PARENT INVOLVEMENT IN SECONDARY SPECIAL EDUCATION AND

TRANSITION: A PSYCHOMETRIC STUDY

by

KARA A. HIRANO

A DISSERTATION

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DISSERTATION APPROVAL PAGE

Student: Kara A. Hirano

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This dissertation has been accepted and approved in partial fulfillment of the requirements for the Doctor of Philosophy degree in the Department of Special Education and Clinical Sciences by:

Lauren Lindstrom	Chairperson
S. Andrew Garbacz	Core Member
Dawn Rowe	Core Member
Leslie Leve	Institutional Representative

and

Scott L. Pratt   Dean of the Graduate School

Original approval signatures are on file with the University of Oregon Graduate School.

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DISSERTATION ABSTRACT

Kara A. Hirano

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Title: Parent Involvement in Secondary Special Education and Transition: A
Psychometric Study

This study evaluated a model of parent involvement in secondary special education and transition planning and identified motivators affecting a parent's decision to become involved. Survey data were collected from a national sample of 300 parents of transition-age youth with disabilities. Results of a confirmatory factor analysis indicated the model fit the data for this sample. Four motivators were associated with parental decisions to become involved: *Child invitations* for involvement were associated with *home*, *school/agency* and *future planning* involvement. *Teacher invitations* and *time and energy* were associated with *school/agency* involvement, and *role construction* was associated with *home involvement*. Age, disability type, and SES impacted motivators of involvement. Implications for research and practice are discussed.

CURRICULUM VITAE

NAME OF AUTHOR: Kara A. Hirano

GRADUATE AND UNDERGRADUATE SCHOOLS ATTENDED:

University of Oregon, Eugene

DEGREES AWARDED:

Doctor of Philosophy, Special Education, 2016, University of Oregon
Master of Education, Couples & Family Therapy, 2007, University of Oregon
Bachelor of Arts, Psychology, 2000, University of Oregon

AREAS OF SPECIAL INTEREST:

Secondary Special Education and Transition
Parent Involvement in Education and Transition Planning
Family-School Partnerships
At-Risk Youth and Young Adults with Disabilities Experiencing Mental Illness
Career Development of Young Adults with Disabilities

PROFESSIONAL EXPERIENCE:

Graduate Teaching Fellow Paths 2 the Future Project, University of Oregon,
        Eugene, 2016

Individual Therapist and Academic Advisor, University of Oregon, Eugene, 2008-
        2012

Employment Specialist Assistant, Lane County Department of Youth Services,
        Eugene, Oregon, 2009-2010

Program Manager and Clinical Director, Oregon Social Learning Center
        Community Programs, Eugene, Oregon, 2007-2008

Family Therapist & Foster Parent Support, Oregon Social Learning Center
        Community Programs, Eugene, Oregon, 2006-2007

GRANTS, AWARDS, AND HONORS:

Clare Wilkins Chamberlin Memorial Dissertation Award, University of Oregon,
        College of Education. Recipient 2015-2016.

Pat Sitlington Student Research Award, Second Place, International Division on
        Career Development and Transition (DCDT) Conference, Fall 2015.

Helena DeGnath Wessela Memorial Scholarship, University of Oregon, College of Education. Recipient 2014-2016.

Pat Killgallon Memorial Scholarship, University of Oregon, College of Education. Recipient 2014-2015.

Finalist, Pat Sitlington Student Research Award, International Division on Career Development and Transition (DCDT) Conference, Fall 2013.

Faculty Scholarship, University of Oregon, College of Education. Recipient 2013-2014.

Florence Wolford Scholarship, University of Oregon, College of Education. Recipient 2012-2013

PUBLICATIONS:

Poppen, M., Sinclair, J., **Hirano, K.A.** & Lindstrom, L., Unruh, D. (2016). Mental health matters: The perceptions of educators on disability, mental health and transition. *Education and Treatment of Children*, *39*(2), 221-246.

Alverson, C., Lindstrom, L**., & Hirano, K**. (2016). High school to college: Transition experiences of young adults with Autism. *Focus on Autism and Other Developmental Disabilities*. doi: 10.1177/1088357615611880

Garbacz, S.A**.**, Eagle, J.W., Dowd-Eagle, S.E., McIntosh, K., **Hirano, K. A.** & Ruppert, T., (2016). Family engagement within schoolwide positive behavioral interventions and supports. *Preventing School Failure: Alternative Education for Children and Youth*, *60*(1), 60-69. doi: 10.1080/1045988X.2014.976809

Hirano, K. A., & Rowe, D. A. (2015). A conceptual model for parent involvement in secondary special education. *Journal of Disability Policy Studies*. doi: 10.1177/ 1044 207315583901

Rowe, D. A., Mazzotti, V. L., **Hirano, K. A.,** & Alverson, C. Y. (2015). Assessing transition skills in the 21st century. *TEACHING Exceptional Children*, *47*(6), 301-309. doi: 10.1177/0040059915587670

Lindstrom, L., **Hirano, K. A.,** McCarthy, C. & Alverson, C. (2014). Just having a job: Career advancement for low-wage workers with intellectual and developmental disabilities. *Career Development and Transition for Exceptional Individuals.* Special Issue on Disability and Poverty. Volume 37 (1) 40 - 49. doi: 10.1177/2165143414522092.

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For Keelan, Sofia, and Ray

Family is not an important thing, it's everything.
~Michael J. Fox

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CHAPTER I

INTRODUCTION

As recently as 1958 U.S. courts upheld legislation excluding students with

disabilities from public education who were thought to be unable to benefit from

education, including the "feeble minded" or students who were "mentally deficient"

(Yell, Rogers, & Rogers, 1998). Long before the federal government defined parameters

for parental roles in education, parents of children with disabilities were blazing trails

defining their own role as advocates. As early as 1930 parents began to organize in local

groups to protest the exclusion of their children from schools (Turnbull & Turnbull,

1990). In the 1950's they began to organize on a national level. For example the National

Association for Retarded Citizens (now the ARC) was established in 1950 by parents and

citizens concerned with rights for people with disabilities.

Advocacy groups like the ARC founded primarily by and for parents and families

of individuals with disabilities partnered with professional organizations to challenge

state and federal legislation. Ultimately these partnerships were instrumental in securing a

free and appropriate education in 1975 for all children with disabilities (Yell et al., 1998)

with the passage of P.L. 94-142, Education for All Handicapped Children Act (EAHCA).

The Act authorized funding to states and local school districts to comply with the

provisions of P.L. 94-142 including (a) the right to a free and appropriate education for

all youth with disabilities; (b) evaluation of the child's learning needs in collaboration

with parents and special educators in addition to the development of an individual

education program to meet these needs; (c) placement in the least restrictive environment;

(d) periodic evaluation of the child's progress with programmatic changes made in

consultation with parents and specialists; and (e) due process proceedings for parents to challenge school decisions (Boyer, 1979). EAHCA was a victory for parents who advocated for their children and for the youth as well. The Act recognized education as a right for youth with disabilities and solidified a place for parents in their education as collaborators and decision-makers with due process procedures to challenge school decisions.

While the formal role of parents in general education has varied over time depending upon the administration, the role of parents of youth with disabilities in special education has been gradually strengthened. With the passage of EAHCA in 1975 parents' right to participate in educational decisions regarding their children was solidified (Yell et al., 1998). Although parent rights in their children's education were strengthened in subsequent reauthorizations in 1990 and 1997, they were not expanded again until reauthorization of the Act in 2004. Reauthorization of EACHA, renamed the Individuals with Disabilities Education Act (IDEA) in 1990 added the requirement of transition services for children 16 years and older, in preparation for their graduation from high school. During the 1997 reauthorization, many parent leaders were not calling for changes to the regulations but for the current regulations to be fully implemented and reinforced (Wrightslaw, n.d.). Reauthorizations in 2004 have since served to expand both parental roles and services for students with disabilities. These reauthorizations reinforce the unique role of parents of students with disabilities in the education system.

One of the main components of IDEA (2004) is parent participation in decision-making related to their children's education. In order to address the unique needs of parents of students with disabilities who must understand special education law in order

to be able make informed educational decisions on behalf of their children, IDEA outlined state and local education agency responsibilities related to parent support. Paraphrased from the IDEA (2004) regulations, state and local education agencies are required to provide, as part of ongoing services to support positive outcomes for students with disabilities, parent training and information activities. It is the school's role to create and preserve constructive relationships between schools and families by facilitating open communication. It is the responsibility of the state and local education agency (LEA) to ensure parent involvement in the planning and decision-making with respect to early intervention, educational, and transition services. It is also the responsibility of the LEA to assist parents in the development of skills to participate effectively in the education and development of their children and their transitions. LEA's are obligated to support the roles of parents as participants within partnerships seeking to improve early intervention, educational, and transitional services and results for children with disabilities and their families.

Federal support for parent involvement in education is critical because much of the funding for parent involvement programs comes from federal dollars. However, policy efforts continue to fall short. NCLB is criticized for paying "lip service to parents by drafting unenforceable provisions" (Fege, 2006, p. 578). Indeed, the most recent monitoring report from the U.S. Department of Education (Stevenson & Laster, 2008) concluded that parent involvement requirements were one of the weakest areas for compliance. Criticisms of IDEA are similar as many parents of children with disabilities report not being viewed as true partners by school professionals (Newman, 2005). In the National Longitudinal Transition Study-2 (NLTS2; Newman, 2005) 45% of parents

reported that their children's IEP goals were developed primarily by the school with little input from the youth or family and 30% of parents reported wanting to be more involved in the IEP meetings. In focus groups regarding their experience with the transition planning process, Hetherington et al. (2010) reported parents expressing frustration at the lack of communication and information coming from schools. Parents often reported feeling that they did not have the knowledge to effectively support their child through the transition from high school to adult life and when information was provided, "it was too little, too late" (Hetherington et al., 2010, p. 167).

Statement of Problem

Parent involvement in education benefits all children in multiple ways (Fan & Chen, 2001). In addition, parent involvement has been identified as a predictor of post-school success for youth with disabilities (Test et al., 2009) and thus may be particularly important for this group of youth who traditionally have poorer educational and post-school outcomes than their peers without disabilities (Newman et al., 2011). Unfortunately, there are parents who find the schools' efforts to involve them to be insufficient (Newman, 2005) and there are school professionals who complain of groups of parents who are uncaring and unresponsive to school outreach efforts (Mapp & Hong, 2010). At this time however, there is little guidance for school professionals on how to focus their efforts to promote parent involvement.

Recently, Hirano, Garbacz, Rowe, and Shanley (2014) adapted scales from the Hoover-Dempsey and Sandler Model of Parent Involvement (2005) for use with parents of secondary age students with disabilities. This was a preliminary attempt to identify factors that impact parent involvement in order to better assist school professionals in

developing targeted interventions for youth with disabilities. Future validation work is needed in order to establish this measure. Therefore, this dissertation study focused on replicating and extending the Hirano et al. (2014) study with a larger sample and revised measures based upon results of the first study. Results from this dissertation study could potentially be used to identify areas of intervention to increase parental involvement in secondary special education and transition services.

CHAPTER II

LITERATURE REVIEW

The current state of school practices to promote parent involvement in education

has a long history influenced not only by legislation but also research. This chapter will

review the literature on parental involvement in education and will (a) describe the

methodology of my literature review, (b) document the importance of parent involvement

in education, (c) review frameworks for parent involvement, (d) examine the current

practices in parent involvement, and (e) introduce the purpose for this study as well as

research questions.

Literature Review Methodology

In order to amass literature relevant to parent involvement in education, I

performed searches in four online databases: Academic Search Premier, PsychNet, ERIC,

and Google Scholar. I did not set any date parameters to restrict my findings. I utilized a

combination of search terms including a) parent involvement, b) parent engagement, c)

secondary special education, d) special education, e) disability/disabilities f)

transition/transition planning. I also conducted ancestral searches by reviewing the

reference lists of articles. Articles included in this review met the following criteria: a)

published in a peer-reviewed journal, and b) addressed the topic of parent involvement in

education.

In addition to articles from peer-reviewed journals, I also sought other sources of

information on parent involvement. I utilized this approach in order to extend the

literature base. Four data based reports were utilized including the NLTS2 report on

parent involvement (Newman, 2005), A New Wave of Evidence: The Impact of School,

Family, and Community Connections on Student Achievement (Henderson & Mapp, 2002), Parent involvement strategies in urban middle and high schools in the Northeast and Island Region (Agronick, Clark, O'Donnell, & Stueve, 2009) and One dream, two realities: Perspectives of parents on America's high schools (Bridgeland, DiIulio, Streeter, & Mason, 2008). Additionally, widely disseminated sources such as books (e.g. Handbook of School-Family Partnerships) were utilized. The following literature review synthesizes the literature on parent involvement in education and provides the context for this dissertation study.

Importance of Parent Involvement in Education

Although the focus of parent involvement in education tends to be on young children, previous research has documented the importance of parent involvement in education across the grades (Jeynes, 2005, 2007). This section will review research findings on parent involvement for students in general and special education.

Parent involvement in general education. Several meta-analyses confirm the importance of parent involvement in education. Fan and Chen (2001) conducted a systematic review of studies that examined the relation between parental involvement and students' achievement outcomes. Authors found a medium effect size for parent involvement and academic achievement of students. A moderator analysis suggested that parental aspirations/expectations for their child's educational achievement had the strongest relationship with academic achievement. Parental supervision at home had the weakest relationship to academic achievement. The authors suggested that perhaps this is because parents may increase supervision at home when students are not doing well academically.

Jeynes conducted two meta-analyses on the relation of parental involvement on the academic achievement of urban youth. In the first meta-analysis, Jeynes (2005) reviewed 42 studies on parental involvement and elementary school student academic achievement and in the second (Jeynes, 2007) examined 52 articles on parent involvement and secondary student achievement. In both studies, Jeynes found that the relation of parental involvement and academic achievement held for both urban elementary and secondary students across race. It is interesting to note that the effect sizes for parental involvement and secondary student achievement were nearly half those found for elementary students. One possible explanation for this is the decrease in parent involvement documented across the grades (Eccles et al., 1993). While effect sizes were largest for parental involvement as a whole, specific components of parental involvement also had statistically significant results. For example, parental expectations and parenting style were both strong predictors of academic achievement. Unique findings on other components of parental involvement in these studies call into question commonly held beliefs about model parent involvement practices. For elementary age students, checking homework did not have a statistically significant effect. In addition, participation in school functions had the smallest effect size of all parent involvement components examined (e.g. communication, homework, parent expectations, reading, parenting style; Jeynes, 2005). For secondary students, communication about school and checking homework both had smaller effect sizes than parental expectations and style while influence of household rules did not have a statistically significant effect (Jeynes, 2007).

Hill and Tyson (2009) synthesized results from 50 studies conducted between 1985 and 2006 on parent involvement and academic achievement of middle school

students. Similar to previous studies, they reported a positive relation between general parental involvement and academic achievement. They also examined the relationships between (a) home-based involvement (e.g. talking with children about school, or taking them to events that foster academic success) and academic achievement, (b) school-based involvement (visiting the school or attending special events) and academic achievement, and (c) academic socialization (e.g. communicating educational values and expectations, fostering aspirations) and academic achievement. Academic socialization was found to have the strongest relationship with academic achievement. The authors suggest that this form of involvement is developmentally appropriate because academic socialization includes strategies that support students' emerging autonomy and independence while fostering internal motivation for achievement. Helping with homework had the strongest negative relation suggesting that helping with homework is not consistently related to achievement. Authors suggest several possibilities exist for this finding. First, parental support with homework could be elicited by poor school performance, which could result in a negative relation between homework help and achievement. It is also possible that the negative relation is due to excessive parental pressure, differences in how parents and schools present material or parental interference with students' autonomy.

Together, these meta-analyses confirm that general parental involvement does indeed have a strong positive effect on student academic achievement across grades. This assertion also holds for urban elementary and secondary students, as well, as across different racial groups. Variations in parent involvement based on socioeconomic status (SES) and race have been found in other studies that were not captured in aforementioned meta-analyses. Although parental involvement contributes to academic achievement,

there may be important racial and cultural variations (Henderson & Mapp, 2002). For example, Sui-Chu and Williams (1996) examined data from National Educational Longitudinal Study (NELS:88) and found that while Asian, Hispanic, and African-American parents were just as active as white middle and high school parents, there were variations in the type of involvement. For example, African American parents reported slightly higher involvement at home than white parents, while Hispanic and Asian parents reported more supervision at home than white parents. So, while the type of involvement may vary across racial groups, findings did not support the assumption that parents from ethnic minority groups are less involved than white parents. Additionally, results from this study suggest that the effect of parental involvement on achievement was independent of family SES.

In addition to academic achievement parental involvement has also been associated with other positive student outcomes including more consistent attendance (Falbo, Lein, & Amador, 2001), improved homework completion and greater time spent on homework (Callahan, Rademacher, & Hildreth, 1998), improved in-school behavior (Domina, 2005; Gonzalez, 2002), improved academic performance (Finn, 1989; Keith, Reimers, Fehrmann, Pottebaum, & Aubey, 1986), and higher school completion rates (Rumberger, Ghatak, Poulos, Ritter, & Dornbusch, 1990).

Parent involvement in secondary special education and transition. Parent involvement has also been found to have a strong effect (Domina, 2005) on the academic achievement of students with disabilities (Newman, 2005). NLTS2 found that students with disabilities whose families were more involved in their school were more likely to receive higher grades and were closer to their measured grade level in reading than

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students whose families were less involved (Newman, 2005). Although parent involvement may be correlated with similar academic outcomes, the actual levels of involvement and involvement activities are different for parents of students with disabilities than their peers in general education. For example, parents of students with disabilities are more involved in general school meetings and parent-teacher conferences than parents of students in general education. At home, parents of students with disabilities are more likely to report providing homework support for their children than parents of students in general education (Newman, 2005).

While as a group parents of youth with disabilities are actively involved in their children's education, not all families are equally involved. Some forms of involvement vary by disability category. For example, parents of students with emotional and behavioral disorders (EBD) are less likely than other families to help with homework or attend school-based activities although they are among the most likely to attend parent-teacher conferences (Newman, 2005). It is important to note however, that other student and family characteristics often compound these differences seen in disability categories. For example, students with EBD and intellectual disabilities (ID) are more likely than students in other disability categories to live in single-parent households and to be living in poverty (Wagner et al., 2003), two factors associated with lower levels of involvement (Newman, 2005).

In addition to academic achievement, parent involvement is also linked to post-school outcomes for youth with disabilities. A 2009 systematic review identified in-school predictors of post-school success for secondary students with disabilities (Test et al.), who typically experience poorer postschool outcomes than their peers without

disabilities (Newman et al., 2011). The review focused on the areas of employment, education, and independent living. With annual updates from the National Secondary Transition Technical Assistance Center (NSTTAC), 17 evidence-based predictors have been identified including parental involvement and parent expectations (Mazzotti, Rowe, Sinclair, & Poppen, 2015).

Fourqurean, Meisgeier, Swank, and Williams (1991) found that students with parents who attended more IEP meetings in their 11th and 12th grade years were more likely to be engaged in post-school employment. Family involvement can also influence other predictors of postschool success such as self-determination (Wehmeyer & Palmer, 2003). In assessing the impact of school-based programs and family support on self-determination (as measured by psychological empowerment, hope, and locus of control), Morningstar et al. (2010) found that the influence of families was the only variable to exhibit moderate to high correlations with all three components of self-determination.

Students with disabilities who have parents with high expectations for their future success also tend to have better post-school outcomes. For example, students whose parents hold high expectations are more likely to graduate from high school (Doren, Gau, & Lindstrom, 2012), attend postsecondary education (Chiang, Cheung, Hickson, Xiang, & Tsai, 2012), and be engaged in postschool employment (Carter, Austin, & Trainor, 2012).

Frameworks for Parent Involvement in Education

Given the research on the importance of parent involvement, several theoretical frameworks have emerged to aid in conceptualizing and studying the contribution of parent involvement to improved student outcomes (Epstein, 1987; Green, Walker,

Hoover-Dempsey, & Sandler, 2007; Grolnick & Slowiaczek, 1994; Hoover-Dempsey et al., 2005). Each framework possesses its own definition of parent involvement and categories for the behaviors that constitute involvement.

Epstein: School, family and community partnerships. Epstein (1995) developed a model of overlapping spheres of influence inspired by Bronfenbrenner's ecological model (1979, 1986). This model emphasizes the influence of these spheres on the individual student's education and development and highlights the importance of both communication and collaboration between these spheres. This framework recognizes the multidimensional nature of parent involvement, proposing that any one of three overlapping spheres of influence can influence the types of parent involvement and related activities. Epstein (1987) identified four types of parent involvement in schools: (a) basic obligations; (b) school-to-home communications; (c) parent involvement at school and (d) parent involvement in learning activities at home. Later, in 1992 the model evolved into six types of parent involvement including: (1) Parenting: schools assist parents in developing parenting skills and learning how to set up home conditions that support student achievement; (2) Communicating: effective two-way communication between home and school; (3) Volunteering: schools provided a variety of opportunities for parents to volunteer; (4) Learning at home: parents are involved with their child's homework and curriculum-related activities; (5) Decision making: families participate in school-related decision-making and have the opportunity to develop as school leaders and representatives; and (6) Collaborating with the community and having access to resources in the community to support their child's learning opportunities.

Although Epstein's framework was mainly developed with elementary and middle school populations, it has also been applied to high school students (Catsambis, 2001). For example, Catsambis (2001) utilized Epstein's model to investigate the types of parent involvement activities associated with academic success and educational outcomes of high school seniors. Based on previous research on parent involvement practices (Catsambis & Garland, 1997) and existing literature on the developmental tasks of adolescence (Steinberg, 1998), Catsambis hypothesized that the effectiveness of parent involvement practices would change over time as children aged. Results supported this hypothesis and demonstrated that once students are in high school, parenting practices were no longer linked to growth in test scores as demonstrated in previous research (Catsambis & Garland, 1997). However, in the 12th grade, parent expectations for the student to attend college and active encouragement for preparing for college were positively associated with credits earned in math, science, and English courses. At this stage of development, the most important family practices are those that are more focused on guiding or advising the child on academic decisions including holding high educational expectations and offering active support for college preparation. These findings add to the Epstein model by differentiating the effectiveness of parent involvement practices at different grade levels while simultaneously reinforcing the importance of parent involvement through graduation.

Grolnick and Slowiaczek: Multidimensional conceptualization and motivational model. In a second example of a parent involvement framework, Grolnick and Slowiaczek (1994) defined parent involvement as "the dedication of resources by the parent to the child within a given domain" (p. 238) and outlined three ways in which

parents can be involved in the educational domain (i.e., behavioral, personal, and cognitive/intellectual). *Behavioral involvement* includes overt school-based activities such as going to the school to participate in activities (e.g., parent-teacher conferences or attending school sporting events and plays). *Personal involvement*, includes the attitudes and expectations about school and education, such as conveying enjoyment for interacting with their child about school and their value of education. *Cognitive/intellectual* reflects home-based involvement where the parent actively expose their child to stimulating activities such as materials and media designed to promote their child's cognitive development.

Grolnick and Slowiaczek also proposed that a child's inner motivational resources mediate the impact of parent involvement on academic performance. The first inner motivational resource is *control understanding* in which children understand how outcomes are linked to their behavior. Next is *perceived competence* where children have the confidence that they can take actions to achieve success and finally, *self-regulation* in which children perceive and experience choice and autonomy in their behavior.

To investigate this framework for parent involvement, Grolnick and Slowiaczek (1994) collected data about teacher and student perceptions of parent involvement across these three categories. Results of the Grolnick and Slowiaczek (1994) investigation of the validity of the three parent involvement constructs revealed two things. First, the three measured factors (*behavioral*, *personal*, and *cognitive/intellectual* involvement) were only modestly associated with one another, suggesting that parents can indeed participate in their children's schooling in multiple ways represented by these three factors. Second, not all demographic variables were associated with parent involvement activities. For

example, child grade, gender, and mother's work status were unrelated to any of the three involvement factors. However, for mothers, marital status was associated with *behavior* and *intellectual/cognitive* involvement while marital status was related to all three involvement factors for fathers. Also, parent education was strongly related to *intellectual/cognitive* involvement, but unrelated to *behavioral involvement* for mothers. This suggests that the *ways* in which parents are involved may vary according to background variables and that involvement is not restricted to families with higher education.

In the final model examining the meditational model, results for mothers indicated that *behavior* and *intellectual/cognitive* involvement indirectly impacted school performance through child motivational factors of *perceived competence* and *control understanding* while *behavior* also had a direct effect on school performance. The only significant path for father involvement was the indirect impact of *behavior* on school performance through the child's *perceived competence*.

Hoover-Dempsey and Sandler: A theoretical model of parent involvement. A third model is the Hoover-Dempsey and Sandler model of parent involvement (Hoover-Dempsey & Sandler, 1995). This model of the parent involvement process includes three constructs affecting parent motivation for involvement in their child's education. The first motivational construct, *parents' motivational beliefs*, includes beliefs about what parents should do in relation to their children's education (role construction) as well as beliefs about the likely outcomes of involvement (e.g., self-efficacy; Hoover-Dempsey & Sandler, 1995).

The second motivational construct, *perceptions of invitations for involvement from others*, includes parent perceptions of invitations to be involved in their child's education from the school (i.e., environment, culture, etc.) as well as specific invitations for involvement from the child's teacher as well as the child. The third motivational construct in the Hoover-Dempsey and Sandler model is parents' perceived *life context variables*. This construct includes family culture, understanding that parents will choose activities that are consistent with their values and beliefs about the goals and roles of parents in education. The *life context factor also* includes the parents' perception of the time and energy they have for involvement activities, as well as, their perception of their own personal knowledge and skills they bring to bear.

Hoover-Dempsey and Sandler (2005) created a survey instrument consisting of nine scales measuring the aforementioned motivational constructs ($\alpha = .70\text{-}.88$; See Appendix A). The purpose of this dissertation study is to validate an adapted version of these scales for parents of secondary age students with disabilities as the validation of this model was based primarily on parents of elementary age students without disabilities. In order to extend the model's application, Deslandes & Bertrand (2005) surveyed parents of seventh-ninth grade students to examine the applicability of the model's constructs (role construction, parent self-efficacy, parent perceptions of teacher invitations, and parent perceptions of student invitations to become involved) to predict parent involvement at home and at school for secondary students. Results indicated that parent self-efficacy contributed significantly to parent involvement at home for seventh and eighth graders but not for ninth graders. This study also found that one of the strongest

contributors to parental involvement at home across all three grades was parents' perception of their student's invitations to be involved.

Hirano and Rowe: Conceptual framework for parent involvement in secondary special education and transition. While all of these models uniquely contribute to the conceptualization of parent involvement in education there are several limitations. First, the unique components of involvement for parents of students in special education are not specifically addressed in previous frameworks. Second, these frameworks mostly examine the effect of parental involvement on academic achievement. While important for transition age students with disabilities, previous literature indicates that there are other factors in addition to academic skills that are important for post-school success (Test et al., 2009). In order to address this gap in the literature, Hirano & Rowe (2015) proposed a Conceptual Framework for Parent Involvement in Secondary Special Education and Transition.

The Conceptual Framework for Parent Involvement in Secondary Special Education and Transition (Hirano & Rowe, 2015) integrates existing models of parent involvement (Hoover-Dempsey & Sandler, 1997; Wandry & Pleet, 2009) qualitative literature on parent experiences in the transition process (Bianco, Garrison-Wade, Tobin, & Lehmann, 2009; Timmons, Whitney-Thomas, McIntyre Jr, Butterworth, & Allen, 2004) and research related to predictors of post-school success for students with disabilities (Rowe et al., 2014; Test et al., 2009). The model places school values and beliefs as the foundation for parent involvement in schools. Included within this are school leaders who typically set the tone for parent involvement through their power to encourage or discourage school practices such as parent involvement initiatives (Lloyd-

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Smith & Baron, 2010). Also included are teacher beliefs and efficacy. The impact of teacher beliefs and behaviors on parent involvement is well documented (Dauber & Epstein, 1993; Storer, 1995). For example, Landmark, Roberts, and Zhang (2012) found that educators who believed parent involvement was important were more likely to enact practices to involve parents than those who did not feel as strongly. Additionally, educators who did not predict that their efforts to involve parents would be successful were less likely to believe that forming partnerships is important (Landmark et al., 2012).

Next, the Hirano and Rowe model suggests school's values and beliefs impact the interventions schools use to promote parent involvement. These interventions are characterized as falling into four categories: (a) parental role construction which, according to Hoover-Dempsey and Sandler (Hoover-Dempsey et al., 2005) is defined as "parents; beliefs about what they are supposed to do in relation to their child's education and patterns of behavior that follow those beliefs"(Hoover-Dempsey et al., 2005, p. 107); (b) parental knowledge and skills in regard to school and transition related activities which is thought to influence (c) parental efficacy, grounded in social cognitive theory (Bandura, 1997). Parental self-efficacy refers to the beliefs parents hold regarding whether their efforts to help or support their child will be successful; and (d) parent expectations.

Traditionally, parental roles in education have focused on helping with homework, volunteering at the school, and attending special school events. Oftentimes, parents who do not participate in these traditional ways are described by school personnel as uncaring or "hard to reach"(Mapp & Hong, 2010). However, according to Hirano and Rowe (2015), it is both important and necessary to expand the roles of parent

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involvement in secondary special education and transition. This will not only account for the roles families are actually fulfilling but expand educator views of parental roles. Increasing parental role construction, knowledge, skills, self-efficacy, and expectations, according to the model will allow parents to more effectively fulfill their roles of evaluator, collaborator, instructor, and advocate and be more effectively involved at home, in the school, and community supporting their child's education and transition to adulthood.

Current Practices in Parent Involvement

Studies continue to document a decrease in parent involvement for all students as they age (Eccles et al., 1993; Newman, 2005). Several reasons for this have been suggested including; (a) the complexity of secondary school systems (Adams & Christenson, 2000), (b) more complex curricula (Hill & Chao, 2009), and (c) a decrease in outreach at the secondary level (Adams & Christenson, 2000). Despite these potential barriers, it is important to address decreasing involvement as parent involvement continues to be an important predictor of in-school and post-school success.

Family diversity. According to Mapp and Hong (2010), teachers, administrators, and school professionals often report that engaging the parents they most want to be involved is one of their greatest challenges. They also report feeling frustrated that their efforts have failed and label these families as uncaring or hard to reach. Unfortunately, these families are often "those who are of color, poor, economically distressed, limited English speakers, and/or immigrants"(Mapp & Hong, 2010, p. 346). Efforts at engaging these families however most often consist of traditional forms of involvement such as volunteering at the school, supporting the student in completing homework, and attending

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school meetings and events (Greenwood & Hickman, 1991). These activities are mostly aligned with the norms of "middle-class, U.S. born, able-bodied, standard English-speaking parents" (Goodwin & King, 2002, p. 5) and in a sense make the school hard to reach (Mapp & Hong, 2010).

Labeling parents who do not conform to traditional forms of parent involvement as hard-to-reach or uncaring perpetuates a myth (Bridgeland et al., 2008) that allows school professionals to disengage from efforts to pursue parent involvement rather than prompting them that their methods may be based on "outdated and inappropriate definitions of family engagement"(Mapp & Hong, 2010, p. 346). The myth that parents who are not involved in traditional ways are uncaring is not substantiated by the literature. In a nationally representative survey of high school parents from low-performing (some students go to college while many or most do not), moderate-performing (many students go to college, many do not), and high performing schools (most students go to college), the majority of parents across school types and racial groups shared high aspirations for their children and recognize a high-quality education as central to those dreams (Bridgeland et al., 2008). Additionally, the majority of parents recognize the importance of their involvement. Eighty-five percent of parents with a child at a low-performing school indicated they think it is important for them to be involved as advocates for their children compared with 78 percent of parents with children at high-performing schools (Bridgeland et al., 2008).

Conversely, parents at low-performing schools were more likely to report that they are not as involved as they should be. While a number of barriers were cited including work and scheduling conflicts, nearly a quarter of parents identified non-time

related barriers. These included lack of information, communication and knowledge of what was going on as well as a lack of knowledge about what is being taught. Bridgeland et al. (2008) described these parents as "shut out"(p. 20) because they have the time but are not as involved as they should or could be. While a causal connection has not been established and may be difficult to verify, this study also found a correlation between outreach efforts of schools and parents' level of involvement and satisfaction. Parents from high-performing schools were more likely to report high levels of engagement and that their child's school does well in providing opportunities for parents to be engaged. Similarly, Simon (2004) reported that parents who perceived more outreach from their child's high school reported higher levels of involvement.

Some parents of secondary youth with disabilities may be described as "shut-out" as well. Nearly one-third of families in the NLTS2 indicated they would like to be more involved in decision-making regarding the IEP (Newman, 2005). Perhaps some parents do not participate in or attend IEP meetings because they feel like outsiders to the process (Hetherington et al., 2010). In a qualitative study examining parent and school professional's perspectives on the importance of transition planning activates as well as their perception of levels of parent involvement in transition planning, Geenan, Powers, and Lopez-Vasquez (2005) found that both school professionals and parents reported low parental involvement in school meetings. However, school professionals reported significantly less involvement for CLD families than did the CLD parents themselves. That is, CLD parents described themselves as active participants in the transition process, rating activities such as talking to their youth about life after high school and teaching them how to care for their disability as well as cultural values. Parents rated themselves

high in most categories except for participating in school meetings. These findings are important for two reasons. First, they refute the belief that CLD parents, many of who are described as uncaring or hard to reach do not care. Second, these findings support the need to expand the traditional definition of involvement to recognize the many things parents do to support and prepare their youth for the transition to adulthood. Finally, parents also report that their participation in school meetings is low.

Summary of literature review

Parent involvement has been shown to decrease across the grades despite decades of research documenting the importance of parent involvement for students of all ages (Jeynes, 2005, 2007) and the desire of parents to be involved (Newman, 2005). This is particularly worrisome for students with disabilities who typically have poorer post-school outcomes than their peers without disabilities. Not only has parent involvement been correlated with improved outcomes (Test et al., 2009), but both students (Morningstar, Turnbull, & Turnbull, 1996) and parents (Bianco et al., 2009) continue to highlight the importance of parent involvement in both in-school and post-school success.

Purpose of the study

The Hoover-Dempsey and Sandler (Hoover-Dempsey et al., 2005) model of parent involvement as described above, includes the identification of factors thought to impact parents' motivations to become involved in their child's education both at home and at school (i.e., parental role construction, parental self-efficacy, general school invitations, specific teacher invitations, specific child invitations, skills and knowledge, and time and energy). Most of the work on the validation of this model has focused on parents of elementary and middle school students and their involvement, particularly in

supporting academic achievement. In a 2014 exploratory study, Hirano and colleagues adapted the scales originally developed to validate the Hoover-Dempsey and Sandler model. Adaptations were made to the original scales to make them more relevant for parents of secondary-age students with disabilities and their need and desire to be involved in not only supporting their child's academic achievement but transition to post-school life, as well. The adapted scales resulted in seven factors (i.e., *future expectations*; *knowledge, skills, and self-efficacy*; *parental role construction*; *general school invitations*; *specific child invitations*; *specific teacher invitations*; and perceived *time and energy*) thought to influence parental involvement in secondary special education and transition activities, however, more research is needed to validate these factors.

The study by Hirano et al. (2014) provides a promising avenue for identifying malleable factors that may be future targets of interventions aimed at increasing parent involvement in secondary special education and transition. The purpose of this study is to confirm findings from the exploratory factor analysis (EFA) of adapted Hoover-Dempsey scales conducted in the pilot study where Hirano and colleagues performed two EFAs, one to identify involvement factors and one to identify motivator factors. These factor analyses were conducted in a number of analytic steps. First, items from three parent involvement scales were submitted to a factor analysis, which resulted in three factors, two forms of involvement identified by Hoover-Dempsey and Sandler (2005) including home involvement and school involvement, and one form of involvement, future planning conversations, relevant to transition-aged youth. Next, items from eight motivator scales were submitted to a factor analysis, which resulted in 7 factors. Because items from the scale designed to measure self-efficacy were closely related to items

designed to measure knowledge and skills when administered to parents of secondary age students with disabilities, this became one factor. It is unclear whether these items are measuring only one construct or whether other survey factors impact these results. For example, it could be that the self-efficacy items were not distinct enough from items in the other scales.

To explore these potential explanations and parse out construct differences, revisions to the 84-item survey created by Hirano et al. (2014) were made based on findings from the pilot study (See Appendix B). Specifically, this study will seek to confirm the factor structure of the scales revised based on findings from the pilot study. The results of these efforts will aid in future measurement development and validation efforts. This study will also examine the association between parent involvement and factors hypothesized to impact parent involvement and examine how motivational and involvement factors differ based on demographic variables (i.e. race, SES, gender, age and disability-type).

The hypothesized relations between demographic variables and parent involvement are as follows. First, because numerous contextual barriers have been identified as preventing parents from low SES households in engaging in transition planning and career-related activities (Blustein et al., 2002), it is hypothesized that parents from low SES households will be more likely to report less time and energy for involvement than parents in average to high income households and less involvement at school. Next, because parents of daughters are more likely to be involved at school (Newman, 2005), it is hypothesized that role construction may stronger for parents of daughters than parents of sons. Thirdly, because parents of students with intellectual disability (ID), autism, and multiple disabilities hold lower expectations for their child's future related to

employment, post-secondary education, and independent living (Newman, 2005), it is hypothesized that disability-type may affect expectations for the future and future planning conversations. Fourth, because research has demonstrated that parent involvement declines as children age, it is hypothesized that parents of younger students will be more involved than parents of older students (i.e. 19-25). Finally, because differences in involvement associated with race/ethnicity have been documented for parents of transition-age youth (Newman, 2005), it is hypothesized that there will be significant differences in types of involvement based on race/ethnicity. The specific research questions for this study are:

(1) To what extent is the model factor structure from the pilot study confirmed with this study sample?

(2) To what extent are the factors believed to impact parent involvement (motivators of involvement) **associated with** types of parent involvement (home, school/agency, future planning)?

(3) How do factors related to parent involvement and types of involvement differ based on child demographic characteristics (i.e. race, SES, gender, age and disability-type)?

Parents' Involvement Forms							
Home Involvement			School Involvement				

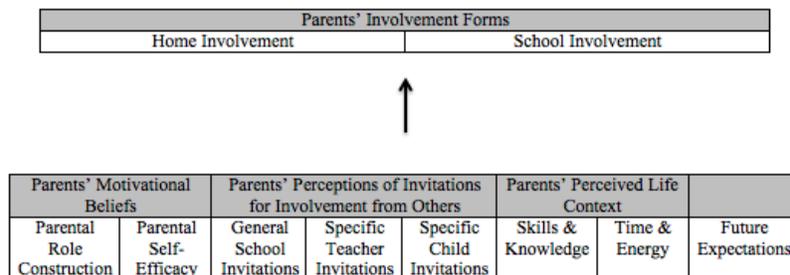| Parents' Motivational Beliefs		Parents' Perceptions of Invitations for Involvement from Others			Parents' Perceived Life Context		
Parental Role Construction	Parental Self-Efficacy	General School Invitations	Specific Teacher Invitations	Specific Child Invitations	Skills & Knowledge	Time & Energy	Future Expectations

Figure 1. Adapted Hoover-Dempsey and Sandler Scales

CHAPTER III

METHODOLOGY

This chapter will present the specific methods for addressing the research

questions by describing a) participants; b) procedures for survey dissemination; c) the

survey instrument; and d) the data analysis completed. Target participants for this study

were parents of secondary age students (14-25 years old) with disabilities who were

currently receiving special education services or who had received services in the last

school year.

Power Analysis

At this time consensus has not been reached in the structural equation modeling

(SEM) literature on how to determine the necessary sample sizes to achieve adequate

power (Fritz & MacKinnon, 2007). Various recommendations exist for adequate ratios of

cases to variables for factor analysis (i.e. ranging from 3:1 to 20:1; Hogarty, Hines,

Kromrey, Ferron, & Mumford, 2005); however, Arrindell and van der Ende (1985) found

that such rules do not affect the stability of factor solutions. Therefore, this study utilized

the convention in SEM that a sample of 200 or more is desirable. If the variable ratio is

less than 5:1, which it will likely be, Williams, Brown, and Onsman (2012) recommend

utilizing the Kaiser-Meyer-Olkin (KMO) measure. The KMO measure was generated

using SPSS (Version 22; IBM Corporation) and sampling adequacy was determined

utilizing standards set by Hutcheson and Sofroniou (1999). These analyses provided an

extra element of support for assessing adequate sample size.

In order to ensure an adequate sample size for conducting regression analyses

between scales, as proposed in the third research question a power analysis was

conducted. G*Power 3.1 (Faul, Erdfelder, Buchner, & Lang, 2009) was utilized to estimate the necessary sample size for the desired statistical power, significance level, and the population effect size to be detected. A sample size of 109 parents is necessary to conduct the analyses with .9 statistical power to detect an effect of .30; α is fixed at .05. With a planned sample of at least 200 participants, the current study could achieve statistical power of .90 to detect an effect size of .22 or larger with a significance level of .05. These power analyses indicated that the expected sample size would be appropriate based on Cohen's recommendation that a medium effect for regression or correlation is around .30 in standard units (1988) while a power of .8 is conventionally considered adequate (Cohen, 1990).

Participant Recruitment

Participants were recruited through federally funded Parent Training and Information (PTI) Centers and Arc chapters throughout the United States. Regional and state coordinators for PTI Centers, Community Parent Resource Centers, and Presidents of Arc chapters were each contacted as potential channels for participant recruitment. Some State PTI Coordinators and Arc Presidents responded to recruitment emails and agreed to disseminate a survey link via parent email lists and social media pages while others disseminated the survey without communication. Respondents from 36 geographically diverse states participated in the survey. The largest percentage of respondents came from the following states: 14.5% ($n = 43$) Massachusetts, 12.8% ($n = 38$) from New York, 8.4% ($n = 25$) from Wisconsin, 7.1% ($n = 21$) from Arkansas, and 5.7% ($n = 17$) from Washington. Because participating agencies disseminated the survey link, the total number of invited participants and overall response rates are unknown.

Inclusion criteria. Parents of students with disabilities were recruited for participation in this study if their child was (at the time of survey administration) currently on an IEP or on an IEP in the last year *and* between the ages of 14 and 25. Transition services are required to begin by age 16 (and younger if deemed appropriate by the IEP team) and typically end by age 21 when public school services typically end (although some states serve students until age 25). In order to capture this range, the 14-25 student age-range criterion was selected. The term "parent" refers to "a natural, adoptive, or foster parent of a child, a guardian, or an individual acting in the place of a natural or adoptive parent (including a grandparent, stepparent, or other relative) with whom the child lives, or an individual who is legally responsible for the child's welfare" (Individuals with Disability Education Act [IDEA], 2004; Sec. 602). From this point forward the term parent will be used to represent the variety of family constellations that were included in the study. .

Survey Instrument

The survey instrument is comprised of 106-items. There are 9 demographic questions, one question on previous IEP meeting attendance, 11 questions regarding satisfaction with transition services, one question inquiring if participants took a previous version of the survey and an open-ended question with space for survey respondents to provide any additional information not capture in the survey. There are also 83 scale items which include revised items based on the initial survey development and pilot study findings from Hirano et al., (2014) and additional items added to increase the accuracy of the scale. The most notable change from Hirano et al., (2014) was that, involvement items were separated into two sections with directions for responding parents to focus on

their involvement at home separately from their involvement at their child's school. Also, three items were added to the self-efficacy scale to strengthen this factor as the original survey administered in the pilot study only included three items designed to assess self-efficacy (Costello & Osborne, 2005). Finally, some of the language was modified in the survey to be more family-friendly. For example, "My child's teacher asked me to help my child work toward his/her transition goals" was changed to "My child's teacher asked me to help my child work towards his/her goals for life after high school". The current survey assesses the following respondent characteristics:

Demographics. Nine demographic items surveyed: (a) the role of the person completing the survey, (b) the state where the family resides, (c) the gender of the student, (d) the student's free or reduced lunch status, (e) the student's race/ethnicity, (f) the student's special education classification, (g) the type of school program the student attends, and (h) the student's grade level and (i) age. Parents were also asked if they attended their child's last IEP meeting.

Parent involvement scales. It is hypothesized that there are three distinct forms of involvement: home, school, and future planning. Items are rated on a 6-point Likert scale ranging from *never* to *daily*. Survey scales are listed in Table 1.

Home involvement assesses parents' involvement behaviors at home related to both academics and transition. Examples include: "At home, someone in this family…helped this child develop daily living skills" and "…helped this child learn how to take care of their emotional health." Internal consistency for a modified version of the scale (without item #28, 35, 36, and 37) was acceptable (ordinal alpha = .88). This scale contains 10 items.

School/Agency involvement assesses parents' involvement behaviors at school as well as in connecting with community agencies. Examples include: "Someone in this family volunteers at this child's school" and "Someone in this family attends school meetings (e.g. IEP, transition planning)." Internal consistency for a slightly modified version of the scale (combined two items from the original scales and without #41, 43 and 44) was acceptable (ordinal alpha = .77). This scale contains 7 items.

Future planning assesses parents' involvement behaviors related to planning for the future with their child. Examples include: "At home, someone in this family …expresses to this child their hopes/expectations for your child's future" and "…talks with this child about his/her plans for the future (e.g. living situation, college, work)." Internal consistency for this scale utilized in the pilot study was acceptable (ordinal alpha = .86). This scale contains 4 items.

Motivational factor scales. It is hypothesized that there are eight motivational factors that can impact a parent's decision to become involved in their child's education.

Parent expectations for the future. This scale was added to the Hoover-Dempsey and Sandler scales based on its hypothesized relevance for the target population. Items on this scale assess parents' expectations for their child's future and were incorporated from the NLTS2 (Wagner, Newman, Cameto, Levine, & Garza, 2006). Items on this scale assess parents' perceptions of the likelihood of their child graduating from a post-secondary institution, obtaining paid employment, living independently, etc. A 6-point Likert scale was also used for these items with answers ranging from *disagree very strongly* to *agree very strongly*. Internal consistency for a slightly modified version of the

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scale (with one extra item not included in the scale for this study) was acceptable (ordinal alpha = .94). This scale contains 6 items.

Parents' motivational beliefs. Parent motivational beliefs is a construct that encompasses both parental role construction and parental self-efficacy. Items are rated on a 6-point Likert scale ranging from *disagree very strongly* to *agree very strongly*.

Parental role construction. Parental role construction assesses parents' beliefs about what their responsibilities and activities should be in relation to their child's education. Adaptations made to the original Hoover-Dempsey scale included adding questions relevant to transition planning. For example, "I believe it's my responsibility to help my child develop goals for the future". Internal consistency for a slightly modified version of the scale (combined two items into one from the pilot study for this scale and without item # 84 and 85) was acceptable (ordinal alpha = .93). This scale consists of 11 items.

Parental self-efficacy for helping the child succeed in school*.* Parental self-efficacy for helping the child succeed in school refers to parents' beliefs that their efforts to utilize their knowledge and skills to teach their child will be successful. Adaptations to the original Hoover-Dempsey scale extended self-efficacy to transition planning and included questions such as "I feel successful about my efforts to help my child develop skills to achieve his/her goals for the future." Results from the pilot study suggested *knowledge*, *skills*, and *self-efficacy* were one factor (ordinal alpha for the pilot study scale = .93). For this study the scales were modified in order to investigate the feasibility of each scale as its' own factor with revised items. Items 65 and 67 were added to the scale for this study and it now contains 4 items.

Parents' perceptions of life context variables. This construct consists of two scales. Items are rated on a 6-point Likert scale ranging from *disagree very strongly* to *agree very strongly*.

Skills and knowledge. The *skills and knowledge* scale assesses parents' skills and knowledge in relation to being involved in their child's education. Additions to this scale were made to also assess parents' skill and knowledge in transition-related areas. For example, "I know how to work effectively with the IEP team to create goals for my child's life after high school." As mentioned above, items were added to the *knowledge and* skills scale for this study. These items include #60, 61, 62, and 63. This scale contains 12 items.

Time and energy. The *time and energy* scale assesses parents' perceived levels of time and energy for involvement in their child's education. Additions to the scale included items such as "I have enough time and energy to talk with my child about their goals for the future." Internal consistency for a slightly modified version of the scale (without item # 74) was acceptable (ordinal alpha = .90). This scale contains 7 items.

Parents' perceptions of invitations for involvement from others. Parents' perception of invitations to involvement from others contains three scales. Items are rated on a 6-point Likert scale ranging from *disagree very strongly* to *agree very strongly*.

General school invitations. *The general school invitations* scale assesses parents' perceptions of the school's overall attitude and environment toward parent involvement. All 7 original scale items were kept and one item was added, "My child's teachers contact me to tell me positive things about my child". Internal consistency for a slightly

the scale utilized in the pilot study was acceptable (ordinal alpha = .94). No modifications to the scale were made for this study. This scale contains 8 items.

Specific teacher invitations. The specific teacher invitations scale assesses parents' perceptions of teacher efforts to involve them in their child's education. An example of an addition to the scale is "Since the beginning of the school year one or more of my child's teachers has asked me to help my child work towards his/her goals for the future." The adapted scale consists of 7 items. Internal consistency for a slightly modified version of the scale (without item # 45 and 51) was acceptable (ordinal alpha = .89).

Specific child invitations. The *specific child invitations* scale assesses parents' perceptions of invitations to be involved from their child. Additions to the scale include, "Since the beginning of the school year, my child talked with me about plans for their future." The adapted scale consists of 7 items. Internal consistency for a slightly modified version of the scale (two items were removed from the pilot study scale for this study) was acceptable (ordinal alpha = .93).

Procedures

Consent. Participants received the survey announcement via email, newsletter, or social media. Interested participants were asked to click on an electronic link to access the survey. Before starting the survey, all participants completed an informed consent form, indicating the voluntary nature of their participation in the survey and their right to end their participation at any time, as well as the ability to skip any questions they did not wish to answer.

Table 1. *Survey Scales*

Scales	Number of items	Scale
Involvement scales		
Home	10	6 point scale: *Never* to *Daily*
Future Planning	4	
School/Agency	7	
Motivator scales		
Expectations for the future	6	6 point scale: *Disagree very strongly* to *Agree very strongly*
Role Construction	11	
Self-efficacy	4	
Child Invitations	7	
Teacher Invitations	7	
General School Invitations	8	
Knowledge & Skills	12	
Time & Energy	7	

Data Analysis

Data screening and preparation. Descriptive analyses were conducted using SPSS 22.0 for Mac (IBM, 2013). The raw data were cleaned and screened for the following problems prior to running analyses: assumptions of normality, missing data, and outliers.

Data cleaning. The survey link was activated a total of 483 times during recruitment. After the survey was closed, it was determined that the link had been accessed by unintended recipients and therefore 34 cases were excluded prior to initial data cleansing and analysis for a total of 449 valid responses. A total of 149 respondents completed less than 80% of scale items and were eliminated from the sample resulting in a final analytic sample of 300 cases.

Assumptions of normality. Descriptive analyses conducted in the pilot study (Hirano et al., 2014) revealed that responses to many of the scale items were not normally distributed, therefore, these data were not expected to be robust to the assumption of normality. Because skewness and kurtosis are two ways that the distribution of data can be nonnormal (Kline, 2011), these statistics were evaluated for the data in the current study using the following rules of thumb regarding acceptable ranges: skewness: -1 to +1 (Bulmer, 1979) and kurtosis: -2 to +2 (George & Mallery, 2010). In the current study, skewness ranged from -2.58 to 1.59 and kurtosis ranged from -1.47 to 12.75 for scale items. Because these data violated the modeling assumption of multivariate normality, the items were treated as ordinal variables and appropriate estimators were employed using Mplus 7.0 for Macintosh computers (Muthén & Muthén, 2012). Specifically, the Weighted Least Squares Means and Variance (WLSMV) estimator for categorical variables was applied for these analyses because it is able to adjust for non-normal variable distributions common in ordinal data.

Missing data. The number of missing ***scale*** items for the final analytic sample ranged from 0-15 out of 83 items. A revised version of the survey was administered with one additional scale item after data collection started. Therefore, 184 respondents were missing this item due to taking the survey prior to the addition of the item (116 respondents answered this question). Eighty-six percent ($N = 257$) of participants completed all survey items and 97% of respondents completed at least 95% of survey scale items.

In addition to the 83 scale items, there were 9 demographic questions, 12 questions on satisfaction with the transition planning process, and 1 question on IEP meeting attendance, and an optional open-ended question for a total of 106 items. The number of missing *total* survey items for the final analytic sample ranged from 0-28. Thirty-two percent ($N = 97$) of participants completed all survey items while 96% of respondents completed at least 95% of all survey items.

For the final analytic sample less than 1% of survey scale items and 1.5% of total survey items were missing. During the data cleaning process, it was noted that 3 participants exited the survey at the same point and this was identified as a potentially important missing data pattern. Thus, analyses were run with and without the three participants. Ninety-three variables from the full dataset were submitted to a missing values analysis in SPSS. Six nominal variables were defined as categorical (e.g., gender, race-ethnicity, placement, diagnosis, etc.); the remaining ordered categorical Likert ratings were defined as quantitative. Missing data ranged from a low of 0 to a high of 62%, 92 of 93 variables were below 26% with a mean of 7% missing. The item missing 62% was attributed to a "not applicable" response for discussing future jobs with the child. Little's chi-square MCAR test indicated the data were missing completely at random [Little's $\chi2(14331) = 14324.459$, p = .514]. No significant differences between observed means, variances, and covariances compared to those estimated with the EM algorithm (expectation maximization). Therefore, full information modeling is warranted (Enders, 2010; Schlomer, Bauman, & Card, 2010).

Outliers. During the data preparation process, responses were screened for outliers or unusual or extreme cases that can bias estimators and significance tests (Yuan

& Bentler, 2001). Multivariate outliers may possess an unusual combination of values or extreme scores on more than one variable (Harrington, 2009). For example, if a respondent indicated they expected their child to obtain paid employment and earn enough to support him/herself without financial support from the government or family and then indicated that they did not expect the child to live away from home, the combination of these answers may be unusual enough that the respondent is identified as an outlier. Utilizing questions from the Expectations for the Future scale, the Mahalanobis distance (D) was calculated for each respondent in the final analytic sample. No outliers were identified. DeCarlo's (1997) macro was also utilized to assess for outliers. No outliers were found to be statistically significant at the .05 level, $F(83, 29) =$ 99.92.

Excluded cases. Of the 149 cases excluded from analysis, 5 (3%) respondents declined to participate in the study, 18 (12%) were instances of activation of the link without participation in the survey, and 26 (17%) did not answer any survey questions after providing consent to participate. For the remaining 100 cases, the number of missing items out of the 83 scale items ranged from 19-83 with 66 participants who did not complete any scale items.

The following demographic information on the participants excluded from analysis is reported based on percentage of respondents who answered the question. Of the respondents who indicated a relationship to the child, 71% ($N = 61$) were birth mothers, 13% ($N = 11$) adoptive mothers, and 5% ($N = 4$) were birth fathers. Sixty percent ($N = 25$) indicated their children were male and 24% ($N = 10$) indicated their child was eligible to receive free or reduced lunch. The majority of participants excluded

from the analysis identified as White (N = 32; 78%) with children whose main diagnoses

under which they received special education services were autism ($N = 9$; 22%), specific

learning disability ($N = 8$; 20%), and intellectual disability ($N = 7$; 17%). The

demographic composition of the excluded sample largely mirrors the analytic sample.

Additionally, results of Pearson's chi-square tests suggested that there were not

statistically significant differences between respondents included in the final sample and

those excluded from analysis with the exception of older students (age 22-25).

Analytic Sample

The final participating sample (i.e., those participants who completed at least 80%

of survey scale items) included 300 family members or legal guardians of high school

students (14-25 years) with disabilities. Participant demographic information is reported

in Table 2. The majority of family members completing the survey were White (74%)

birth mothers (69%) of male (67%) children. Thirty-four percent of respondents ($n = 101$)

reported their child was eligible for free or reduced lunch. Most of the parents indicated

their child was receiving special education services under the classification of Autism

(35%) or Intellectual Disability (20%). Table 2 provides additional demographic

information.

Table 2

Demographic Information

Variable	Total sample ($N = 300$)	
	n	*%*
Your relationship to this child		
Birth mother	208	69.3
Adoptive mother	38	12.7
Birth father	17	5.7
Other	30	10.0
Missing	7	2.3

Gender of child		
Male	202	67.3
Female	98	32.7
Race/Ethnicity of the child		
White	222	74.0
African American	25	8.3
Hispanic/Latino	18	6.0
Multiracial	12	4.0
Other	18	6.0
Missing	5	1.7
Eligibility for free or reduced lunch		
Yes	97	32.3
Missing	4	1.3
IDEA classification		
Autism	104	34.7
Intellectual disability	61	20.3
Multiple disabilities	40	13.3
Other health impairment	34	11.3
Emotional disturbance	21	7.0
Specific learning disability	18	6.0
Other	21	6.8
Missing	1	0.3
School		
Regular school that serves a wide variety of students	169	56.3
Transition program for 18-21 year old students	39	13.0
School that served only students with disabilities	36	12.0
Other	45	15.0
Missing	11	3.7
Age		
14	28	9.3
15	34	11.3
16	43	14.3
17	44	14.7
18	39	13.0
19	26	8.7
20	20	6.7
21	30	10.0
22	14	4.7
23-25	16	5.3
Missing	6	2.0

Confirmatory Factor Analysis

Model specification. The confirmatory factor analysis (CFA) model was generated based on previous analyses (Hirano et al., 2014) and contained three involvement factors (i.e., Home, School, and Future Planning) and eight factors of motivators of involvement (i.e., expectations for the future, child invitations, teacher invitations, general school invitations, role construction, self-efficacy, knowledge and skills, and time and energy). The paths between the observed variables and the associated latent variables were estimated. See Figure 2. All observed variables had one path estimated to the *a priori* hypothesized latent variable. It was hypothesized that the covariance matrix from this study would not be statistically significantly different from the theoretical model.

Assessment of fit. Four goodness-of-fit indices outlined by Hu and Bentler (1999) were used to assess how well the data fit the *a priori* model. These included: (a) the chi-square approximation of the discrepancy function ($\chi2$); (b) the standardized root mean square residual (SRMR); (c) the comparative fit index (CFI), and (d) the root mean square error of approximation (RMSEA). However, because the chi-square approximation of the discrepancy function is extremely sensitive to sample size, it is often an inefficient indicator of model fit (Klein, 2010). Thus, Hu and Bentler's (1999) criteria for the other fit indices were used. Model fit is considered adequate if CFI values are $\geq .90$, and better if they are $\geq .95$. The cut-off value for SRMR is $< .08$. RMSEA is $\leq .08$ for moderate fit and $\leq .06$ for good fit.

Figure 2 *Confirmatory Factor Analysis*
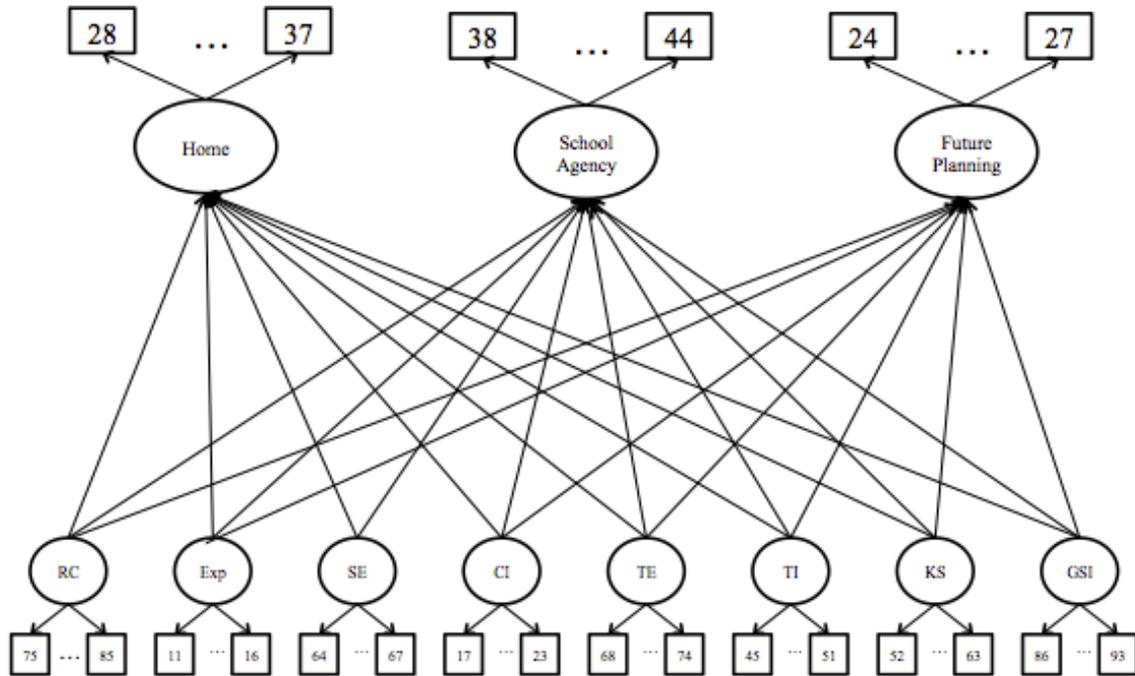
Predictors of Involvement. Mplus was utilized to investigate the relationships between the motivator factors and the three forms of parent involvement: School, Home, and Future Planning. In order to arrive at a parsimonious model, a series of regression models were analyzed until only significant paths remained.

Main Effects for Demographic Variables. In the final analytic step, Mplus was utilized to examine the main effects for demographic differences (i.e. race, SES, gender, age and disability-type) on motivators of involvement and types of involvement. Dummy coding for each demographic factor was utilized to create within group comparisons. There were three dichotomous demographic variables (i.e., male vs. female, Low SES vs. not low SES, and White vs. not White) and two categorical variables including disability category coded as autism, ID, and all other, and age coded as high school (14-17 years), transition (18-21 years), and older students (22-25 years old).

Because there were no specific hypotheses about predicted demographic differences, all demographic variables were entered as predictors of all of the motivational factors. Statistically significant relations were retained and the model was rerun to generate a final model with only statistically significant paths.

CHAPTER IV

RESULTS

Research Questions 1: To what extent is the model factor structure from the pilot study confirmed with this study sample?

   Measurement Models.

   Model estimation. MPlus 7.0 for Macintosh computers (Muthén & Muthén, 2012) with WLSMV estimation was used to run a series of CFAs to assess the adequecy of 11 latent factor measurement model. The pattern of parameters was restricted so that each measured variable was only aligned with the latent factor it was hypothesized to represent as indicated by previous analysis (Hirano et al., 2014) and all factors were allowed to correlate freely. Factor loadings were examined and one indicator (#64) with a low loading (>.40) was removed. Next, non-significant correlations were removed, therefore, only significant correlations were retained in the final model.

   Model fit. Overall the model fit was good. The chi square test was statistically significant, however, Kenny (2014, 2015) has identified several instances revelvant to this model in which the chi square test may not be a reasonable measure of fit. First, the size of correlations in the model affect the chi square. Correlations between latent factors ranged from 0 to .795. As noted by Kenny, larger correlations are associated with poorer fit. Additionally, models with more variables tend to have higher chi square values and poor fit. Finally, non-normal data, especially highly skewed and kurtotic variables can inflate chi square values. Due to these factors being associated with poor fit as indicated by the statistically significant chi square value, alternative indices of goodness of fit were evaluated using recommended rules of thumb. Based on these criteria, the final model

(shown in Figure 2) demonstrated good fit, $X^2(3191) = 5292.07$, p < .001, TLI = .93,

RMSEA = .05. All factor loadings were statistically significant, $p < .001$. See Table 3 for

the three types of involvement factors standardized factor loadings and Table 4 for the

standardized loadings for motivators of involvement factors.

Table 3

Standardized Factor Loadings: Types of Involvement

Item	M (SD)	Future Planning	Home-based Involvement	Agency/School-based Involvement	R^2
24	3.77 (1.50)	.84			.71
25	3.49 (1.46)	.96			.92
26	2.48 (1.41)	.84			.71
27	3.80 (1.33)	.89			.79
28	4.98 (1.44)		.78		.61
29	4.49 (1.53)		.69		.48
30	4.90 (1.48)		.69		.48
31	4.49 (1.59)		.71		.50
32	4.50 (1.64)		.81		.66
33	5.19 (1.35)		.76		.58
34	4.08 (1.66)		.66		.44
35	5.60 (1.04)		.73		.53
36	4.10 (1.69)		.64		.41
37	4.59 (1.65)		.71		.50
38	2.67 (1.52)			.62	.38
39	2.21 (1.18)			.80	.64
40	2.94 (1.22)			.75	.56
41	1.92 (1.06)			.82	.67
42	2.78 (1.16)			.66	.44
43	2.43 (1.19)			.80	.64
44	1.83 (1.14)			.86	.74

Note. R^2 = squared multiple correlation. All factor loadings are statistically significant, $p < .001$. All items
were scored on a scale from 1-7.

Research Question 2: To what extent are the factors believed to impact parent

involvement associated with parent involvement factor(s)?

Predictive validity. Mplus was utilized to examine the predictive relations

between motivator and involvement constructs. Because there were not any theoretical

hypotheses for the relations between motivators of involvement and types of

involvement, all motivator variables were entered into the model as predictors of all types

Table 4
Standardized Factor Loadings: Motivators of Involvement

Variable	M (SD)	Future Expectations	Child Invitations	Teacher Invitations	Knowledge & Skills	Self-efficacy	Time & Energy	Role Construction	School Invitations	R^2
11*	2.61 (1.38)	.77								.59
12	2.54 (1.28)	.88								.77
13	2.89 (1.31)	.89								.79
14	2.91 (1.43)	.93								.87
15	3.45 (1.33)	.91								.83
16	3.84 (1.25)	.79								.62
17	1.80 (1.06)		.88							.77
18	2.06 (1.25)		.79							.62
19	2.12 (1.15)		.78							.61
20	4.03 (1.95)		.71							.50
21	2.99 (1.58)		.81							.66
22	2.29 (1.52)		.82							.67
23	2.91 (1.87)		.75							.56
45	3.70 (1.40)			.39						.16
46	2.27 (1.26)			.75						.55
47	2.35 (1.09)			.91						.83
48	2.32 (1.16)			.95						.90
49	2.11 (1.20)			.93						.87
50	2.20 (1.31)			.89						.79
51	2.21 (1.47)			.63						.41
52	4.48 (1.34)				.81					.66
53	5.51 (0.89)				.73					.53
54	4.99 (1.24)				.88					.77
55	4.82 (1.31)				.91					.83
56	4.37 (1.44)				.93					.87
57	4.31 (1.43)				.94					.88
58	4.84 (1.10)				.76					.58
59	4.54 (1.48)				.70					.49
60	4.74 (1.25)				.75					.56

Item	M (SD)	F1	F2	F3	F4	F5	R^2
61	5.39 (0.92)	.67					.45
62	4.51 (1.55)	.61					.37
63	4.54 (1.35)	.81					.66
64	5.08 (1.13)		.84				.71
66	4.46 (1.39)		.94				.88
67	4.51 (1.41)		.89				.79
68	4.88 (1.18)			.75			.56
69	4.71 (1.27)			.75			.56
70	5.14 (0.99)			.74			.55
71	4.81 (1.27)			.85			.72
72	4.95 (1.19)			.86			.74
73	4.71 (1.24)			.92			.85
74	4.74 (1.25)			.82			.67
75	5.52 (0.76)				.74		.55
76	5.74 (0.62)				.84		.69
77	5.62 (0.70)				.90		.81
78	5.55 (0.81)				.86		.74
79	5.51 (0.76)				.92		.85
80	5.52 (0.76)				.96		.92
81	5.23 (1.01)				.83		.69
82	5.62 (0.61)				.77		.59
83	5.26 (0.96)				.80		.64
84	4.29 (1.50)				.52		.28
85	5.69 (0.59)				.83		.69
86	4.80 (1.45)					.83	.69
87	4.83 (1.33)					.85	.72
88	4.59 (1.40)					.83	.69
89	4.59 (1.53)					.84	.71
90	4.25 (1.67)					.84	.71
91	4.80 (1.39)					.93	.87
92	4.50 (1.53)					.91	.83
93	5.15 (1.13)					.78	.61

Note. R^2 = squared multiple correlation. All factor loadings are statistically significant, $p < .001$. * indicates an item scaled from 1-5. All other items were scored on a scale from 1-7.

of involvement. In order to identify motivators that are uniquely predictive of different types of involvement, controlling for other motivators, all non-statistically significant paths were eliminated until only statistically significant paths remained.

Figure 3 displays the final model and Table 5 displays standardized beta coefficients for motivator factors predicting parent involvement. *Home involvement* was associated with *Expectations for the future*, *Child invitations*, and *Role construction*. *School involvement* was associated with *Child invitations*, *Teacher invitations*, *General school invitations*, *Time and energy*, and *Knowledge and skills*. Finally, *Future planning* was associated with *Child invitations*.

Model fit. The chi square value was significant, and other fit indices indicate the final model (shown in Figure 3) provided good fit to the data, $X^2(3203) = 5265.51$, p $< .001$, TLI = .93, RMSEA = .05.

Figure 3. *Predictive Validity of Motivators of Involvement*
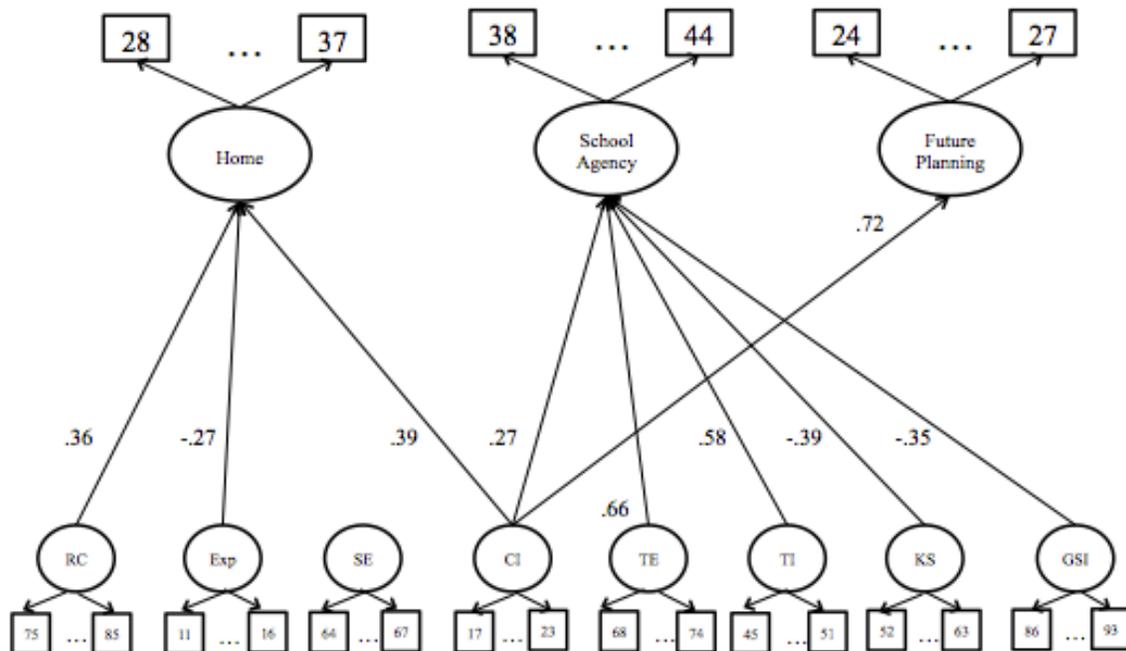
Table 5. *Motivator Loadings on Involvement Factors*

Involvement Factors	Motivator Factors	Standardized betas	Ordinal ∝
Home involvement			.90
	Expectations for the future	-.27	
	Child Invitations	.39	
	Role Construction	.36	
School involvement			.87
	Child Invitations	.27	
	Teacher Invitations	.58	
	Knowledge & Skills	-.39	
	Time & Energy	.66	
	General School Invitations	-.35	
Future planning			.92
	Child Invitations	.72	

Note. All significant at *p* < .001

Research Question 3: How do factors related to parent involvement and types of involvement differ based on child demographic characteristics (i.e. race, SES, gender, age, and disability-type)?

Main effects for demographic variables are shown in Figure 4. There were no differences in motivators of involvement or types of involvement based on race or gender, but there were statistically significant differences based on other demographic factors. With regard to student age and disability-type, parents of high school students were more likely to report higher expectations for the future than parents of older students, while parents of students with ID were more likely than parents of students with other disabilities (excluding autism) to report lower expectations.

Parents of students with autism were more likely than parents of students with other disabilities (excluding ID) to report lower levels of child invitations to be involved. Additionally, parents of high school students were less likely to report teacher invitations

for involvement than parents of older students, while parents of students in low-income

households reported higher levels of both teacher invitations and general school

invitations for involvement.

Figure 4. *Predictive Validity of Motivators of Involvement with Demographic Variables*
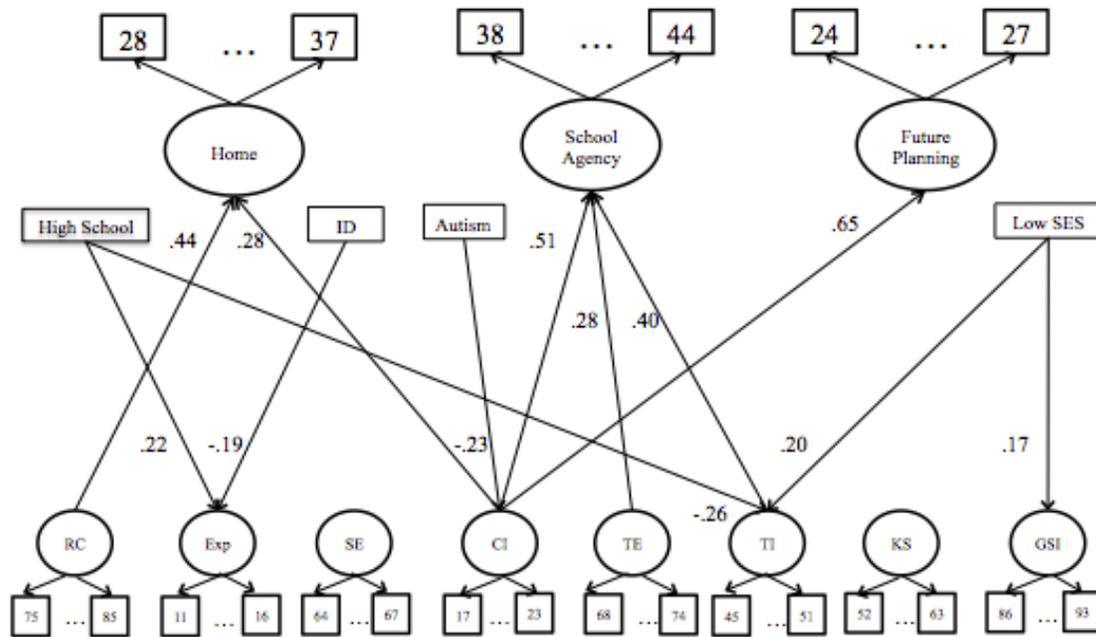
Model fit. The chi square value was significant, and other fit indices indicate the

specified model provided adequate fit to the data. The final model (shown in Figure 4)

had mediocre fit, $X^2(3805) = 12,363.43$, p < .001, TLI = .72, RMSEA = .09.

CHAPTER V

DISCUSSION

The purpose of the present study was threefold: (1) to examine the extent to which the model of parent involvement from the pilot study (Hirano et al., 2014), which was originally adapted from the Hoover-Dempsey and Sandler (2005) model of parent involvement, was confirmed with this study sample; (2) to examine the associations between motivators of involvement (*expectations for the future*, *child invitations*, *teacher invitations*, *general school invitations*, *role construction*, *self-efficacy*, *knowledge and skills*, and *time and energy*) and types of involvement (*home*, *school/agency*, and *future planning)*; and (3) to examine how factors related to parent involvement and types of involvement differ based on child demographic characteristics (i.e. race, SES, gender, age and disability-type). Study results from a national sample of 300 parents of transition-age youth with disabilities indicated that an adapted (Hirano et al., 2014) version of the Hoover-Dempsey and Sandler Model of Parent Involvement provided an adequate fit to parents of transition-age youth with disabilities. The addition of transition-related items (e.g. daily living skills and agency involvement) and a scale of involvement in future planning proved to be important to the fit of the adapted Hoover-Dempsey and Sandler (2005) model for this study sample. Investigations of the relations between motivators of involvement and types of involvement revealed unique associations for this sample as well.

An examination of relations between motivators of involvement and types of involvement revealed that *child invitations* was the only motivator with statistically significant associations with all three types of parent involvement for parents of

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transition-age youth with disabilities. *School/agency* involvement was also associated

with *teacher invitations* and parent perception of *time and energy*. These findings are

consistent with and extend previous research. Child invitations have been found to

predict home and school-based involvement for parents of elementary-aged children

(Green et al, 2007) and parents of elementary aged children with disabilities (Fishman &

Nickerson, 2013). Teacher invitations have been found to predict involvement at school

for parents of elementary-aged children (Green et al., 2007) and both home and school

involvement for parents of adolescents ages 10 to 17 years-old (Anderson & Minke,

2001). This study extends this previous research by providing insight into what motivates

involvement of parents of transition-age youth in the planning and preparation for the

youth's life after high school. This focuses is unique in that previous research has focused

on parent involvement activities related mostly to academic support at home and school.

This study also provided insight into the patterns of motivators and involvement

based on demographic characteristics of the family and child, an area previously

unexamined for parents of transition-age youth. First, parents of high school students

were more likely to report higher expectations for the future and fewer teacher invitations

for involvement than parents of older students (defined as age 19-25). Secondly, parents

of students with autism were more likely to report fewer child invitations for involvement

than parents of youth with other disabilities, while parents of students with ID were

significantly more likely than parents of youth with other disabilities to report lower

expectations for their child's future. Finally, parents from low-income households as

indicated by FRL status, were more likely than parents in middle to high-income

households to report higher levels of *teacher invitations* and *general school invitations* to

involvement. In the following sections I expand upon some of these key findings, discuss the implications for research and practice, and provide additional context for the models developed in this study.

CFA Results

Hoover-Dempsey and Sandler (1995) originally proposed a causal model of parent involvement that began with a parent's decision to become involved in their child's education and ultimately ended with impacting student outcomes. Although there are five levels to the original model, most of the research on the model (e.g. Fishman & Nickerson, 2013; Green et al., 2007; Hoover-Dempsey et al., 2005) focused on the first two levels: factors that impact a parent's decision to become involved and their forms of involvement. Most of the work validating this model has been with parents of elementary-aged children. Even though studies have continued to document a decrease in parent involvement as children age (e.g. Newman, 2005), this does not mean that parents are not interested in being involved or that their involvement is not important. In fact, research continues to demonstrate the importance of parent involvement through high school, especially for high school students with disabilities (Test et al., 2009). Therefore is important to understand factors impacting a parent's decision to become involved in their child's education across the grades. This knowledge can then be used to develop and test interventions to increase involvement.

In 2014, Hirano et al. adapted scale items from the Hoover-Dempsey and Sandler model of parent involvement (2005) designed to assess motivational factors that assess a parents's decision to become involved in their child's secondary education and transition to adulthood. Results of the exploratory factor analysis on involment activities suggested

a three-factor model: *Home Involvement*, *School Involvement*, and *Future Planning*.

Results of the EFA on motivators of involvement suggested a 7-factor solution:

expectations for the future, *knowledge, skills and self-efficacy*, *role construction*, *general*

school invitations for involvment, *child invitations for involvement*, *specific teacher*

invitations for involvement, and *parental perceptions of time and energy*. The aim of this

study was to confirm that the factor structure generated from the Hirano et al., (2014)

study was appropriate for the target population (i.e. parents of transition-aged youth with

disabilities). Based on results of the exploratory factor analysis conducted by Hirano et

al., this study modified the survey adapted by Hirano et al. (2014), rewording some

questions, adding agency-based involvement questions, and items related to self-efficacy.

The CFA model in this study demonstrated adequate fit with minor modifiations. This

finding provides further support for the adequecy of the adapted survey for measuring

constructs related to involvement for parents of transition-age youth with disabilities.

Motivators and Types of Involvement

Four motivators of involvement were found to have significant associations with

types of involvement for parents of transition-aged students with disabilities. These

include *time and energy*, *child and teacher invitations*, and *role construction*. These

relationships are discussed below.

Child invitations. A child's invitations for parents to be involved have been

found to be a significant predictor of a parent's decision to become involved both at

home and at school (Deslandes & Bertrand, 2005; Fishman & Nickerson, 2013; Green et

al., 2007). Hoover-Dempsey & Sandler (2005) suggested this is related to a parent's

desire to be responsive to their child's developmental needs (e.g. Baumrind, 1971, 1991)

and parent's desire for their children to be successful (Hoover-Dempsey & Sandler, 1995), both of which are activated when children invite them to be involved.

Findings from this study support previous research indicating parents who reported more invitations from their child for involvement were more likely to be involved at home, school, and future planning conversations. These findings extend findings from previous literature focused on parents of elementary age students (Green et al., 2007), middle grade students (Deslandes & Bertrand, 2005) and elementary students with disabilities (Fishman & Nickerson, 2013), by examining findings for parents of transition age youth with disabilities. In this study *child invitations* was the only motivator in the model to be significantly associated with all three types of parent involvement. One possible explanation for this is the child's emerging independence. Parent involvement has been shown to decrease as students age (Eccles et al., 1993; Newman, 2005). Eccles and Harold (1993) suggested that adolescent's focus on emerging independece and autonomy may depress parent interest in overt involvement. Therefore, parents may be relying on cues from their child as to how to be involved in a developmentally appropriate way during the high school and transition years.

Teacher invitations. Teacher invitations have also been consistently associated with higher levels of parent involvement at school across grades, regardless of child disability status (Deslandes & Bertrand, 2005; Green et al., 2007; Anderson & Minke, 2001). Findings from this study are consistent with that research as parents in this study who reported higher levels of teacher invitations were more likely to be involved at school.

This study did not find that *teacher invitations* were associated with higher levels

of home involvement as has been found in previous research (e.g. Anderson & Minke, 2001). This may be in part due to a mismatch between the content of the questions comprising the home involvement and teacher invitation scales in this adapted measure for parents of transition-aged students with disabilities. For example, in previous studies, home involvement scales focused on academics (e.g. "Someone in this family supervises this child's homework or helps this child study for tests"). Many of the questions on the adapted scales utilized in this study were associated with preparing for transition (e.g. "some in this family helps this child develop daily living skills…helps this child learn how to take care of their emotional health"). It may be that teacher invitations are less indicative of home involvement when the home activities are transition-related activities as many families engage in these activities on a daily basis in response to their child's needs. Regardless however, for this population, *teacher invitations* emerged as significantly associated with *school/agency involvement,* which when coupled with child invitations is also consistent with previous research (e.g., Delgado-Gaitan, 1992; Sheldon, 2003). This suggests that parental involvement at school is motivated primarily by aspects of the social context, especially parents' relationships with children and teachers.

Role construction. Role construction includes the parent beliefs about their roles and responsibilities. "This construction of the parental role is important because it enables the parent to imagine, anticipate, and act on a host of educationally related activities with their children" (Hoover-Dempsey & Sandler, 1995). Wandry and Pleet (2009) identified five potential roles parents can play during the transition years. These roles include: 1) collaborators in the IEP process; 2) instructors in their youth's emergent

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independence; 3) decision makers and evaluators; 4) peer mentors; and 5) systems change agents. Findings from this study suggest that parents with higher levels of role construction were more likely to be involved at home. This finding is consistent with previous research (Green et al., 2007), although in studies with younger children, role construction also predicted involvement at school (Deslandes & Bertrand, 2005; Fishman & Nickerson, 2013; Green et al., 2007).

The relationship between role construction and involvement at home for parents of transition-aged students with disabilities has several interesting implications. First, parent involvement may decrease during this developmental period as adolescents focus more on emerging independence and autonomy. Perhaps however, parents with strong role construction, who believe it is their role and responsibility to be involved at home, are less likely to rely solely on prompts from their child to be involved and instead act from their beliefs about their role. Many families of youth with disabilities have expressed the importance of providing support at home to their adolescent children. For example, Landmark, Zhang, & Montoya (2007) reported that providing support to children at home was very important to nearly all parents from a diverse sample of parents of transition-age youth with disabilities. Williams and Sánchez (2012) reported that all parents interviewed in a study examining parental involvement at a predominately African American inner-city high school, discussed the importance of being physically present and emotionally available to their children outside of school. Home involvement by the parents included in the Williams and Sánchez study was composed of four main components: meeting basic needs, family activities, providing educational assistance, and teaching life lessons. Parents included in the Williams and Sánchez perceived ensuring

children were well cared for at home as an important aspect of parental involvement, a finding consistent with results of the current study. This study concluded parents with higher levels of role construction were more likely to be involved at home.

Time & energy. In this study, parents who reported having enough time and energy were more likely to be involved at school. This finding is supported by previous literature which has noted time in particular as one of the main barriers to parent involvement at school. (Landmark, Zhang, & Montoya, 2007, Geenan et al., 2003, Williams & Sánchez, 2012). In one study of culturally and linguistically diverse parents of transition age youth (Landmark, Zhang, & Montoya, 2007) and in another study of urban parents of high school students (Williams and Sánchez, 2012), parents reported that one barrier to involvement is the ability to take time off of work due to scheduling or the financial cost of missing work.

Time is a particularly important consideration for parents of transition-aged students with disabilities. Transition planning is often a collaborative effort between parents and schools, which typically entails meetings held during school hours. Taking time away from work to attend meetings in the middle of the day however can be difficult for some parents and prevent their involvement at school (Williams & Sánchez, 2012). Geenan et al. (2003) found that parents from culturally diverse backgrounds who struggled to meet basic needs were likely to participate only in the most pressing activities. It is likely for this reason then that some parents noted that if financial pressures were relieved, it would be easier to participate in transition planning (Landmark, Zhang, & Montoya, 2007). Given the wide array of demands on parent time and the added demands of transition planning for parents of transition-aged students with

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disabilities, lack of energy is also another facet to consider. Some parents have reported that after a number of years advocating and caretaking their child, they have simply "run out of steam" (Schneider, Wedgewood, Llewellyn, & McConnell, 2006).

Differences Related to Demographic Factors

The last two decades of research on family involvement in education have documented differences in involvement related to student and family characteristics (e.g. student disability classification, gender, age, race/ethnicity, SES; Harry, 2002; Fishman & Nickerson, 2013; Lareau, 2000; Newman, 2005). Understanding the differential impact of these characteristics can assist future research and practice in more succinctly targeting interventions to increase involvement. Based on previous research, it was hypothesized that gender and age of the child, child disability classification, SES, and race/ethnicity would all significantly impact either motivators of involvement or types of involvement as described previously. Surprisingly, results of the study found that there were no significant differences based on gender of the child or race/ethnicity. It is possible that this is due to the small number participants who were parents of female children (33.7%) and non-White (26%) and that a more diverse sample would result in significant findings for gender and race/ethnicity consistent with previous research. Findings did however reveal significant differences on motivator factors based on child disability classification, age of the student and SES. These findings will be discussed in more detail below.

Disability type related differences.

Autism Spectrum Disorders. Perhaps not surprisingly, because one of the hallmarks of autism spectrum disorders is difficulty with communication, parents of students with ASDs reported fewer child invitations for involvement than parents of

students with other disabilities. Being a parent of a child with ASD did not significantly impact parent involvement in this analysis but because *child invitations* was the only factor that impacted a parent's decision to become involved in all three types of involvement, this finding is important to consider.

Research on the impact of verbal and cognitive ability of young children on levels of relatedness with caregivers found that the more verbal and cognitive ability a child possesses, the more caregivers engage in mutual play and provide positive feedback (Kasari et al., 1988). Although there is less research on the relationships between parents and adolescents with ASDs, Orsmond et al., (2006) found that mothers of children with less severe social impairments were more likely to be over-involved and hypothesized that this could be because "when children have better social reciprocity skills, mothers are more able to remain engaged and vigilant, despite the child's health problems and language impairments"(p. 133). Although parents of youth with ASDs in this study were not more likely than any other parents to be less involved, for researchers wanting to increase involvement for parents of youth with autism, it may be important to further examine how lack of child invitations may be impacting their decision to become involved.

Intellectual Disability. Parent expectations for their child's future are important for two reasons. First, parent expectations have been shown to influence involvement behaviors (Davis-Kean, 2005) and second, parent expectations have been associated with improved post-school outcomes for students with disabilities (e.g. Carter, Austin & Trainor, 2012; Doren, Gau, Lindstrom, 2012). In this study, parents of students with ID reported significantly lower expectations for the future than parents of students with other

disabilities (excluding autism). This finding is supported by previous research. For example, Newman (2005) found that low future expectations were especially common for parents of youth with ID, autism, and multiple disabilities. This does not mean however, that parents do not hope or wish for more for their students, but that perhaps there is a distinction between hopes and wishes and reality. For example, although some parents of adolescents with disabilities reported that employment and independent living were values and important outcomes for their child, they instead predicted that their child would live at home, and work in a segregated setting (Canha, 2013). Similarly, Martinez (2009) found that although parents of students with ID primarily desired that their child be employed in an integrated setting with benefits, they expected that they would volunteer for work without pay. Martinez (2009) attributed this discrepancy to results from qualitative data indicating a low degree of parent knowledge and access to information about postsecondary education in college for children with intellectual disabilities.

Student age related differences. In this study, parents of high school students reported significantly lower teacher invitations than parents of older students (ages 19-25) a trend that has been observed in previous studies (Adams & Christenson, 2003). High school teachers reported fewer outreach efforts to parents than elementary school teachers (Stone 2003). However, teacher invitations for involvement may increase for older students (19-25) who are still in high school for several reasons. First, students who remain in high school after beyond age 18, often need expanded opportunities and supports in developing independent living, social, and employment skills in order to improve post-school outcomes (Wisconsin Statewide Transition Initiative, n.d.). It is

possible that as a result of these needs, teachers extend more invitations for parent involvement. Increased teacher invitations may also be the result of the need to gather input from multiple perspectives (i.e. student, family, adult service agencies) in order to better plan transition, goals, services, and supports.

One additional finding of this study is that parents of high school-age youth reported higher expectations as compared to older students (ages 19-25), a finding supported by other research. For example, parents of older children (17 years old) in the NLTS2 study (Newman, 2005) were significantly less likely than 13 or 14 year olds to be expected to attend school after high school or to graduate from a 4-year college. Although NLTS2 found that parents of all youth with disabilities held similar expectations in regards to the likelihood of their child finding future paid employment. Parents of younger students were more likely than parents of older students without paid work experience to "definitely" expect that their child would eventually obtain paid employment. It is possible that as children age and come closer to the time in which they graduate, parents are assessing the feasibility of their student achieving employment and post-secondary education goals. Indeed, a parent may hope that their child will graduate with a regular diploma when they are a freshman but as the difficulty of academics increases, their expectations may change.

SES related differences. While parents of high school students reported significantly lower teacher invitations than parents of older students, parents in low-income households reported more teacher and general school invitations than parents in average to high-income households, a finding supported by other research (Stein, Goldring, & Zottola, 2008). Stein, Goldring, & Zottola (2008) found that parents of youth

from low SES families were more likely to report receiving both general school and specific teacher invitations for involvement. One possible explanation is that poverty is associated with a number of "toxic stressors" (e.g. hunger and food insecurity, homelessness and high mobility, domestic violence) that have been shown to have lasting impacts on learning, behavior, and health (Rumberger, 2013). Therefore, students from low-income families may be experiencing greater academic and behavioral needs, resulting in more frequent teacher contacts. It is also possible that teachers who are aware of these stressors and the importance of family engagement's connection to in school and post-school outcomes increase engagement efforts to low-income families.

It is also possible that parents of low-income families may perceive more general school and teacher invitations to be involved due to Title I requirements, which outlines provisions for parent involvement. For example, districts are responsible for creating parent involvement policies that detail the ways in which they will involve parents of all youth, not just youth with disabilities, in developing school improvement plans, facilitating parent involvement to improve student and school academic performance, and evaluating the effectiveness of their parent involvement policies (U.S. Department of Education, 2004). Among other responsibilities, schools are required to (a) develop school-parent compacts that describe how school staff and parents will share responsibility for student achievement and develop a plan for meeting state standards for student achievement and (b) build school capacity for parent involvement (e.g. educating staff about the importance of parent involvement and effective strategies for reaching out to parents; U.S. Department of Education, 2004).

Non-significant Associations

Exploration of non-significant findings is important, especially when the lack of findings contributes to knowledge (Taylor, Kermode, & Roberts, 2006). In this study there were three surprising non-significant associations between types of involvement and target motivators of involvement (i.e., *knowledge and skills*, *self-efficacy*, and *parent expectations for the future*). Because these non-significant findings run counter to some of the literature in transition, exploration of these non-significant findings can provide important avenues for future research and continued development of the parent involvement scales utilized in this study.

Knowledge & skills. Hoover-Dempsey and Sandler (1995) suggested that the particular types of knowledge and skills parents possess influence types of involvement. Given this theoretical relationship, the lack of an observed relationship between *knowledge and skills* and types of involvement was unexpected. Several studies on parent involvement for parents of transition-age youth with disabilities highlight knowledge and skills as barriers to transition planning (Hetherington, 2007; Landmark, 2007; Rehm, 2013; Rueda, 2005). For example, in an ethnographic study examining parent advocacy styles, Rehm (2013) found that many parental attempts at advocacy failed because parents did not possess information about services, multiple advocacy strategies, or knowledge of how to appeal a denial of services. It is also surprising that there were not any significant demographic differences that emerged for knowledge and skills as several studies including culturally diverse families also highlight knowledge and skills as a barrier to involvement in transition planning (Landmark, Zhang, & Montoya, 2007; Povenmire-Kirk & Lindstrom, 2007; Shapiro, 2004). For example, in a qualitative study

with families in rural Hawaii, Sheehey (2006) found that knowledge was a barrier to parent involvement in educational decision-making. In a study with Latina mothers of young adults with disabilities, mothers perceived that lack of knowledge prevented them from being able to access and utilize services for their children (Shapiro, 2004).

There are several possible explanations for these findings. First, parents for this study were recruited through agencies focused specifically on serving the needs of individuals with disabilities and their families. It is possible that because of their connection to an agency that provides information, resources, supports and training, parent responses lacked variability and as a result, did not to reflect a significant association with involvement. It is possible that a more diverse sample of parents not connected to such agencies would yield different results.

It is also possible that even if parents don't have the skills or knowledge to be involved, they still choose to become involved. Although a parent may not understand the purpose of an IEP meeting or how to effectively participate this does not mean that they do not attend. Also, just because they cannot assist their child with homework because of their own educational levels or time and energy, it does not mean they cannot or do not find or facilitate other educational supports for their children. For example, Williams and Sánchez (2012) reported that parents in their study who could not assist their children with homework made extra efforts to find tutors, mentors, or workbooks to aid their child. So, despite a lack of knowledge and skill some parents are still involved. Finally, it may be that although knowledge and skills contribute to a parent's decision to become involved, they are not most strongly associated with involvement as reported in other studies cited above. Some parents may be involved and gain knowledge and skills along

the way. In a study with families in rural Hawaii, Sheehey (2006) found, "the commitment to meeting their children's needs served as a springboard for gaining knowledge"(p. 12) and later using that knowledge to advocate for their children.

Self-efficacy. Whereas knowledge and skills are logical precursors to parent involvement, in theory simply possessing knowledge and skills does not guarantee involvement. Self-efficacy theory (Bandura, 1989) asserts, "parents develop behavioral goals for their involvement based on their appraisal of their capabilities in the situation"(Hoover-Dempsey et al., 2005, p. 109). Previous research examining the association of self-efficacy and parent involvement present inconsistent findings. Self-efficacy is the belief that person's efforts will positively effect desired outcomes (Bandura, 1997). Notably, in the current study, *self-efficacy* did not have significant association with higher levels of involvement. For parents of elementary aged students and adolescents, some studies have suggested that self-efficacy positively predicts home involvement (Anderson & Minke, 2001; Green et al., 2007). Other studies have not found this same predictive relation (Deslandes & Bertrand, 2005; Fishman & Nickerson, 2014). Park and Holloway (2013) found that self-efficacy predicted parent involvement at home in only in regards to academics. When reviewing the items on the scale used for this study, many items on the *home-based involvement* scale were related to activities of daily living and supports, which families may provide on a regular basis. It is possible that self-efficacy was not associated with home involvement as many of the home involvement scale questions related to activities of daily living or that revisions and additions need to be made to the self-efficacy scale used in this study.

Expectations for the future. Parent expectations create the context in which children and youth grow and develop, as well as, shape their own goals and aspirations for the future. Social cognitive and expectancy-value frameworks (Bandura, 1986; Eccles & Wigfield, 2002) provide a theoretical framework for conceptualizing the mechanisms by which parent expectations may influence post-school outcomes for youth with disabilities. Within these frameworks parent expectations are communicated to students via overt and covert behaviors that are congruent with their own expectations for their student. The student learns and internalizes these behaviors, which in turn influence their own values, beliefs, attitudes, and behaviors, ultimately influencing their post-school outcomes.

In general, parent expectations for the future have been associated with positive in-school and post-school outcomes for students including academic achievement (Chen & Gregory, 2010; Jeynes, 2007), school engagement (Simons-Morton & Chen, 2009), and college attendance (Crosnoe, Mistry & Elder, 2012). This also holds true for students with disabilities. Recent research has found that students with disabilities whose parents held high expectations tended to have better post-school outcomes (Carter, Austin & Trainor, 2012; Chiang, Cheung, Hickson, Xiang, & Tsai, 2012; Doren, Gau, Lindstrom, 2012). Because parent expectations have been associated with improved post-school outcomes, it was hypothesized that expectations would also be associated with involvement, particularly in future planning conversations. It is possible that revisions to the scale could capture more nuanced connections between specific expectations and specific involvement behaviors. Parsons, Adler, & Kaczala, (1982) suggest that parents form specific expectations regarding their child's performance in a particular activity or

course and then convey these expectations through messages about their belief in their child's abilities. So instead of asking parents if they talk with their child about his/her future plans or express their hopes/expectations for their child's future, parents could be asked specifically about conversations and expression of expectations related directly to employment.

Limitations

Several limitations to this study exist and are important to consider as they offer directions for future research. First, although SEM is sometimes referred to as a causal modeling technique, this is both dated and erroneous (Kline, 2011). In the absence of experimental control, no causal relations can be established. Therefore, the findings reported in this study can offer no causal or predictive relations, only associations. Intervention research is needed in order to determine if indeed increasing identified motivators of involvement actually increases involvement behaviors and to explore casual mechanisms that can be leveraged to increase involvement.

Second, this study used self-report measures to collect indicators of parent involvement behaviors. Because self-report is sometimes prone to distortions (Lanyon & Goodstein, 1997) as well as bias from *social desirability* in which "some people tend to respond to items more as a result of their social acceptability than their true feelings"(Podsakoff, MacKenzie, Lee, and Podsakoff, 2003, p. 882). Podsakoff et al. (2003) provide several techniques for controlling common method bias including both design methods and statistical controls. For example to address method bias in the future, data could be collected from multiple sources (e.g. children, and teachers) or administer a

social desirability scale along with the original scales to allow researchers to partial out the effects of social desirability out of the criterion and predictor variables.

Third, parents for this study were recruited from PTI's and Arc Centers. Therefore this sample is limited to parents who accessed those services and not representative of all families. Additionally, this sample is not representative of the population of children and youth receiving special education services. The majority of respondents to this survey were White (74%) biological or adoptive mothers (82%) of male (67%) children who were ineligible for free and reduced lunch (68%), receiving special education services under autism (35%) and intellectual disability (20%). Only 13% of students receiving special education services in the United States are identified as White and only 7% of students receive services under the autism spectrum disorder category and 7% under intellectual disability (Kena et al., 2014). Therefore, it is unclear how a more diverse sample of parents, not connected to parent training or ARC centers would respond. Finally, this survey was computer/internet based and may have prevented people without access to electronics and Internet service from taking the survey. This likely posed barriers to participation for some potential participants. Future research may use both electronic and paper copies of the survey in order to capture a broader audience.

Implications for Research

Five main implications for research emerged from this study. First, every Parent Training and Information Center, Parent Information and Resource Center, and state chapter of the Arc in the U.S. was contacted to disseminate this survey. Although not all agencies agreed to disseminate the survey, it is noteworthy that the overwhelming majority of respondents to the survey were White (74%) biological or adoptive mothers

(82%) whose children are not eligible for free or reduced lunch (68%). Although it is certainly important to include these groups of parents in the development of parent involvement scales and the development of theory on parent involvement in transition, it would be misguided to proceed as if the findings of this study were representative of all parents. Therefore, it is important to replicate this study with diverse groups of families, representing not only diversity in disability, language, culture, and SES, but also role. Many family members act in the role of caretaker and contribute to the academic and daily lives youth as they prepare for transition, including fathers, grandparents, and siblings. Larger and more diverse samples would allow for comparisons across groups to identify similarities and differences.

It is expected that associations between motivators of involvement and involvement behaviors will be different for families different from those that participated in this study. For example, parental role construction or beliefs about a parent's role in their child's education are influenced by culture (Chrispeels & Rivero, 2001) and SES (Lareau, 2003). Studies with Latino immigrant families have suggested that these families may take a more passive role in school and home-based involvement due to the belief that teaching academic skills is the role of the school (Chrispeels & Rivero, 2001; Delgado-Gaitan, 1987) and therefore it is expected that the association between role construction and types of involvement may be different for these families. Also, because knowledge and skills are noted as barriers to involvement in qualitative literature (Hetherington, 2007; Landmark, 2007; Rehm, 2013; Rueda, 2005), it is hypothesized that the associations between knowledge and skills and involvement will be different for parents not connected with adult service agencies or parent training centers. Since both

the pilot study and this dissertation study recruited through agencies, future research should seek to partner with large school districts so as to increase the probability of obtaining more diverse samples. Recruitment efforts could also be diversified so as to obtain responses from more caregivers, including fathers. Perhaps this could be accomplished y creating recruitment materials specifically addressing fathers or prompting students to invite their parents to complete the survey.

Second, in addition to replication of this study with other samples, Hinkin, Tracey, and Hinz (1997) suggest that the next step for developing a reliable and valid measurement instrument is to assess construct validity. This includes "examining the extent to which the scales correlate with other measures designed to assess similar constructs (convergent validity) and to which they do not correlate with dissimilar measures (discriminant validity)" (Hinkin, Tracey, & Hinz, 1997, p. 114).

Third, although this study sample is not representative of all parents of students receiving special education services, these findings can still inform future intervention development and exploratory research. For example, future studies might examine which types of parent involvement are most associated with positive postschool outcomes or interventions to increase role construction or child and teacher invitations.

Fourth, future research is also recommended to examine more closely, the motivators for involvement such as knowledge and skills, self-efficacy, and expectations for the future that did not demonstrate any significant associations with involvement. These motivators of involvement have all been identified as barriers to or influential in a parent's decision to become involved and therefore should be examined more closely to

see if these associations may exist with other study samples or if these motivators are influential through other mechanisms.

Lastly, qualitative studies may also be necessary and valuable in order to better understand the nuances and intricacies of parent involvement unable to be captured by surveys. For example, what are the experiences of families that report low levels of knowledge and skills and self-efficacy yet report high levels of involvement? How do parent expectations for the future influence parent involvement behaviors? What is the cycle of the recursive influence of hopes, dreams, expectations, and reality?

Implications for Practice

Six main implications for practice emerged from the study. First, the most notable pattern of influence on parent involvement is child invitations to be involved. If the objective of any intervention is to increase parent involvement, it is important to work directly with students. It may be necessary to first assist students in understanding the importance of working with their parents and aid them in developing these relationships if they are not already present. Teachers may design activities for students to engage in at home with their parents such as interviews about their careers, or exploring postsecondary or employment options. Teachers might also have students create invitations to take home in order to invite parents to school events such as Transition Fairs.

Second, if the aim is to increase parent involvement at home, it is also necessary to address role construction. Parents who perceived their role and responsibilities as being involved at home, were more likely to be involved at home. One way schools can address parental role construction is to be clear about school expectations for

involvement. For example, a short newsletter article or teacher conversation with a parent might reinforce the importance of the role parents play in their adolescent's life despite their emerging independence and autonomy and identify opportunities for parents to be involved. Teachers could also provide home-based activities for parents and students to complete together (e.g. looking at Social Security information or searching for colleges) or provide guides for parents (e.g. How to help your child in the transition to college or work). Third, if the aim of intervention is to increase parent involvement at school, it is also necessary to increase teacher invitations. The finding that teacher invitations can impact school involvement suggests that teachers can have an impact on parent involvement at school and that parents are responsive to teacher invitations to be involved. This finding also underscores the importance of personal teacher-parent communication in building relationships that eventually manifest in increased parent involvement.

Fourth, time and energy are also associated with increased involvement at school. It may be necessary to offer alternative ways for parents to be involved such as meeting times that work with parents schedule, home visits, or connection to community resources that may help parents address the family's basic needs so that involvement becomes increasingly possible. Fifth, teachers might also consider using these scales as a tool to get to know their families better. The range of involvement activities in these scales might assist them in seeing all of the ways that parents are supporting their children outside of school.

Finally, parents of youth with ID reported lower expectations for their future than parents of students with other disabilities (excluding autism). One way that teachers

might be able to increase expectations is by providing parents with information on the most current resources and programs available to support students. For example, sharing information about programs at colleges and universities for student with ID might help parents envision postsecondary education for their child. In focus groups conducted by Thorin, Yovanoff, & Irvin (1996), one remark heard repeatedly was that parents never would have guessed all that their child was capable of doing. Providing role models or examples of other students with successful postschool outcomes might help parents expand their expectations for their own child's future.

Summary and Conclusion

Parent involvement in education is associated with multiple positive in-school and post-school outcomes for students with disabilities (Newman, 2005), yet the field of secondary transition and special education still needs to better define, measure, and create interventions that may increase parent involvement for the benefit of students with disabilities. This study identified four main motivators of parent involvement (i.e., *child invitations*, *teacher invitations*, *role construction*, *time and energy*): *Child invitations* were associated with all forms of involvement: *home*, *school/agency*, and *future planning conversations*. In addition to *child invitations*, *school/agency involvement* was associated with teacher invitations and time and energy while home involvement was associated with role construction. Only *child invitations* were associated with future planning conversations. There were also notable patterns of involvement and motivators of parent involvement associated with demographic characteristics. Parents of high school students were more likely than parents of older students to report higher expectations for the future and lower invitations from teachers for involvement. Parents of students with

autism reported lower invitations from their child to be involved, and parents of students with ID reported lower expectations for the future. Finally, parents from low-income households were more likely to report more general school and teacher invitations to be involved. These findings positively contribute to the literature defining important next steps in understanding parent involvement in secondary special education and transition.

APPENDIX A

Original Hoover-Dempsey and Sandler Scales

Parental Role Construction for Involvement in the Child's Education Scale

Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about the current school year as you consider each statement.
 I believe it is my responsibility…

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
…to volunteer at the school	❍	❍	❍	❍	❍	❍
…to communicate with my child's teacher regularly.	❍	❍	❍	❍	❍	❍
…to help my child with homework.	❍	❍	❍	❍	❍	❍
...make sure the school has what it needs.	❍	❍	❍	❍	❍	❍
...support decisions made by the teacher.	❍	❍	❍	❍	❍	❍
...stay on top of things at school.	❍	❍	❍	❍	❍	❍
...explain tough assignments to my child.	❍	❍	❍	❍	❍	❍
...talk with other parents from my child's school.	❍	❍	❍	❍	❍	❍
...make the school better.	❍	❍	❍	❍	❍	❍
...talk with my child about the school day.	❍	❍	❍	❍	❍	❍

Parental Self-Efficacy for Helping the Child Succeed in School Scale

Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about the current school year as you consider each statement.

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
I know how to help my child do well in school.	❍	❍	❍	❍	❍	❍
I don't know if I'm getting through to my child. (reversed)	❍	❍	❍	❍	❍	❍
I don't know how to help my child make good grades in school. (reversed)	❍	❍	❍	❍	❍	❍
I feel successful about my efforts to help my child learn.	❍	❍	❍	❍	❍	❍
Other children have more influence on my child's grades than I do. (reverse)	❍	❍	❍	❍	❍	❍
I don't know how to help my child learn. (reversed)	❍	❍	❍	❍	❍	❍
I make a significant difference in my child's school performance.	❍	❍	❍	❍	❍	❍

Parents' Perceptions of General Invitations for Involvement from the School Scale

Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about the current school year as you consider each statement.

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
Teachers at this school are interested and cooperative when they discuss my child.	❍	❍	❍	❍	❍	❍
I feel welcome at this school.	❍	❍	❍	❍	❍	❍
Parent activities are scheduled at this school so that I can attend.	❍	❍	❍	❍	❍	❍
This school lets me know about meetings and special school events.	❍	❍	❍	❍	❍	❍
This school's staff contacts me promptly about any problems involving my child.	❍	❍	❍	❍	❍	❍
The teachers at this school keep me informed about my child's progress in school.	❍	❍	❍	❍	❍	❍

Parents' Perceptions of Personal Knowledge and Skills Scale

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

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
I know about volunteering opportunities at my child's school.	○	○	○	○	○	○
I know about special events at my child's school.	○	○	○	○	○	○
I know effective ways to contact my child's teacher.	○	○	○	○	○	○
I know how to communicate effectively with my child about the school day.	○	○	○	○	○	○
I know how to explain things to my child about his or her homework.	○	○	○	○	○	○
I know enough about the subjects of my child's homework to help him or her.	○	○	○	○	○	○
I know how to communicate effectively with my child's teacher.	○	○	○	○	○	○
I know how to supervise my child's homework.	○	○	○	○	○	○
I have the skills to help out at my child's school.	○	○	○	○	○	○

Parents' Perceptions of Personal Time and Energy Scale

Please indicate how much you AGREE or DISAGREE with each of the following
statements with regard to the current school year.
I have enough time and energy to…

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
… communicate effectively with my child about the school day.	❍	❍	❍	❍	❍	❍
. . .help out at my child's school.	❍	❍	❍	❍	❍	❍
… communicate effectively with my child's teacher.	❍	❍	❍	❍	❍	❍
… attend special events at school.	❍	❍	❍	❍	❍	❍
… help my child with homework.	❍	❍	❍	❍	❍	❍
… supervise my child's homework.	❍	❍	❍	❍	❍	❍

Parents' Perceptions of Specific Invitations for Involvement from the Teacher

Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
My child's teacher asked me or expected me to help my child with homework.	○	○	○	○	○	○
My child's teacher asked me or expected me to supervise my child's homework.	○	○	○	○	○	○
My child's teacher asked me to talk with my child about the school day.	○	○	○	○	○	○
My child's teacher asked me to attend a special event at school.	○	○	○	○	○	○
My child's teacher asked me to help out at the school.	○	○	○	○	○	○
My child's teacher contacted me (for example, sent a note, phoned, e-mailed).	○	○	○	○	○	○

Parents' Perceptions of Specific Invitations for Involvement from the Child Scale

Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.

	Never	1 or 2 times	4 or 5 times	Once a week	A few times a week	Daily
My child asked me to help explain something about his or her homework.	○	○	○	○	○	○
My child asked me to supervise his or her homework.	○	○	○	○	○	○
My child talked with me about the school day.	○	○	○	○	○	○
My child asked me to attend a special event at school.	○	○	○	○	○	○
My child asked me to help out at the school.	○	○	○	○	○	○
My child asked me talk with his or her teacher.	○	○	○	○	○	○

Parent Report of Home-based Involvement Activities Scale

Parent and families do many different things when they are involved in their children's education. We would like to know how true the following things are for you and your family. Please think about the current school year as you read and respond to each item.

	Never	1 or 2 times	4 or 5 times	Once a week	A few times a week	Daily
… talks with this child about the school day.	○	○	○	○	○	○
… supervises this child's homework.	○	○	○	○	○	○
… helps this child study for tests.	○	○	○	○	○	○
… practices spelling, math or other skills with this child.	○	○	○	○	○	○
… reads with this child.	○	○	○	○	○	○

Parent Report of School-based Involvement Activities Scale

Parent and families do many different things when they are involved in their children's education. We would like to know how true the following things are for you and your family. Please think about the current school year as you read and respond to each item.

	Never	1 or 2 times	4 or 5 times	Once a week	A few times a week	Daily
. . . helps out at this child's school.	○	○	○	○	○	○
…attends special events at school.	○	○	○	○	○	○
…volunteers to go on class field trips.	○	○	○	○	○	○
…attends PTA meetings.	○	○	○	○	○	○
…goes to the school's open house.	○	○	○	○	○	○

APPENDIX B

Dissertation Survey Instrument

1. Your relationship to this child:
○ Birth mother
○ Birth father
○ Adoptive mother
○ Adoptive father
○ Stepmother
○ Stepfather
○ Foster mother
○ Foster father
○ Grandmother
○ Grandfather
○ Aunt
○ Uncle
○ Sister
○ Brother
○ Legal guardian (select only if you are the l.g. and none of the other roles apply)

2. In which state do you currently reside?
○ Alabama
○ Alaska
○ Arizona
○ Arkansas
○ California
○ Colorado
○ Connecticut
○ Delaware
○ District of Columbia
○ Florida
○ Georgia
○ Hawaii
○ Idaho

- ⭕ Minnesota
- ⭕ Mississippi
- ⭕ Missouri
- ⭕ Montana
- ⭕ Nebraska
- ⭕ Nevada
- ⭕ New Hampshire
- ⭕ New Jersey
- ⭕ New Mexico
- ⭕ New York
- ⭕ North Carolina
- ⭕ North Dakota
- ⭕ Ohio
- ⭕ Oklahoma
- ⭕ Oregon
- ⭕ Pennsylvania
- ⭕ Puerto Rico
- ⭕ Rhode Island
- ⭕ South Carolina
- ⭕ South Dakota
- ⭕ Tennessee
- ⭕ Texas
- ⭕ Utah
- ⭕ Vermont
- ⭕ Virginia
- ⭕ Washington
- ⭕ West Virginia
- ⭕ Wisconsin
- ⭕ Wyoming
- ⭕ I do not reside in the United States

3. Is your child
- ⭕ Male
- ⭕ Female

4. Is your child eligible to receive free or reduced lunch?
- ⭕ No
- ⭕ Yes

5. Please indicate your child's race/ethnicity
❍ African American
❍ American Indian or Alaska Native
❍ Asian
❍ Hispanic or Latino
❍ Native Hawaiian or Other Pacific Islander
❍ White
❍ Multiracial
❍ Prefer not to specify

6. Please select the main diagnosis under which your child is receiving special education services
❍ Autism
❍ Deaf-blindness
❍ Deafness
❍ Emotional disturbance
❍ Hearing impairment
❍ Intellectual disability
❍ Multiple disabilities
❍ Orthopedic impairment
❍ Other Health impairment
❍ Specific learning disability
❍ Speech or language impairment
❍ Traumatic Brain Injury
❍ Visual Impairment, including blindness

7. Which of the following best describes the school your child attends THIS SCHOOL YEAR:
❍ A transition program for 18-21 year old students with disabilities
❍ A regular school that serves a wide variety of students
❍ A school that serves only students with disabilities
❍ A school that specializes in a particular subject area or theme, sometimes called a magnet school
❍ A vocational-technical school
❍ A charter school
❍ An alternative school
❍ Homebound instruction by public school personnel
❍ Home schooled by parent or other non-public-school personnel
❍ School in a hospital, medical or convalescent facility, or institution for persons with disabilities
❍ School in a mental health facility

○ School in a juvenile justice facility, youth detention center, or other correctional facility

8. This year my child is in...
○ 10th grade
○ 11th grade
○ 12th grade
○ 18-21 Transition Program

9. How old is your child?
○ 16
○ 17
○ 18
○ 19
○ 20
○ 21
○ 22
○ 23
○ 24
○ 25

10. Did you attend your child's last IEP meeting?
○ Yes
○ No

Although you may have more than one child, please answer all questions in this survey with regard to your oldest or only child between the age of 16 and 21 who is receiving special education services.

How likely do you think it is that your son or daughter will do each of the following activities in the future?

	Definitely won't	Probably won't	Maybe	Probably will	Definitely will
11. Graduate from a post secondary program (technical or trade school, community college or 4-year college).	○	○	○	○	○
12. Obtain paid employment and earn enough to support	○	○	○	○	○

him/herself without financial help from his/her family or the government.					
13. Live away from home on his/her own.	O	O	O	O	O
14. Manage his/her own transportation needs (e.g. bus, driver's license, bicycle).	O	O	O	O	O
15. Purchase and prepare his/her own snacks and meals.	O	O	O	O	O
16. Attend to his/her own personal grooming and hygiene.	O	O	O	O	O

Please indicate HOW OFTEN the following have happened in the last year.
MY CHILD .....

	Never	Once in a while	Once a month	Once a week	A few times a week	Daily	N/A
17. ... asked me to attend a school meeting.	O	O	O	O	O	O	O
18. ... asked me to talk with his or her teachers.	O	O	O	O	O	O	O
19. ... asked me to attend a special event at the school.	O	O	O	O	O	O	O
20. ... talked with me about the school day.	O	O	O	O	O	O	O
21. ... talked with me about plans for their future (job, school, living situation, dreams/goals).	O	O	O	O	O	O	O

	Never	Once in a while	Once a month	Once a week	A few times a week	Daily	N/A
22. ... asked me to help them work toward a transition goal (learning to drive, find a job, etc.).	○	○	○	○	○	○	○
23. ... asked me to help them with homework.	○	○	○	○	○	○	○

Parents and families do many different things when they are involved in their child's education. We would like to know how true the following things are for you and your family. Please think about the last year as you read and respond to each item.
At **home**, someone in this family...........

	Never	Once in a while	Once a month	Once a week	A few times a week	Daily	N/A
24. … expressed to this child their hopes/expectations for your child's future.	○	○	○	○	○	○	○
25. … talked with this child about his/her plans for the future (e.g. living situation, college, work)	○	○	○	○	○	○	○
26. …helped this child explore college or other post-high school education programs.	○	○	○	○	○	○	○
27. …talked with this child about their future job interests and goals.	○	○	○	○	○	○	○

	Never	Once in a while	Once a month	Once a week	A few times a week	Daily	N/A
28. …helped this child develop daily living skills (grooming, taking care of a household, money management, transportation).	O	O	O	O	O	O	O
29. ...helped this child sustain recreation activities (e.g. sports, hobbies).	O	O	O	O	O	O	O
30. ...helped this child learn about taking care of their physical health (e.g. hygiene, nutrition).	O	O	O	O	O	O	O
31. ...helped this child learn how to take care of their emotional health (e.g. manage anxiety, stress).	O	O	O	O	O	O	O
32. ...helped this child develop academic skills (reading, writing, mathematics).	O	O	O	O	O	O	O
33. ...helped this child develop communication skills (speaking, listening).	O	O	O	O	O	O	O
34. ...helped this child maintain friendships.	O	O	O	O	O	O	O

	Never	Once in a while	Once a month	Once a week	A few times a week	Daily	N/A
35. ...asked this child about their day at school.	O	O	O	O	O	O	O
36. ...discussed grades on tests and homework with this child.	O	O	O	O	O	O	O
37. ...taught this child cultural values of your family.	O	O	O	O	O	O	O

Parents and families do many different things when they are involved in their child's education. We would like to know how true the following things are for you and your family. Please think about the last year as you read and respond to each item.
Someone in this family.......

	Never	Once in a while	Once a month	Once a week	A few times a week	Daily	N/A
38. ...helped this child connect with adult service agencies (e.g. Social Security, Vocational Rehabilitation, brokerages).	O	O	O	O	O	O	O
39. ...volunteered at your child's school.	O	O	O	O	O	O	O
40. ...attended special events at your child's school (e.g. student performance, sporting event).	O	O	O	O	O	O	O

	Never	Once in a while	Once a month	Once a week	A few times a week	Daily	N/A
41. ...attended PTA/PTO meetings at your child's school.	O	O	O	O	O	O	O
42. ...attended school meetings (e.g. IEP, transition planning).	O	O	O	O	O	O	O
43. ...attended open house or back-to-school night.	O	O	O	O	O	O	O
44. ...served on a school committee (e.g. fundraising, social events)	O	O	O	O	O	O	O

Please indicate HOW OFTEN the following have happened.

In the last year one or more of my CHILD'S TEACHERS has....

	Never	Once in a while	Once a month	Once a week	A few times a week	Daily	N/A
45.....contacted me (e.g. sent a note, phoned, emailed).	O	O	O	O	O	O	O
46. ....invited me to attend a special event at school related to my child's future (Career Fair, College Fair, Adult Services).	O	O	O	O	O	O	O

	Never	Once in a while	Once a month	Once a week	A few times a week	Daily	Not applicable
47.....discussed goals for my child's future after high school (education, employment, living situation) at an IEP or other school meeting.	O	O	O	O	O	O	O
48. ....asked for my input on goals for my child's future after high school (education, employment, living situation).	O	O	O	O	O	O	O
49. .... asked me to talk with my child about his/her goals for life after high school.	O	O	O	O	O	O	O
50. .... asked me to help my child work towards his/her goals for life after high school.	O	O	O	O	O	O	O
51. ...asked me to help my child with homework.	O	O	O	O	O	O	O

Please indicate how much you AGREE or DISAGREE with each of the following statements.

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly	N/A
52. I know how to help my child plan for his/her future.	O	O	O	O	O	O	O
53. I understand the purpose of IEP meetings.	O	O	O	O	O	O	O
54. I know how to work effectively with the IEP team to create goals for my child's future after high school.	O	O	O	O	O	O	O
55. I know how to work effectively with the IEP team to meet my child's goals for the future.	O	O	O	O	O	O	O
56. I know how to help my child develop career or employment goals.	O	O	O	O	O	O	O

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly	N/A
57. I know how to help my child work toward achieving his/her career goals.	O	O	O	O	O	O	O
58. I know how to help my child develop independent and community living skills (grooming, taking care of a household, money mgmt, transportation, communication & health).	O	O	O	O	O	O	O
59. I know how to help my child connect with adult service agencies and community resources (Social Security Administration, Vocational Rehabilitation, etc.).	O	O	O	O	O	O	O
60. I know how to communicate effectively with my child about the school day.	O	O	O	O	O	O	O

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly	N/A
61. I know how to effectively contact my child's teachers.	O	O	O	O	O	O	O
62. I know about volunteering opportunities at my child's school.	O	O	O	O	O	O	O
63. I know how to help my child do well in school.	O	O	O	O	O	O	O
64. I make a significant difference in my child's ability to plan for his/her future.	O	O	O	O	O	O	O
65. Other people have more influence on my child's future than I do.	O	O	O	O	O	O	O
66. I feel successful about my efforts to help my child develop skills to achieve his/her goals for the future.	O	O	O	O	O	O	O
67. I feel successful about my efforts to help my child learn	O	O	O	O	O	O	O

Please indicate how much you AGREE or DISAGREE with each of the following statements with regard to the last year.

I have enough time and energy to:

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly	Not applicable
68. ...attend meetings at the school.	○	○	○	○	○	○	○
69. …attend special events at the school.	○	○	○	○	○	○	○
70. …communicate with my child's teachers regularly.	○	○	○	○	○	○	○
71. …make sure my child is receiving the services and supports he/she needs to be successful at school.	○	○	○	○	○	○	○
72. …talk with my child about their goals for the future.	○	○	○	○	○	○	○
73. …help my child develop the skills necessary to achieve his/her goals for the future.	○	○	○	○	○	○	○
74. ...help my child with homework.	○	○	○	○	○	○	○

Parents have many different beliefs about their level of responsibility in their children's education. Please respond to the following statements by indicating the degree to which you believe you are responsible for the following. I believe it's my responsibility to...

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
75…communicate with my child's teachers regularly.	O	O	O	O	O	O
76. ...attend school meetings (e.g. IEP, transition, parent-teacher).	O	O	O	O	O	O
77. …make sure that the transition goals on the IEP reflect my child's goals.	O	O	O	O	O	O
78. …make sure my child is receiving the support at school necessary to help him/her achieve their goals for the future.	O	O	O	O	O	O
79. … talk with my child about their future job interests.	O	O	O	O	O	O
80. … help my child develop goals for the future.	O	O	O	O	O	O
81. …help my child obtain employment experiences.	O	O	O	O	O	O
82. …help my child develop daily living skills (e.g., grooming, taking care of a household, money mgmt., transp.).	O	O	O	O	O	O

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly
83. …help my child develop academic skills (reading, writing, etc.).	O	O	O	O	O	O
84. ...volunteer at the school.	O	O	O	O	O	O
85. ...stay current on how my child is doing in school.	O	O	O	O	O	O

Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about the last year as you consider each statement.

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly	N/A
86. I felt welcome at this school.	O	O	O	O	O	O	O
87. This school let me know about meetings and special school events.	O	O	O	O	O	O	O
88. Parent activities were scheduled at this school so that I can attend.	O	O	O	O	O	O	O
89. School staff contacted me promptly about any problems involving my child.	O	O	O	O	O	O	O
90. My child's teachers contacted me to tell me positive things about my child.	O	O	O	O	O	O	O
91. Teachers were interested and cooperative when they discuss my child.	O	O	O	O	O	O	O

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly	N/A
92. Teachers kept me informed about my child's progress in school.	○	○	○	○	○	○	○
93. Teachers at the school respected my child's race, nationality, or cultural background.	○	○	○	○	○	○	○

Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about the last year as you consider each statement.

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly	N/A
94. I am satisfied with the transition planning services my child has received.	○	○	○	○	○	○	○
95. I am satisfied with my level of involvement in my child's transition planning.	○	○	○	○	○	○	○

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly	N/A
96. The transition goals on my son/daughter's IEP are important.	O	O	O	O	O	O	O
97. Teachers at my child's school respect our race, nationality, or cultural background.	O	O	O	O	O	O	O
98. My child's teachers and I share the same goals for my child's future.	O	O	O	O	O	O	O
99. The school is preparing my child well for adult life.	O	O	O	O	O	O	O
100. I am preparing my child well for adult life.	O	O	O	O	O	O	O
101. Teachers at my child's school are aware of the ways I am preparing my child for adulthood.	O	O	O	O	O	O	O
102. Teachers at my child's school value the ways I am preparing my child for adulthood.	O	O	O	O	O	O	O

	Disagree very strongly	Disagree	Disagree just a little	Agree just a little	Agree	Agree very strongly	N/A
103. Teachers at my child's school value my input at meetings.	○	○	○	○	○	○	○
104. My child and I share the same goals for his/her future.	○	○	○	○	○	○	○

105. We distributed an earlier version of this survey to parents of youth with disabilities (March-May 2014). If you believe you completed this survey previously, please check here. It is ok to complete the survey again.

○ Yes, I completed an earlier version of this survey.

106. Is there anything else you would like me to know about your experience in planning for your child's life after high school?

REFERENCES CITED

Adams, K. S., & Christenson, S. L. (2000). Trust and the family–school relationship examination of parent–teacher differences in elementary and secondary grades. *Journal of School Psychology, 38*(5), 477-497.

Agronick, G., Clark, A., O'Donnell, L., & Stueve, A. (2009). Parent involvement strategies in urban middle and high schools in the northeast and islands region. Washington, DC: U.S. Department of Education, NCEERA.

Allison, P. D. (2003). Missing data techniques for structural equation modeling. *Journal of Abnormal Psychology*, *112*, 545-557.

Arrindell, W. A., & Van der Ende, J. (1985). An empirical test of the utility of the observations-to-variables ratio in factor and components analysis. *Applied Psychological Measurement, 9*(2), 165-178.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1989). Regulation of cognitive processes through perceived self-efficacy. *Developmental Psychology, 25*(5), 729–735.

Bandura, A. (1997). Self-efficacy: The exercise of control: New York: Freeman.

Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology Monographs*, *4*(1).

Baumrind, D. (1991). Parenting styles and adolescent development. In R. M. Lerner, A. C. Petersen, & J. Brooks-Gunn (Eds.), Encyclopedia of adolescence (Vol. 2, pp. 746–758.) New York: Garland.

Bianco, M., Garrison-Wade, D. F., Tobin, R., & Lehmann, J. P. (2009). Parents' perceptions of postschool years for young adults with developmental disabilities. *Journal of Intellectual and Developomental Disabilities, 47*(3), 186-196.

Blustein, D. L., Chaves, A. P., Diemer, M. A., Gallagher, L. A., Marshall, K. G., Sirin, S., & Bhati, K. S. (2002). Voices of the forgotten half: The role of social class in the school-to-work transition. *Journal of Counseling Psychology, 49*(3), 311-323.

Boone, R. S. (1992). Involving culturally diverse parents in transition planning. *Career Development for Exceptional Individuals, 15*(2), 205-221.

Boyer, E. L. (1979). Public law 94-142: A promising start? *Educational Leadership, 36*(5), 298-301.

Bridgeland, J. M., DiIulio, J. J., Streeter, R. T., & Mason, J. R. (2008). One dream, two realities: Perspectives of parents on America's high schools *Civic Enterprises*.

Brinckerhoff, J. L., & Vincent, L. J. (1986). Increasing parental decision-making at the individualized educational program meeting. *Journal of Early Intervention, 11*(1), 46-58.

Bronfenbrenner, U. (1979). Contexts of child rearing: Problems and prospects. *American Psychologist, 34*(10), 844-850.

Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology, 22*(6), 723.

Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York: Guilford Publications.

Bulmer, M. G. *Principles of statistics*. New York: Dover.

Callahan, K., Rademacher, J. A., & Hildreth, B. L. (1998). The effect of parent participation in strategies to improve the homework performance of students who are at risk. *Remedial and Special Education, 19*(3), 131-141.

Canha, L., Owens, L. A., Simoes, C., Gaspar de Matos, M. (2013). American and Portuguese parent perspectives on transition. *Journal of Vocational Rehabilitation*, *38*, 195-205.

Carter, E. W., Austin, D., & Trainor, A. A. (2012). Predictors of postschool employment outcomes for young adults with severe disabilities. *Journal of Disability Policy Studies, 23*(1), 50-63.

Catsambis, S. (2001). Expanding knowledge of parental involvement in children's secondary education: Connections with high school seniors' academic success. *Social Psychology of Education, 5*(2), 149-177.

Catsambis, S., & Garland, J. E. (1997). Parental involvement in students' education during middle school and high school. Report no. 18. Washington, DC: National Institute on the Education of At-Rik Students.

Chen, W. B., & Gregory, A. (2010). Parental involvement as a protective factor during the transition to high school. *Journal of Educational Research, 103*(1), 53—62.

Chiang, H.-M., Cheung, Y. K., Hickson, L., Xiang, R., & Tsai, L. Y. (2012). Predictive factors of participation in postsecondary education for high school leavers with autism. *Journal of autism and developmental disorders, 42*(5), 685-696.

Chrispeels, J. H., & Rivero, E. (2001). Engaging Latino families for student success: How parent education can reshape parents' sense of place in the education of their

children. *Peabody Journal of Education*, 76, 119–169.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Cohen, J. (1990). Things i have learned (so far). *American Psychologist, 45*(12), 1304-1312.

Costello, A. B. & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Recommendations for getting the most from your analysis. *Practical Assessment, Research & Evaluation*, *10*(7). Retrieved from: pareonline.net/pdf/v10n7.pdf

Crosnore, R., Mistry, R.S., & Elder, G.H. (2002). Economic disadvantage, family dynamics, and adolescent enrollment in higher education. *Journal of Marriage and Family, 64*(3), 690-702.

Dauber, S. L., & Epstein, J. L. (1993). Parents' attitudes and practices of involvement in inner-city elementary and middle schools. In N. F. Chavkin (Ed.), *Families and schools in a pluralistic society* (pp. 53-71). Albany, NY: State Universoty of New York Press.

Davis-Kean, P.E. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology, 19*(2), 294-304.

DeCarlo, L. T. (1997). On the meaning and use of kurtosis. *Psychological Methods*, *2*, 292-307.

Delgado-Gaitan, C. (1987). Parent perceptions of school: Supportive environments for children. In H. T. Trueba (Ed.), Success or failure? Learning and the language minority student(pp. 131-155). New York: Newbury House.

Deslandes, R., & Bertrand, R. (2005). Motivation of parent involvement in secondary-level schooling. *The Journal of Educational Research, 98*(3), 164-175.

Domina, T. (2005). Leveling the home advantage: Assessing the effectiveness of parental involvement in elementary school. *Sociology of Education, 78*(3), 233-249.

Doren, B., Gau, J. M., & Lindstrom, L. E. (2012). The relationship between parent expectations and postschool outcomes of adolescents with disabilities. *Exceptional Children, 79*(1), 7-23.

Eccles, J. S. & Harold, R. D. (1993). Parent-school involvement during the early adolescent years. *Teachers College Record*, *94*(3), 568-587.

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & Mac Iver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools and in families. *American Psychologist, 48*(2), 90-101.

Eccles, J.S. & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology, 53*, 109-132.

Education for all handicapped children act of 1975, P. L. 94.142, 20 Stat. (1975).

Enders, C. K. (2010). *Applied missing data analysis*. New York: Guilford Publications.

Epstein, J. L. (1987). Toward a theory of family-school connections: Teacher practices and parent involvement. In K. Hurrelmann, F. Kaufmann ,& F. Losel (Eds.), *Social intervention: Potential and constraints* (pp. 121-136). Oxford, England: Walter De Gruyter.

Epstein, J. L. (1995). School/family/community partnerships: Caring for the children we share. *Phi delta kappan, 76*(9), 701-712.

Falbo, T., Lein, L., & Amador, N. A. (2001). Parental involvement during the transition to high school. *Journal of Adolescent Research, 16*(5), 511-529.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational psychology review, 13*(1), 1-22.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G* power 3.1: Tests for correlation and regression analyses. *Behavior research methods, 41*(4), 1149-1160.

Fege, A. (2006). Getting ruby a quality public education: Forty-two years of building the demand for quality public schools through parental and public involvement. *Harvard Educational Review, 76*(4), 570-586.

Finn, J. D. (1989). Withdrawing from school. *Review of educational research, 59*(2), 117-142.

Fourqurean, J. M., Meisgeier, C., Swank, P. R., & Williams, R. E. (1991). Correlates of postsecondary employment outcomes for young adults with learning disabilities. *Journal of Learning Disabilities, 24*(7), 400-405.

Fritz, M. S., & MacKinnon, D. P. (2007). Required sample size to detect the mediated effect. *Psychological science, 18*(3), 233-239.

Geenen, S., Powers, L. E., & Lopez-Vasquez, A. (2005). Barriers against and strategies for promoting the involvement of culturally diverse parents in school-based transition planning. *Journal for Vocational Special Needs Education, 27*(3), 4-14.

George, D., & Mallery, M. (2010). SPSS for windows step by step: A simple guide and reference, 17.0 update (10th ed.) Boston: Pearson.

Gonzalez, A. R. (2002). Parental involvement: Its contribution to high school students' motivation. *The Clearing House, 75*(3), 132-134.

Goodwin, A. L., & King, S. H. (2002). *Culturally responsive parental involvement: Concrete understandings and basic strategies*. Washington, DC: AACTE.

Green, C. L., Walker, J. M., Hoover-Dempsey, K. V., & Sandler, H. M. (2007). Parents' motivations for involvement in children's education: An empirical test of a theoretical model of parental involvement. *Journal of educational psychology, 99*(3), 532-534.

Greenwood, G. E., & Hickman, C. W. (1991). Research and practice in parent involvement: Implications for teacher education. *The Elementary School Journal*, 279-288.

Grolnick, W. S., & Slowiaczek, M. L. (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model. *Child development, 65*(1), 237-252.

Harrington, D. (2009). Confirmatory factor analysis. New York: Oxford University Press.

Harry, B. (2002). Trends and issues in serving culturally diverse families of children with disabilities. *The Journal of Special Education*, *36*(3), 131-138.

Henderson, A. T., & Mapp, K. L. (2002). A new wave of evidence. *The impact of school, family, and community connections on student achievement. Austin [Texas]: National Center for Family & Community: Connections with Schools*.

Hetherington, S. A., Durant-Jones, L., Johsnon, K., Nolan, K., Smith, E.,, Taylor-Brown, S., &, & Tuttle, J. (2010). The lived experiences of adolescents with disabilities and thier parents in transition planning. *Focus on Autism and Other Developmental Disabilities, 25*(3), 163-172. doi: 10.1177/1088357610373760

Hill, N. E., & Chao, R. K. (2009). *Families, schools, and the adolescent: Connecting research, policy, and practice*. New York: Teachers College Press.

Hill, N.E. & Tyson, D.F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental*

Psychology, 45(3), 740-763. doi: 10.1037/a0015362

Hirano, K. A., Garbacz, S. A., Shanley, L., & Rowe, D. A. (2014). Parent involvement in secondary special education: An exploratory study. Manuscript submitted for publication.

Hirano, K. A., & Rowe, D. A. (2015). A conceptual framework for parent involvement in secondary special education and transition. *Journal of Disability Policy Studies*. doi:10.1177/1044207315583901

Hogarty, K., Hines, C., Kromrey, J., Ferron, J., & Mumford, K. (2005). Communality, and overdetermination the quality of factor solutions in exploratory factor analysis: The influence of sample size. *Educational and Psychological Measurement, 65*, 202-226.

Hoover-Dempsey, K., & Sandler, H. (1995). Parental involvement in children's education: Why does it make a difference. *The Teachers College Record, 97*(2), 310-331.

Hoover-Dempsey, K. V., & Sandler, H. M. (1997). Why do parents become involved in their children's education? *Review of Educational Research, 67*(1), 3-42.

Hoover-Dempsey, K. V., & Sandler, H. M. (2005). Final performance report for OERI grant # r305t010673: The social context of parental involvement: A path to enhanced achievement. Final report, submitted to institute of education sciences, U.S. Department of Education, Washington, D.C.

Hoover-Dempsey, K. V., Walker, J. M. T., Sandler, H. M., Whetsel, D., Green, C. L., Wilkins, A. S., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *The Elementary School Journal, 106*(2), 105-130.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1-55.

Hutcheson, G. D., & Sofroniou, N. (1999). *The multivariate social scientist: Introductory statistics using generalized linear models*. London: Sage Publications.

IBM. (2013). IBM SPSS statistics for Macintosh. Armonk, NY: IBM Corp.

Individuals with Disabilities Education Improvement Act of 2004, P.L. 108-446, 20 U.S.C. $ 1400 *et seq.*

Jeynes, W. H. (2005). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Education, 40*(3), 237-269.

Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement a meta-analysis. *Urban Education, 42*(1), 82-110.

Jones, B. A., & Gansle, K. A. (2010). The effects of a mini-conference, socioeconomic status, and parent education on perceived and actual parent participation in individual education program meetings. *Research in the Schools, 17*(2), 23-38.

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement, 20*, 141-151.

Kasari, C., Sigman, M., Mundy, P., & Yirmiya, N. (1988). Caregiver interactions with autistic children. *Journal of Abnormal Child Psychology, 16,* 45–56.

Keith, T. Z., Reimers, T. M., Fehrmann, P. G., Pottebaum, S. M., & Aubey, L. W. (1986). Parental involvement, homework, and tv time: Direct and indirect effects on high school achievement. *Journal of Educational Psychology, 78*(5), 373.

Kena, G., Aud, S., Johnson, F., Wang, X., Zhang, J., Rathbun, A., . Kristapovich, P. (2014). *The Condition of Education 2014* (NCES 2014-083). U.S. Department of Education, National Center for Education Statistics. Washington, DC. Retrieved April 17, 2016 from http://nces.ed.gov/pubsearch.

Kenny, D. A. (2015). *Measuring model fit.* Retrieved March 3, 2016, from http://davidakenny.net/cm/fit.htm

Kenny, D. A. (2014). *Factors affecting measure fit*. Retrieved March 3, 2015 from http://davidakenny.net/webinars/listpp.htm#Fit

Kline, R. B. (2011). *Principles and practice of Structural Equation Modeling (*3rd ed.). New York: The Guildford Press.

Landmark, L. J., Roberts, E. L., & Zhang, D. (2012). Educators' beliefs and practices about parent involvement in transition planning. *Career Development and Transition for Exceptional Individuals, 36*(2), 114-123.

Lanyon, R.I. & Goodstein, L.D. (1997). *Personality assessment* (3rd ed.). New York: Wiley.

Lareau, A. (2003) *Unequal Childhoods: Class, Race, and Family Life*. University of California Press, Berkeley, CA.

Libutti, P. O. (2011). Legislation and funding for the education of children who are disadvantaged. *The education study: The role of the feferal government in public education* (pp. 1-17). Retrieved from: http://lwv.org/content/legislation-and-funding-education-children-who-are-disadvantaged.

Little, R. J. A., & Rubin, D. B. (2002). *Statistical analysis with missing data* (2nd ed.). Hoboken, NJ: John Wiley & Sons.

Lloyd-Smith, L., & Baron, M. (2010). Beyond conferences: Attitudes of high school administrators toward parental involvement in one small midwestern state. *School Community Journal, 20*(2), 23-44.

Mapp, K. L., & Hong, S. (2010). Debunking the myth of the hard to reach parent *Handbook of school-family partnerships* (pp. 345-361).

Martinez, D. C. (2008). Parents involvement in transition planning for their young adult children with intellectual disabilities. Retrieved from PQDT Open. (3331458)

Mazzotti, V., Rowe, D. A., Sinclair, J., & Poppen, M. (2015). Predictors of post-school success: A systematic review of NLTS2 secondary analysis. *Career Development and Transition for Exceptional Individuals,* Advance online publication. doi: 10.1177/2165143415588047

Morningstar, M. E., Frey, B. B., Noonan, P. M., Ng, J., Clavenna-Deane, B., Graves, P., & Wade, D. B. (2010). A preliminary investigation of the relationship of transition preparation and self-determination for students with disabilities in postsecondary educational settings. *Career Development for Exceptional Individuals, 33*(2), 80-94.

Morningstar, M. E., Turnbull, A. P., & Turnbull, H. R. (1996). What do students with disabilities tell us about the importance of family involvement in the transition from school to adult life? *Exceptional Children, 62*(3), 249-260.

Muthén, L. K., & Muthén, B. O. (2012). Mplus for macintosh 7.0. Los Angeles: CA.

Newman, L. (2005). Family involvement in the educational development of youth with disabilities: A special topic report of findings from the national longitudinal transition study-2 (NLTS2). Menlo Park, CA: SRI International.

Newman, L., Wagner, M., Knokey, A.-M., Marder, C., Nagle, K., Shaver, D., & Wei, X. (2011). The post-high school outcomes of young adults with disabilities up to 8 years after high school: A report from the national longitudinal transition study-2 (NLTS2). Ncser 2011-3005. *National Center for Special Education Research*.

Orsmond, G. I. Seltzer, M. M., & Greenberg, J. S. (2006). Mother-child relationship quality among adolescents and adults with autism. *American Journal on Mental Retardation*, *111*(2), 121-137.

Park, S. & Holloway, S. D. (2013). No parent left behind: Predicting parental involvement in adolescents' education within sociodemographically diverse population. *The Journal of Educational Research*, *106*, 105-119.

Pasrons, J. E., Adler, T. F., & Kaczala, C. M. (1982). Socialization of achievement attitudes and beliefs: Parental influences. *Child Development*, *53*(2), 310-321.

Podsakoff, P. M., MacKenzie, S. B., Lee, J., and Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879-903.

Povenmire-Kirk, T., Lindstrom, L., & Bullis, M. (2010). School to adult life: Transition needs for latino youth with disabilities and their families. *Career Development for Exceptional Individuals, 33*(1), 41-51.

Rehm, R.S., Fisher, L.T., Fuentes-Afflick, E., & Chelsa, C.A. (2013). Parental advocacy styles for special education students during transition to adulthood. *Qualitative Health Research*, *23*(10), 1377-1387.

Rueda, R., Monzo, L., Shapiro, J., & Blacher, J. (2005). Cultural models of transition: Latina mothers of young adults with developmental disabilities. *Exceptional Children, 71*(4), 401-414.

Rowe, D. A., Alverson, C. Y., Unruh, D. K., Fowler, C. H., Kellems, R., & Test, D. W. (2014). A delphi study to operationalize evidence-based predictors in secondary transition. *Career Development and Transition for Exceptional Individuals*, Advance online publication. doi: 10.1177/2165143414526429

Rumberger, R. (2013). Poverty and high school dropouts: The impact of family and community poverty on high school drop outs. *The SES Indicator*, *6*(2). Retrieved from: http://www.apa.org/pi/ses/resources/indicator/2013/05/poverty-dropouts.aspx

Rumberger, R. W., Ghatak, R., Poulos, G., Ritter, P. L., & Dornbusch, S. M. (1990). Family influences on dropout behavior in one california high school. *Sociology of Education*, 283-299.

Schlomer, G. L., Bauman, S., & Card, N. A. (2010). Best practices for missing data management in counseling psychology. *Journal of Counseling Psychology*, *57*(1), 1-10.

Schneider, J., Wedgewood, G., Llewellyn, G., & McConnell, D. (2006). Families challenged by and accommodating to the adolescent years. *Journal of Intellectual Disability Research*, *50*(12), 9260936.

Schreiber, J. B. Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, *99*(6), 323-338. doi: http://dx.doi.org/10.3200/JOER.99.6.323-338.

Shapiro, J., Monzo, L., Rueda, R., Gomez, J., & Blacher, J. (2004). Alienated advocacy: The perspective of Latina mothers of young adults with developmental disabilities on service systems. *Mental Retardation, 42*(1), 37-54.

Sheehey, P. H. (2006). Parent involvement in educational decision-making: A Hawaiian perspective. *Rural Special Education Quarterly, 24,* 3-15.

Sheldon, S. (2002). Parents' social networks and beliefs as predictors of parent involvement. *Elementary School Journal, 102*, 301–316. doi:10.1086/499705

Simon, B. S. (2004). High school outreach and family involvement. *Social Psychology of Education, 7*(2), 185-209.

Simons-Morton, B. & Chen, R. (2009). Peer and parent influences on school engagement among early adolescents. *Youth & Society, 41*, 3025.

Stein, M., Goldring, E., & Zottola, G. (2008). Student achievement gains and parents' perceptions of invitations for involvement in urban charter schools. Paper presented at the Society for Research on Educational Effectiveness. Retrieved from: http://vanderbilt.edu/schoolchoice/documents/parents_perceptions.pdf

Steinberg, L. (1998). *Adolescence*. New York: McGRaw-Hill.

Stevens, J. P. (2002). Applied multivariate statistics for the social sciences. Mahwah, NJ: Erlbaum Associates.

Stevenson, J. J., &, & Laster, C. (2008). U.S. Department of education, office of elementary and secondary education, student achievmenet, and school accountability programs.

Stone, S., (2003). The transition to high school: teacher perspectives in a large, urban, predominantly minority school system. *Journal of Ethnic and Cultural Diversity in Social Work, 12*(1), 47–67.

Storer, J. H. (1995). Increasing parent and community involvement in schools: The importance of educators' beliefs. *Community Education Journal, 22*(2), 16-20.

Sui-Chu, E. H., & Willms, J. D. (1996). Effects of parental involvement on eighth-grade achievement. *Sociology of Education, 69*(2), 126-141.

Taylor, B. J., Kermode, S., & Roberts, K. L. (2006). *Research in nursing and healthcare: Creating evidence for practice* (3rd ed.). London: Cengage Learning.

Test, D. W., Mazzotti, V. L., Mustian, A. L., Fowler, C. H., Kortering, L., & Kohler, P. (2009). Evidence-based secondary transition predictors for improving postschool outcomes for students with disabilities. *Career Development for Exceptional Individuals*.

Thorin, E., Yovanoff, P., & Irvin, L. (1996). Dilemmas faced by families during their young adults' transition to adulthood: A brief report. *Mental Retardation*, *34*, 117-120.

Timmons, J. C., Whitney-Thomas, J., McIntyre Jr, J. P., Butterworth, J., & Allen, D. (2004). Managing service delivery systems and the role of parents during their children's transitions. *The Journal of Rehabilitation, 70*(2), 19-26.

Turnbull, A. P., & Turnbull, H. R. I. (1990). *Families, professionals, and exceptionality: A special partnership*. Columbus, OH: Merrill Publishing Company.

U.S. Department of Education. (2004). Parental Involvement: Title I, part A non-regulatory guidance. Retrieved from: www2.ed.gov/programs/titleiparta/ parentinvguid.doc

Wagner, M., Marder, C., Levine, P., Cameto, R., Cadwallader, T. W., Blackorby, J., .& Newman, L. (2003). The individual and household characteristics of youth with disabilities. A report from the national longitudinal transition study-2 (nlts2). *Menlo Park, CA: SRI International.*

Wagner, M., Newman, L., Cameto, R., Levine, P., & Garza, N. (2006). An overview of findings from wave 2 of the national longitudinal transition study-2 (nlts2). Ncser 2006-3004. *National Center for Special Education Research*.

Wandry, D., & Pleet, A. (2009). *Engaging and empowering families in secondary transition: A practicioner's guide*: Council for Exceptional Children.

Wehmeyer, M. L., & Palmer, S. B. (2003). Adult outcomes for students with cognitive disabilities three-years after high school: The impact of self-determination. *Education and Training in Developmental Disabilities*, 131-144.

Williams, B., Brown, T., & Onsman, A. (2012). Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine, 8*(3), 1-13.

Williams, T. T. & Sánchez, B. (2013). Identifying and decreasing barriers to parent involvement for inner-city parents. *Youth & Society*, *45*(1), 54-74.

Wisconsin Statewide Transition Initiative. (n.d.). 18-21 year-old programs. Retrieved from: http://www.witig.org/18-21-year-old-programs.html

Wrightslaw. (n.d.). Back to school on civil rights: Part 1. Retrieved from: http://www.wrightslaw.com/law/reports/IDEA_Compliance_1.htm

Yell, M. L., Rogers, D., & Rogers, E. L. (1998). The legal history of special education: What a long, strange trip it's been! *Remedial and Special Education, 19*(4), 219-228.

Yuan, K. & Bentler, P. M. (2001). Effect of outliers on estimators and tests in covariance structure analysis. *British Journal of Mathematical and Statistical Psychology, 54*, 161-75.

Zwick, W. R., & Velicer, W. F. (1986). Comparison of five rules for determining the number of components to retain. *Psychological Bulletin, 99*(3), 432-442.