study.

Thank you,

Heather Scott
Doctoral Student, Department of Measurement and Research

Consent to Take Part in this Research Study

“Your Involvement in Your Child’s Schooling”

Title of Research Study: Parent Involvement in Children’s Schooling: An Investigation of Measurement Equivalence across Ethnic Groups (IRB #Pro00002885)

I agree to help with the research study about parents’ involvement in their children’s schooling. I understand that I can stop helping at any time without being asked why and without being punished.

Signature of Parent or Guardian

Date

Printed Name of Parent or Guardian

Signature of Person Obtaining Informed Consent / Research Authorization

Date

Printed Name of Person Obtaining Informed Consent / Research Authorization

APPENDIX D

LETTER OF INTRODUCTION – SPANISH VERSION



Por Favor Ayude con mi Estudio
“Su Participación en la Educación de su Hijo(a)”

Titulo del Estudio de Investigación: Participación de los Padres en la Educación de sus Hijos: Una Investigación de la Equivalencia de Mediciente Grupos Étnicos (IRB #Pro00002885)

Estoy llevando a cabo un estudio de investigación sobre la participación de los padres en la educación de sus hijos(as). Este estudio es parte de mi trabajo en la Universidad del Sur de la Florida. Las primeras preguntas solicitan información básica acerca de usted y su familia. El siguiente grupo de preguntas se refiere a lo que dicen y hacen ustedes para ayudar a su hijo(a) a aprender en casa. La tercera sección pregunta acerca de la comunicación entre usted y el maestro(a) de su hijo(a). Por último, se le preguntará su opinión acerca de la encuesta.

No se le pedirá su nombre, de manera que la información que usted escriba en la encuesta será anónima. Nadie sabrá que las respuestas provienen de usted. Usted no se beneficiará directamente por ayudar en este estudio. Sin embargo, al ayudar usted añade a nuestro conocimiento sobre la vida de los niños. No existen riesgos por ayudar con este tipo de estudio.

Si usted tiene más de un hijo(a), por favor elija **SOLAMENTE uno** de sus hijos(as) y complete la encuesta pensando en él o ella. El niño(a) debe estar en 3ro, 4to o 5to grado (alrededor de 8 a 11 años de edad). Completar la encuesta sólo tomará 10-15 minutos. Por favor utilice el sobre adjunto pre dirigido con sello de correo para enviarme la encuesta de regreso. Al completar la encuesta adjunta, usted se compromete a participar en esta investigación.

Si usted tiene alguna pregunta, por favor no dude en contactarme por teléfono al (813) 974-6064 o por correo electrónico a hmscott2@mail.usf.edu. Si no contesto el teléfono, por favor deje un mensaje. Si usted tiene preguntas acerca de sus derechos como participante en este estudio, preguntas generales o tiene quejas, preocupaciones o problemas que quiere discutir con alguien fuera de la investigación, llame a USF IRB al (813) 974-5638.

Realmente aprecio su ayuda con este estudio.

Gracias,

Heather Scott

Estudiante Doctoral, Departamento de Medición e Investigación

APPENDIX E

PARENT INVOLVEMENT INVENTORY – SPANISH VERSION

8. ¿Cuál es el ingreso total anual del hogar?
- Menos de \$10,000
 - \$10,001 a \$14,999
 - \$15,000 a \$24,999
 - \$25,000 a \$34,999
 - \$35,000 a \$44,999
 - \$45,000 a \$74,999
 - \$75,000 a \$99,999
 - \$100,000 a \$149,999
 - \$150,000 a \$199,999
 - \$200,000 o más

Para los siguientes ítems, por favor responda de acuerdo a lo que *suele decir o hacer* para ayudar a su hijo(a) a aprender en casa, *no lo que necesariamente cree que es correcto*. Por favor rellene el círculo que muestra la frecuencia con que dice o hace lo siguiente.

Ítem	Nunca					Mucho				
9. Animo a mi hijo(a) a tratar de encontrar la razón de los errores que ella o él hace.	<input type="radio"/>									
10. Animo a mi hijo(a) a hacer trabajo adicional para aprender cosas nuevas.	<input type="radio"/>									
11. Presto mucha atención al mejoramiento de mi hijo(a) en su aprendizaje escolar.	<input type="radio"/>									
12. Trato de descubrir a través de mi hijo(a) lo que él o ella quieren aprender.	<input type="radio"/>									
13. Animo a mi hijo(a) a sentirse exitoso por el simple hecho de trabajar duro en su tarea.	<input type="radio"/>									
14. Cuando mi hijo(a) trae a casa una prueba o trabajo que él o ella completó, le pregunto primero que calificación recibió.	<input type="radio"/>									
15. Presto mucha atención a las calificaciones que mi hijo(a) recibe.	<input type="radio"/>									
16. Cuando mi hijo(a) está cometiendo muchos errores en una tarea, le animo para intentar una tarea diferente.	<input type="radio"/>									
17. Felicito a mi hijo(a) cuando él o ella lo hace mejor que otros.	<input type="radio"/>									

Ítem	Nunca					Mucho
18. I often tell my child that he or she can do better than others if he or she tries hard enough.	<input type="radio"/>					
19. I often tell my child he or she can get good grades if he or she works hard enough.	<input type="radio"/>					

Para los siguientes ítems, por favor responda de acuerdo a lo que *suele decir o hacer* para ayudar a su hijo(a) a aprender en casa, *no lo que necesariamente cree que es correcto*. Por favor rellene el círculo que muestra la frecuencia con que dice o hace lo siguiente.

Ítem	Casi Nunca					Muy Frecuente
20. ¿Con qué frecuencia usted habla con su hijo(a) sobre lo que él o ella está aprendiendo en la escuela?	<input type="radio"/>					
21. ¿Con qué frecuencia usted revisa y discute con su hijo(a) las tareas calificadas y el trabajo que él o ella trae a la casa?	<input type="radio"/>					
22. ¿Con qué frecuencia usted ayuda a su hijo(a) con las matemáticas?	<input type="radio"/>					
23. ¿Con qué frecuencia usted ayuda a su hijo(a) con la lectura?	<input type="radio"/>					
24. ¿Con qué frecuencia usted habla con su hijo(a) sobre sus expectativas con respecto a su tarea?	<input type="radio"/>					

Ítem	Muy poco tiempo					Una gran cantidad de tiempo
25. En general, ¿Cuánto tiempo usted (o alguien en su hogar) dedica a trabajar con su hijo(a) en las clases de la escuela cada día?	<input type="radio"/>					
26. ¿Cuánto tiempo usted (o alguien en su hogar) dedica a revisar/corregir su tarea cada día?	<input type="radio"/>					

Los maestros(as) se comunican con y hacen participar a los padres en una variedad de formas. A lo que usted se refiere, ¿El maestro(a) de su hijo(a) se comunicó con usted lo suficiente en las siguientes maneras este año escolar?

Ítem	No Suficiente		Suficiente		Más que Suficiente
27. Envío al hogar actividades para mi hijo y yo trabajar juntos.	<input type="radio"/>				
28. Me dio informes o notas sobre el progreso mi hijo(a).	<input type="radio"/>				
29. Me pidió que ayudara a mi hijo(a) en sus tareas escolares.	<input type="radio"/>				
30. Me habló sobre las fortalezas y cualidades positivas de mi hijo(a).	<input type="radio"/>				
31. Me dio ideas acerca de cómo ayudar a mi hijo(a) a aprender.	<input type="radio"/>				
32. Me envió una carpeta con los trabajos en clase de mi hijo(a) con los comentarios.	<input type="radio"/>				
33. Me mantuvo informado acerca de lo que mi hijo(a) estaba aprendiendo.	<input type="radio"/>				
34. Me envió boletines de noticias o notas para mantenerme informado acerca de la clase.	<input type="radio"/>				

APPENDIX F
LETTER TO THE TEACHERS

Dear Teacher,

I am doing a research study about parents' involvement in their children's schooling. This study is part of my work at the University of South Florida. My study involves parents completing a survey about what they say and do in helping their child to learn at home as well as the communication that takes place between them and you, the child's teacher.

I would appreciate if you would hand these manila envelopes out to your students and please let them know that it is important for them to give the envelopes to their parents or guardians. If the students are curious about the envelopes, you can let them know that the survey is about their parents' involvement in their schooling.

Half of this bundle of envelopes are English versions of the survey and cover letter, and the other half are Spanish versions of the survey and cover letter.

Inside the envelopes are a cover letter explaining the details of the survey, the survey itself, and a pre-addressed stamped envelope for the parents to mail the survey back to me.

If you have any questions, please feel free to contact me by phone at (813) 974-6064 or by email at hmscott2@mail.usf.edu. If I do not answer the phone, please leave a message.

I really appreciate your help in handing out the envelopes to your students.

Thank you,

Heather Scott
Doctoral Student, Department of Measurement and Research

Title of Research Study: Parent Involvement in Children's Schooling: An Investigation of Measurement Equivalence across Ethnic Groups (IRB #Pro00002885)

APPENDIX G
ITEM STRUCTURE LOADINGS ON THE FOUR FACTORS
FOR THE WHITE/NON-HISPANIC GROUP

Table G1

Item Structure Loadings on the Four Factors for the White/non-Hispanic Group

Item	Factor 1 (PPATC)	Factor 2 (PIS)	Factor 3 (PMOS)	Factor 4 (PPOS)
33. Kept me informed about what my child was learning.	.90	.20	.31	.08
34. Sent me newsletters or notes to keep me informed about the classroom.	.81	.19	.20	.02
30. Told me about my child's strengths and positive qualities.	.83	.10	.33	.01
28. Gave me reports or notes about my child's progress.	.79	.17	.23	-.11
31. Gave me ideas about how to help my child learn.	.77	.09	.32	-.03
32. Sent me a folder of my child's classwork with comments.	.74	.29	.25	.16
27. Sent home activities for my child and me to work on together.	.63	.26	.08	-.005
29. Asked me to help my child with his or her schoolwork.	.53	.22	.14	.08
25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?	.19	.86	.14	.16
26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day?	.26	.83	.11	.32
22. How often do you help your child with math?	.10	.74	.14	.14
23. How often do you help your child with reading?	.26	.69	.38	.21
21. How often do you review and discuss with your child the graded assignments and work he or she brings home?	.34	.51	.48	.10
11. I pay close attention to my child's improvement in his or her school learning.	.18	.23	.64	-.02

Item	Factor 1 (PPATC)	Factor 2 (PIS)	Factor 3 (PMOS)	Factor 4 (PPOS)
13. I encourage my child to feel successful for simply working hard on his or her homework.	.13	.15	.52	.07
12. I try to find out from my child what he or she wants to learn about.	.35	.09	.58	.08
10. I encourage my child to do extra work to learn new things.	.22	.22	.52	.28
15. I pay close attention to the grades my child receives.	-.02	.02	.40	.23
24. How often do you talk with your child about your expectations regarding his or her homework?	.27	.39	.47	.14
9. I encourage my child to try to find the reason for the mistakes he or she makes.	.04	.03	.33	-.01
20. How often do you talk to your child about what he or she is learning in school?	.26	.39	.42	.20
18. I often tell my child that he or she can do better than others if he or she tries hard enough.	.08	.40	.01	.71
14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	-.04	-.10	.13	.54
17. I congratulate my child when he or she does better than others.	-.02	.31	-.01	.57
19. I often tell my child he or she can get good grades if he or she works hard enough.	.13	.14	.33	.51
16. When my child is making a lot of mistakes on a task, I encourage him or her to try a different task.	.20	.16	.10	.20

Note. PPATC = Parent-Perceived Amount of Teacher Communication; PIS = Parent Involvement Scale; PMOS = Parent Mastery Orientation Scale; PPOS = Parent Performance Orientation Scale.

APPENDIX H
ITEM STRUCTURE LOADINGS ON THE FOUR FACTORS
FOR THE HISPANIC GROUP

Table H1

Item Structure Loadings on the Four Factors for the Hispanic Group

Item	Factor 1 (PPATC)	Factor 2 (PMOS)	Factor 3 (PIS)	Factor 4 (PPOS)
33. Kept me informed about what my child was learning.	.87	.10	.05	.07
34. Sent me newsletters or notes to keep me informed about the classroom.	.83	.12	.07	.07
31. Gave me ideas about how to help my child learn.	.82	.12	.25	.08
32. Sent me a folder of my child's classwork with comments.	.75	.07	.07	.01
30. Told me about my child's strengths and positive qualities.	.68	.19	.05	.06
28. Gave me reports or notes about my child's progress.	.64	.26	.17	-.05
29. Asked me to help my child with his or her schoolwork.	.52	.13	.38	.12
27. Sent home activities for my child and me to work on together.	.39	.10	.32	.08
15. I pay close attention to the grades my child receives.	.18	.65	.21	.16
24. How often do you talk with your child about your expectations regarding his or her homework?	.11	.68	.41	.16
11. I pay close attention to my child's improvement in his or her school learning.	.20	.61	.30	.17
12. I try to find out from my child what he or she wants to learn about.	.05	.52	.16	.26
10. I encourage my child to do extra work to learn new things.	.03	.52	.31	.07
21. How often do you review and discuss with your child the graded assignments and work he or she brings home?	.17	.57	.48	.04

Item	Factor 1 (PPATC)	Factor 2 (PMOS)	Factor 3 (PIS)	Factor 4 (PPOS)
9. I encourage my child to try to find the reason for the mistakes he or she makes.	.07	.51	.35	.12
13. I encourage my child to feel successful for simply working hard on his or her homework.	.08	.51	.28	.27
20. How often do you talk to your child about what he or she is learning in school?	-.05	.48	.48	-.03
23. How often do you help your child with reading?	.15	.37	.81	.17
22. How often do you help your child with math?	.02	.42	.81	.01
26. How much time do you (or someone in your home) spend checking/correcting his or her homework each day?	.22	.42	.79	.10
25. In general, how much time do you (or someone in your home) spend working with your child on school subjects each day?	.21	.41	.70	.05
18. I often tell my child that he or she can do better than others if he or she tries hard enough.	-.03	.09	.07	.79
17. I congratulate my child when he or she does better than others.	.02	.11	-.01	.72
19. I often tell my child he or she can get good grades if he or she works hard enough.	.11	.36	.08	.57
14. When my child brings home a test or paper he or she completed, I ask first what grade he or she received.	.15	.44	.18	.51
16. When my child is making a lot of mistakes on a task, I encourage him or her to try a different task.	.07	.20	.20	.36

Note. PPATC = Parent-Perceived Amount of Teacher Communication; PMOS = Parent Mastery Orientation Scale; PIS = Parent Involvement Scale; PPOS = Parent Performance Orientation Scale.