SCHOOL-BASED FAMILY INVOLVEMENT:

PATTERNS AND PREDICTORS IN THE NLTS2

A Dissertation

by

LEIGH ANN EISTERHOLD FREW

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

DOCTOR OF PHILOSOPHY

August 2012

Major Subject: Educational Psychology

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Approved by:

Chair of Committee,	Michael R. Benz
Committee Members,	Oiman Kwok
	Patricia Goodson
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ABSTRACT

School-based Family Involvement: Patterns and Predictors in the NLTS2. (August 2012)

Leigh Ann Eisterhold Frew, B.S; M.Ed., Texas A&M University

Chair of Advisory Committee: Dr. Michael R. Benz

This investigation used data from the National Longitudinal Transition Study 2 (NLTS2) to investigate patterns among student, family, and school characteristics, school outreach programs, and school-based family involvement for families of 5,670 students with disabilities ages 13 to 17 in a nationally representative sample.

Consistent with prior research, several variables were linked to higher levels of family involvement, including age, disability, ethnicity, living in the same neighborhood, household income, household structure, head of household's education level, support group participation, time in community, and school outreach programs.

Although these variables were statistically significant, model estimates were small. School outreach program predictors included school size, urbanicity, and a lower principal evaluation of outreach efforts. This study makes a unique contribution to the research base by extending Newman's investigation to include school outreach programs offered by schools as a possible predictor of school-based family involvement.

DEDICATION

This dissertation is dedicated to June Glover ("Granny"), who always encouraged me and supported education.

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I would like to thank my committee chair, Dr. Benz, and my committee members, Dr. Kwok, Dr. Lynch, and Dr. Goodson, for their guidance and support throughout the course of this research.

Dr. Glenda Byrns has been a wonderful mentor, and I have the utmost respect for her as a professional and individual.

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To my past, current, and future students, I hope that you may learn as much from me as I have learned from you.

I greatly appreciate all of the sacrifices my family has made to allow me to pursue this degree. To Andy, Mom, and Dad, thank you for the wonderful adventures and making my life so much easier and encouraging me throughout my years at Texas A&M.

NOMENCLATURE

NLTS2	National Longitudinal Transition Study-2
SEELS	Special Education Elementary Longitudinal Study

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CHAPTER I

INTRODUCTION

Family involvement has long been recognized as an important component of student success. Efforts to increase the level of family involvement in general education have gained momentum in the past several years. Family involvement in special education, however, has not received the same level of attention; less is known about school-based family involvement patterns and trends for families of students with disabilities, and very few initiatives and large-scale outreach efforts have targeted this group. This investigation, using data from the National Longitudinal Transition Study-2 (NLTS2), evaluates levels of school-based family involvement for families of students with disabilities, with consideration given to the number of school outreach programs offered by schools. By investigating school-based family involvement patterns and their relation to school outreach programs, information on how to best focus resources can help school principals promote school-based involvement among historically under-involved groups. Accordingly, the purpose of this study is to investigate relationships between student, family, and school characteristics, school outreach programs, and school-based family involvement patterns.

Importance of Family Involvement in General Education

Many current initiatives are underway to promote family involvement and highlight its importance in schools. As No Child Left Behind (NCLB, 2001) recognizes

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This dissertation follows the style of *Exceptional Children*.

that both schools and families share responsibility for a student's academic success, Title I funding stipulates schools involve families in their children's education (Sec. 1118, No Child Left Behind).

Programs designed to promote and increase family involvement in general education include initiatives by the National Coalition for Parent Involvement in Education, Center for Family Involvement in Schools, Project Appleseed, PTA, and Afterschool Alliance, among others.

Family involvement in their children's education has been linked to a number of positive social and academic advantages for students in general education. In the remainder of this Introduction, research on the importance of family involvement in schools will be briefly reviewed to set a context for the study. Throughout this manuscript, an effort is made by the author to use the term "parent involvement" or "parental involvement" only when it applies to research limited to the role of the mother and/or father. To acknowledge the important role other family members play in a student's education, the term "family involvement" offers a preferable description.

Social development benefits. Increased levels of parent involvement are important for a child's well-being (Chen & Chandler, 2001; Gibson & Jefferson, 2006; Norton & Nufeld, 2002). Family involvement has been linked to improved school behavior and school discipline (Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999; Sheldon & Epstein, 2002) and less disruptive behavior in school (Gutman & Midgley, 2000; Sanders & Herting, 2000).

School rapport/engagement benefits. Parent involvement improves relationships with schools and teachers (Jeynes, 2007). There is a positive relationship between school engagement and school adjustment (Simons-Morton & Chen, 2009), as well as many established inter-relationships among school engagement, motivation, adjustment, achievement, and behavior (Andrews & Duncan, 1997; Aunola, Stattin, & Nurmi, 2000; Barber & Olsen, 2003). Conversely, inadequate parenting with lack of involvement is linked to delinquency and antisocial behavior in adolescence (Jacob & Johnson, 1997). Parent involvement has also been found to have implications for students' learning involvement and educational decisions, such as curriculum rigor and course selection (Mo & Singh, 2008).

Academic achievement benefits. Higher levels of family involvement are linked to higher academic achievement, school attendance, and graduation rates.

The positive relationship between student academic achievement and family involvement has been described by Hill and Craft (2003) and Ho Sui-Chu and Willms (1996), and family involvement has been cited by Hara (1998) as a key avenue to increasing academic performance. Higher levels of family involvement are associated with higher grades (Shumow & Miller, 2001; Simon, 2001; Singh et al., 1995; Sirin & Rogers-Sirin, 2004) and higher rates of students passing standardized achievement tests (Sheldon, 2003). Positive effects across the areas of math (Crane, 1996; Muller, 1998; Peressini, 1998) and reading (Jeynes, 2001; Shaver & Walls, 1998) closely correlate with the level of family involvement. With the exception of the Mattingly, Prislin, McKenzie, Rodriguez, and Kayzar (2002) general education study, parent involvement

has been largely found to have strong academic benefits for students. One limitation of the Mattingly et al. (2002) report was that it included many unpublished studies in the meta-analysis.

Haynes, Comer, and Hamilton-Lee (1989) associated increased levels of family involvement with better school attendance for students. Schools with better family-school partnerships and higher levels of family and parent involvement report lower absenteeism and reduced truancy (Epstein & Sheldon, 2002; McNeal, 1999; Weinberg & Weinberg, 1992). Results of a study by Epstein and Sheldon (2002) suggested schools could improve overall attendance rates through communicating with families about school attendance and providing families information on contacts at the school. By developing the home-school partnership, attendance can be increased while truancy and absenteeism decrease. Many studies have linked increased family involvement to on-time high school completion (Barnard, 2004) and overall graduation rates (Fan & Chen, 1999; Gutman & Midgley, 2000; Sanders & Herting, 2000).

Importance of Family Involvement in Special Education

In special education, the Education for All Handicapped Children Act of 1975 (P.L. 94-142) emphasized the importance of family involvement through the beliefs that:

1. "The parents (and the child) should be part of the process from which they are so often removed—a belief in shared decision making;
2. Parent participation should increase the appropriateness of the educational services—a belief in parent involvement as a means of insuring that schools satisfy their legal obligations to children; and

3. Parents should receive counseling and training to prepare them to be part of the education of their child at home—a belief in the role of parent as teacher (Turnbull & Turnbull, 1982, p. 116)."

The Individuals with Disabilities Education Act Amendments of 1997 and the 2004 reauthorization encouraged family involvement in the individualized education program (IEP) planning process. Special education family involvement was historically aimed at the middle-class parent who could participate in meetings and conferences and successfully advocate for his or her child's educational benefit (Harry, 2002).

Parent support and involvement is an important component of successful transition planning (Benz & Halpern, 1987), as parents influence and advocate for their child's expectations and aspirations (Johnson, Bruininks, & Thurlow, 1987). Further benefits of family involvement in special education include better generalization of skills outside the classroom and higher parent satisfaction (Koegel, Koegel, & Schreibman, 1991). Zhang et al. (2011) reiterate family involvement as being very important for students with disabilities. Common teacher initiatives to encourage higher involvement in special education include improving communication, asking for input on decisions, and formally inviting parents to participate in school activities (Spann, Kohler & Soenksen, 2003).

The first comprehensive examination of parent involvement practices for secondary students with disabilities was conducted by the National Longitudinal Transition Study-2 (Newman, 2004). This report highlights patterns and trends of home-based and school-based involvement of parents and families of students with disabilities.

According to findings from this study, most families are involved at school to some extent and are in some ways (e.g., general school meetings and parent-teacher conferences) more involved than families in the general student population. Some variations attributable to disability were found for some school-based involvement options (e.g., attending a parent/teacher conference). School-based family involvement was higher for families of students with speech or orthopedic impairments, while families of students with mental retardation or speech impairments were the least likely to attend IEP meetings. Families of students with emotional disturbances or mental retardation were the most likely to attend parent-teacher conferences but were the least likely to participate at school in other ways (e.g., general school meetings, school/class events, volunteering at school). It is not known whether parents who actively participate in support groups for families of students with disabilities and attend trainings for families of students with disabilities are more likely to be involved in school-based activities.

Although a cornerstone of best practice in special education, family involvement is not observed uniformly across all student groups or in the type of activity in which parents participate (Geenen, Powers, & Lopez-Vasquez, 2001). The field needs an understanding of how school outreach efforts influence school-based involvement and benefit families of students with disabilities.

Need for Research on School Outreach

Little attention has been given to school outreach programs that can benefit families of students with disabilities. Although many school outreach programs are

aimed at the general population and not designed to target or exclude families of students with disabilities, the impact that these programs can have is not understood.

In an era of financial uncertainty and budget cuts, schools must focus resources on the family outreach programs with the largest return on investment. In a 2011 Gallup poll, respondents identified funding difficulties as a top concern of public education (Bushaw & Lopez, 2011). Channeling funds into the most beneficial school programs can provide the maximum increases in family participation at home and school; monies can be allocated to programs shown to offer educational benefits for students. Information on the success of outreach programs could allow schools and districts to more efficiently manage limited funds by directing monies and efforts toward those with the greatest impact.

Information on the efficacy of school outreach programs for students with disabilities could allow school principals, staff, and teachers to better understand the extent to which their efforts to increase home-school collaboration are successful with families of students with disabilities. It takes a large investment of planning and persistence to produce successful family outreach programs. School outreach programs have the potential to positively benefit families of students with disabilities just as they do families of students in the general education population.

Research Questions

Whether school-based parent outreach programs are successful in generating increased family involvement for students with disabilities is unknown. Jeynes (2007)

highlighted the need for research to determine the most beneficial types of parent involvement and their efficacy.

Therefore, research questions introduced here and discussed further in chapter 3 include,

1. What was the relationship between school outreach programs and school-based family involvement, taking into consideration student, family, and school predictor variables, and what school characteristics are associated with school outreach programs for youth with disabilities in the NLTS2?
2. What was the relationship between student, family, and school variables and school-based family involvement for youth with disabilities in the NLTS2?

This study will add to the current research literature in two ways. First, this study will examine the relationships between school outreach programs and family involvement in school. Montemayor and Romero (2000) and Van Voorhis (2000) explain that many investigations focus only on fixed variables beyond the control of schools, such as family income or home relationships. Schools have control over the type and number of family outreach programs they offer, and the findings from this study will provide empirical information on whether outreach programs are associated with higher levels of family involvement.

Second, this study will use a nationally representative dataset to examine family involvement for students with disabilities. Most parent involvement studies address the effects of family involvement in a generic sense for the general education population (Jeynes, 2003), or give attention to a small subset of the population, making it difficult to

generalize findings to desired student groups (McBride & Lin, 1996; Muller, 1998; Peressini, 1998). Another challenge to effective family involvement research is the small number of large-scale, longitudinal data sets (Jordan, Orozco, & Averett, 2001). Epstein and Sanders (2000) suggest family involvement researchers "employ better samples…to more clearly identify the results of particular practices and partnerships" (p. 290).

This study makes a unique contribution to the literature base by analyzing the effects of school outreach programs on school-based family involvement and investigating any differential effects that may be present for a large, nationally representative sample of students with disabilities during the 1999-2000 school year during which data were collected.

CHAPTER II

LITERATURE REVIEW

Family involvement has been extensively studied and heralded as an important component of a student's educational success. This perspective has been shaped as a culmination of influential research, legislation, and advocacy over the last several decades. This literature review is organized to describe a link to or pattern of family involvement, followed by what is known regarding the corresponding family involvement trends for families of students with disabilities.

Importance of Family Involvement in Schools

The importance of family involvement in a student's education and development is well-established. Most notably, the Fan and Chen (2001) meta-analysis explored parent involvement in the general education student population and confirmed the presence of many benefits across academic and behavioral domains. An emphasis on urban students in the Jeynes (2007) meta-analysis confirmed the conclusions of Fan and Chen (2001), as well as supported the effects of parent involvement overall across all ethnic groups, with an effect size of 0.38 for the students included in the studies.

Dr. Epstein's research in the early 1990s gave recognition and structure to the different parent participation methods most commonly espoused and has been widely accepted by the research community (Jordan, Orozco, & Averett, 2001). The six categories of involvement in her framework include (a) parenting, (b) communication, (c) volunteering, (d) learning at home, (e) decision making, and (f) collaborating with

the community (Epstein, 1991). Most types of family involvement fall into one of these domains. Learning at school is shaped by family and community involvement through the three spheres of influence: home, school, and community (Epstein, 1995; 2001; Epstein & Sanders, 2000). It is important to emphasize the significance of strong home-school relationships in enhancing learning and maximizing the influence of all involved in a student's education; no single factor at the home, school, or community level can have the impact of all three entities working in collaboration.

Professionals, families, and community members recognize the importance of family involvement. Turnbull and Turnbull (2001) describe many opportunities for partnerships including (a) communicating among reliable allies, (b) meeting families' basic needs, (c) evaluating for special education services, (d) individualizing for appropriate education and placement, (e) extending learning in home and community, (f) attending and volunteering at school, and (g) advocating for systems improvement. The opportunities for involvement described by Turnbull and Turnbull, though not all specific to special education, expand Epstein's (1991) categories of involvement proposed a decade earlier to highlight the importance of comprehensively meeting the needs of families beyond the school sphere of influence. As students with disabilities sometimes need support across many different life domains, involvement and planning for students with disabilities may go beyond the traditional focus toward general education students' academic areas. Turnbull and Turnbull (2001) expand on their partnership opportunities by suggesting school professionals create partnerships with families by encouraging parents to (a) attend school events, (b) contribute to classroom

instruction, (c) contribute to other school tasks, (d) attend classes of their own, (e) participate in PTOs, and (f) participate in family resource centers. These specific suggestions highlight some of the avenues in which family involvement at school can occur.

Sociodemographic Trends in Family Involvement

Research documents certain student and family demographic characteristics associated with family involvement in schools. Among the characteristics are:

Gender. In an investigation by Stevenson and Baker (1987), parents reported providing more support at school on behalf of sons, while Muller's (1998) study of high school students' gender differences found parent involvement levels to be similar for male and female students.

Controlling for other factors, Newman (2004) found parents of daughters with disabilities more likely to be involved than parents of sons with disabilities, but clear involvement differences based on gender have not been established elsewhere.

Age. In the general education population, age is a consistent predictor of family involvement: parents are more involved on behalf of younger children than older children (Dubas & Gerris, 2002). Parents are more involved during their child's elementary school years than their child's middle school years (Hoover-Dempsey & Sandler, 1997; Mo & Singh, 2008; U.S. Department of Education, 1998). Middle school parents are half as likely as elementary school parents to attend school conferences (Downs, 2001), and fewer than half of the parents of middle school students are actively engaged in school programs and activities (Johnston, 1998).

Special education parallels this general education trend, as family involvement and interest in involvement decreases as students with disabilities age (Geenen et al., 2001; Morningstar, Turnbull, & Turnbull, 1995). Early NLTS2 analyses found an inverse relationship between student age and parent-reported home and school involvement (Newman, 2004). Newman (2004), citing unpublished Special Education Elementary Longitudinal Study (SEELS) data and NLTS2 data, reported 44% of the elementary and middle schools attended by study participants offer services that encourage parent involvement, such as child care or transportation, while only 12% of high schools offer these same services. The absence or reduction of these supports could contribute to the lower levels of family involvement at the secondary level.

Researchers have suggested other possible explanations for the age-related involvement decreases. Simons-Morton and Crump (2003) hypothesize that as the distance of the family home to the school typically increases as students transition from elementary to middle school, parent access becomes less convenient. Davis and Lambie (2005) suggest a student-driven reason for the decline, that students desire less involvement from parents as they become more involved with peers. However, a consensus among researchers on factors motivating families' involvement practices has not been reached (Green, Walker, Hoover-Dempsey, & Sandler, 2007).

Ethnicity. In the general education literature, consistently low levels of school-based parent involvement have been reported for African American and Hispanic families, in comparison to Caucasian families (Sui-Chu & Willms, 1996). Culturally diverse families can experience discrimination by the school system at any grade level

(Geenen, Powers, & Lopez-Vasquez, 2001), possibly contributing to the varying family involvement levels. A meta-analysis by Jeynes (2003) identified stronger benefits of parent involvement for African American students, compared to Hispanic and Asian students; however, all students benefitted in some way from increased parent involvement.

African American students. As early as the 1980s, lower levels of parent involvement have been reported among African American families (e.g., Lynch & Stein, 1987). A 2003 meta-analysis by Jeynes determined the positive benefits of parent involvement accrued more for African American students than for Asian American or Latino students. Other researchers suggest African American family involvement is manifested differently, such as through involvement at home or through sports and extracurricular activities, which can be a powerful tool to increase African American family involvement (O'Bryan, Braddock, & Dawkins, 2006).

African American family involvement of students with disabilities seems to match the general education pattern. Newman (2004) found African American families of students in the NLTS2 study less likely to be involved at school. Harry, Allen, and McLaughlin (1995) and Brandon, Higgins, Pierce, Tandy, and Sileo (2010) described difficulties between schools and African American families with regard to inadequate communication, special education labeling, and a perceived low priority of family involvement.

Harry (1992) described five obstacles facing African American families of students with disabilities: (a) a lack of trust in the educational system, (b) apathy, (c)

constraints and stressful life circumstances, (d) problems with schedules, and (e) transportation. Though not exclusive to African Americans, these difficulties can inhibit involvement efforts when day-to-day life challenges take precedence.

Hispanic students. Consistent with teacher reports, Geenen, Powers, & Lopez-Vasquez (2001) found lower levels of family involvement in school-based planning among culturally and linguistically diverse families, the majority of whom were Hispanic. McCollum (1996) described the cultural differences between schools, which expect parents to be involved, and immigrant parents, who feel it is not their place to intervene in the school's business. Recent U.S. immigrants might cling to their traditional culture and values rather than quickly assimilate to mainstream U.S. norms (Harry, 2002). Additionally, some ways in which Hispanic families are involved in their children's education might not be clearly visible in the school setting.

In special education, Newman (2004) found lower levels of family involvement at home among Hispanic families compared to Caucasian parents in the NLTS2 study.

Disability. Examinations of differences in levels of family involvement based on disability have been very difficult due to small sample sizes of students with different disabilities within the same or similar programs. Newman's (2004) NLTS2 report identified involvement patterns among students in certain disability categories: families of students with orthopedic impairments were more likely to participate in school activities than families of students with other disability classifications. Families of students with ED were least likely to participate in school meetings, events, and volunteering, but were most likely to attend parent-teacher conferences. Most parents of

students with disabilities participate in at least one type of school involvement activity (Newman, 2004). Though less prevalent prior to the 1980s, family involvement in the IEP and transition planning process is better encouraged by teachers and school staff (Spann, Kohler, & Soenksen, 2003).

Family Characteristics

Household income. General education research has widely documented the positive relationship between SES and family involvement (e.g., Brady & Flor, 1998; Drummond & Stipek, 2004; Fan & Chen, 2001; Lareau, 1989; Stevenson & Baker, 1987), with the exception of Redd, Brooks, and McGarvey (2001), where no link was established. Sontag and Schacht (1994) found a strong positive relationship between family income status and the utilization of early intervention services, which they attributed to a lack of parental awareness and perceived ineligibility. Lareau (2000) describes an interdependent relationship between middle class families and schools, with everyone collaborating to organize activities, lead literacy efforts, and promote learning. The typical ways that middle-class parents are involved in school closely resemble the way schools typically define parent involvement and participation (Auerbach, 2007; Nakagawa, 2000; Valencia & Black, 2002). There exists a moderate relationship between income and family involvement in school, with school expectations and involvement opportunities closely aligned to middle-class involvement preferences.

In special education, household income continues to be a predictor of family involvement (Newman, 2004), with income patterns mirroring the general education population. Similar to the Berends (1995) findings in general education, Zhang et al.

(2011) also reported higher SES correlated with higher levels of school engagement for families of students with disabilities.

Household structure. Auerbach (2007) found two-parent families more frequently described their relationships with teachers and school staff as positive. Jeynes (2001) identified family structure to be an important facet of family involvement, with intact, two-parent families more likely to be involved in their children's education. When looking at families of students with disabilities, Newman (2004) found parents who were more involved at school were those who lived in the same neighborhood as the schools, who had lived in the community longer, or those from two-parent households. The mother's employment status was not associated with school-based family involvement level.

Parent education level. Although parent expectations for children's social and academic development are strongly based on cultural norms (Harry, 2002), Newman (2004) found parents with higher aspirations for their children's postsecondary education plans were more likely to be involved in school events. Parents with higher education levels are more likely to consider parent involvement an important factor in their child's success (Legutko, 1998; Mulroy, Goldman, & Wales, 1998), while Lareau (1989, 1997) suggests that parents with lower education levels may feel intimidated by the middle-class norms of the school system.

NLTS2 analyses found the mother's education level to be a predictor of school-based involvement when controlling for other factors (Newman, 2004), and families

with higher aspirations for their children reported more involvement in school-based activities.

School Efforts to Increase Family Involvement in Schools

Information on the effects of school outreach programs on family involvement is limited. There is also a dearth of research comparing different types of school outreach programs based on different school demographics, such as school urbanicity, school size, or percentage of students receiving free/reduced-price lunch.

School outreach efforts through school programs offered could impact school-based family involvement at the school level. Frew, Zhou, Duran, Kwok, and Benz (2012) found more school outreach programs offered by elementary schools associated with higher levels of school-based family involvement for students with disabilities. Jeynes (2007) notes voluntary parent involvement has more of an impact than attending parental support programs, although all seem to benefit students. Encouraging parent involvement is a common goal of schools, not surprising given the aforementioned legal mandates and the widespread, widely known benefits. However, the initiatives and lengths taken to promote involvement and minimize barriers are not entirely understood. This could be problematic, as both home-based and school-based family involvement can be predicted by parents' perceptions of invitations for involvement from teachers and school staff (Green et al., 2007).

Other barriers to frequent, effective family involvement are within the control of schools and educators. Calderon (2000) concluded differences in philosophy, goals, and expectations could lead to conflicts between home and school. Although some teachers

may view parent involvement as stepping on their toes professionally (Peressini, 1998), invitations from teachers can be important for promoting parent involvement (Hoover-Dempsey & Sandler, 1997) and a strong predictor of the success of family and community involvement (Epstein & Dauber, 1991). School-initiated outreach efforts to families should predict greater family involvement (Dauber & Epstein, 1993). In separate publications, Sheldon (2003) noted partnership program quality is influenced both by how well schools organized and implemented programs and how well schools reached out to family and community members, and then identified schools with organized, written action plans and the support of principals, teachers, and parents as being most successful (2005). As it is often difficult for educators to organize formal outreach programs (Sheldon, 2005), entities enacting effective outreach plans must have the leadership of a strong principal. Berends and colleagues have identified principal leadership and support as the most influential factor in school implementation of new programs (Berends, Chun, Schuyler, Stockly, & Briggs, 2002; Berends, Kirby, Naftel, & McKelvey, 2001; Kirby, Berends, & Naftel, 2001). Other professionals recognize the role of the school principal in designing, implementing, and leading effective family outreach activities. According to the National Association of Elementary School Principals' six standards for principal leadership, principals should actively engage the community to promote successful collaborative outreach programs (Coalition for Community Schools, 2006), which should involve a vision shared by school staff, community members, and stakeholders. These collaborative home-school-community efforts toward academics, health and human services, and youth and community

development could benefit all involved parties (Michael, Dittus, & Epstein, 2007). To address the involvement challenges of some families, those traditionally less-involved low-income and ethnic minority groups, Sheldon (2005) suggests that schools that go to greater lengths to contact hard-to-reach parents and community members will experience higher levels of success.

CHAPTER III

METHOD

NLTS2 Design

This study used the dataset from the National Longitudinal Transition Study 2 (NLTS2) to investigate relationships among student, family, and school-level predictors, school outreach programs, and family involvement in school-based activities. The design for the NLTS2 is summarized next as a context for this study. The interested reader is referred to Cameto, Wagner, Newman, Blackorby, and Javitz (2000) for an in-depth description of the design and procedures for the NLTS2.

Population and sample. The NLTS2 was commissioned by the U.S. Department of Education's Office of Special Education Programs, and conducted by SRI International and Westat to obtain information on a variety of topics related to youth with disabilities (e.g., school experiences, employment, independent living, and social adjustment). Youth in the sample were students ages 13 through 16 in seventh grade (at least) and receiving special education services at the onset of the study in December, 2000. Five waves of data collection spanned 2001 to 2009.

NLTS2's first wave of sampling identified local education agencies (LEAs) based on four categories each for the LEA's enrollment size, geographic region, and socioeconomic status (SES). LEA enrollment size was categorized as very large (> 14,931), large (4,661 - 14, 931), medium (1,568 - 4,660), or small (11 - 1,567). Geographic region categorized the LEA's state as located in the Northeast, Southeast,

Central, or West/Southwest. Socioeconomic status of the LEA used the Orshansky Index to classify the LEA as high (0% - 13%), medium (14% - 24%), low (25% - 43%), or very low (> 43%). Each of the 12,440 LEAs listed by the Quality Education Data index was assigned to one of over 60 stratified sampling cells, from which 2,210 LEAs were selected. Thus, LEAs can be considered to be nested within a cell that contains LEAs similar in size, region, and SES. LEAs that agreed to participate provided NLTS2 a roster of students receiving special education services, including student date of birth and disability classification. From the LEA-provided rosters, SRI sampled students based on disability category, with the intention of sampling 1,250 students per disability category, with the exception of the categories of autism (projected n = 1,010), traumatic brain injury (projected n = 560), and deaf-blind (projected n = 120).

Data collection procedures. Data were collected from multiple sources in different waves of data collection, including youth, their parents/guardians, teachers, principals, and school records as youth transitioned from school to their post-secondary outcome. Sample statistics can be generalized to the national population of youth with disabilities in this age group within the twelve federally-recognized disability categories. Weights developed by SRI allow researchers to weight the sample statistics to better represent the general population of students with disabilities based on certain demographic characteristics of the sample (e.g., LEA enrollment size, region, wealth, student age, student disability). Weights were included for each survey instrument, wave, and are specific to data contained within the data file.

Instruments. The three main data components of NLTS2 included parent/youth telephone interviews, direct youth assessments and in-person interviews, and school data collection. Parent/youth telephone interviews were computer-assisted telephone interviews questioning the parents or guardians and youth (if capable) about the youth's experiences and outcomes. This interview was available in English or Spanish. A follow-up simplified mail questionnaire was sent to those unable to complete the phone interview. Academic performance was measured through a direct assessment by a professional using the Woodcock-Johnson III, and student interviews were conducted, if possible. Additionally, school data were collected through a teacher survey, school program survey, school characteristics survey, and/or individual student transcripts from the school.

This Study's Design

Only information from the first wave of data collection was included in this study, as information on school experiences of youth in later waves was not available due to students' older age and more elapsed time. Data files used in this investigation included the wave 1 parent interview, completed by the parent or guardian, and the wave 1 school characteristics questionnaire, completed by the school principal. Although the total sample size of the NLTS2 was 11,270, there were 9,230 partial or complete parent interviews from wave 1. Of the youth with completed wave 1 parent interviews, 5,960 also had completed school characteristics questionnaires. Of these, 5,670 had responses from principals indicating the number of school outreach programs, one of the outcome variables. The final sample size for this study, therefore, was 5,670. Table 1 compares

the 5,670 youth included in this study to the 9,230 youth from the wave 1 parent interview. Youth in the final sample were very similar to the starting sample in terms of age, gender, household income, disability, and ethnicity.

Research questions and hypotheses. Research questions included,

1. What was the relationship between school outreach programs and school-based family involvement, taking into consideration student, family, and school predictor variables, and what school characteristics are associated with school outreach programs for youth with disabilities in the NLTS2?
2. What was the relationship between student, family, and school variables and school-based family involvement for youth with disabilities in the NLTS2?

The first research question asked whether the number of school outreach programs was associated with higher levels of school-based family involvement. Schools offering more school outreach programs were predicted to be associated with higher reported levels of school-based family involvement at the student level, but the possibility of a different interpretation existed: schools with high levels of school-based family involvement could be encouraged to develop and offer more school outreach programs in response to the interest in school-based family involvement. Thus, the relationship between school-based family involvement and school outreach programs was hypothesized to be bi-directional.

The second research question asked which sociodemographic characteristics were associated with higher levels of family involvement, interacting in the presence of a high number of school outreach programs. Although Newman (2004) has already

provided descriptive information regarding characteristics of families with high levels of school-based involvement, the report did not consider the efforts made by schools through school outreach programs to increase school-based family involvement. It is important for schools to be aware of patterns of involvement that exist after taking into consideration the number of outreach programs offered by the school.

The following factors were thought to influence the outcome variable: age, ethnicity, household income, parent education, household structure, time in community, same neighborhood, and school outreach programs. The variables disability, gender, and other school-related variables were included in the model to account for any variation that may exist. School-based family involvement was selected as the dependent variable. Additionally, school-based family involvement could predict increases in the school outreach programs, as the supply should respond to the demand for better communication and more participation opportunities offered by the schools. Weighted and unweighted means and standard deviations for the study's variables are provided in Table 2.

Measures. This study included several youth, family, and school variables.

Dependent variable. Measuring school-based family involvement based on the current literature involved creating a composite for a school-based family involvement frequency variable, "school-based family involvement." Parents who indicated they or another adult in the household participated in any school-based involvement activity (e.g., attended a general school meeting, attended a school/class event, or volunteered at the school) were questioned regarding the frequency of their involvement in the prior

school year. Responses for each activity type were coded as never (coded 0), 1-2 times (coded 1), 3-4 times (coded 2), 5-6 times (coded 3), or more than 6 times (coded 4). The sum indicates the frequency of responses for three types of school-based involvement: frequency of attending a school meeting, attending a school/class event, and volunteering at school. These three school-based participation avenues are the most highly correlated (Newman, 2004), and mirror the steps taken in NLTS2 analyses. The school-based family involvement frequency variable was collapsed from an original range of 0 to 12 to a more normally-distributed range of 0 to 6, as calculated by SRI. Prior values of 5 and 6 were recoded to a value of 5, and prior values of 7, 8, 9, 10, 11, and 12 were recoded to a value of 6. Thus, the final collapsed range of the school-based family involvement was 0 to 6. The unweighted mean is 3.05 (*SD*=1.99).

Student characteristics predictor variables. Four student demographic variables were drawn from the NLTS2 database as possible predictors of parent participation in school activities. Student demographic variables selected included student disability, ethnicity, gender, and age, with disability and age provided to SRI by the school district student rosters and confirmed in the wave 1 parent interview.

Disability. Primary disability was one of the twelve federally-recognized disability categories used by NLTS2: autism, deaf-blindness, emotional disturbance (ED), hearing impairment, intellectual disability, multiple disabilities, orthopedic impairment, other health impairment, specific learning disability, speech or language impairment, traumatic brain injury, or visual impairment. The primary disability category of Deaf was not included as a primary disability category used by SRI in

NLTS2; however, youth who were not explicitly excluded from this study. For the analyses, the disability variable was dummy-coded as students having ED (value = 1) or not having ED (value = 0). Newman (2004) found families of students with ED reported less involvement in school meetings, events, and volunteering, thus, ED was selected as the reference group.

Ethnicity. Ethnicity was categorized as Caucasian, African American, Hispanic, or other. The final sample included 3,850 Caucasian youth, 1,059 African American youth, 561 Hispanic youth, and 203 youth of another ethnicity. The smaller groups of Asian/Pacific Islander, American Indian/Alaska native, and other/multiple ethnicities were combined into one "other" group. Three dummy-coded groups were created to indicate an ethnicity of African American (yes/no), Hispanic (yes/no), or other (yes/no).

Gender. Gender was coded dichotomously (female=0, male=1). The final sample included 3,600 males and 2,070 females.

Age. Student age was treated as a continuous variable, ranging from 13 to 17 years old. The mean age of the sample was 15.34 years old.

Family characteristics predictor variables. Six family characteristics variables were drawn from the NLTS2 parent questionnaire: household structure, household income, same neighborhood, time in community, support group utilization, and parent education level.

Household structure. Parents or guardians reported whether their child lived in a two-parent household at the time data were collected (coded as 1). Other family

structures (e.g., single divorced parent, single widowed parent) were coded as non-two-parent families (value=0). The unweighted mean was 0.90 (*SD*=0.30).

Household income. Household income was reported by the parent or guardian as the family's annual household income. For a less skewed distribution, household income was categorized by SRI as $25,000 or less (coded as 1), greater than $25,000 to $50,000 (coded as 2), and greater than $50,000 (coded as 3). The unweighted mean was 2.06 (*SD*=0.83).

Same neighborhood. Parents were asked whether the school the student attended was located in the same neighborhood where the youth lived (no=0, yes=1). The unweighted mean was 0.62 (*SD*=0.49).

Time in community. The variable "time in community" was a continuous variable where parents reported the number of months the youth has lived in the community. The unweighted mean was 133.22 months (*SD*=61.85).

Support group utilization. Parents indicated (no=0, yes=1) whether they belonged to support groups for families of youth with disabilities, participated in programs for families of youth with disabilities, and/or attended meetings/programs/trainings sponsored by parents. These responses were summed to create a composite variable, "support group utilization."

Parent education level. Parent education level described the highest education level completed by the parent or guardian: less than high school graduate (value=1), high school graduate (value=2), some college (value=3) or four-year degree or beyond (value=4).

School characteristics predictor variables. Six school-level predictor variables were extracted from the NLTS2 database: school urbanicity, school size, school (student) mobility, percent of student population receiving free/reduced-price lunch, principal outreach evaluation, and number of school outreach programs.

School urbanicity. School urbanicity referred to whether the student's school area was rural (value =1), suburban (value =2), or urban (value =3). The unweighted mean was 2.26 (*SD*=0.62).

School size. School size was the total number of students enrolled in the school at the time of data collection as reported by the principal, a continuous variable. School size ranged from an enrollment of 8 to 5,480 students, with an unweighted mean of 1156.44 (*SD*=851.11).

School mobility. School mobility, a continuous variable between 0% and 99% reported by the school principal, indicated the percentage of students enrolled in the school in the prior year who moved away from school during the school year. The unweighted mean was 10.09% (*SD*=9.64).

Percentage of students receiving free/reduced-price lunch. The free/reduced lunch variable as reported by the school principal indicated the percentage of the student population eligible for the free or reduced-price lunch program (coded <25%=1, 26%-50%=2, 51%-75%=3, and >75%=4). The unweighted mean was 2.05 (*SD*=1.10).

Principal evaluation. Principal evaluation asked school principals the extent to which they feel their school does a good job of reaching out to parents who are typically not involved at school, reversed coded as strongly agree (value=4), agree (value=3),

disagree (value=2), and strongly disagree (value=1). The unweighted mean was 2.05 (*SD*=0.63).

School outreach programs. School outreach programs were reported by the school principal in the school characteristics questionnaire. Principals indicated whether the school offered (a) open house or back to school night; (b) regularly scheduled school-wide parent-teacher conferences; (c) interim reports or report cards on student performance or attendance for parents; (d) school events to which parents were invited; (e) workshops or courses on parenting; (f) written contact between school and parent; (g) parents asked to sign off on homework; (h) parents given examples of work that meets high standards; (i) parents given positive phone calls or notes from teachers; (j) parent-student learning activities at school; (k) parents as volunteers in the school; (l) a newsletter for parents; (m) parents involved in instructional issues; (n) parents involved in school governance activities; (o) a school-wide e-mail list, web page, or homework hotline; (p) services to support parent involvement; (q) translation of school materials into languages other than English; (r) educational programs for parents, (s) a parent liaison program; or (t) a family resource center or drop-in center. A sum score ranging from 0 to 20 was calculated to indicate the total number of school outreach programs. The percentage of schools offering each program is shown in Table 3. The unweighted mean number of school outreach programs reported by each school's principal was 10.28 (*SD*=3.33).

Steps for Conducting Analyses

The course of action for investigating the above-stated research questions was as follows:

Obtain Institutional Review Board approval. According to Texas A&M University's Office of Research Compliance, this proposed dissertation study met the requirements as exempt, and the application was approved on April 5, 2011.

Data security. The NLTS2 dataset is categorized by IES/NCES as a restricted-use dataset. The Center on Disability and Development at Texas A&M University applied for and received a restricted-use data license in order to obtain the NLTS2 dataset. Accompanying the license was a security plan that contains mandatory procedures associated with maintaining the confidentiality of the data. Procedures for maintaining the confidentiality of the data were followed per IES/NCES guidelines, and sample sizes were rounded up or down to the nearest ten (National Center for Education Statistics, 2011).

Select variables to include in the models. The dependent variable was school-based family involvement. The variable "school outreach programs" was both an outcome variable as well as a predictor of the other family involvement outcome variables included in the model. As school outreach programs offered is the unique contribution to the literature, students missing the number of school outreach programs were excluded from the analyses.

Predictor variables included in the model described student, family, or school characteristics. Student-level predictor variables from the NLTS2 rosters and wave 1

parent questionnaire include student age, ethnicity, disability, and gender. Family characteristics from the wave 1 parent interview questionnaire include household income, parent education level, household structure, same neighborhood, time in community, and support group utilization. School-level variables include school size, school urbanicity, percentage of students receiving free/reduced-price lunch, principal evaluation, and school mobility.

Data merging and recoding. Variables and weights from different sources (e.g., parent interview questionnaire, school characteristics survey) were extracted from their respective wave 1 information source data file and merged into one SPSS data file according to student ID, a number unique to each student in the dataset. Dichotomous dummy-coded variables were created and renamed as earlier described. Composite and recoded variables for school-based family involvement, school outreach programs, ethnicity, parent education level, household structure, and support group utilization were calculated and named accordingly. Cases were selected based on complete responses to the school outreach programs offered variable of the school characteristics survey. Variable correlations for the final sample are shown in Table 4.

Model selection. Four variations of the model were run: (a) a basic model (without weights or missing data addressed), (b) a model without weights but with missing data addressed, (c) a model with both weights and missing data addressed, and (d) a model with weights but missing data not addressed. Although the estimates and statistically significant variables were close in all four models, addressing the missing data allowed data from more youth to be used in the analyses. Opting to not apply

weights in the analysis yielded more conservative estimates and mirrored some of the analyses conducted by SRI, which did not incorporate weights into the analyses (K. Valdez, personal communication, October 24, 2011). Thus, the model without weights but with missing data addressed was used.

Missing data. Using the Mplus command "missing=blank" and "integration = montecarlo," the software applied a blank for missing values, meaning those values were not incorporated into the analyses. Mplus calculated the closest estimates possible given the information available, but did not impute or substitute information for any missing values.

To determine whether missing values were missing at random, a new "missing" variable was created. If a youth had a missing value for any variable, he/she was coded as "missing" on the new created variable (value = 1). If a youth did not have missing values for any variables, he/she was coded as "not missing" on the new created variable (value = 0). Of the 5,670 youth in this sample, 1,010 had complete information on all variables examined. Chi-square tests and *t*-tests compared youth within the sample of 5,670 on each variable included in the model, using "missing" as the grouping variable for each analysis. Results of the missing/not-missing comparisons are presented in Table 5. A Bonferroni adjustment was used to correct the *p*-value; 0.05 was divided by the number of model variables, 17, to lower the cutoff value to $p \leq 0.003$. Effect sizes for variables that were statistically significant were provided, and ranged from low (e.g., less than 0.01) to high (e.g., 0.92), which indicated there could be differences between

youth who had no missing information and youth who were missing data for one or more variable, on certain variables used in these analyses.

Descriptive information calculated. Using the weights provided by NLTS2, descriptive information was generated for all variables included in the model. Weights from the school characteristics questionnaire, the data source with the smallest number of respondents, were used to most closely resemble a cross-instrument weight. The weights created by SRI and Westat were applied to the descriptive values in the sample to allow generalization of findings to the general population. Descriptive information is presented in Table 2.

To correct standard errors, procedures consistent with SRI data documentation options were used to properly adjust standard errors. Variable distributions and correlations with other variables were reviewed.

Analyses

Structural equation modeling provided more information about the relationships between and among variables using Mplus 6.11 software (Muthén & Muthén, 2011). The Type=Complex estimation method was used with the default MLR estimation. In Mplus, this is the option for maximum likelihood estimation with robust standard errors, and it addresses situations of missing data and/or non-normality of data by approximating the most accurate model estimates using the data provided. The model estimates are provided in Table 6.

CHAPTER IV

RESULTS

The model tested evaluated the relationship between several student, family and school predictors, the number of school outreach programs offered, and school-based family involvement for the nationally representative 5,670 youth with disabilities from the NLTS2 dataset included in this study. Research questions included,

1. What was the relationship between school outreach programs and school-based family involvement, taking into consideration student, family, and school predictor variables, and what school characteristics are associated with school outreach programs for youth with disabilities in the NLTS2?
2. What was the relationship between student, family, and school variables and school-based family involvement for youth with disabilities in the NLTS2?

Standardized results are presented in the order in which the above research questions were investigated in Table 6.

RQ1: School Outreach Programs and Involvement

The number of school outreach programs offered by the school was a statistically significant predictor of family involvement (p=0.043); however, the standardized estimate was small, at 0.03. A higher number of school outreach programs predicted a slightly higher level of family involvement when taking into consideration other student, family, and school predictors included in the model.

At the school level, many factors were investigated to suggest predictors of school outreach programs offered by schools. School size was a weak but statistically significant predictor of school outreach programs (β= 0.14, p<.001), where larger schools were associated with more school outreach programs offered. Urbanicity was a statistically significant predictor of school outreach programs offered (β= 0.06, p<.001). Principal evaluation of outreach activities was a weak but statistically significant predictor of school outreach programs (β= -0.34, p<.001), where the greater the extent to which principals feel their school does a good job of reaching out to parents who are typically not involved at school, the lower the number of outreach programs offered by the school. The negative estimate indicates an inverse relationship. Paths that were tested but not statistically significant indicators of school outreach programs offered included percentage of students eligible for free/reduced-price lunch and school mobility.

RQ2: Involvement Predictors

Variable relationships. Statistically significant indicators of higher levels of family involvement included many student and family characteristics: age, disability, ethnicity, income, same neighborhood, household structure, head of household's education level, support group utilization, and time in community. Age was a weak but statistically significant predictor of family involvement (β= -0.09, p<.001), where family involvement level decreased with age. Families of younger students reported higher levels of involvement than families of older students. A disability of ED was a weak but statistically significant predictor of family involvement (β= -0.03, p=.024), where lower

levels of family involvement were associated with having a disability label of ED, compared to students with other disabilities. Being African American (β= -0.04, *p*=.004), Hispanic (β= -0.03, *p*=.021), or other ethnicities (β= -0.05, *p*=.002) was a statistically significant predictor of lower levels of family involvement, compared to Caucasian students. Living in the same neighborhood where the youth's school was located was a weak but statistically significant predictor of family involvement (β= 0.10, *p*<.001), where higher levels of family involvement were associated with living in the same neighborhood. Income was a statistically significant predictor of family involvement (β= 0.10, *p*<.001), where higher household income levels were associated with more family involvement. Household structure predicted family involvement (β= 0.05, *p*=.003), where living in a two-parent household was a weak, but statistically significant, predictor of higher levels of family involvement. A higher education level for the head of household predicted higher family involvement levels (β= 0.14, *p*<.001). Support group involvement was a weak but statistically significant predictor of family involvement (β= 0.11, *p*<.001). Time in community was a weak but statistically significant predictor of family involvement (β= 0.04, *p*=.012), where living in the community a greater number of months predicted family involvement. The aforementioned predictor variables were statistically significant predictors of higher levels of family involvement.

Bidirectional paths between the outcome variables and each predictor were tested. The author tested the model presented for fit. To evaluate the fit of the model, a chi-square test offers limited information regarding the overall model evaluation; this

test is a function of sample size, thus, not very informative. More helpful were the goodness of fit indices, where a RMSEA and SRMR less than 0.08 were considered a fair fit, and a CFI greater than 0.05 was considered a good fit. Mplus was used to conduct analyses, and SAS (v. 9.3) was used to determine weighted estimates. For the basic model used in this study before missing data were accounted for, the chi-square value was 47.26 ($p<.001$), the RMSEA was .03, the SRMR was .01, and the CFI was .96.

CHAPTER V

DISCUSSION

This study investigated relationships between student, family, and school characteristics, school outreach programs, and school-based family involvement patterns. The number of school outreach programs was a positive predictor of school-based family involvement. Consistent with prior literature, many student and family factors were linked to higher family involvement, including younger age, disability other than ED, Caucasian ethnicity, same neighborhood, higher household income, two-parent household structure, higher head of household's education level, support group participation, and more time in the community. Information regarding the efficacy of school-initiated outreach programs will be beneficial in better meeting the needs of typically underserved populations.

Family Involvement Predictors

Student characteristics. Although many family involvement predictors were statistically significant, estimates were small (e.g., all less than 0.20). Patterns of school-based family involvement for students with disabilities in this sample closely mirrored the general education population and findings of other studies. Compared to the reference group of Caucasian students, families of students of other ethnicities (e.g., African American, Hispanic, or other) reported less involvement at school. This is consistent with the findings of Geenen, Powers, and Lopez-Vasquez (2001), and Sui-

Chu and Willms (1996), who found families of ethnic minority students to report lower levels of school-based family involvement.

Gender was not a statistically significant predictor of family involvement level, consistent with findings of Muller (1998). According to the model tested, neither families of male students nor families of female students were more likely to report school participation.

Age was a statistically significant predictor of family involvement, as families of younger children were more involved than families of older children, consistent with research from Dubas and Gerris (2002) and Mo and Singh (2008). Possible explanations for this include older students attending high schools a greater distance from the home, compared to younger students, and younger students being more amenable to family participation at school.

Having a disability of ED was a statistically significant predictor of lower family involvement. Consistent with Newman's (2004) investigation, families of students with a disability of ED are less likely to attend school/class events, general school meetings, and volunteer at school than students with other disabilities.

Family characteristics. Families living in the same neighborhood in which the school was located were more likely to be involved at school. Convenience and fewer transportation difficulties could make it easier for families in close proximity to their child's school to be involved.

Families with higher household incomes and higher education levels were more likely to report higher levels of family involvement at school. Household income and

education level are correlated in this study (r=.44), and the link between higher income, education level, and involvement is consistent with findings from the literature (e.g., Brady & Flor, 1998; Drummond & Stipek, 2004; Fan & Chen, 2001; Lareau, 1989; Stevenson & Baker, 1987).

Families with two parents were more likely to report higher levels of family involvement at school. Single-parent households could have less time for general school meetings, school/class events, and volunteering at school. Additionally, the responsibilities falling on single adult households could limit the time available for voluntary participation in these school-based activities.

Families attending support groups or trainings related to the student's disability were more likely to participate in general school meetings, school/class events, and to volunteer at school. If a family is already involved in these participation avenues, the interest, willingness, and availability to participate in family involvement activities at school is likely.

School predictors. Principal evaluation of outreach activities was not a statistically significant predictor of a family's involvement level at school, meaning the school principal's opinion on school outreach success does not appear to be connected to the level of involvement reported by the family. This is contrary to what many would expect, in that, a principal's assessment of the effectiveness of school outreach programs seems to have no relationship to the intended result, increased family involvement.

Families of students attending schools offering more outreach programs reported statistically significant higher levels of involvement. A positive predictor, more

outreach programs offered by the school was associated with higher levels of family involvement. It is encouraging that something often within the control of school administrators and staff is linked to the desired outcome, higher family involvement.

School Outreach Program Predictors

School outreach programs offered by the school are often within the influence and control of the school principal, who can increase or decrease program availability based on effectiveness and need. One contribution of this study is the consideration of school outreach programs offered as a predictor of school-based family involvement. Statistically significant predictors of the number of school outreach programs offered included school size, urbanicity, and principal evaluation of outreach activities.

Schools with higher enrollments were more likely to offer more school outreach programs. With a larger number of families with whom school personnel must communicate and collaborate, it is possible that more outreach programs are needed to appeal to different subsets of parents.

Urbanicity was also a statistically significant predictor of school outreach programs. The more urban the area in which the school was located (compared to suburban or rural), the greater the number of school outreach programs. Compared to other predictor variables, urbanicity and school size were more highly correlated than most (r=.14), so it is possible that larger schools can support more outreach programs to encourage family involvement.

Principal evaluation of outreach program effectiveness was a statistically significant, comparatively strong predictor of school outreach programs offered. The

negative beta weight describes an inverse relationship between these two variables. Though no causal relationship can be implied either direction, it can be speculated whether principals who consider their outreach programs more effective feel that fewer programs are needed, or whether principals of schools offering more outreach programs do so in response to the perceived ineffectiveness of existing programs.

General Education Comparison

Although the NLTS2 sampled only youth with disabilities and their schools and families, the U.S. Department of Education's National Center for Education Statistics commissioned the National Household Education Surveys (NHES) Program, with data collected from families of 51,600 K-12 students during the 2006-2007 school year (Herrold & O'Donnell, 2008). Students with disabilities were not excluded from the study; however, general education students comprise the majority of most school populations. For 16,503 students in grades 9-12, 83% of families reported attending a general school meeting, 68% reported attending a school/class event, and 34% reported volunteering at school (Herrold & O'Donnell, 2008). In the NLTS2 sample used in this investigation, the corresponding statistics reveal 77.1% of families reported attending a general school meeting, 62.5% reported attending a school/class event, and 23.6% reported volunteering at school (Newman, 2004). As these corresponding statistics are lower for students with disabilities compared to the school population as a whole, encouraging family participation of students with disabilities should be emphasized.

Barriers for Families

Many emotional and logistical barriers make school-based family involvement of youth difficult. Emotional barriers to family involvement could include not knowing of participation opportunities, perceptions of an unwelcoming school environment, and fear that their children would be embarrassed by parent participation, all reasons given by parents in a health education study conducted by Winnail, Geiger, and Nagy (2002). For some low-income parents from an ethnic minority background, a reluctance to actively participate in school-based involvement activities can be partially attributed to their own negative experience in school (Auerbach, 2007; Calderon, 2000; Diamond & Gomez, 2004; Olivos, 2009). Other logistical factors hampering participation could include parental fatigue, lack of childcare, lack of transportation, and language barriers (Geenen, Powers, & Lopez-Vasquez, 2001), as well as time constraints (Calderon, 2000). Additional family stressors in urban communities with high family dissolution rates and parents working multiple jobs could decrease family availability for school-based involvement activities (Bauch & Goldring, 1995; Hampton, Mumford, & Bond, 1998). Many emotional and logistical barriers experienced by parents and families could limit the amount of school-based family involvement initiated.

Implications of Findings

While it is encouraging that predictors of higher involvement for students with disabilities have been identified, it is discouraging that the effects appear to be small (e.g., all under β=0.20). The presence of more school outreach programs predicts higher family involvement; however, the effect is small. Three possibilities exist: (a) there truly

is little to no practical effect, (b) there are benefits beyond school-based family involvement associated with school outreach activities, or (c) the measured family involvement variable does not comprehensively capture the benefits of school-based family involvement.

Should school outreach programs not be associated with increased family involvement, other avenues for increasing family-school-community collaboration should be explored. Perhaps community leaders, local churches, and civic organizations can promote increased collaboration between home, school, and community. Or, it is possible that other outreach programs more strongly associated with higher family involvement were not examined by this study.

Family involvement can take many forms, one of which is school-based family involvement. It is possible that school outreach activities are associated with higher family involvement in other ways, such as helping with homework, talking about postsecondary goals, or communicating more frequently between teachers, students, and families.

It is possible that the measure of school-based family involvement used here and by NLTS2 does not accurately gauge the depth of family participation. No measure of active versus passive participation was used. It is possible a family member holding a leadership role in one activity could be rated less involved than someone who has merely attended different types of activities.

Based on these findings, researchers and school principals should not consider school outreach programs as marginally linked to increased family participation for

families of students with disabilities, however, other avenues to increase family participation and explore its benefits are encouraged.

External Validity

The NLTS2 was designed to provide a national snapshot of many aspects of life for youth with disabilities. The stratified designed incorporated local education agency (LEA) geographic region, size, and wealth, and survey results were weighted by disability and LEA characteristics. Differences between the target population and the sample are presumed to be minimal. Findings from this study can be generalized to all youth with disabilities, ages 13 to 17, for the time period when data were collected. One benefit of a national, characteristic sample of the population of youth with disabilities is the ease with which findings are generalized.

Limitations

Several limitations are noted in this investigation, specifically, the use of self report data, missing data, narrow family involvement definition, and lack of recent data, especially as it pertains to the technology available at the time the NLTS2 survey was conducted. These concerns could have influenced the results and their interpretations in several ways.

The use of self-report data for the dependent measure is one limitation of this study. It is possible that some respondents over-reported their school involvement. Comparing parent-reported measures to student-reported or teacher-reported measures (if available) of the same construct would help establish response validity. Additionally,

validating principal responses by comparing to teacher reports of school outreach programs offered could minimize inflated response values.

Many youth included in this investigation were missing data on one or more predictor variable. Missing and non-missing group comparisons produced some large effect sizes for some statistically significant variables, meaning the differences were large for some variables. Using listwise deletion to eliminate all missing data would have been too drastic, so the limitation of large group differences for some predictor variables, as shown in Table 5, is noted.

This investigation focused on family involvement at school, one observable tenet of family involvement. Equally as important is family involvement at home, through activities such as helping with homework, talking about school experiences, and planning for post-secondary goals. The link between school outreach programs and family involvement at home for students with disabilities merits further investigation.

Data were collected in the 1999-2000 school year, meaning the findings in this investigation were based on information from over one decade ago. Has the status of family involvement of students with disabilities changed in the past decade? Implications of federal mandates such as No Child Left Behind (2001) and the updated Individuals with Disabilities Education Act could have influenced the status of family involvement of students with disabilities.

Although some of the school outreach programs involved a technology component (e.g., email newsletter, homework hotline), programs available today could incorporate technology to involve parents. Modern-day outreach programs could use

other social media options to facilitate family involvement. Should this study be replicated, consideration of the more recent ways in which schools can involve parents should be investigated.

Recommendations

Principals. More information on the efficacy of certain programs could help school principals and staff make better-informed decisions when planning outreach efforts. A cost-benefit analysis of existing school programs could allow principals to weigh program effectiveness at increasing family involvement against the time, energy, and monetary costs of the outreach programs.

Certain school outreach programs could appeal to certain family groups. Perhaps communication-focused outreach efforts are considered more important by families of students with communication difficulties as a symptom of their disability. Education-focused outreach efforts might appeal to families with varying degrees of formal education. Learning whether outreach programs appeal to the involvement preferences of certain family groups could allow school to target certain populations with school outreach efforts. Principals should consider implementing other programs that could appeal to underserved groups and set clear goals for developing, implementing, and evaluating outreach programs.

Teachers. Through communication, teachers, staff, and families can reach an understanding of how to best help students succeed. Teachers can facilitate family-friendly environments in which families can actively participate in school-related

activities. Facilitating childcare, transportation, and flexible scheduling could reduce some participation barriers.

Teachers can provide feedback to administrators on the effectiveness of school-wide programs. If they have more direct contact with families, teachers may be able to provide anecdotal feedback to principals regarding the success of outreach programs. Teachers can make their own efforts to reach out to families and develop strong school-community-family ties. Families could be more responsive to personal contact and encouragement from someone they know well. Through dedicated collaboration, teachers, principals, and other school staff can work to promote family involvement.

Future Research

School outreach programs. A future area of research is an analysis of the specific family outreach programs offered by schools. How effective school principals perceive outreach efforts to be could differ from actual outreach program effectiveness. More in-depth information regarding to what families attribute increased interaction would be helpful. If increased interaction is attributed by families to a particular school outreach effort, the specific school program credited could receive further attention and development.

Different school outreach programs as defined by SRI share some similar characteristics. An exploratory factor analysis could determine whether certain programs load onto different defining program goals, e.g., communication, training, school support. The model used in the prior analyses could be tested using different

factors, which could be compared to estimate the effectiveness of different program types.

The driving forces motivating schools to reach out to families could be investigated. School outreach program motives could include a desire to strengthen family-school-community ties for the betterment of the students, legal mandates and funding contingencies, and/or a demand by families and consumers for more programs in which they can participate. Understanding the motivation behind school outreach initiatives could offer insight into program development, effectiveness, and buy-in from all involved. It seems plausible that programs best destined for success are those that come to fruition from the collaborative, altruistic goals and efforts of principals, teachers, families, and communities.

A qualitative analysis of schools with strong ties to families and the community could offer perspectives on effective outreach, and how well efforts are perceived by families and community members.

Family involvement. Although this investigation considered student age as a predictor of family involvement, future research could target outreach program differences at the elementary, middle, and high school levels. Certainly, family involvement patterns change as the student ages, as prior research has documented (e.g., Dubas & Gerris, 2002, Mo & Singh, 2008; Hoover-Dempsey & Sandler, 1997, U.S. Department of Education, 1998). Less studied are the differences in school outreach programs at the elementary and middle school levels. The Special Education Elementary Longitudinal Study (SEELS) and NLTS2 databases contain information on

elementary, middle, and high school family outreach programs, as described by school principals. Longitudinal connections between the Special Education Elementary Longitudinal Study (SEELS) and NLTS2 could offer a broader picture of the trends occurring as students begin school and throughout their school experience. Also using these datasets, a comparison of the types of activities offered at different levels could allow the field to identify other outreach development activities not previously considered, or offer insight into the types of programs most utilized by families of elementary, middle, and high school students.

Although disability was incorporated into the model, more attention to special education is merited. Families of students with disabilities can be involved in ways beyond the legally-mandated avenues of special education involvement (e.g., IEP meetings, transition planning), as studied by this investigation.

More research is needed to understand which disability groups are less involved and which parent outreach activities can encourage greater participation. As some disability populations are small, making comparisons based on disability is difficult. However, the development of national datasets facilitates the study of smaller groups. Analysis of family involvement by disability could help school professionals focus outreach efforts.

Although many general education sociodemographic correlates of family involvement have already been studied, the same is not true for special education. Further study is needed to determine whether the same relationships hold for special education, and for what circumstances.

Promising Directions

According to the Herrold and O'Donnell (2008) report of NHES findings, most parents reported some type of school-initiated communication. Of the 51,600 K-12 students, 54% of parents received notes or email about the student, 91% received school newsletters, memos, or notices, and 49% were contacted by phone. For the subset of over 16,500 9^{th}-12^{th} grade students, 51% of parents received notes or email about the student, 87% received school newsletters, memos, or notices, and 46% were contacted by phone. It is encouraging that schools are making efforts to communicate with and involve families.

Although the mean number of school outreach programs offered in the 1999-2000 school year was 10.42 (SD=0.23), it is not known whether this number has increased or decreased in the years since data were collected. It is possible that initiatives to increase family involvement (e.g., No Child Left Behind) have prompted schools to institute more outreach programs.

Current initiatives to increase family involvement in schools include the efforts of many organizations and research centers. Programs designed to promote and increase family involvement in general education include the National Coalition for Parent Involvement in Education, Center for Family Involvement in Schools, Project Appleseed, PTA, and Afterschool Alliance, among others. The Parent Advocacy Coalition for Educational Rights (PACER) Center provides support for families to participate in all phases of their child's education, and is one recipient of OSEP funding aimed at promoting family involvement. The Center for Family Involvement in Schools,

part of the Rutgers Center for Mathematics, Science, and Computer Education, provides professional development opportunities to coach school professionals on the benefits and implementation of successful family involvement practices. As more attention is given to the topic of family involvement, it is the hope that stronger partnerships can be formed through schools, communities, and families working in collaboration.

Conclusion

For students with disabilities, family involvement is one of the tenets of an effective school experience, as espoused by IDEA, No Child Left Behind, and the established body of research highlighting the benefits of family involvement. In this study, links between school outreach programs, family involvement, and many other student, family, and school predictors were investigated. Many findings paralleled Newman's (2004) report of family involvement using the NLTS2 database. The additional contribution of this study is its investigation of school outreach programs and their link to family involvement for students with disabilities. A weak but positive link between these was found.

This investigation contributes to the body of knowledge in the field of special education by highlighting a link between more school outreach programs and higher levels of family involvement at school, which research has shown to be academically and socially beneficial for students.

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APPENDIX A

Table 1
Sample Comparisons

	NLTS2 sample *n*=9,230	This study's sample *n*=5,670
Gender		
Male	66.61	66.86
Female	33.39	33.14
Age	15.30	15.32
Disability		
Learning Disability	61.96	62.94
Speech Impairment	3.95	4.28
Mental Retardation	12.20	13.11
Emotional Disturbance	11.41	8.21
Hearing Impairment	1.28	1.33
Visual Impairment	0.47	0.47
Orthopedic Impairment	1.16	1.28
Other Health Impairment	4.59	5.18
Autism	0.69	0.76
Traumatic Brain Injury	0.29	0.31
Multiple Disabilities	1.84	1.96
Deaf/Blindness	0.15	0.18
Ethnicity		
White	60.56	69.55
African American	18.46	18.59
Hispanic	18.41	9.44
Other	2.57	2.42
Household Income	1.97	2.07

Note. Gender, disability, and ethnicity values shown as percentages. Sample means provided for age and household income.
Values are weighted and rounded to the nearest ten.

Table 2

Variable Information

	Unweighted			Weighted	
	Mean	*SD*	Valid *n*	Mean	*SD*
Gender (male=1)	0.64	0.48	4850	0.66	0.02
Age	13.00	1.19	4850	15.34	0.04
Disability_ED	0.06	0.24	5670	0.10	0.01
Ethnicity					
White	0.68	0.47	5630	0.67	0.34
African American	0.19	0.39	5630	0.19	0.02
Hispanic	0.10	0.30	5630	0.11	0.02
Other	0.04	0.19	5630	0.03	0.01
Same Neighborhood	0.62	0.49	4590	0.73	0.02
Time in Community	216.00	133.22	4560	134.84	2.54
Income	2.06	0.83	4420	2.05	0.04
Household Structure	0.90	0.30	3570	0.90	0.02
Head of Household's Education Level	2.53	1.02	4500	2.38	0.04
Support Group	0.47	0.50	4410	0.34	0.02
Urbanicity	2.26	0.62	5610	2.15	0.05
Percent of Students Eligible for Free/Reduced-Price Lunch	2.05	1.10	5430	1.85	0.07
School Size	5480.00	1156.44	5610	1292.87	45.12
School Mobility	10.09	9.64	5100	10.66	0.52
Principal Evaluation	2.05	1.10	5610	2.06	0.04
School Outreach Programs	10.28	3.33	5670	10.42	0.23
Family Involvement	3.05	1.99	4560	3.08	0.07

Note. Sample sizes rounded to nearest ten.

Table 3

School Outreach Programs Offered by Type

Activity Type	Percentage of Schools	*SD*
Open house/back-to-school night	92.26	0.27
Regular school-wide parent-teacher conferences	69.43	0.46
Interim reports on performance/attendance	98.89	0.10
Parents invited to school events	95.75	0.20
Workshops/courses on parenting	31.94	0.47
Written contract between school and parent	43.72	0.50
Parents asked to sign off on homework	47.28	0.50
Parents get examples of good work	25.56	0.44
Parents get positive phone calls/notes	84.98	0.36
Parent/student learning activities at school	10.66	0.31
Parents as volunteers in the school	64.71	0.48
Newsletter for parents	81.70	0.39
Parents involved in instructional issues	30.32	0.46
Parents involved in governance	53.52	0.50
School-wide email/web page/homework hotline	63.88	0.48
Services to support parent involvement	15.86	0.37
Information translated into language other than English	52.90	0.50
Educational programs for parents	21.28	0.41
Parent liaison	30.37	0.46
Family resource center	12.89	0.34

Table 4

Variable Correlations

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	--												
2. Income	-.01	--											
3. Household Structure	-.01	.27*	--										
4. Head of Household's Education Level	-.01	.44*	.08*	--									
5. Support Group	.12	.20*	.05*	.28	--								
6. Urbanicity	.03	-.07*	-.09	.02	.06	--							
7. Percent of Students Eligible for Free/Reduced-Price Lunch	.01	-.30*	-.14	-.22	-.04	.29*	--						
8. Time in Community	.18*	.05*	.04	-.04	.01	-.02	-.04*	--					
9. School Size	.11*	.07*	-.01	.07	.03	.14*	-.30*	-.01	--				
10. School Mobility	.01	-.07*	-.00	-.04*	-.01	.12*	.07*	-.04	.31*	--			
11. Principal Evaluation	.04*	-.01	.00	-.02	.01	-.07*	-.02	.01	.01*	.07*	--		
12. School Outreach Programs	-.04*	-.02	-.01	.02	.01	.10*	-.00	-.02	-.13*	.02	-.34*	--	
13. Family Involvement	-.09*	.23*	.12	.24	.17	-.08*	-.13*	.03*	-.04*	-.04*	-.00	.03	--

*p<.05.

Table 5

Missing v. Non-Missing Group Comparisons

	t	*Chi-square*	Sig.	Effect size
Gender		0.01	.000*	0.00[a]
Age	-0.65		.185	
Disability_ED		12.64	.000*	-0.02
Ethnicity				
White		83.15	.000*	0.36
African American		87.37	.000*	0.62
Hispanic		0.18	.000*	0.80
Other		6.94	.000*	0.92
Same neighborhood		0.81	.000*	0.21
Income	18.69		.000*	0.62
Household structure		14.02	.000*	0.63
Head of household's education level	1.93		.000*	0.47
Support group		5.66	.000*	0.05
Urbanicity		9.84	.000*	0.55
Percentage of students eligible for free/reduced-price lunch	-6.29		.000*	-0.15
Time in community	1.55		.150	
School size	0.59		.018	
Mobility	0.74		.759	
Principal evaluation	-0.11		.859	
School outreach programs	-0.08		.058	
Family involvement	6.59		.000*	0.34

Note. Adjusted *p*-value is .003 (0.05/17 variables) for Bonferroni adjustment.
[a]Effect size < 0.005.
**p*< 0.003.

Table 6

Model Estimates

	Standardized coefficents	*p*-value
School outreach programs, as predicted by		
School size	0.14	.000*
Urbanicity	0.06	.000*
Percentage of students eligible for free/reduced-price lunch	0.02	.203
School mobility	-0.01	.525
Principal evaluation	-0.34	.000*
Family involvement, as predicted by		
Age	-0.09	.000*
Gender (male)	-0.02	.105
Disability_ED	-0.03	.024*
Ethnicity		
African American	-0.04	.004*
Hispanic	-0.03	.021*
Other	-0.05	.002*
Same neighborhood	0.10	.000*
Income	0.11	.000*
Household structure	0.05	.003*
Head of household's education level	0.14	.000*
Support group	0.11	.000*
Time in community	0.04	.012*
Principal Evaluation	0.01	.617
School outreach programs	0.03	.043*

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