Benefits and Influences of Parent Involvement for Children with Learning Disabilities

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Abstract

The benefits and influences of parent involvement were examined among a group of children with learning disabilities (LD). One aim of this study was to determine whether different types of parent involvement are associated with educational benefits in special education. A second aim was to apply an existing model of parent involvement to assess its influences in this population. One hundred and twenty-three children with and without LD from grades 1 to 8 and their parents participated in the study. Children's grades and their attitudes to school were used as educational outcomes to evaluate the impact of their parents' involvement. Mothers and fathers completed questionnaires regarding their school, cognitive-intellectual and personal involvement, as well as measures of stress, social support, and perception of their child's academic ability. Mothers were consistently more involved than fathers in all types of activities. Higher grades were significantly correlated with mothers' involvement in school-related activities and fathers' involvement in personal activities. Fathers who felt they received a greater amount of social support tended to be more involved in their children's cognitive and personal activities. Mothers who perceived a greater amount of social support were more personally involved with their children, and mothers who perceived their children as having more severe LDs were less personally involved. Overall results extend the literature on the benefits and the factors associated with parent involvement for children with LD and highlight the need for parents, educators and school psychologists to combine resources in order to increase awareness and levels of parent involvement.

Résumé

On a examiné les avantages de l'engagement parental et ce qui l'influence chez un groupe d'enfants ayant des troubles d'apprentissage (TA). L'un des objectifs de la présente étude visait à déterminer si différents types d'engagement parental sont associés à des avantages pédagogiques en éducation spécialisée. Un deuxième but voulait appliquer un modèle existant d'engagement parental afin d'évaluer ses influences dans cette population. Cent vingt trois élèves de la première année à la huitième, ayant ou non des TA, ainsi que leurs parents ont participé à cette étude. Les notes de ces enfants et leurs attitudes vis-à-vis de l'école ont été employés comme résultats éducatifs servant à évaluer l'effet de l'engagement de leurs parents. Mères et pères ont rempli des questionnaires concernant leur implication scolaire, cognitive-intellectuelle et personnelle et comportant des mesures de stress, de soutien social et de perception des capacités scolaires de leur enfant. Les mères étaient à chaque fois plus engagées que les pères dans tous les types d'activités. De meilleures notes étaient en corrélation significative avec la participations des mères à des activités de type scolaire et avec la participation des pères à des activités personnelles. Les pères qui estimaient avoir reçu plus de soutien social avaient tendance à s'engager davantage dans les activités cognitives et personnelles de leurs enfants. Les mères qui pensaient bénéficier de plus de soutien social étaient plus personnellement engagées auprès de leurs enfants et les mères qui percevaient leurs enfants comme ayant des TA plus graves étaient moins impliquées personnellement. Globalement, les résultats prolongent la littérature sur les bienfaits et sur les facteurs associés à l'engagement parental pour des enfants ayant des TA et soulignent le besoin pour parents,

éducateurs et psychologues scolaires de combiner leurs ressources afin de rehausser la prise de conscience et les niveaux d'engagement de la part des parents.

Introduction

Research has made clear that parents play a critical role in children's educational achievement and socioemotional development (e.g., Henderson & Berla, 1994). The effect of parents' contributions to their children's educational growth is enhanced when combined with schools' efforts to involve them (Epstein, 1986; U.S. Department of Education, 1994). The interconnections between school and home environments, as much as their individual impact, affect children's potential for development (Bronfenbrenner, 1986). Legislation in Canada (e.g., Education Act, R.S.O., 1990, c. E-2) and the U.S. (e.g., Individuals with Disabilities Education Act, P.L. 94-142) has reinforced this view, mandating not only parents' involvement in children's schooling but also their joint involvement with teachers and schools.

Recent attention in the field of parent involvement has turned to examining the individual influences that determine why and to what extent parents become involved in their children's educations (e.g., Epstein & Dauber, 1991; Hoover-Dempsey, Bassler, & Brissie, 1992; Stevenson & Baker, 1987). The effort to better understand what drives parent involvement has prompted researchers to develop models assessing the impact of a wide range of potential influences (Eccles & Harold, 1994, 1996; Grolnick, Kurowski, Benjet, & Apostoleris, 1997; Hoover-Dempsey & Sandler, 1995, 1997). Using a hierarchical model of factors and a more comprehensive definition than used in previous studies, one model in particular provides a valuable perspective from which to examine some of these predictors (Grolnick et al., 1997).

Though early results reflect those found in regular education programs, research on the effects of parent involvement in special education remains sparse. Parent involvement in children's special education, such as participation in the Individualized Education Program process, has long been legally mandated. Making parents and teachers more aware of the benefits of parent involvement may serve to increase their low involvement rates in special education (e.g., Salisbury & Evans, 1988; Yanok & Derubertis, 1989). One aim of the present study was to determine whether parent involvement is associated with educational benefits in special education. The study examined two key educational outcomes linked with parent involvement in regular education programs.

Parents can become involved in children's schooling in a variety of ways, for example, attending parent-teacher conferences, monitoring, or being aware of the child's experiences at school. Studies have shown that these different types of involvement can individually and collectively influence children's academic success (e.g., Grolnick & Slowiaczek, 1994). By employing a multidimensional definition of parent involvement, it was expected that a more thorough understanding of the most beneficial types of involvement for parents of children in special education would be achieved.

A second aim was to test the applicability of an established hierarchical model (Grolnick et al., 1997) to assess the influences of different types of parent involvement in a special education population. The identification of influences predictive of parent involvement for children in special education may assist efforts to increase and broaden involvement.

Given the complexity of parent involvement, assessing a mostly homogeneous population becomes essential in an early study of its benefits and correlates. This study examined the effects and influences of parent involvement in a sample of children with learning disabilities (LD) and their parents. An otherwise comparable group of children without LD was included to encompass a range of academic achievement levels.

Statement of Original Contributions

This research offers a unique contribution to the emerging study of parent involvement for children in special education. While minimal research on parent involvement and special education exists, none has specifically examined the benefits of, and factors associated with, parent involvement for children with learning disabilities. This dissertation contains the primary goal of exploring possible benefits of parents' involvement in their children's education as well as the secondary goal of understanding the factors that may influence parent involvement.

In addition, this study expands the overall parent involvement research base by including both mothers and fathers in its sample. Although mothers have been found to be more involved than fathers in all aspects of parent involvement (e.g., Cone, Delawyer, & Wolfe, 1985), both parents can play a substantial role in children's school performance (Grolnick & Slowiaczek, 1994; U.S. Department of Education, 1997). While a few studies have looked at the involvement of both parents, none has directly examined their involvement. This study is unique in assessing various forms of involvement based on mothers' and fathers' own perceptions, rather than relying on the perceptions of teachers or children.

Literature Review

The first part of this chapter provides a context for studying parent involvement, followed by an overview of the importance of parent involvement in regular education populations, including a review of the benefits and predictors of parent involvement. Two models will be reviewed, one of which will form the conceptual basis for the present model of parent involvement for children with LD. The aim of the succeeding section is to establish a context for examining influences of parent involvement in special education programs.

The majority of studies reviewed in the present paper examined parent involvement through teacher reports of parents' involvement; few have directly assessed parents' perceptions of their own involvement; and none have directly assessed fathers' involvement. Unless otherwise stated, usage of the term *parent* will refer to mothers.

Historical Context and Educational Laws

Early debates surrounding the importance of parent involvement ultimately led to agreement among researchers that schools, communities and parents exerted a simultaneous influence on, and shared responsibility for, children's education and socialization (Epstein, 1996). During the mid-1960s, programs such as Head Start in the U.S. encouraged parents to become involved in their children's educations and also aimed to educate them about the importance of their own involvement (Connors & Epstein, 1995). Increasing parent involvement became an additional recommendation of the effective schools movement of the 1970s for enhancing students' academic performance (Moles, 1993; Edmonds, 1979). During the 1980s,

the role of parents was subjected to closer examination, including attempts to clarify the traditionally vague term 'parent involvement' (Epstein, 1996).

While early investigations concerning parent involvement were broad and unsystematic, by the early 1990s researchers had begun to explore the individual components of parent involvement and its benefits for students, parents and educators (e.g., Epstein, 1991). Recently, school psychologists have been called to provide a leadership role to promote and increase parent involvement in schools (Christenson, Rounds, & Gorney, 1992; Christenson, 1995; Ehly, Hartman, Robbins, & Villegas-Gutierrez, 1997; Pelco, Jacobson, Ries, & Melka, 2000; Raffaele & Knoff, 1999), including fostering the involvement of parents whose children receive special education (Shriver & Kramer, 1993; Shriver, Kramer, & Garnett, 1993; Turnbull & Leonard, 1980; Turnbull & Turnbull, 1982).

Parent involvement has been recognized through U.S. legislation as a critical aspect of children's academic success. The Individuals with Disabilities Education Act (IDEA), a federal law (PL 94-142) passed in 1975 and reauthorized in 1990, mandated the involvement of parents by encouraging them to provide informed consent to changes in their children's educational programs and to be present during, and equal partners in, the Individualized Education Program (IEP) process. School personnel and parents were directed to work toward the common goal of developing effective education programs for children. Parents were encouraged to participate in public hearings, serve on advisory panels, and belong to advocacy groups.

More recent efforts, such as the Goals 2000: Educate America Act, encourage and promote family involvement in school improvement efforts. The Act mandates

for specific family-school connections and cites parent involvement as an essential aspect of successful schools. In addition, the United States' largest federal education program, Title I of the Elementary and Secondary Education Act, has increased support for activities encouraging involvement of parents in their children's educations.

The need for increased parent involvement has likewise emerged in the Canadian education system, where individual provinces have separate education acts legislating parent involvement. Smith and Foster (1996) researched the current state of educational rights of students with disabilities in Canada, assessing the degree to which individual provinces were meeting various legal mandates across five themes: (self-)advocacy, access to schooling, non-discrimination, service delivery, and assessment/placement. Ontario, where the current study was conducted, was one of the two highest ranked provinces on an aggregate score for all themes. Though it ranked above the national average for (self-)advocacy, no general right exists in Ontario for parents to participate at the school or board level. However, every school board is required to set up a special education advisory committee (i.e., Ontario Regulation 464/97, Special Education Advisory Committee), and it is of note that school boards are required by public policy to involve parents in assessment and program decisions of students with disabilities and in monitoring students' progress (i.e., Ontario Regulation 181/98, Individual Placement Review Committee). There is no general right for third-party adjudication of school board decisions, thus parents have no appeal rights on such decisions.

Definitions of Parent Involvement

The many definitions used in examining the construct parent involvement have made generalizing across studies difficult. While some researchers have focused on attitudinal components of parent involvement by defining it as parental aspirations or expectations for children's educational success (e.g., Bloom, 1980), others have focused on behavioural aspects of parent involvement, such as assistance with homework or attendance at parent-teacher conferences (e.g., Stevenson & Baker, 1987).

Inconsistency in the operationalizing of certain aspects of parent involvement has provided another obstacle to generalizing results. Adding to the difficulty, other terms have been used to refer to parent involvement, such as parental or school participation or home-school collaboration. Epstein (1996) argued that the term parent involvement has been clarified and recast during the past decade from *parent involvement*, deemed the responsibility of the parent, to *school, family, and community partnerships,* emphasizing the concept of shared responsibility for children among these groups.

In attempts to organize the many uses of the term parent involvement, several categories of parent involvement in children's regular and special education have been proposed (Coots, 1998; Singh, Bickley, Trivette, Keith, Keith, & Anderson, 1995). These categories can be broadly divided into activities related to children's learning at home and at school (Coots, 1998). Home-based activities include reviewing the child's work and monitoring progress, helping with homework, signing notes sent home from the teacher, providing enriching activities pertinent to school

success (e.g., reading aloud) and communicating about school with children (Coots, 1998). Additional home-based activities specifically performed with children with disabilities include arranging for therapies such as speech therapy or physiotherapy and teaching the child self-help skills (Coots, 1998). School-based activities for parents of children with and without disabilities include attending parent-teacher conferences, participating in school committees, and governance (Coots, 1998; Desimone, 1999). Involvement in IEP meetings for parents of children with disabilities is another activity included among school-based activities (Coots, 1998). Other researchers have included a category of parent involvement that addresses parents' academic aspirations and expectations for their children (Singh et al., 1995). While this category of parent involvement has only been studied for parents of children in regular education (e.g., Fehrmann et al., 1987; Keith, 1991), it is likely to be relevant for children in special education as well.

Epstein (1987, 1992) suggested the following typology of parent involvement: (1) basic obligations of families to provide for the health and safety of their children; (2) basic obligations of schools to communicate with the families about school programs and children's progress; (3) parent involvement at school; (4) parent involvement in learning activities at home; (5) parent involvement in decision making, governance and advocacy; and (6) collaboration and exchange with community organizations. Absent from this typology is a category relating to parents' academic expectations for their children. This typology has frequently been cited in the parent involvement literature (e.g., Eccles & Harold, 1993, 1996), yet most studies have not examined each type of parent involvement systematically. In

addition, many of the studies have failed to state the type of involvement being investigated.

Benefits of Parent Involvement

An extensive body of research has provided solid evidence that parent involvement, including positive quality connections between families and schools, influences a variety of outcomes (e.g., Chavkin, 1993; Christenson, 1995; Comer & Haynes, 1991; Dauber & Epstein, 1993; Eccles & Harold, 1996; Epstein, 1986, 1991; Fehrmann, Keith, Reimers, 1987; Hess & Holloway, 1984; Henderson & Berla, 1994; Hoover-Dempsey et al., 2001; Keith, Keith, Troutman, Bickley, Trivette, & Singh, 1993; Izzo, Weissberg, Kasprow, & Fendich, 1999; Pelletier & Brent, 2002; Reynolds, 1989, 1999; Stevenson & Baker, 1987; U.S. Department of Education, 1994). Correlational research has clearly linked parent involvement with a number of student outcomes, including improvement in grades (e.g., Lytton & Pyryt, 1998), attitudes to schoolwork (e.g., Becker & Epstein, 1982), self-concept and behaviour (e.g., Comer & Haynes, 1991), increased completion of assigned homework (Keith et al., 1993), higher attendance rates (Collins, Moles, & Cross, 1982), lower suspension rates (e.g., Comer & Haynes, 1991), as well as lower grade retention rates and fewer years in special education (Miedel & Reynolds, 1999). While research has mostly emphasized benefits to students, parent and teacher outcomes have also been correlated with parent involvement (Epstein, 1991; Pelletier & Brent, 2002). For example, greater parent involvement has been associated with mothers' increased confidence (Hoover-Dempsey, Bassler, & Burow, 1995) as well as teachers' higher efficacy levels (Hoover-Dempsey, Bassler, & Brissie, 1987) and teachers' greater job

satisfaction (Christenson, 1995). In addition, better parent-staff relationships have been noted as a function of parent involvement in children's schooling (Comer & Haynes, 1991; Epstein, 1991).

Despite this mounting evidence, a causal role in the relationship between parent involvement and children's educational outcomes has not been well established, primarily because of the correlational nature of the research. In attempting to clarify the direction of the correlation between parent involvement and school performance, one longitudinal study examined the relationship between parent involvement and change in school performance by controlling for children's previous school performance (Izzo et al., 1999). While the researchers demonstrated that parent involvement might precede better school performance, the study's results do not constitute evidence of a causal relationship. Specifically, the study, and others of its kind, is compromised by its use of nonexperimental designs in which controls necessary for ruling out alternative explanations are lacking (Baker & Soden, 1998; Keith et al., 1993). For instance, parent involvement may imply the presence of other aspects of parenting more directly related to children's academic outcomes (Bierman, 1996).

Influences on Parent Involvement

Research limitations notwithstanding, it has been sufficiently demonstrated across age levels and populations that parent involvement in children's schooling is associated with learning and school success (e.g., Epstein, 1983; Fehrmann et al., 1987; Reynolds, 1989). However, less is known about the individual influences that determine variations in parent involvement. Recent research has made it a priority to

understand these influences (e.g., Epstein & Dauber, 1991; Desimone, 1999; Hoover-Dempsey, Bassler, & Brissie, 1992; Stevenson & Baker, 1987).

A few researchers have devised major categories of influence related to parent involvement (Eccles & Harold, 1993, 1996; Coots, 1998). The most important of these categories, including parent/family characteristics (e.g., family resources and parental attitudes), child characteristics, school and teacher characteristics and practices, and community characteristics (Coots, 1998; Eccles & Harold, 1993, 1996) are synthesized in the following review.

Parent/family characteristics. The relationship of parent involvement to family characteristics has been considered in numerous studies. Researchers have examined the contribution of variables such as socioeconomic status (SES) (e.g., Herman & Yeh, 1983; Lareau, 1987, 1989), occupational status (e.g., Lareau, 1989), parents' education level (e.g., Baker & Stevenson, 1986; Stevenson & Baker, 1987), and ethnicity (e.g., Chavkin & Williams, 1993; Desimone, 1999). In examining whether mothers' educational level was associated with degree of parent involvement, Baker and Stevenson (1986) found that mothers with a higher level of education were more aware of their children's school performance, had more contact with teachers, and were more likely to select college-preparatory courses for their children and be active in managing their academic success. Some studies have shown that low-income minority parents are less involved in school activities than higher income, nonminority parents (e.g., Chavkin & Williams, 1993), while other studies have found that minority parents have higher levels of involvement in other areas than nonminority parents (e.g., Keith et al., 1993). It has also been demonstrated that

married parents are more involved in their children's educations than single parents (Dauber & Epstein, 1993; Hoover-Dempsey et al., 1987; Lareau, 1987; Moles, 1993).

Aspects of parents' attitudes in relation to their involvement have been studied as well, including parents' beliefs in their own efficacy (Hoover-Dempsey, Bassler, & Brissie, 1992; Hoover-Dempsey, Battiato, Walker, Reed, DeJong, & Jones, 2001; Hoover-Dempsey & Sandler, 1997). Drawing from Bandura's (1986) theory of efficacy, Hoover-Dempsey et al. (1992) examined the relationship between parents' involvement in school and their sense of efficacy for fostering children's academic success. Parent efficacy, defined as parents' beliefs about their ability to exert a positive influence on their children's school outcomes, was positively linked to involvement with children in educational activities at home and volunteering time at school. Notably, efficacy was not related to income, employment status, or marital status. Parents' perceptions and expectations of their roles in their children's education have also been regarded as important in parent involvement (Hoover-Dempsey & Sandler, 1997; Lareau, 1989). Hoover-Dempsey and Sandler (1997) proposed that parents become involved because they view personal involvement in their children's education as part of their parental role.

Child characteristics. Parent involvement has been demonstrated to vary according to child characteristics such as children's age, level of competence, and gender. In particular, parent involvement declines dramatically as children age (e.g., Dornbusch & Ritter, 1988; Dauber & Epstein, 1993; Keith, 1991; Izzo et al., 1999; Lareau, 1989; Salisbury & Evans, 1988; Stevenson & Baker, 1987). It has been hypothesized that this trend may be attributable to parents' greater opportunities for

involvement in earlier grades (Dauber & Epstein, 1993) and feelings of decreased competence as their children's schoolwork becomes more complicated (Dauber & Epstein, 1993; Eccles & Harold, 1993; Stevenson & Baker, 1987), as well as their children's developmental changes. Younger children are generally more inclined to involve their parents than adolescents, whose emergent independence and autonomy usually reduces their desire for overt parental involvement (Eccles & Harold, 1993, 1996). It may also be that parents understand the importance of early schooling and attribute greater value to their involvement at earlier developmental stages (Stevenson & Baker, 1987).

A separate child characteristic influencing parent involvement may be a child's overall level of competence, although evidence in support of this has been mixed. Dauber and Epstein (1993) reported that parents of elementary and middle school children with stronger academic performances were more involved at school than parents whose children were not performing as well. In contrast, Baker and Stevenson (1986) reported that mothers of eighth graders with poorer academic performances used more involvement strategies than mothers of those with better performances. Developmental effects, such as the stronger motivation of parents with younger, academically successful children, may account for the disparity in these findings.

Stevenson and Baker (1987) demonstrated that parents' involvement in their young children's schooling was more pronounced for boys than for girls, a difference the authors suggested may be accounted for by boys' typically slower starts in school and parents' consequently greater concern for them.

School characteristics. School characteristics, especially teacher attitudes and practices and organizational structures, have been shown to influence parent involvement (Becker & Epstein, 1982; Epstein & Dauber, 1991; Hoover-Dempsey et al., 1987). When teachers use parent involvement in their teaching practices (e.g., by involving parents in reading activities at home or teaching parents how to tutor), parent involvement, parents' beliefs in their abilities to help, and students' academic gains increase (Ames, 1993; Epstein, 1991). Hoover-Dempsey et al. (1987) found that teachers' feelings of efficacy were related to the extent to which parent involvement was a component of school programs, including increases in classroom involvement and parent participation at conferences.

There is evidence that teacher characteristics, such as level of education, are associated with more parent involvement practices (Hoover-Dempsey et al., 1987). Becker and Epstein (1982) suggested that teachers with higher educational attainment might relate better to parents because they have greater resources and more confidence in their own abilities.

Studies on the effects of school level on parent involvement have shown that teachers in elementary schools involved parents more than teachers in middle schools (Becker & Epstein, 1982; Epstein & Dauber, 1991). Middle schools, characteristically larger and more diversified, may discourage parent involvement by maintaining fewer specific teacher practices, such as planning parent conferences or providing feedback about children's progress.

A Multidimensional Perspective of Parent Involvement

The majority of studies on the individual influences on parent involvement have used narrow, unidimensional measures that overlook the various ways parents can be involved in their children's education. Recently, researchers have opposed the idea of a unitary phenomenon and argued instead for a broad, multidimensional perspective of parent involvement that includes emotional, personal and school-related activities (e.g., Cone, Delawyer, & Wolfe, 1985; Grolnick & Slowiaczek, 1994; Izzo et al., 1999; Pelco et al., 2000).

Grolnick and Slowiaczek (1994) proposed a multidimensional conceptualization of parent involvement that incorporated developmental and educational constructs. Defining parent involvement as the allocation of resources by the parent to the child within a given domain, the authors described three types of parent involvement in children's education: *parent behaviour*, such as participation in activities in school (e.g., attending parent-teacher conferences); *personal involvement*, such as interest in and knowledge about the child's school activities and endeavours (e.g., knowing the names of classmates); and *cognitive-intellectual involvement*, such as exposing the child to intellectually stimulating activities and materials (e.g., discussing current events).

The primary goal of Grolnick and Slowiaczek's study was to examine their tripartite representation of parent involvement using multiple measures and reporters of mother and father involvement. Sampled from a predominantly middle-class, mainly Caucasian (90%) school district, 302 11-14-year-old children (100 sixth, 99 seventh, and 102 eighth graders), of whom 46.8% were male, and their teachers (n =

18) completed questionnaires assessing their perceptions of parents' involvement. The majority of children (75%) came from two-parent families, with the remainder from single (16%) and step-parent (9%) families. Information on parents' educational level and maternal work status was also collected. Supporting Grolnick and Slowiaczek's framework, correlations among the measures of parent involvement suggested multiple dimensions of involvement rather than one overall construct. A factor analysis of the measures, conducted to examine the structure of parent involvement, revealed that the three dimensions were only moderately correlated and thus relatively independent. These findings support the view that parent involvement can be demonstrated in a number of ways and highlight the value of distinguishing among multiple components.

Grolnick and Slowiaczek further examined the differential relationships of the three dimensions of involvement with regard to demographic variables. While child grade and gender, as well as maternal work status, were unrelated to any of the parent involvement variables, parent education was strongly associated with the cognitive-intellectual variable. However, parent education was unrelated to *parent behaviour* for mothers and only weakly, though significantly, related for fathers. Consistent with earlier findings (e.g., Hoover-Dempsey et al., 1987), these results do not support the earlier findings that less-educated parents are less involved in all forms of parent involvement (Baker & Stevenson, 1986); they show instead that education levels are only relevant for certain types of involvement.

An important limitation of Grolnick and Slowiaczek's study must be considered. Measurement of parent involvement was restricted to children's and their

teachers' perceptions. While the benefits of multiple reporters are clear, there is an inherent disadvantage in including only child and teacher ratings. For example, although children's and teachers' ratings did converge into one factor, there was some unique variance in children's and teachers' perceptions, which is expected given children's and teachers' differential access to parents and/or feelings toward them. Including parents' perceptions of their own involvement may serve to substantiate the study's findings.

Grolnick and Slowiaczek's multidimensional view of parent involvement may be restricted by the absence of a critical area of parent involvement from their definition. Though the authors acknowledged their study did not include all aspects of parent involvement, their omission of home learning activities (e.g., monitoring homework) may represent failure to include an important type of parent involvement. In her typology of parent involvement, Epstein (1996) lists learning activities at home as a crucial element of parent involvement.

It is worth noting also that Grolnick and Slowiaczek elected to study a sample of children from grades six to eight to examine a critical period of transition somewhat overlooked in the literature. While they acknowledged the linear association between age and parent involvement (e.g., Stevenson & Baker, 1987), Grolnick and Slowiaczek found no developmental differences within their sample. That their study did not include children in younger grades, when parent involvement is at its highest, may be another limiting feature.

Models of Parent Involvement

Recent attention has been directed toward developing comprehensive models of parent involvement to assess its many individual influences. Researchers have begun to explore the numerous processes that underlie parent involvement in children's education (Eccles & Harold, 1993, 1996; Grolnick et al., 1997) as well as the reasons why parents choose to become involved (Hoover-Dempsey & Sandler, 1995, 1997).

Eccles and Harold (1993, 1996) presented a theoretical framework for understanding the dynamic processes motivating parents' involvement in their children's schooling. Parent involvement was treated as an outcome of parent, teacher and child influences as well as a predictor of child outcomes, such as achievement. The first set of influences was considered exogenous, that is, it was assumed to have indirect effects on parent involvement, and thus was excluded from the model. These distal influences consisted of characteristics pertaining to the parent/family, neighbourhood, child, teacher, and school. They included, for example, demographic variables for families, children and teachers. The second set of influences concerned parent and teacher beliefs and attitudes, such as efficacy and role as parent or teacher; the third included teacher practices, such as invitations for parent involvement; and the fourth, parent practices or parent involvement. A relationship between all these sets of influences was assumed. It was also assumed that each individually and directly impacts child outcomes (see Figure 1 for a visual presentation of the influences on and consequences of parent involvement).

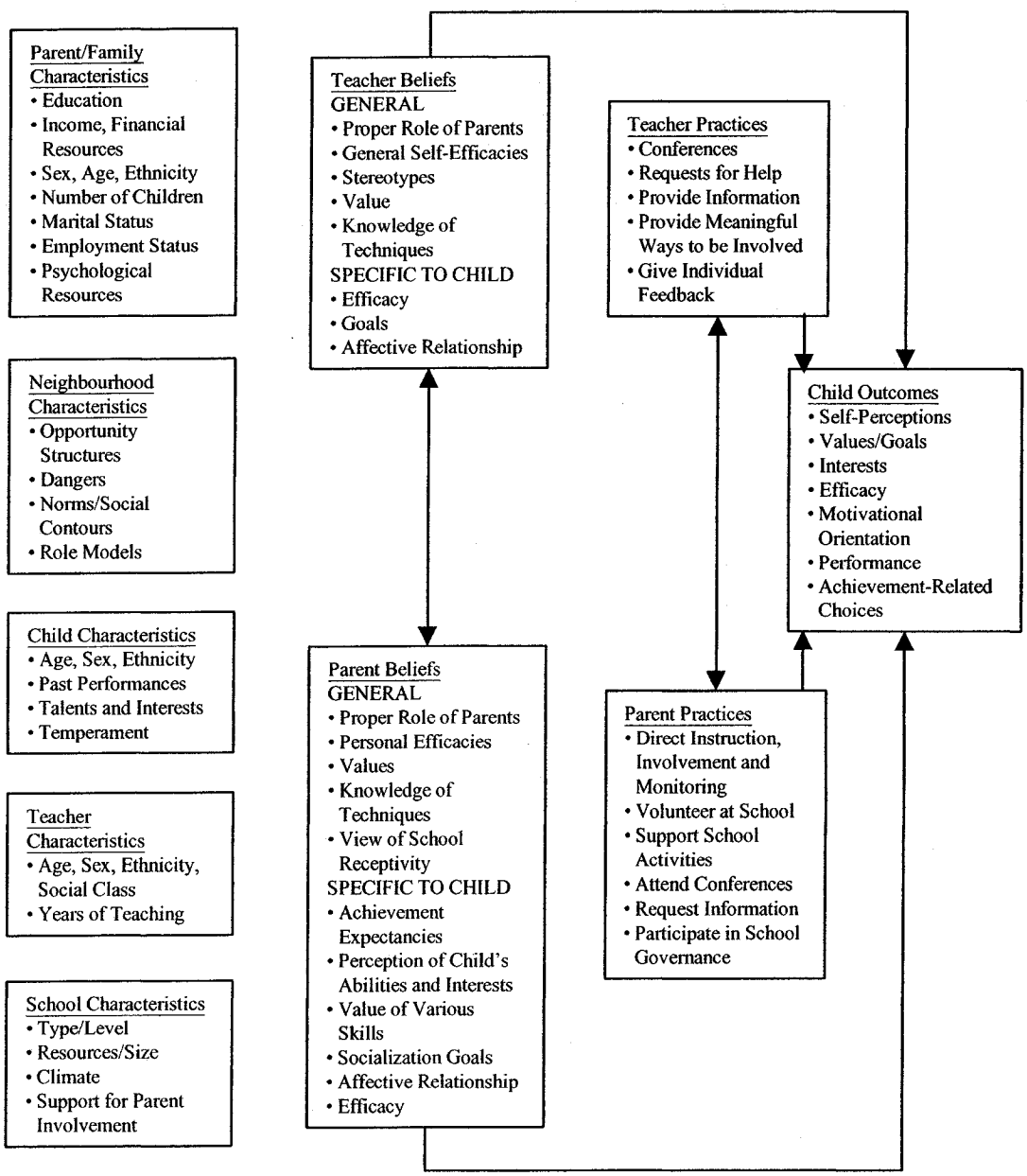

Figure 1. Eccles and Harold's (1993, 1996) model of the influences on and consequences of parent involvement.

Eccles and Harold (1996) summarized two ongoing studies designed to assess some of the proximal influences of parent involvement at home and at school, as well as the attitudinal and behavioural processes within families and schools that differ by grade level and form of school organization (i.e., elementary versus middle versus high school). The first study, the Michigan Childhood and Beyond Study (MCABS), focused on elementary school, and the second, the Maryland Adolescent Growth in Context Study (MAGICS), on junior high. Five variables were developed to constitute parent practices or involvement: *monitoring* (parent response to teacher requests and information), *volunteering* (the rate of parent participation in volunteer activities at school), *involvement* (parent report of frequency of involvement with child's daily activities), *progress* (do you contact the school about child's progress?), and *extra help* (do you contact the school about how to give extra help?).

In the MCABS study, participants, sampled from primarily White, lower-middle to middle-class urban and suburban schools, were 354 second-graders, 375 third-graders, and 518 fifth-graders (of which 247 were in elementary school and 262 were in a grade five-to-six middle-school setting), approximately two-thirds of their parents, and their teachers. Consistent with previous findings, a downward trend in parents' monitoring of their children's work was noted from grades two and three to five. In addition, while parents' volunteering decreased across grades, the finding was only significant for elementary and middle schools, suggesting that parents may assume their children want and require less direct supervision during early adolescence. However, parents' contact with schools was greater for children in middle schools compared to same-age, same-grade peers in elementary school,

suggesting that parents of middle-school children may be more active in contacting the schools to offset the declining level of contact from the schools themselves. Another possible interpretation is that middle-school parents initiate contact to a greater extent than elementary-school parents to get a sense of their children's new schools, given the new environment and expectations.

To test their model of parent involvement, Eccles and Harold correlated several of the parent/family and child characteristics with a composite variable of parent involvement. Parent efficacy and variables presumably related to parent efficacy, such as parents' intellectual confidence (i.e., confidence in their own intellectual abilities), achievement motivation (i.e., enjoyment of intellectual challenges and persistence over relinquishment of hard problems), and valuing mastery (i.e., ascribing importance to learning, demonstrating perseverance, and productive use of time), were most strongly associated with parent involvement in children's reading and math education. A significant, though weak, positive correlation was found between parents' intellectual confidence and their volunteer participation at school: the more confident parents felt, the more likely they were to volunteer. A stronger positive association was found for parents' education levels and their contacts with the school for information on their children's progress. However, parents' education was negatively related to monitoring of children's schoolwork. In light of this finding and the positive correlation between teachers' requests for parental monitoring and actual levels of parental monitoring, the authors suggested that parent involvement might vary as a function of children's experience at school.

For instance, parents may become more involved when teachers request their support for a child who is having difficulty academically or behaviourally.

The MAGICS study examined approximately 1,400 seventh- and eighth-grade African American and European American adolescents and their parents. Socioeconomic status ranged widely within both the African American and European American samples. Results regarding the predictors of parent involvement followed expected directions, with higher income, education, and married status predicting greater involvement at school, though not at home. Ethnicity was found to be an important variable, with African American parents more involved at home than European American parents, who were more involved at school. As would be expected, time demands, such as work and family responsibilities, were negatively correlated with involvement at home and at school. In addition, parents' positive perceptions of the school (i.e., its concern for families and adolescents in the school, accessibility of school personnel to parents, and teachers' desire to actively involve parents) had a positive effect on involvement at school. Parents' perceptions of their children influenced involvement both at home and at school. Parents with more positive views of their children and higher educational expectations for them were more involved in their schooling.

Eccles and Harold extended the field of parent involvement by proposing a model that integrates established predictors. However, the deliberate exclusion of an important set of variables may limit the results of their study. Eccles and Harold hypothesized that the first set of variables (e.g., demographic characteristics, parent education and income level, and marital and employment status) has indirect and

removed effects on parent involvement and its more proximal influences. They speculated that these variables would influence the quality of parents' beliefs and behaviour and the amount of time, energy, motivation, and resources available for helping their children at home and at school. Since these variables were not included in testing their model, it remains unclear whether Eccles and Harold's assumption regarding them is correct.

In addition, the definition of parent involvement used by Eccles and Harold is limited to academic forms of involvement, and, unlike other, multidimensional definitions (e.g., Grolnick & Slowiaczek, 1994), excludes other aspects, such as those pertaining to parental academic aspirations. Eccles and Harold's operational definition of parent involvement is further limited by their use of a single question to measure each of the five variables.

Applying the tripartite conceptualization of parent involvement (Grolnick & Slowiaczek, 1994), Grolnick et al. (1997) also proposed a hierarchical model of factors to predict various types of parent involvement (i.e., school involvement—originally referred to as parent behaviour by Grolnick and Slowiaczek—cognitive, and personal). Their model, based on an ecological perspective (Bronfenbrenner, 1986), specified three levels of factors, individual, contextual, and institutional, to assess their individual and interactive contributions to various aspects of parent involvement. At the individual level, parent and child characteristics influence parent involvement. At the next level, individuals' behaviour is placed within a context, which for parent involvement is created by family circumstances. At the highest level, importance is placed on institutions that interact with the family, whereby schools

may set the parameters for parent involvement, such as teacher practices of involving parents.

Grolnick et al.'s (1997) model views the influence of parent, child, contextual, and school predictors on parent involvement as having varied importance in different families. The model predicts that child gender and family configuration will moderate parent involvement and that classroom practices will moderate the effects of the predictors (i.e., parent, child, contextual, and school variables). Also considered by the model are the effects of demographic variables (i.e., SES, mother's education level, family configuration, and employment status) on different types of involvement (see Figure 2 for Grolnick et al.'s (1997) model depicting predictors of parent involvement in children's schooling).

To investigate their model, Grolnick and her colleagues sampled 209 mothers of third- (n = 76), fourth- (n = 69), and fifth-graders (n = 64), their children (111 girls and 98 boys), and the children's teachers (n = 28) from urban public schools. The sample was largely Caucasian (81%), with Hispanic (11%), African American (4%), and other minorities (4%) also represented. Families were proportionately distributed across Hollingshead's (1975) social classes and educational levels. Nearly 70 percent of the children came from two-parent families, followed by 23 percent from single-parent families and eight percent from step-families. Mothers' educational level ranged from less than a high school education to holding an advanced degree. The majority of mothers (74%) were employed either full- or part-time.

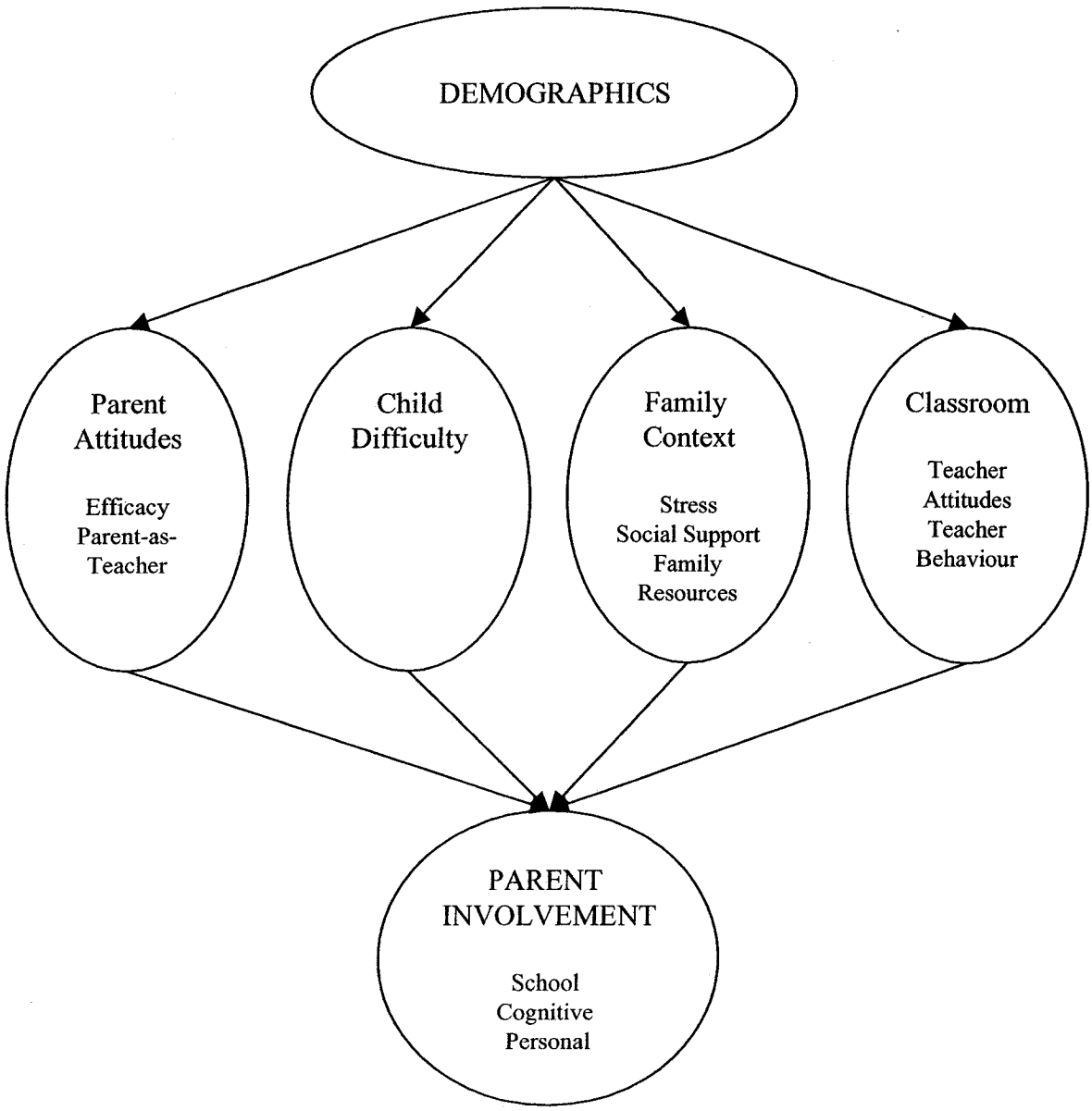

Figure 2. Grolnick, Benjet, Kurowski, and Apostoleris' (1997) model depicting predictors of parent involvement in children's schooling.

As expected, factors from each level predicted parent involvement, and the effects of the predictors were found to depend on the type of involvement examined. Comparable with other studies, family SES was found to be a strong predictor of certain types of involvement (*school*: F = 12.91, p < .001; *cognitive*: F = 18.38, p < .001; *personal*: F = 3.45, p < .10 and ns for the final model). The results further demonstrated that SES was relevant for school and cognitive but not personal involvement. This implies that parents from all occupational and educational levels may be involved in more personal types of involvement. In addition, single mothers were less involved in school, personal and cognitive involvement than mothers in two-parent families. However, when SES was held constant, this finding only remained true for school involvement, suggesting that school involvement for single mothers may be the most difficult, perhaps due to greater time demands, such as meetings during school hours.

The first set of results in Grolnick et al.'s model addressed the individual level, in which parent and child characteristics were said to influence parent involvement. As predicted, parent characteristics, namely parents' attitudes toward their roles as teacher and their sense of efficacy, as well as child characteristics, operationally defined as parents' perceptions of their children's difficulty on several behavioural dimensions, were strongly associated with parents' cognitive involvement and, to a smaller degree, personal involvement. Thus, when mothers view themselves as efficacious and see themselves in a teaching role, they are more likely to be involved in cognitively stimulating activities. However, since cognitive and personal involvement require the most parent-child interactions, it is speculated

that mothers who consider their children difficult avoid these types of involvement (Grolnick et al., 1997).

Family factors were found to affect parent involvement at the contextual level. A difficult context and lack of social support was found to compromise school involvement, lending support to the hypothesis that school involvement entails the largest time commitment and the greatest physical and financial resources, while allowing little flexibility since activities must be planned during school time. These results were moderated by gender and family configuration. Single mothers and mothers of boys were likely to reduce their involvement under difficult circumstances. Unexpectedly, results yielded an inverse relationship between personal involvement and a difficult context, suggesting that a difficult context may undermine mothers' awareness of their children's experiences at school.

Finally, institutional effects, consisting of teacher attitudes and classroom practices, were linked with school involvement, a finding moderated by gender. The effect of teacher attitudes on involvement at school was significant for mothers of girls. Grolnick et al. (1997) suggested that girls might feel more attached to their teachers and thus act as better liaisons than boys, carrying teachers' messages home with them. A more parsimonious explanation may be that girls are more organized than boys. Teachers' classroom practices of parent involvement were also found to moderate other factors. However, contrary to the authors' predictions, these practices had their most profound influence when factors such as context and attitudes were optimal. For example, teachers' attempts to involve parents are more successful when parents view themselves as teachers and feel efficacious and/or have better contexts.

Those in difficult contexts or who do not see themselves this way do not become more involved as a function of teachers' behaviours and attitudes. Therefore, teachers' efforts to involve parents may be successful, particularly for mothers of girls, but they may not reach those who could benefit most.

The results of Grolnick et al.'s study further underscore the complexity of parent involvement and suggest that parent involvement can be explained by multiple factors at several levels. In contrast to an earlier study conducted by Grolnick and Slowiaczek (1994) in which parents were not directly assessed, Grolnick et al. (1997) included mothers of the children in the sample as a means of assessing mothers' perceptions of their own involvement. Despite previous findings that mothers are more involved in their children's schooling than fathers (e.g., Cone et al., 1985; Grolnick & Slowiaczek, 1994), the results of this study may be limited by the inclusion of only the children's mothers. Recent reports suggest that fathers' involvement in their children's education has also contributed to their educational success (U.S. Department of Education, 1997).

In addition, since only a subset of potential factors was included in the model, there may be other predictors that warrant investigation (Grolnick et al., 1997). Teachers' sense of efficacy, established as important in understanding parent involvement at school (Hoover-Dempsey et al., 1987), is one variable in particular missing from their model. The addition of this variable to the present model might provide a broader view of the school's influence on parent involvement. However, when comparing the testing of their model to Eccles and Harold's (1996), Grolnick and her colleagues' inclusion of child and demographic factors, as well as those

relating to a family's context, may provide a more complete understanding of parent involvement's varied influences. Furthermore, Grolnick et al.'s more comprehensive definition of parent involvement is more valuable than the definition used in Eccles and Harold's (1996) study.

Hoover-Dempsey and Sandler (1995) proposed a five-level model of parent involvement, describing the reasons driving parents' choice to become involved in their children's schooling and why this involvement is positively associated with educational outcomes. In a subsequent article, Hoover-Dempsey and Sandler (1997) concentrated on the first level of their model, in which parents' choices to become involved were explored.

Hoover-Dempsey and Sandler (1997) postulated three major constructs central to the basic decisions made by parents to get involved in their children's educations; (a) parents' role construction, which encompasses their beliefs about how they should become involved and what types of involvement are important, necessary and allowed; (b) parents' sense of efficacy, which indicates their beliefs about how much their involvement can help; and (c) general invitations, demands and opportunities for involvement, or the degree to which parents believe their children and their children's teachers or schools desire their involvement. The results of Hoover-Dempsey and Sandler's analysis suggest a crucial need for school programs to acknowledge parents' perspectives in the educational process.

Parent Involvement in Children's Special Education

While research on parent involvement in children's education in the regular school system has proliferated, considerably less research, with a narrower scope,

exists on parent involvement in children's special education. Early findings, however, appear to indicate similar conclusions for those derived from parent involvement studies in children's regular education (e.g., Shriver, Kramer, & Garnett, 1993).

The U.S. Education for All Handicapped Children Act of 1975 (Public Law 94-142) recognized the importance of parent involvement in special education by mandating that schools and families collaborate in the planning of IEPs for students with disabilities. Its impact, however, has been limited (Yanok & Derubertis, 1989). Yanok and Derubertis' studied differences in school participation levels of parents of 1,539 children in regular and 163 special education enrolled in a large, urban public school system. The representative sample consisted of 69.5 percent Black, 27 percent Caucasian and 3.5 percent other minorities (i.e., Hispanic, Asian, and Native American). Their results showed that, despite increased communication between teachers and parents of exceptional children, parents' involvement in their children's special education did not improve. It was found that whether a child was enrolled in regular or special education had only a negligible effect on parent involvement. Thus, parental involvement does not appear to increase based on children's needs for increased services or the statute's stipulation for parental involvement. More recent rates of parent involvement would be necessary to accurately evaluate the statute's impact. Yanok and Derubertis hypothesized that parents of children in special education avoid additional responsibility for their children's education partly because they feel inadequately equipped to help address their special learning needs. Another, and possibly more concerning, hypothesis was that special education teachers might subtly dissuade parents from becoming involved. The authors stated that teachers'

elitist attitudes account for this behaviour, though little support is provided for their assumption.

A lack of information on the nature of the communications between parents and teachers calls into question the results of Yanok and Derubertis' (1989) study. Given that increases in communication were not related to increases in parent involvement, it may be speculated that communications were negative in nature. For example, if teacher contact was made mainly to report child problems, it is reasonable to suspect that parents would not want to increase contact with teachers.

Vaughn, Bos, Harrell, and Lasky (1988) examined IEP conference participation of 26 parents of kindergarten through sixth-grade students thought to have LD, with a mean age of 8.4. The ethnic composition of the sample represented the population from which they were drawn (approximately 58% Anglo-Saxon, 38% Hispanic, and 4% Black); families' socioeconomic status ranged from low to upper middle-class with median income falling within the $10,000 to $14,999 bracket; and the majority of students (70%) came from two-parent families. Comparable to Yanok and Derubertis' (1989) findings, the authors concluded that parent involvement has not increased and that parents continue to assume passive roles during the initial placement/IEP conference despite being mandated to actively participate. Reasons offered to explain the low level of participation include parents' limited understanding of their children's disabilities and purpose of the IEP (Hoff, Fenton, Yoshida, & Kaufman, 1978; McKinney & Hocutt, 1982), overall satisfaction with their level of involvement (Goldstein, Strickland, Turnbull, & Curry, 1980; Shriver &

Kramer, 1993), and their perceptions that school personnel think they should play passive roles (Yoshida, Fenton, Kaufman, & Maxwell, 1978).

An alternative explanation of the generally limited level of parent involvement may be that parents are not aware of their rights to participate in decision-making processes regarding their children's educations (Katsiyannis & Ward, 1992; Shriver & Kramer, 1993). By investigating parent involvement in an early childhood special education program, Shriver and Kramer found that a large proportion of parents (59.8%) revealed they were not aware of their right to participate in meetings where children's eligibility for the program were decided. Goldstein et al. (1980) suggested that parents' lack of knowledge regarding the purpose of the IEP conference contributed to low involvement as well. However, other findings suggest that many parents are satisfied with their involvement and level of input in their children's educational programs (Shriver & Kramer, 1993). This acceptance of their lack of influence may be due to parents' lack of awareness of their rights to become more involved.

Benefits of Parent Involvement in Special Education

Although research on the benefits of parent involvement in special education is sparse, there is evidence that when parents are tutored on how to assist their children, they are better able to ensure appropriate programs in the least restrictive environments (Dwyer, 1990), to help vocational/special education programs through collaborative consultation with schools (Elksnin & Elksnin, 1989), and to improve the mathematical abilities of students with disabilities (Minner, 1989). Although there has been some empirical support for parent involvement in early childhood special

education (National Institute of Education, 1985; White, Mastropieri, & Casto, 1984), further research has been encouraged (Shriver et al., 1993). A number of studies of students with severe handicaps (Lombardino & Mangan, 1983; Macy, Solomon, Schoen, & Galey, 1983; Sandler, Coren, & Thurman, 1983) or mild handicaps (Bittle, 1975; Chapman & Heward, 1982; Imber, Imber, & Rothstein, 1979) have shown that parent involvement is positively correlated with developmental and educational outcomes, such as increases in fine motor, social, and language skills.

Positive correlations have also been observed between parent involvement and parental outcome measures for parents of children in special education. Active parental participation in the IEP process has been associated with parents' greater satisfaction with programming and placement decisions, more positive feelings about the parent-professional partnership, and more confidence in teachers' abilities to improve their children's skills (Abrahamson, Wilson, Yoshida, & Haggerty, 1983; Fiscus & Mandel, 1983).

Influences on Parent Involvement in Special Education

While the research on variables influencing parents' involvement in children's special education is only now emerging, early results appear to be comparable to those found for parents of children in regular education systems. As in the early stages of research on parent involvement in regular education, variables contributing to parent involvement have mostly addressed family demographic characteristics. These studies, like their counterparts in the regular education system, have demonstrated that race, family income, level of education, and marital status are related to varying levels of parent involvement for children in special education (e.g.,

Cone et al., 1985; Harrison, Arnold, & Henderson, 1995; Harry, 1992; Lynch & Stein, 1982, 1987; Meyers & Blacher, 1987; Shriver & Kramer, 1993; Weber & Stoneman, 1986).

Harry (1992) suggested that families from culturally diverse backgrounds are less involved in or knowledgeable about special education programs. In comparing Hispanic, Black, and Anglo families, Lynch and Stein (1987) found that, although the majority of Hispanic families were highly satisfied with their children's special education, they were often unaware of the services provided. Hispanic parents were less knowledgeable about, and less involved in, their children's special education programs, such as assessment and IEP processes, than Anglo parents, but not Black parents. Bennett, Zhang, and Hojnar (1998) provided a conceptual model for understanding the many issues surrounding participation in special education for culturally diverse families, such as language barriers, views of disability, knowledge of special education, and help-seeking style.

It has been shown that single mothers of minority race and of lower income and education are less likely to attend IEP meetings for children in special education programs (Weber & Stoneman, 1986). These same mothers were more likely to hold educational service providers responsible for educational decisions affecting their children and more likely to view their own input as having no impact on the outcome of the meetings. Additionally, compared with married parents, single parents wanted less involvement in the multidisciplinary team meetings. However, parents with higher income levels reported less satisfaction with their level of involvement and input and a desire for equal decision-making (Shriver & Kramer, 1993). Cone and his

colleagues (1985) also found that family income level and parents' education levels were positively correlated with parent involvement.

Parental attitudes or beliefs influencing parent involvement for children in special education have not been examined to the same degree or in the same manner as in the regular education system. One study examined the variables influencing attitudes about family-school communication for parents of children with mild learning problems (Arnold, Michael, Hosley, & Miller, 1994). The study found that having knowledge or information about special education was negatively related to parents' attitudes toward communication with schools. However, it was also shown that the more positive these attitudes were, the greater the frequency of activity between the school and the family.

Unlike the strong evidence regarding the influence of child characteristics on parent involvement in children's regular education, results for parents in the special education system are less definitive. The results of one study suggested that parent involvement is negatively related to a child's age and grade (Cone et al., 1985), while the results of another suggested that participation does not decline steadily with age for children with disabilities as it does for children without disabilities (Salisbury & Evans, 1988). However, it appears that degree of disability may be moderated by age, at least for some types of parent involvement (Salisbury & Evans, 1989). Overall, mothers of children with mild to moderate disabilities were more involved than mothers of children with severe to profound disabilities across all age groups. However, mothers of older children with more severe disabilities were more involved in advocacy and attending school events, while mothers of younger children with

more severe disabilities were more involved in IEP planning and helping with the program. Cone and his colleagues (1985) also found that administrative activities increased with grade level.

An interesting finding related to child characteristics was reported by Cone et al. (1985), who noted that the amount of time per week a child spends in special education is positively related to parent involvement. In addition, fathers' involvement was found to increase with the number of years their children spend in special education.

The influence of school characteristics on parent involvement in children's special education has received considerable attention. In particular, educators' attitudes toward parents have been examined for their facilitating or inhibiting influence on parent involvement (e.g., Fuqua, Hegland, & Karas, 1985; Gerber, Banbury, & Miller, 1986; Halpern, 1982; Hilton & Henderson, 1993; Yoshida et al., 1978). Special educators have been divided in their attitudes regarding the purpose of parent involvement and attendance at IEP conferences (e.g., Gerber et al., 1986). Researchers suggest that some special education personnel do not actively seek parents' participation or inform parents of their own and their children's rights (e.g., Halpern, 1982). For example, one study showed that only a slight majority (51%) of special educators found value in involving parents in the IEP process (Gerber et al., 1986). In another study, only a small majority (59%) of special education teachers found parents' roles as decision makers to be important (Hilton & Henderson, 1993). It has been suggested that special education teachers do not see parents as having the expertise necessary to actively participate in their children's education and that their

roles should be passive ones (McAfee & Vergason, 1979). As expected, teachers who hold positive attitudes about parents' abilities to work with their children are more satisfied with parents' levels of involvement (Fuqua et al., 1985), and these parents, favourably viewed by teachers, are more likely to be involved in activities that enhance home-school relations, such as dropping off their children at school.

In examining the attitudes of planning team members (i.e., administrative, supportive, and instructional personnel) about parent involvement in planning team meetings, Yoshida and his colleagues (1978) found that parents, though expected to provide information to the planning team, were not viewed as decision makers. The authors suggested that the attitudes of those involved in special education decision-making would affect parents' participation roles, that is, whether they would be active participants or passive observers. Yoshida et al. proposed also that parents' abilities to contribute to decision-making would increase school and home collaboration.

In addition to their attitudes, teachers' experiences and personal characteristics have also been shown to relate to their use of parent involvement practices (Hilton & Henderson, 1993). Hilton and Henderson's study of special education teachers' use of non-mandated parent involvement demonstrated that, as expected, class size was negatively correlated with parent involvement. However, it was also noted that teachers working with students with a wider range of disabilities were more likely to employ more parent involvement practices than teachers working with more homogenous groups of students. As well, teachers who had worked at many schools with many principals, those who belonged to several professional educational organizations, and those with more college-level training experiences in parent

involvement reported more involvement practices. A greater level of involvement was also reported by teachers with a higher SES.

A Model of Parent Involvement for Children with Disabilities

To date, only one study has developed a model of the predictors of parental involvement in children's special education (Coots, 1998). This study investigated whether family, child and school characteristics were related to amount and type of parent participation for families of children with developmental delays. The sample consisted of 35 Euro-American families of children aged seven and eight identified as having developmental delays of unknown etiology at age three and later diagnosed with disorders including autism, cerebral palsy, mental retardation, and LD. While families were largely middle class, incomes ranged greatly, from less than $15,000 to more than $100,000, as did occupational status, from unskilled to executive/professional, and education level, from junior high graduated to graduate degree. At the time of the study, the children's mean cognitive competence fell into the moderately delayed range for IQ on the Stanford-Binet Intelligence Scale-short form.

Coots grouped characteristics affecting parent involvement into four categories: family resources, parental beliefs or attitudes, child factors, and school characteristics. Family characteristics comprised parents' SES, family resources, and beliefs. Family resources consisted of a measure of *available time*, operationally defined as work schedules, number of children in the family, and domestic workload; *social support network*, defined as marital status, instrumental and emotional support from spouse, parents, family, friends, and professionals; and *informational resources*,

defined as experience with child-related professions (e.g., teaching), level of education, reported familiarity with school activities, and amount of activity focused on accessing information about how to help children through TV, books, and attending conferences. Family beliefs included *perceptions of parenting roles*, parents' views of their primary responsibilities, as well as *expectations for schooling*, parents' definitions of educational activities and reported beliefs about the responsibilities of schools. Child factors consisted of a child's *IQ* and *ratings of child behavioural and communication hassle*, or the child's impact on the family due to behavioural and communication problems. School characteristics were defined by *parents' attitudes toward schooling* (i.e., confidence and comfort participating at school; knowing how to assist the child to do well at school; school achievement considered important to the child's future) and *perceptions of school characteristics* (i.e., meetings scheduled at convenient times; participation activities considered enriching and worthwhile; teacher seeks and values input). Parent participation was defined as hours spent in parent-directed activities at home (e.g., helping the child with speech exercises) and school (e.g., parent-directed tutoring program) as well as hours spent in other-directed activities at home (e.g., arranging physical therapy) and school (e.g., observing the child's class).

Results indicated that parents participated the most in parent-directed activities at home, followed by other-directed activities at home and school, with parent-directed activities at school the least frequent type of participation. Comparable to the findings of Grolnick et al. (1997), school characteristics were most strongly related to parents' level and type of participation at school and at home. As

the authors predicted, parents' informational resources were also strongly linked to their involvement at home and at school. However, parents' beliefs and attitudes about school were associated only with their degree of involvement at school. Family SES related to parents' participation at home but not at school, a result seemingly in contrast to findings for regular education systems.

The results of Coots' (1998) study may be interpreted according to two different models of parent involvement developed in reference to parents of children without disabilities. First, the results fall specifically within the framework of Epstein's (1987) overlapping spheres of influence, which emphasizes the reciprocally influential relationship between home and school. In Coots' study, involvement was higher for parents who perceived greater overlap between the home and school spheres.

Coots' results are also relevant to Hoover-Dempsey and Sandler's (1997) model used to examine the reasons parents become involved in their children's educations. Hoover-Dempsey and Sandler argue that parents' decisions to participate, and in what manner, are essentially driven by the psychological constructs of parental role construction, parental attitudes about efficacy of participation, and parental perceptions of opportunities and demands from school personnel. Coots, while also elucidating the importance of psychological constructs in predicting parent involvement, demonstrated further that efficacy and role construction were related to participation at school but not at home. Coots also reported that parents' perceptions of their opportunities for involvement were related both to home and school participation. Coots found that child characteristics related to participation at home,

but not school, a relationship not addressed by Hoover-Dempsey and Sandler's (1997) model.

Certain limiting aspects of Coots' study are of note. First, the experiences of single parents, whose typically higher stress levels may differentiate their patterns of parent involvement, were not accounted for (Coots, 1998; Grolnick et al., 1997). Second, ratings of school characteristics were performed only by parents and not teachers, creating the possibility of reporter bias. Third, the study did not examine teacher efficacy, a variable whose influence on parent involvement has been consistently demonstrated in studies of regular education programs (e.g., Hoover-Dempsey et al., 1987). Finally, a considerably small, non-homogenous sample was used, making generalization of the results tenuous. Despite these limitations, Coots' findings point to some important general relationships among the factors influencing parent involvement in special education.

Rationale

Numerous studies have highlighted the manifold benefits of parent involvement on various dimensions of children's educational development (e.g., Henderson & Berla, 1994; U.S. Department of Education, 1994). Focusing on involvement in regular education systems (e.g., Dauber & Epstein, 1993; Stevenson & Baker, 1987), these studies have examined the effects of parent involvement on a variety of student outcomes, including improvements in grades and attitudes (e.g., Comer & Haynes, 1991; Lytton & Pyryt, 1998; Miedel & Reynolds, 1999). The minimal and narrow nature of research on the benefits of parent involvement in children's special education to date provided the context for this investigation.

In examining the possible effects of parent involvement on children's outcomes in special education systems, an attempt to understand the relevant variables necessarily follows. Many sets of influences have been studied extensively to help understand variations in parent involvement in children's regular schooling, including parent, family, child, school, and teacher characteristics and behaviours (e.g., Hoover-Dempsey et al., 1987; Epstein & Dauber, 1991), and recent efforts have been made to develop comprehensive models for testing these influences (Eccles & Harold, 1993, 1996; Grolnick et al., 1997). Comparable research in special education is nascent; only one study thus far has proposed a model for understanding different types of parental involvement in children's special education (Coots, 1998). The present study attempted to determine whether parent involvement is positively associated with educational outcomes for children in special education programs and certain individual predictors that influence this involvement.

As a first step in this pursuit, a specific sub-population within the special education system was examined: children with LD and their parents. Because parent involvement has been shown to be a complex construct with numerous determinants, it is vital to isolate a relatively homogeneous population with comparable needs. Though the involvement of parents in children's special education programs is legally mandated and can be achieved in a variety of ways, notably attendance at IPRC meetings, participation rates remain low (e.g., Yanok & Derubertis, 1989). An investigation of the relationships between family and child characteristics in parent involvement at home and at school may allow parents, schools, and teachers to focus their efforts on specific influences in attempting to increase parent involvement.

Hypotheses

The objective of this study was to address the following hypotheses:

Hypothesis 1: Parent involvement will be positively associated with children's educational outcomes in a sample of children with LD.

Extending the considerable body of research on regular education populations (e.g., Henderson & Berla, 1994; Eccles & Harold, 1996) and early research in special education populations suggesting that parent involvement is positively linked to children's academic success (e.g., Minner, 1989), it was hypothesized that a positive relationship would also be observed in a sample of children with LD.

Given the definitional challenge surrounding it, parent involvement was defined in multidimensional terms, based on Grolnick and Slowiaczek's (1994) conceptualization. Parent involvement was considered as the allotment of resources by the parent to the child according to three types of involvement: school involvement (i.e., participating in activities at school and at home), personal involvement (i.e., parents' knowledge about school activities), and cognitive-intellectual involvement (i.e., exposing child to intellectually stimulating activities). School involvement, which Grolnick et al. (1997) defined as involvement at school, also included school-related activities occurring at home, such as monitoring homework. In addition, the definition of school involvement consisted of parents' involvement in the special education process for children with LD.

Various educational outcomes have been associated with parent involvement (e.g., grades, standardized achievement tests, attitudes, self-concept, behaviour, social competence, attendance, and rates of retention), and it is essential to address a

spectrum of these possible outcomes. The present study examined the relationship of parent involvement to significant educational outcomes, academic achievement (i.e., grades) and attitudes to school (e.g., Epstein, 1991; Keith 1991; Izzo et al., 1999), which have been demonstrated to impact upon academic success (e.g., Connolly, Hatchette, & McMaster, 1998). These educational outcomes served as dependent variables, while the three types of parent involvement served as independent variables.

Hypothesis 2: The patterns of parent involvement of children with LD (i.e., school, cognitive-intellectual, and personal) will be consistent with Grolnick et al.'s (1997) framework. Specifically, it is predicted that similar individual- and contextual-level factors of parent involvement will be identified.

A variety of family, child and school characteristics have been shown to influence parent involvement for children in regular school systems (e.g., Becker & Epstein, 1982; Hoover-Dempsey et al., 1987) as well as children in special education (e.g., Salisbury & Evans, 1989; Yoshida et al., 1978). Recent attempts have been made to develop predictive models of these characteristics (Coots, 1998; Grolnick et al., 1997; Eccles & Harold, 1993). Grolnick et al.'s (1997) model for the predictors of parent involvement in children's schooling in regular education provides a particularly useful framework for assessing the same influences in a special education population. A distinct advantage of this model is its established ability to identify factors related to different forms of parent involvement using a multidimensional conceptualization (i.e., school, personal, and cognitive-intellectual involvement). In addition, Grolnick et al.'s model proposes a structure that organizes predictors of

parent involvement into a hierarchy of levels: individual, contextual, and institutional. This study focused on variables within the individual and contextual levels particularly relevant to children with LD.

At the individual level, it was expected that child characteristics, identified by Grolnick et al. (1997) as significant predictors of parent involvement, would also influence parent involvement in a special education population. Child characteristics (i.e., severity of disability and parents' perceptions of child difficulty) were expected to most strongly influence personal and cognitive-intellectual involvement. Given that these types of involvement require the most interactions between parent and child, it was hypothesized that parents who perceive their children as difficult would be less involved with them.

In a special education population, the degree of a child's disability has been demonstrated to moderate the effects of age on parent involvement (Salisbury & Evans, 1989). Severity of disability has been found to impact particular types of parent involvement, such as attendance at school events, participation in IEP planning, and assistance in developing children's programs (e.g., Hilton & Henderson, 1993; Salisbury & Evans, 1989; Vaughn et al., 1988). Specifically, though mothers of children with mild to moderate disabilities are involved in more activities than mothers of children with severe to profound disabilities at all age levels, there is preliminary evidence that children's age moderates severity for certain types of involvement. In particular, mothers of younger children with more severe disabilities were more involved in IEP planning and helping with the program and mothers of older children with more severe disabilities were more involved in

advocacy and attending school events.

At the contextual level, parent involvement is influenced by parents' level of stress and social support. In a special education population, as in regular education, it was expected that lack of social supports and a stressful family environment would most strongly impact school involvement, which demands more time and flexibility from parents, and personal involvement, which requires parents to be aware of their children's experiences at school.

Variations within the individual and contextual levels of influences are expected to determine various forms of parent involvement. The variables within each level comprised the independent, or predictor, variables, specifically, child difficulty and family context. The dependent, or outcome, variables consisted of the three forms of parent involvement. See Figure 3 for the proposed model of the effects and influences of parent involvement in a special education population.

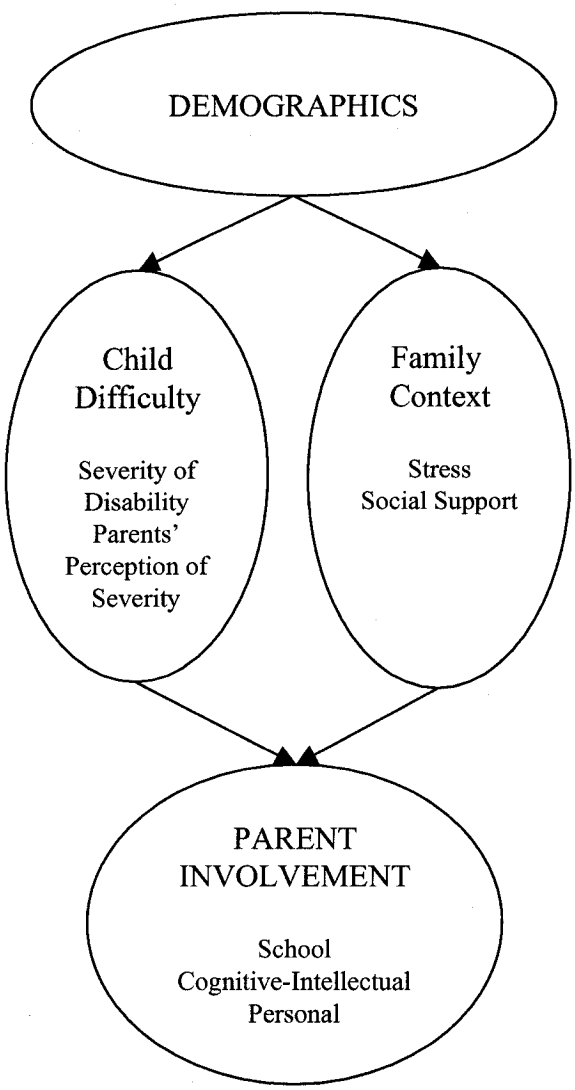

Figure 3. Model depicting predictors of parent involvement for children with learning disabilities.

Method

Participants

Children

Participants were sampled from two large Catholic public school boards from southwestern Ontario serving urban and rural communities. Seventy-eight children (58 males, 20 females) from grades one through eight, identified by their school board as having a learning disability and receiving some form of special education, were included in the study. Forty-nine children (30 males, 19 females) without any exceptionality identification by the school board were included to form the control group. Children ranged in age from 7 to 14 years, with a mean age of 10.70 years.

Thirteen students (16.7%) from the school's defined LD group did not meet the researcher's criteria for a learning disability on the basis of achievement tests. Several independent samples t-tests were computed to examine possible differences between these children and those whose school's LD designation matched that of the researcher's (see page 56 for detailed criteria). No demographic differences (i.e., age, grade, gender, race) nor differences on the educational outcome variables (i.e., grades, attitudes toward school) were found. Thus, given that the children identified as having a LD are treated by the school and, presumably, their parents, as such, the students were included in the LD group's analyses.

Similarly, four students (8.2%) in the control group had mild academic problems based on the academic testing. Significant differences were found on the educational variables (i.e., grades, attitudes toward school), though not on the demographic variables. Children who did not match the researcher's criteria had

lower grades (M = 6.30, SD = 1.38) and poorer school attitudes (M = 64.00, SD = 5.75) compared to children whose designation of no learning disability matched that of the researcher's (M = 1.28, SD = .31 for grades and M = 77.78, SD = 1.29 for attitudes), $F(2, 39) = 5.548$, $p<.01$, with an observed power of .826. Though these students have not been identified as having a learning disability by the school, it is possible that their academic difficulties have been recognized by both the school and/or their parents. Thus, as a precautionary measure their data was not included in the analyses. The final number of children in the control group was 45 (26 males, 19 females).

Parents

Of the 78 students with LD, 73 mothers and 36 fathers participated in the study. Of the 45 students without LD, 43 mothers and 37 fathers participated in the study. The resulting number of parents was 116 mothers and 73 fathers.

Procedure

Three hundred and forty-one children, identified by the school administration as having a learning disability, were informed of the study by their teachers and given letters to take home to their parents or guardians. The letters provided information about the project and separate consent forms for each parent and child. Parents were given the option of requesting a telephone call from the researcher to learn more about the study before agreeing to participate. Of the 341 consent forms sent home, 136 were returned (39.88%), of which 104 were positive, resulting in a participation rate of 30.5%. However, the sample of children with LD dropped to 97 participants when seven participants were excluded from the study for a variety of reasons: two

had moved away by the time the study began, three were absent on days of testing, and two chose to discontinue. Nineteen parents did not return their questionnaires, rendering the information gathered on their children unusable. The final sample of children with LD was 78.

A control group of 186 children with no exceptionality identification by the school board were matched on gender and randomly selected from the same classes as the children from the LD group. Of these 186, the parents of 69 children gave consent to participate (36.36%). However, due to exclusions comparable to those affecting the LD group, six participants were dropped, resulting in a total of 63 children (34.22%) without LD. The total sample of children in the control group was reduced first to 49 due to 14 unreturned questionnaires, and finally to 45 owing to the above-stated presence of mild academic problems.

Upon obtaining of parental consent for participation in the project, data collection began in the spring to provide parents adequate time to become involved in their children's education. Child measures were administered individually and orally, while questionnaires were mailed to parents with pre-addressed, stamped envelopes for ease of return to the researcher. Telephone reminders were given to parents who had not returned the questionnaires after the allotted time. Some parent questionnaires were completed by telephone due to language, literacy or time issues.

Measures

Parent Involvement

A parent involvement questionnaire was completed by mothers and fathers. This measure is based on Grolnick and Slowiaczek's (1994) multidimensional conceptualization of parent involvement, particular measures developed by Grolnick and her colleagues (1997), and includes a measure developed by Cone et al. (1985) for children in special education (see Appendix A).

The measure consists of three areas of involvement: school, cognitive-intellectual and personal. *School Involvement* consists of parents' involvement in school-related activities at school, home and in special education. This scale was obtained by combining the school, home and special education subscales for the group of children with LD. For the control group, the school and home subscales were prorated to obtain a comparable total for the school scale.

Involvement at school was measured by mothers and fathers rating the number of times they engaged in 16 activities (e.g., volunteering on a class trip), on a scale from never (0) to many times (3). Involvement in school-related activities at home was measured by parents rating their involvement on nine items (e.g., listen to my child read) from never (0) to daily (4) (Grolnick, 2000). Involvement in special education-related activities at school was assessed by means of a subscale from Cone et al. (1985) Parent/Family Involvement Index (P/FII) specifically addressing parent involvement in children's special education at school (e.g., attendance at IEP conferences). Parents rated their involvement on five items from never (0) to many times (3). Interrater reliability for the entire P/FII was .74 in a study of 65 teachers

rating the involvement of 229 families. Internal consistency for the scale was found to be KR-21 .93 for mothers and .87 for fathers. Correlations of this subscale with the total involvement measure was .59 for mothers and .72 for fathers.

Cognitive-Intellectual Involvement was measured by the frequency with which parents engaged in six cognitive-intellectual activities at home (e.g., going to the library, talking about current events) on a scale from never (0) to daily (4).

Personal Involvement, parents' interest in and knowledge about their children's school activities and endeavours, was measured by five items (e.g., "I know what my child is currently doing at school," "I know the names of my child's classmates") rated on a scale from strongly disagree (1) to strongly agree (4).

Educational Outcomes

Grades. Parents provided a copy of their child's final report card. End-of-year grades, averaged across subject areas in English and Mathematics, were converted using a numeric scale (i.e., 1 = F to 13 = A+). Students were assigned a number grade for each subject by the school, which was then converted to a numeric grade by the researcher.

Attitudes toward school. Children completed the Marjoribanks Attitude-to-School Inventory (Marjoribanks, 1994), which assesses affective and cognitive attitudes toward school (see Appendix B). This inventory consists of a series of Likert-scale items designed to assess children's enthusiasm for school, enthusiasm for a particular class in school, dislike of disruptive behaviour, relationships with teachers, academic self-concept, social adjustment to school, and achievement orientation. The phrasing of certain items was modified to be more appropriate for

Canadian children. The 20-item scale includes statements such as "Overall, I like school quite a lot" and "I find a lot of my work hard to understand." Items are scored on a five-point scale from strongly disagree (1) to strongly agree (5). Negatively worded items are rescored so that higher scores reflect better attitudes. Possible total scores for the scale range from 20 to 100. Since psychometric properties of this measure were unavailable due its limited use, internal reliability analyses on the present sample were conducted. The internal consistency of the scale for the present sample was an alpha coefficient of .81.

Child Difficulty

The child difficulty index consisted of the combining of two variables: the actual severity of children's LD (i.e., no difficulty, mild difficulty, moderate difficulty, or severe difficulty) and parents' perceived severity of their children's LD due to the high correlations between the two variables.

Actual severity. The severity of a child's learning disability was assessed using standardized achievement measures in reading, arithmetic and spelling: the Word Attack subtest on the Woodcock Mastery Reading Tests – Revised (WRMT-R; Woodcock, 1987) and the Wide Range Achievement Test-3 (WRAT-3; Wilkinson, 1993).

The WRMT-R Word Attack subtest consists of a series of increasingly complex nonsense words that children are required to read aloud. The test assesses children's abilities to apply phonetic and structural analysis skills in pronouncing unfamiliar words. Word Attack standard scores have a mean of 100 and a standard deviation of 15. Number-correct raw scores were converted into standard scores.

Word Attack's value in measuring children's ability to apply knowledge of letter-sound correspondences in decoding words has been well demonstrated (e.g., Share & Stanovich, 1995).

The WRAT-3, a widely accepted achievement test scaled similarly to other measures (i.e., M = 100, SD = 15), was individually administered to determine children's achievement in reading, arithmetic and spelling, areas in which LD are commonly manifest. The Reading subtest consists of recognizing and naming letters and pronouncing printed words. The Arithmetic subtest consists of mathematical calculations such as counting, reading number symbols, and performing oral and written computations. The Spelling subtest consists of writing letters and single words from dictation. Individual test scores were converted to standardized scores based on age norms. Test-retest coefficients of greater than .90 have been reported for individuals ranging in age from 6 to 16 years (Wilkinson, 1993). For most age groups, internal reliability coefficients have also been reported in the .80s and .90s.

Severity of LD was based on the standard scores in reading, arithmetic, spelling and decoding skills and were scored as follows: (a) severe: children with standard scores at 77 or below in two or more areas received a score of 3; (b) moderate: children with a standard score of 77 or below in one area received a score of 2; (c) mild: children with standard scores ranging from 78-85 inclusive in one area received a score of 1; and (d) no difficulty: children with standard scores of 86 and above in all areas received a score of 0.

Parents' perception of severity. Parents' perception of their child's achievement was assessed by having parents rate their child's ability in reading,

arithmetic and spelling compared to others the child's age. Parents were asked to select one of five statements that best described their child's academic abilities, from "above average" or "average" (corresponding to no difficulty and a score of 0) to "experiencing some difficulties" (corresponding to mild difficulties and a score of 1), "experiencing a moderate amount of difficulties" (corresponding to moderate difficulties and a score of 2) or "experiencing a lot of difficulties" (corresponding to severe difficulties and a score of 3). Parents' responses across subject matters were added to obtain a total score of their perception of severity (see Appendix C).

Family Context

Two types of family context measures were employed in this study: those measuring parental stress and those measuring social support.

Stress. The Life Experiences Survey (Sarason, Johnson, & Siegel, 1978) was used to measure life events and their positive or negative impact (see Appendix D). Mothers and fathers were asked to indicate whether each of the 47 life events had occurred within the past year and, if so, to rate the level of impact on a scale from extremely negative (1) to extremely positive (5). A score is computed by adding the number of life events weighted by their degree of impact. In this study, the weighted score for negatively rated items was used. Sarason et al. reported a short-term test-retest reliability of .56 for the negative event index in a study of 34 undergraduate students and .88 for the negative event index in a study of 58 undergraduate students. The authors suggested that variance between the two studies may represent actual changes in a respondent's life given the five- to six-week time interval. The negative index of the LES was found to correlate with state (.46, $p < .001$) and trait anxiety

(.29, p <.01) on the State-Trait Anxiety Inventory, as well as with Grade Point Average (-.38, p <.001) in a study of 100 undergraduate students.

Social support. The Family Support Scale (Dunst, Trivette, & Jenkins, 1986) was used to measure the helpfulness of sources of support to families rearing children (Dunst, Jenkins, & Trivette, 1984) (see Appendix E). Mothers and fathers responded to 19 items plus one respondent-initiated item. Items were scored on a five-point scale ranging from not at all helpful (1) to extremely helpful (5). Two indices of support can be obtained from the scale: the number of sources of support available to the respondent and the sum of 19 ratings of the support items. The latter is intended as a "helpfulness" index as perceived by the respondent. The scale measures five different, independently available sources of support, categorized by the following factors: Informal Kinship (i.e., spouse/partner's friends, own friends, other parents, own children, religious organization); Spouse/Partner Support (i.e., spouse/partner, spouse/partner's parents, spouse/partner's relatives/kin); Social Organization (i.e., social groups/clubs, parents' groups, school/daycare centers, co-workers); Formal Kinship (i.e., own relative/kin, own parents); Professional Services (i.e., early intervention program, professional helpers, family/child's physician, other professional agencies). Validity for this scale has been reported as .79 and split-half reliability as .77 in a study of 224 parents of children with disabilities and children at risk for developmental problems (Dunst, Trivette, & Jenkins, 1986). Good short and long-term stability have also been reported (Dunst, Jenkins, & Trivette, 1986).

Results

Overview

Descriptive statistics of the parent involvement scales, achievement variables, child difficulty and family context variables on children with and without LD are presented first. Demographic differences as well as differences in parent involvement and achievement for children with and without LD follow. Analyses pertaining to Hypothesis 1 regarding the association between parent involvement and achievement are presented, followed by analyses of Hypothesis 2 regarding the relationship of each of the predictor variables to the three forms of parent involvement.

Response Rate Issues

In preliminary analyses of the data, it was found that parents' response rate varied. While in some cases both parents living in the same home returned a questionnaire, in other cases both did not. Therefore for some children, data exists for both mothers and fathers. Specifically, there were 134 parents living in the same home (67 mothers, 67 fathers) who each returned a questionnaire regarding their child, and 55 parents (49 mothers, 6 fathers) who returned a questionnaire when the other parent did not. Given that married parents' response rate may act as an artefact of the data, it was deemed necessary to conduct analyses taking into account their response rates. As a means of addressing this concern, a subset of the entire sample was used for certain analyses. A random sample of either mother or father with two-parent responses was chosen in order to minimize sample bias. The subset sample consisted of 123 participants. Where necessary, for instance when examining parental responses as a whole (i.e., not comparing mothers and fathers), the subset of

randomly chosen parents was used.

Descriptive Statistics

The means and standard deviations of the demographic variables for the sample of children with and without LD are shown in Table 1. The means and standard deviations of the measures used to assess parent involvement (school, cognitive-intellectual and personal), achievement (grades and attitudes to school), child difficulty (WRAT and Word Attack scores and parents' perception of achievement), and family context (social support and stressful life events) for the sample of children with and without LD are shown in Table 2.

Demographic variables by group. To determine whether differences in any of the child demographic variables (age, gender, grade, race) or parent demographic variables (SES, income level, educational attainment, marital status, employment) existed for children with or without LD, independent samples t-tests were conducted with group (children with LD or control) as the independent variable and each demographic variable as the dependent variable. There were no significant differences on any of the child demographic variables. However, differences were found for maternal employment status and paternal educational level. Specifically, mothers of children with LD had significantly higher rates of employment than mothers of children without LD ($t(120) = 2.94$, $p < .005$). As well, fathers of children with LD had significantly lower educational levels than fathers of children without LD ($t(120) = -2.20$, $p < .05$).

Table 1. *Demographic variables for LD and Non-LD sample*

Demographic Variables		LD	Non-LD
Age	Mean	10.74	10.51
	SD	1.81	1.65
Household Income	Mean	62,800	76,500
	SD	29,420	27,040
Gender	Male	58 *(74.4%)*	26 *(57.8%)*
	Female	20 *(25.6%)*	19 *(42.2%)*
Parent	Mother	73 *(67%)*	43 *(53.7%)*
	Father	36 *(33%)*	37 *(46.3%)*
Grade	1	1 *(1.3%)*	0
	2	5 *(6.4%)*	5 *(11.1%)*
	3	4 *(5.1%)*	4 *(8.9%)*
	4	11 *(14.1%)*	6 *(13.3%)*
	5	22 *(28.2%)*	13 *(28.9%)*
	6	9 *(11.5%)*	5 *(11.1%)*
	7	14 *(17.9%)*	10 *(22.2%)*
	8	12 *(15.4%)*	2 *(4.4%)*
Ethnicity	White	62 *(79.5%)*	38 *(84.4%)*
	Hispanic	6 *(7.9%)*	2 *(4.4%)*
	Asian/Pacific Islander	3 *(3.8%)*	5 *(11.1%)*
	Black	2 *(2.2%)*	0
	Native Indian	1 *(1.3%)*	0
	Other minority	4 *(5.1%)*	0

Table 1. *Demographic variables for LD and Non-LD sample (continued)*

Demographic Variables		LD	Non-LD
Hollingshead's (1975) Social Classes	I	1 *(1.3%)*	2 *(4.4%)*
	II	21 *(27.6%)*	7 *(15.6%)*
	III	34 *(44.7%)*	18 *(40%)*
	IV	18 *(23.7%)*	15 *(33.3%)*
Mother's employment*	Full-time	53 *(67.9%)*	16 *(36.4%)*
	Part-time	14 *(17.9%)*	13 *(29.5%)*
	Unemployed	11 *(14.1%)*	15 *(34.1%)*
Father's employment*	Full-time	62 *(92.5%)*	42 *(95.5%)*
	Part-time	1 *(1.5%)*	1 *(2.3%)*
	Unemployed	3 *(4.5%)*	0
	Retired	1 *(1.5%)*	1 *(2.3%)*
Mother's education*	Less than high school	10 *(13.6%)*	1 *(2.2%)*
	High school	19 *(25%)*	12 *(26.7%)*
	Some college	28 *(36.8%)*	16 *(35.6%)*
	University	12 *(15.8%)*	13 *(28.9%)*
	Graduate	7 *(9.2%)*	3 *(6.7%)*
Father's education*	Less than high school	15 *(22.1%)*	3 *(6.7%)*
	High school	15 *(22.1%)*	8 *(17.8%)*
	Some college	24 *(35.3%)*	16 *(35.6%)*
	University	11 *(16.2%)*	10 *(22.2%)*
	Graduate	3 *(4.4%)*	8 *(17.8%)*

* Indicates missing data

Table 2. *Means and standard deviations for total LD and non-LD sample and by parent for all variables*

Variable	Total		Mothers		Fathers	
	LD M (SD)	Non-LD M (SD)	LD M (SD)	Non-LD M (SD)	LD M (SD)	Non-LD M (SD)
Parent Involvement						
School	59.26 (16.37)	57.89 (18.10)	65.18 (12.59)	66.61 (12.60)	47.78 (16.93)	47.58 (18.33)
Cognitive-Intellectual	10.10 (3.47)	10.57 (2.97)	10.60 (3.17)	11.58 (2.53)	9.11 (3.85)	9.36 (3.04)
Personal	16.72 (2.34)	17.33 (2.34)	17.28 (2.03)	18.44 (1.67)	15.61 (2.53)	16.03 (2.36)
Achievement Measures						
Grades (combined)	7.43** (1.69)	10.29** (1.90)				
Attitudes to school	71.37** (8.72)	78.42** (7.94)				
Child Difficulty Measures						
WRAT-R	86.07** (9.60)	109.76** (9.13)				
WRAT-A	86.59** (8.89)	109.91** (11.60)				
WRAT-S	83.59** (12.50)	106.78** (10.56)				
Word Attack	80.05** (11.24)	101.47** (8.47)				
Parent perception	4.79** (2.59)	0.39** (1.04)	4.93** (2.60)	0.42** (1.50)	4.53** (2.60)	0.35** (1.03)
Family Context Measures						
Family Support Scale	29.23 (13.25)	30.96 (11.16)	29.90 (13.45)	31.05 (11.10)	27.86 (12.92)	30.86 (11.38)
Life Events Scale	-5.07* (7.47)	-3.39* (4.56)	-5.76 (7.86)	-3.72 (4.55)	-3.72 (6.58)	-3.00 (4.61)

Note: $*p < .01$, $**p < .001$

Parent involvement by group. A between-subjects multivariate analysis of variance was performed on the three parent involvement scales (school, cognitive-intellectual and personal), which served as the dependent variables. The independent variable was group (children with LD or control).

An SPSS MANOVA was used for the analysis. A total N of 123 (78 LD and 45 non-LD) was reduced to 103 (64 LD and 39 non-LD) with the deletion of 20 cases with missing data on the parent involvement scales. The MANOVA was nonsignificant.

Educational outcomes by group. A between-subjects multivariate analysis of variance was performed on the two educational outcomes (grades and attitudes toward school), which served as the dependent variables. The independent variable was group (children with LD or control).

An SPSS MANOVA was used for the analysis. A total N of 123 (78 LD and 45 non-LD) was reduced to 94 (53 LD and 41 non-LD) with the deletion of 29 cases with missing data. With the use of Pillai's Trace, $F(2,91) = 31.408$, $p < .001$, with an observed power of 1.00.

Univariate analyses revealed main effects for grades, univariate $F(1,92) = 59.718$, $p < .001$, and for attitudes, univariate $F(1,92) = 12.263$, $p < .001$. A comparison of the means indicated that children with LD obtained lower grades than children without LD ($M = 7.427$, $SD = .245$; $M = 10.295$, $SD = .279$) and had poorer attitudes toward school ($M = 71.736$, $SD = 1.168$; $M = 77.927$, $SD = 1.327$).

Hypothesis 1

The effects of the three forms of parent involvement on the educational outcomes were examined via the General Linear Model for multivariate analyses of variance. Each type of parent involvement was analyzed separately in an independent analysis for the dependent variables of grades and attitudes to school. Parent involvement was entered into each equation as an independent variable and, for each analysis, age served as the covariate. Mothers and fathers were analyzed separately.

School Involvement as a predictor of educational outcomes. Age was significantly related to grades and attitudes to school for children with LD ($F = 3.914$, $p < .05$; $F = 5.078$, $p < .05$). After the effects of age were accounted for, School Involvement was found to be significantly associated with grades for mothers of children with LD ($F = 22.158$, $p < .01$). A positive correlation was found between School Involvement and grades for children with LD. For fathers, School Involvement was not a significant predictor of educational outcomes for children with LD. Results for the GLM for School Involvement are presented in Table 3.

Cognitive-Intellectual Involvement as a predictor of educational outcomes. No significant effect was found between Cognitive-Intellectual Involvement and educational outcomes for mothers or fathers of children with LD. Results for the GLM for Cognitive-Intellectual Involvement are presented in Table 4.

Personal Involvement as a predictor of educational outcomes. Age was significantly related to children's attitudes to school for mothers of children with LD ($F = 2.69$, $p < .05$). Personal Involvement was not a significant predictor of grades or attitudes to school for mothers of children with LD. For fathers, however, Personal

Table 3. *Results of the GLM analyses for the prediction of educational outcomes from School Involvement for mothers and fathers of children with learning disabilities.*

	Dependent Variable							
	School Grades				Attitudes to School			
	Type III Sum of Squares	df	F	Sig	Type III Sum of Squares	df	F	Sig
Mothers								
Age	117.420	33	3.914	.033	3334.498	33	5.078	.016
School	20.145	1	22.158	.002	22.030	1	1.107	.328
Fathers								
Age	48.526	24	2.666	.454	2105.730	24	1.796	.537
School	5.038	1	6.642	.236	1.156	1	.024	.903

Table 4. *Results of the GLM analyses for the prediction of educational outcomes from Cognitive-Intellectual Involvement for mothers and fathers of children with learning disabilities.*

	Dependent Variable							
	School Grades				Attitudes to School			
	Type III Sum of Squares	df	F	Sig	Type III Sum of Squares	df	F	Sig
Mothers								
Age	118.026	37	1.485	.246	3496.537	37	2.382	.062
Cognitive	5.621	1	2.617	.134	12.355	1	.311	.588
Fathers								
Age	57.041	28	5.215	.335	2348.535	28	3.355	.411
Cognitive	5.406	1	13.838	.167	25.000	1	1.000	.500

Involvement was significantly associated with grades for children with LD ($F = 3216.51$, $p < .05$) after age effects were accounted for ($F = 1165.688$, $p < .05$). Results for the GLM for Personal Involvement are presented in Table 5.

Hypothesis 2

The effects of the predictor variables of child difficulty and family context (i.e., social support and stress) on each of the parent involvement variables were examined via the General Linear Model (GLM) for univariate analyses of variance. Each form of parent involvement was analyzed separately in an independent analysis. No covariates were entered into the model since the demographics of interest (age, SES, gender and family configuration) did not correlate with the parent involvement scales. Mothers and fathers were analyzed separately. Children with and without LD were included in all analyses in order to have a full range of children's achievement levels.

Factors influencing School Involvement. No overall GLM was found for School Involvement for mothers or fathers. See Table 6 for a summary of results.

Factors influencing Cognitive-Intellectual Involvement. No overall GLM was found for mothers. However, for fathers, an overall significant model of Cognitive-Intellectual Involvement was revealed ($F = 2.917$, $p < .05$). Social support was significantly related to Cognitive-Intellectual Involvement ($F = 5.999$, $p < .05$). Fathers who perceived a greater amount of social support tended to be more involved in cognitive activities. Results of the GLM for Cognitive-Intellectual Involvement are presented in Table 7.

Table 5. *Results of the GLM analyses for the prediction of educational outcomes from Personal Involvement for mothers and fathers of children with learning disabilities.*

	Dependent Variable							
	School Grades				Attitudes to School			
	Type III Sum of Squares	df	F	Sig	Type III Sum of Squares	df	F	Sig
Mothers								
Age	121.721	38	1.416	.287	3622.881	38	2.690	.049
Personal	6.625	1	2.928	.118	94.291	1	2.661	.134
Fathers								
Age	58.799	28	1165.688	.023	2334.188	28	2.267	.488
Personal	5.794	1	3216.510	.011	13.235	1	.360	.656

Table 6. *Results of the GLM analyses for the prediction of School Involvement from child difficulty, social support and parental stress for mothers and fathers.*

	Dependent Variable School Involvement			
	Type III Sum of Squares	df	F	Sig
Mother				
Child Difficulty Index	9.601	1	.062	.803
Social Support	518.773	1	3.368	.070
Stress	2.308	1	.015	.903
Father				
Child Difficulty Index	2.588	1	.009	.925
Social Support	673.335	1	2.310	.134
Stress	520.862	1	1.787	.186

Table 7. *Results of the GLM analyses for the prediction of Cognitive-Intellectual Involvement from child difficulty, social support and parental stress for mothers and fathers.*

	Dependent Variable Cognitive-Intellectual Involvement			
	Type III Sum of Squares	df	F	Sig
Mother				
Child Difficulty Index	26.750	1	3.499	.064
Social Support	19.113	1	2.500	.117
Stress	10.937	1	1.431	.234
Father				
Child Difficulty Index	6.628E-02	1	.007	.935
Social Support	59.635	1	5.999	.017
Stress	25.474	1	2.563	.114

Table 8. *Results of the GLM analyses for the prediction of Personal Involvement from child difficulty, social support and parental stress for mothers and fathers.*

	Dependent Variable Personal Involvement			
	Type III Sum of Squares	df	F	Sig
Mother				
Child Difficulty Index	21.070	1	6.039	.016
Social Support	21.308	1	6.108	.015
Stress	2.178	1	.624	.431
Father				
Child Difficulty Index	.763	1	.138	.712
Social Support	37.543	1	6.769	.011
Stress	14.590	1	2.631	.110

Factors influencing Personal Involvement. An overall significant model of Personal Involvement was found for mothers ($F = 4.411$, $p<.01$). The Child Difficulty Index and social support were significantly related to Personal Involvement ($F = 6.039$, $p<.05$, $F = 6.108$, $p<.05$, respectively). Mothers who had children with a high Child Difficulty Index score were less personally involved, and mothers with greater social support were more personally involved. For fathers, a significant model was also revealed for Personal Involvement ($F = 3.308$, $p< .05$). Social support was significantly related to Personal Involvement ($F = 6.769$, $p<.05$). When fathers' social support was high, so was their involvement in their child's personal life. Results of the GLM for Personal Involvement are presented in Table 8.

Discussion

Extensive research has demonstrated that parents can be vital contributors to their children's education. A number of recent studies have attempted to devise models to better understand the factors that predict parent involvement. However, the majority of this research has focused on children in regular education. The primary purpose of the current study was to examine parent involvement for children with LD, focusing specifically on two questions: first, whether parent involvement is associated with educational benefits, and second, which factors influence parent involvement.

Parent Involvement

Use of a multidimensional definition yielded evidence that the most common form of parent involvement was personal, followed by school and cognitive-intellectual for parents of children with and without LD. Comparable to previous research (U.S. Department of Education, 1997), mothers were consistently more involved than fathers in all types of activities, though patterns of involvement were similar.

Parent Involvement as a Predictor of Educational Outcomes

When mothers of children with LD were involved in their children's educational activities at home, at school and in the special education process, grades were higher, a finding consistent with previous studies (e.g., Henderson & Berla, 1994). Grolnick and Slowiaczek (1994), who also observed a significant association between mothers' involvement in school-related behaviours and grades, noted that studies focusing on parents' participation at school (e.g., Stevenson & Baker, 1987) report positive findings more often than those examining other aspects of

involvement (Keith et al., 1986). Reasons for this relationship between school involvement and grades may include the existence of a positive feedback loop whereby mothers become more involved as a response to their children performing well in school (Seginer, 1983), parents being better able to help their children as a result of their own realistic expectations (Grolnick & Slowiaczek, 1994), and teachers being more invested in children whose parents participate more (Epstein, 1988). Overall, the benefit of mothers' school involvement to school performance for children with LD underscores the importance of increasing parent involvement for children in special education, a need first raised over a decade ago (Yanok & Derubertis, 1989).

Fathers' involvement in school activities at home, school, or in special education was not related to children's academic achievement or their attitudes toward school. One explanation may be that, in addition to fathers being less involved than mothers, the quality of their involvement may be different as well. Mothers' interactions with their children, and perhaps their children's teachers, may be more effective than those of fathers because traditional roles or different parenting styles may predispose mothers to more successfully assist their children in school-related activities than fathers. For instance, mothers may practice more autonomy support, defined as the degree to which parents motivate their children to problem-solve and make decisions independently rather than encouraging achievement through punishment or pressure. Autonomy support is shown to be specifically relevant to self-regulation and competence in school (Deci, Nezlek, & Sheinman, 1981). This may be one reason why mothers' involvement is more effective at improving

students' grades (Grolnick & Ryan, 1989; Martinez-Pons, 2002). Future research is necessary to investigate the qualitative aspects of parental involvement, for example, the types of relationships parents have with their children's teachers, the manner in which homework help is provided (e.g., cursory versus thorough), and styles of interaction during IEP meetings (e.g., active versus passive).

Although fathers' involvement in school-related activities was not found to significantly affect children's grades, when fathers were involved in their child's personal and daily lives, children fared better academically. It has been speculated that, while overall maternal involvement benefits children's social and emotional development, overall paternal involvement may be a stronger influence on academic achievement (U.S. Department of Education, 1997). This may be explained by evidence that children perceive academic achievement as their fathers' most valued priority (1996, as cited by U.S. Department of Education, 1997). Thus, when fathers take an interest in their personal lives, children may strive harder to meet a perceived expectation for academic success. Moreover, because fathers are traditionally less present in children's lives, their involvement may be regarded as special and therefore more motivating. It is also important to note that the items of the questionnaire do refer to personal involvement in relation to school.

No significant relationship between parents' cognitive-intellectual involvement and children's grades or attitudes was detected. Exposure to cognitively stimulating materials such as books and current events, while likely contributing to an overall enriched environment, did not directly affect school performance. Although parents' cognitive involvement likely exerts an effect on educational outcomes over

time, measuring this relationship within the confined period of a single school year may not provide an accurate picture. Additionally, grades, while an important measure of learning, may not tap into the effects of parents' providing a rich and stimulating learning environment. It is noteworthy that the measure used to assess cognitive-intellectual involvement comprised only five items. A better measure of school performance for this type of involvement may be standardized achievement test scores, which are less related to student effort (Keith, 1991). A worthwhile avenue for future study would be to evaluate the potential effects of cognitive involvement using longitudinal variables of academic performance.

An alternate explanation for the lack of a significant relationship between parents' cognitive-intellectual involvement and educational outcomes is that, to achieve educational gains, children with LD require more specific intervention strategies from parents than general exposure to, or participation in, cognitive-intellectual activities. Grolnick and Slowiaczek (1994), in their study of the mediators of parent involvement and school performance, established an indirect relationship between parents' cognitive-intellectual involvement, children's perceived competence and grades. They suggested that engaging children in cognitively stimulating activities at home may give them an increased sense of mastery over school activities. However, general feelings of increased confidence may not be sufficient to overcome the difficulties experienced by children with LD, especially given the fact that children with LD have poorer academic self-concepts than their non-LD peers (e.g., Bear, Minke, & Manning, 2002).

Attitudes toward school were not found to be associated with any form of parental involvement. This finding, though inconsistent with previous research in the regular education population, is not surprising in an LD population given the low academic self-perceptions of children with LD (e.g., Bear, Minke, & Manning, 2002; Chapman, 1988). Poor self-perceptions of academic ability generalize to more negative attitudes toward school (Chapman & Boersma, 1979). As expected, the children with LD in this study were found to have poorer attitudes to school compared to their non-LD counterparts. The lack of a relationship between parent involvement and children's attitudes toward school may be due to the fact that, despite their parents' efforts at involvement, children with LD maintain negative perceptions of their own abilities and of school itself.

The measure used in this study to assess children's attitudes to school relied heavily on the academic aspects of school. Though it may be difficult to disentangle the relationship between children's attitudes to school and their academic self-perceptions, a measure addressing other social-emotional aspects of a child's education would be useful in future research to determine whether parent involvement is beneficial with regard to attitudes to the non-academic aspects of school.

Influences of Parent Involvement

As expected, variables at both the individual and contextual levels were found to influence parent involvement. Although it was predicted that parents' level of stress and social support would most impact school involvement, neither of these factors was related to school involvement. Two crucial variables in predicting parent

involvement, age and SES, were not included in the analyses since no relationship between either variable and parent involvement was found.

A wealth of previous research has made it clear that parent involvement is associated with age (e.g., Epstein & Dauber, 1991) and SES (e.g., Stevenson & Baker, 1982). However, the wide age range in this study's relatively small sample, combined with the lack of a relationship with parent involvement, precluded the use of age as a variable in the analyses. For SES, families were not equally distributed across Hollingshead's (1975) social classes. The majority of families had average to high SES, with few falling into the low category. Specifically, less than 5% of the non-LD sample and only about 1% of the LD sample fell into this group. While a strong correlation would have been expected between average-to-high-SES and a highly involved sample, none could be observed due to the small range of SES in the sample.

As predicted, child characteristics were most strongly related to personal involvement. Mothers were less involved personally with their children whose learning disabilities were more severe. Given that personal involvement requires the most interactions between parent and child, mothers who perceive their children as difficult are less involved in their daily lives (Grolnick et al., 1997). However, this relationship was observed only for mothers. Mothers, more involved than fathers in all educational activities, may be focused on academic achievement to such an extent that they have little time or energy left for those aspects of involvement pertaining to their children's personal lives. A further explanation may be that some children with more severe learning disabilities have more difficulty expressing themselves, making

it more challenging for mothers to engage them in discussion about social or personal matters, such as friendships or extracurricular activities.

At the contextual level, social support was the only variable influencing parent involvement. Stressful family environments were not found to affect any form of parent involvement. As previously noted, parents of children receiving special education are mandated to have some involvement at school. A consequence of these demands may be mitigation of the potential impact of familial stress. Examining stress directly related to parenting rather than parents' general stress would be valuable to future research because parenting-related stress may be a more pertinent factor related to parent involvement.

It was predicted that a difficult context (i.e., high parental stress and lack of social supports) would impact negatively on personal involvement. However, only level of social support influenced parents' level of personal involvement. Mothers and fathers with less supportive environments tended to be less involved in their children's personal lives. A recent study of inner-city African American children found that social support from the parent community associated with the school was negatively associated with parent involvement at home (McKay et al., 2003). While these results appear to contradict the above finding, they may in fact allude to a separate issue: parents' perceptions that the school's influence may be harmful and their consequent desire to protect their children from it, leading to greater at-home involvement. Grolnick and her colleagues (1997), reporting a result consistent with the present finding, hypothesized that a difficult context may compromise mothers' abilities to recognize the more subtle aspects of their children's school experiences.

Conversely, a good support system, in particular a good marital relationship, may facilitate family discussions and the sharing of both general and specific feelings and experiences related to school.

An unexpected, though not surprising, finding was that fathers who perceived a strong social support network were more involved in providing cognitively stimulating activities to their children. Fathers, not only traditionally less available to their children but also less responsible for providing a variety of educational activities, may derive more confidence when they receive support from various sources. For example, if fathers feel connected to and supported by other parents, they may gain more ideas for cognitively oriented activities, and therefore feel more assured of their own competence.

There is additional evidence that fathers are more involved when strong support is derived from the marital relationship (Coiro & Emery, 1998). Some researchers have suggested that father-child relationships can benefit largely from the buffering effect of the spousal relationship (Flouri & Buchanan, 2003; Parke & Beitel, 1988).

Limitations

In light of some limitations, some caution should be used when generalizing the findings of this study. First, the parents in the study were limited to those choosing to participate, and it is likely that these parents are more involved in their children's education, leading to a narrow range of parent involvement. This potential sample bias may be responsible for the difficulty in establishing results consistent with previous studies.

A further sample bias, resulting from the low response rate, may be attributable to the period in which the study was conducted. Consent for participation was requested in the spring to give parents sufficient opportunities for involvement, however end-of-year obligations during this time may in fact cause parents to feel overburdened. In addition, the low return rate for the questionnaire may be due to language constraints: many parents spoke English, but not as their native language. Of the parents who received follow-up calls, many stated that the questionnaire was lengthy.

Finally, generalization of the findings may be restricted by the fact that the sample consisted entirely of children in Catholic schools. It is reasonable to assume that any religiously homogeneous group will hold similar family values. In this case, those values include strong importance placed upon parent involvement, which may account for the high rate of involvement observed in the sample. Different patterns may be found for families from different religious or nonreligious groups.

The study relied on self-reports of parent involvement, which differed from previous studies in which children or their teachers' perceptions of parent involvement were examined. As in all self-reports, the parent involvement measure assessed perceptions and not actual parent involvement. These reports, prone to the effects of social desirability, may be inflated compared to children's or teachers' reports. Future studies should incorporate more objective measures of parent involvement, such as longitudinal observations of involvement from parents, teachers, and children. Further, the measure used in this study to assess parent involvement did

not include an important aspect of involvement that pertains to children in special education in Ontario, attendance at IPRC meetings.

An additional limiting factor, inherent in nonexperimental research, was the use of regression analyses. As in other studies investigating parent involvement, a causal relationship between involvement and its benefits and influences could not be established. For example, it may be that unmeasured factors correlated with parent involvement, such as parenting skills, influenced school outcomes.

Implications and Conclusions

The value of parental involvement in enhancing academic achievement cannot be overstated. Despite some limitations, this investigation highlights a unique new branch of parent involvement research by providing findings for children in special education. Specifically, the current study makes clear that children with LD benefit from their parents' attention, a finding that serves as a continued call to action for parents, educators and the community to work collaboratively toward increasing rates of involvement.

Another important contribution of this study is its support for the notion that different types of involvement, from different parents, can have beneficial effects. Specifically, mothers' school-related involvement and fathers' personal involvement are associated with higher grades for children with LD. While parents' involvement in the educational process is a significant goal of policymakers and the educational system, efforts to address parents' influence in other forms of involvement are essential as well. This study points to a need for interventions alerting fathers to the impact of their interest in their children's lives on academic performance.

The present findings also contribute uniquely to the field by shedding light on the factors associated with parent involvement for children in special education. Parents become involved based on the extent to which they feel supported, are able to engage their children, and feel that they can make a difference in their education. Schools would be well advised to implement programs specifically designed to create these conditions. For example, they may develop social networking opportunities, especially useful for fathers who may feel disconnected from the educational environment. Such networks would be designed to expand parents' system of social supports. As well, schools may actively educate parents in the importance of their involvement or make specific recommendations regarding ways to get involved. Parents whose children experience greater learning difficulties may need more targeted interventions to help them better assist their children in learning and communicate with them about their daily lives.

Such programs need to go beyond the typical opportunities for involvement and demonstrate to parents how they can help overcome their children's disabilities. School psychologists, experts in assessment, consultation, and child development, can facilitate these programs and help make significant strides in family-school partnerships. Individuals in such roles are poised to make a vital difference by assisting school personnel in developing strategies to increase family-school collaboration, thereby enhancing parents' relationships with schools and, ultimately, helping their children attain greater academic gains.

The current findings enhance our understanding of the impact of parent involvement on children with LD and the factors associated with it. Children in

special education populations can achieve greater levels of academic success when their parents are active participants in their education. The key to this potential lies not only in recognizing the importance of parent involvement but in seeking new ways to inspire it.

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Appendix A

Parent Involvement Questionnaire

This questionnaire lists different ways in which parets may become involved in their child's education. No parent can participate in all, or even most, activities. Please respond honestly to all items based on your involvement with your child during the past school year.

School Involvement

1. I went to open house or open school nights.	Never	1-2	Few	Many	
2. I met my child's teacher.	Never	1-2	Few	Many	
3. I volunteered to go on a class trip.	Never	1-2	Few	Many	
4. I went to a school event or activity (e.g., book fair, special school program).	Never	1-2	Few	Many	
5. I talked with my child's teacher on the phone.	Never	1-2	Few	Many	
6. I went to a parent advisory meeting.	Never	1-2	Few	Many	
7. I went to a parent-teacher conference.	Never	1-2	Few	Many	
8. I went to a workshop held at school.	Never	1-2	Few	Many	
9. I volunteered in my child's classroom.	Never	1-2	Few	Many	
10. I borrowed books from my child's teacher to give extra help.	Never	1-2	Few	Many	
11. I helped with fundraising activities for the school.	Never	1-2	Few	Many	
12. I went to a school council meeting.	Never	1-2	Few	Many	
13. I talked informally to my child's teacher before and after school.	Never	1-2	Few	Many	
14. I did a homework assignment that required my child to interact with me (e.g., write about my experiences, do a work sheet together).	Never	1-2	Few	Many	
15. I visited my child's classroom.	Never	1-2	Few	Many	
16. I signed my child's homework or folder.	Never	1-2	Few	Many	

Home Involvement

17. I help my child with homework.	Never	Rarely	Monthly	Weekly	Daily
18. I practice spelling or other skills before a test.	Never	Rarely	Monthly	Weekly	Daily
19. I check to see that my child has done his/her homework.	Never	Rarely	Monthly	Weekly	Daily
20. I help my child plan time for homework.	Never	Rarely	Monthly	Weekly	Daily
21. I listen to stories my child writes.	Never	Rarely	Monthly	Weekly	Daily
22. I listen to my child read.	Never	Rarely	Monthly	Weekly	Daily
23. I tell my child how important school is.	Never	Rarely	Monthly	Weekly	Daily
24. I discuss a TV show with my child.	Never	Rarely	Monthly	Weekly	Daily
25. I talk to my child about school.	Never	Rarely	Monthly	Weekly	Daily

Cognitive Involvement

26. I take my child to the library.	Never	Rarely	Monthly	Weekly	Daily
27. I talk about current events with my child.	Never	Rarely	Monthly	Weekly	Daily
28. I take my child to lectures, plays or concerts.	Never	Rarely	Monthly	Weekly	Daily
29. I take my child to a museum.	Never	Rarely	Monthly	Weekly	Daily
30. I play games that help my child learn.	Never	Rarely	Monthly	Weekly	Daily
31. I buy books for my child.	Never	Rarely	Monthly	Weekly	Daily

Personal Involvement

32. I know what my child is currently learning in school.	Strongly agree	Agree	Disagree	Strongly disagree
33. I know the names of my child's classmates.	Strongly agree	Agree	Disagree	Strongly disagree
34. I know the activities in school my child likes and does not like	Strongly agree	Agree	Disagree	Strongly disagree
35. I keep close track of how well my child is doing in school.	Strongly agree	Agree	Disagree	Strongly disagree
36. I ask my child about how well things are going in school.	Strongly agree	Agree	Disagree	Strongly disagree

Special Education Process Involvement

37. I completed screening/assessment device concerning my child upon request by teacher.	Never	1-2	Few	Many
38. I attended an IEP (Individualized Education Program) conference in the school setting.	Never	1-2	Few	Many
39. I participated actively in the IEP meeting (e.g., asked questions, made numerous comments, etc.).	Never	1-2	Few	Many
40. If necessary, I allowed IEP meeting to be held in home.	Never	1-2	Few	Many
41. I completed needs assessment, program evaluation, parent satisfaction rating or other such forms.	Never	1-2	Few	Many

Appendix B

Marjoribanks Attitude-to-School Inventory

In the following questionnaire there are statements regarding how you feel about school. After the statements you will find the letters: SA, A, NC, D, and SD.

These letters mean:

SA:	you STRONGLY AGREE with the statement.
A:	you AGREE with the statement.
NC:	you are NOT CERTAIN about the statement.
D:	you DISAGREE with the statement.
SD:	you STRONGLY DISAGREE with the statement.

1. I get along with my teachers.	SA	A	NC	D	SD
2. Doing well at school is most important to me.	SA	A	NC	D	SD
3. School is boring.	SA	A	NC	D	SD
4. I think that I am pretty good at my schoolwork.	SA	A	NC	D	SD
5. I like fooling around during my lessons.	SA	A	NC	D	SD
6. My teachers think that I am smart.	SA	A	NC	D	SD
7. I'm sorry when school is over for the day.	SA	A	NC	D	SD
8. Generally, my schoolwork worries me.	SA	A	NC	D	SD
9. Generally, my teachers are very pleasant to me.	SA	A	NC	D	SD
10. When my teachers ask me questions about my work I often get upset.	SA	A	NC	D	SD
11. I think that going out to work would be better than coming to school.	SA	A	NC	D	SD
12. When we have schoolwork to complete I generally get very good grades.	SA	A	NC	D	SD
13. I don't like other students who are noisy during lessons.	SA	A	NC	D	SD
14. In this class our lessons are always very interesting.	SA	A	NC	D	SD
15. Overall, I like school quite a lot.	SA	A	NC	D	SD
16. I find a lot of my schoolwork hard to understand.	SA	A	NC	D	SD
17. Of all the classes in this school, my class is the nicest of all.	SA	A	NC	D	SD
18. I would like to be one of the smartest students in my school.	SA	A	NC	D	SD
19. Going to school is a waste of time.	SA	A	NC	D	SD
20. I work and try very hard at my schoolwork.	SA	A	NC	D	SD

Appendix C

Parents' Perception of Children's LD Severity

Please indicate which sentence best describes your child's academic abilities when compared to other children his/her age:

Reading

- ❑ My child's achievement in reading is above average compared to others his/her age.
- ❑ My child's achievement in reading is average compared to others his/her age.
- ❑ My child is experiencing some difficulties in reading compared to others his/her age.
- ❑ My child is experiencing a moderate amount of difficulties in reading compared to others his/her age.
- ❑ My child is experiencing a lot of difficulties in reading compared to others his/her age.

Arithmetic

- ❑ My child's achievement in arithmetic is above average compared to others his/her age.
- ❑ My child's achievement in arithmetic is average compared to others his/her age.
- ❑ My child is experiencing some difficulties in arithmetic compared to others his/her age.
- ❑ My child is experiencing a moderate amount of difficulties in arithmetic compared to others his/her age.
- ❑ My child is experiencing a lot of difficulties in arithmetic compared to others his/her age.

Spelling

- ❑ My child's achievement in spelling is above average compared to others his/her age.
- ❑ My child's achievement in spelling is average compared to others his/her age.
- ❑ My child is experiencing some difficulties in spelling compared to others his/her age.
- ❑ My child is experiencing a moderate amount of difficulties in spelling compared to others his/her age.
- ❑ My child is experiencing a lot of difficulties in spelling compared to others his/her age.

Appendix D

The Life Experiences Survey

Listed below are a number of events that sometimes happen to people. Please check those events that you have experienced in the past twelve months. Also, for each item below, please indicate the extent to which you viewed the event as having either a positive or negative impact on your life at the time the event occurred. That is, indicate the type and extent of impact that the event had. A rating of -3 would indicate an extremely negative impact. A rating of 0 suggests that no impact either positive or negative. A rating of +3 would indicate an extremely positive impact.

	Extremely Negative	Moderately Negative	Somewhat Negative	No Impact	Somewhat Positive	Moderately Positive	Extremely Positive
1. Marriage	-3	-2	-1	0	+1	+2	+3
2. Detention in jail or comparable institution	-3	-2	-1	0	+1	+2	+3
3. Death of spouse	-3	-2	-1	0	+1	+2	+3
4. Major change in sleeping habits (much more or much less sleep)	-3	-2	-1	0	+1	+2	+3
5. Death of close family member:							
a. Mother	-3	-2	-1	0	+1	+2	+3
b. Father	-3	-2	-1	0	+1	+2	+3
c. Brother	-3	-2	-1	0	+1	+2	+3
d. Sister	-3	-2	-1	0	+1	+2	+3
e. Grandmother	-3	-2	-1	0	+1	+2	+3
f. Grandfather	-3	-2	-1	0	+1	+2	+3
g. Other (specify)	-3	-2	-1	0	+1	+2	+3
6. Major change in eating habits (much more or much less food intake)	-3	-2	-1	0	+1	+2	+3
7. Foreclosure on mortgage or loan	-3	-2	-1	0	+1	+2	+3
8. Death of close friend	-3	-2	-1	0	+1	+2	+3
9. Outstanding personal achievement	-3	-2	-1	0	+1	+2	+3
10. Minor law violations (traffic tickets, disturbing the peace, etc.)	-3	-2	-1	0	+1	+2	+3
11. Male: Wife/girlfriend's pregnancy	-3	-2	-1	0	+1	+2	+3
12. Female: Pregnancy	-3	-2	-1	0	+1	+2	+3
13. Changed work situation (different work responsibility, major change in working conditions, working hours, etc.)	-3	-2	-1	0	+1	+2	+3
14. New job	-3	-2	-1	0	+1	+2	+3
15. Serious illness or injury of close family member:							
a. Father	-3	-2	-1	0	+1	+2	+3
b. Mother	-3	-2	-1	0	+1	+2	+3
c. Sister	-3	-2	-1	0	+1	+2	+3
d. Brother	-3	-2	-1	0	+1	+2	+3
e. Grandfather	-3	-2	-1	0	+1	+2	+3
f. Grandmother	-3	-2	-1	0	+1	+2	+3
g. Spouse	-3	-2	-1	0	+1	+2	+3
h. Other (specify)	-3	-2	-1	0	+1	+2	+3
16. Sexual difficulties	-3	-2	-1	0	+1	+2	+3
17. Trouble with employer	-3	-2	-1	0	+1	+2	+3
18. Trouble with in-laws	-3	-2	-1	0	+1	+2	+3

	Extremely Negative	Moderately Negative	Somewhat Negative	No Impact	Somewhat Positive	Moderately Positive	Extremely Positive
19. Major change in financial status	-3	-2	-1	0	+1	+2	+3
20. Major change in closeness of family members	-3	-2	-1	0	+1	+2	+3
21. Gaining a new family member	-3	-2	-1	0	+1	+2	+3
22. Change of residence	-3	-2	-1	0	+1	+2	+3
23. Marital separation from mate (due to conflict)	-3	-2	-1	0	+1	+2	+3
24. Major change in church activities	-3	-2	-1	0	+1	+2	+3
25. Marital reconciliation with mate	-3	-2	-1	0	+1	+2	+3
26. Major change in number of arguments with spouse (a lot more or a lot less arguments)	-3	-2	-1	0	+1	+2	+3
27. Married Male: Change in wife's work outside home (beginning work, ceasing work, change to a new job, etc.)	-3	-2	-1	0	+1	+2	+3
28. Married Female: Change in husband's work outside home (beginning work, ceasing work, change to a new job, etc.)	-3	-2	-1	0	+1	+2	+3
29. Major change in usual type and/or amount of recreation	-3	-2	-1	0	+1	+2	+3
30. Borrowing more than $10,000 (buying home, business, etc.)	-3	-2	-1	0	+1	+2	+3
31. Borrowing less than $10,000 (buying car, TV, school loan, etc.)	-3	-2	-1	0	+1	+2	+3
32. Being fired from job	-3	-2	-1	0	+1	+2	+3
33. Male: Wife/girlfriend having abortion	-3	-2	-1	0	+1	+2	+3
34. Female: Having abortion	-3	-2	-1	0	+1	+2	+3
35. Major personal illness or injury	-3	-2	-1	0	+1	+2	+3
36. Major change in social activities	-3	-2	-1	0	+1	+2	+3
37. Major change in living conditions of family	-3	-2	-1	0	+1	+2	+3
38. Divorce	-3	-2	-1	0	+1	+2	+3
39. Serious injury or illness of close friend	-3	-2	-1	0	+1	+2	+3
40. Retirement from work	-3	-2	-1	0	+1	+2	+3
41. Son or daughter leaving home	-3	-2	-1	0	+1	+2	+3
42. Ending of formal schooling	-3	-2	-1	0	+1	+2	+3
43. Separation from spouse (due to work, travel, etc.)	-3	-2	-1	0	+1	+2	+3
44. Engagement	-3	-2	-1	0	+1	+2	+3
45. Breaking up with boyfriend/girlfriend	-3	-2	-1	0	+1	+2	+3
46. Leaving home for the first time	-3	-2	-1	0	+1	+2	+3
47. Reconciliation with boyfriend/girlfriend	-3	-2	-1	0	+1	+2	+3
Other recent experiences which have had an impact on your life:							
48. _____	-3	-2	-1	0	+1	+2	+3
49. _____	-3	-2	-1	0	+1	+2	+3

Appendix E

Family Support Scale

Listed below are people and groups that oftentimes are helpful to a family raising a child. This questionnaire asks you to indicate how helpful each source is to *your family*.

Please *circle* the response that best describes how helpful the sources have been in your family during the past *3 to 6 months*. If a source of help has not been available to your family during this period of time, circle the NA (Not Available) response.

How helpful has each of the following been to you in terms of raising your child(ren):

	Not Available	Not at all	Sometimes Helpful	Generally Helpful	Very Helpful	Extremely Helpful
1. My parents	NA	1	2	3	4	5
2. My spouse or partner's parents	NA	1	2	3	4	5
3. My relatives/kin	NA	1	2	3	4	5
4. My spouse or partner's relatives/kin	NA	1	2	3	4	5
5. Spouse or partner	NA	1	2	3	4	5
6. My friends	NA	1	2	3	4	5
7. My spouse or partner's friends	NA	1	2	3	4	5
8. My own children	NA	1	2	3	4	5
9. Neighbours	NA	1	2	3	4	5
10. Other parents	NA	1	2	3	4	5
11. Co-workers	NA	1	2	3	4	5
12. Parent groups	NA	1	2	3	4	5
13. Social groups/clubs	NA	1	2	3	4	5
14. Church members/minister	NA	1	2	3	4	5
15. My family or child's physician	NA	1	2	3	4	5
16. Child intervention program	NA	1	2	3	4	5
17. School/day-care centre	NA	1	2	3	4	5
18. Professional helpers	NA	1	2	3	4	5
(social workers, therapists, teachers, etc)	NA	1	2	3	4	5
19. Professional agencies	NA	1	2	3	4	5
(public health, social services, mental health, etc.)						
20. _____	NA	1	2	3	4	5

Appendix F

Demographics Questionnaire

Please circle/indicate the following background information to help us better understand parent involvement:

1. What is your child's birth date? _____(Day/Month/Year)

2. Child's Ethnic Background:

Native Indian Asian/ Pacific Islander African American Hispanic Caucasian Other

3. Number of years your child has received special education services:
0 1 2 3 4 5 6 7 8

4. Please indicate the type of special education services your child has received this year:
_____ (e.g., SERT, SERC)

5. Please indicate the person(s) with whom your child lives:
(a) Mother (d) Mother/step-parent
(b) Father (e) Father/step-parent
(c) Both parents (f) Other (please indicate) _____

6. Marital status: Single Married Divorced

7. Employment status:
(a) Mother: Unemployed Part-time employed Full-time employed
(b) Father: Unemployed Part-time employed Full-time employed

8. Highest level of education:
Mother
(a) Less than 7th Grade (b) 7th –9th Grade (c) 10th -11th Grade
(d) High school degree (e) 1-3 years of College/Trade School
(f) University Degree (g) Graduate Degree

Father
(a) Less than 7th Grade (b) 7th –9th Grade (c) 10th -11th Grade
(d) High school degree (e) 1-3 years of College/Trade School
(f) University Degree (g) Graduate Degree

9. Occupation:
(a) Mother: _____
(b) Father: _____

10. Household Income
(a) Less than $ 20,000 (f) $ 60,000 - $ 69,999
(b) $ 20,000 - $ 29,999 (g) $ 70,000 - $ 79,999
(c) $ 30,000 - $ 39,999 (h) $ 80,000 - $ 89,999
(d) $ 40,000 - $ 49,999 (i) $ 90,000 - $ 99,999
(e) $ 50,000 - $ 59,999 (j) Over $ 100,000