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The Effect of Extracurricular Activity Participation on the Relationship Between Parent Involvement and Academic Performance in a Sample of Third Grade Children

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**The Effect of Extracurricular Activity Participation on the Relationship Between
Parent Involvement and Academic Performance in a Sample of Third Grade
Children**

by

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The Effect of Extracurricular Activity Participation on the Relationship Between Parent
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Previous research has suggested that parent involvement with children at home and in school is positively related to academic performance. Children with little to no parent involvement are at a distinct academic disadvantage. In light of this disadvantage, the present study examined the possibility that participation in extracurricular activities might serve as an alternative option for the school success of these children. Past research has found a significant positive association between participation in extracurricular activities and performance in school. Thus, this study tested the hypothesis that the relationship between parent involvement and school performance depended upon participation in extracurricular activities. In other words, children with low parent involvement who participated in extracurricular activities were expected to academically outperform children with low parent involvement who did not participate in

extracurricular activities. This study also contributed to the literature on parent involvement and extracurricular activity participation by testing the relationship of each to academic performance. Participants came from a longitudinal, nationally representative data set and included 8410 third grade children. Parent involvement was measured with a composite variable including home-based and school-based involvement items (derived from parent and teacher report). Extracurricular activity participation was measured by parent report. Each child's academic performance was measured by teacher report of academic competence in reading and math. This study controlled for sex, race/ethnicity, previous achievement and family structure. Contrary to what was expected, the interaction between parent involvement and extracurricular activities was not significant. Although the relation between extracurricular activity participation and academic performance was statistically significant, that of parent involvement and academic performance was not. Supplementary analyses revealed a positive, statistically significant association between school-based parent involvement and school performance; a negative, statistically significant relation was found between home-based parent involvement and school performance. Previous research supporting home-based parent involvement has utilized parent training provided by schools and teachers. Results of the current study, which did not involve formal parent training, may therefore suggest that children stand to gain more from home-based parent involvement when schools and teachers encourage, train, and support parents. In response to the encouraging finding with respect to extracurricular activity participation, future researchers may wish to delve

further into the topic by examining the activities or characteristics of those activities that prove most beneficial for the academic performance of children.

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CHAPTER 1: INTRODUCTION

At one time, parents presided over the home, and school was the teacher's domain. Over the last several years, however, the boundary between home and school has become more diffuse, and it has increasingly become the responsibility of parents to become involved in both spheres of the child's life. At present, it is not only popular for parents to be involved with school, but it has become crucial. In fact, the federal government considered parent involvement to be such a priority that it was put into legislation in 1994 as part of the "Goals 2000: Educate America Act." Goal eight of the Act states that "every school will promote partnerships that will increase parental involvement and participation in promoting the social, emotional, and academic growth of children" (United States Department of Education, 1994). The national interest in the topic of parent involvement in the achievement of children over the past few decades has spawned a substantial amount of empirical inquiry. This research suggests that the involvement of parents in the school lives of their children has positive implications for children's school performance both academically and socially (e.g., Stevenson & Baker, 1987). As early as pre-school, significant differences in academic performance have been shown between children with highly involved versus less involved parents (Marcon, 1999; Reynolds, Mavrogenes, Bezruczko, & Hagemann, 1996).

The types of involvement that have been shown most useful range from direct to more peripheral connections with the school and the school curriculum. Based on the literature, the most effective involvement dimensions can be broken down into four overarching categories: (1) communication between home and school; (2) parent

involvement at home; (3) parent involvement at school; and (4) parent educational aspirations and expectations for the child (Fan & Chen, 2001; Fantuzzo, Tighe, & Childs, 2000). These types of involvement have been shown to affect various aspects of children's academic performance, such as grades, standardized test scores, and behavior in the classroom (Epstein, 2001a; Epstein, 2001b; Stevenson & Baker, 1987).

Unfortunately, not all children have involved parents. For a number of different reasons (e.g., work schedules, feelings of incompetence), not all parents are involved in the learning experiences of their children. A reported 60.6% of married families with children have both parents working outside of the home (United States Department of Labor: Bureau of Labor Statistics, 2004). In single parent families, the employment figures are even higher, with 83.9% of single fathers and 72.0% of single mothers at work (United States Department of Labor: Bureau of Labor Statistics, 2004). Research indicates that this majority of working parents leave 39% of elementary age children without adult supervision for a portion of the day (Brimhall, Reaney, & West, 1999). Approximately 36% of children spend at least one day a week at home unsupervised after school, 16% are alone after school for 3-4 days out of the week, and 13% of children spend some time alone every day after school (Duffett, Johnson, Farkas, Kung, & Ott, 2004). Parents are obviously extraordinarily busy, and their work schedules likely cut down on the amount of time they have for school and in-home involvement with their children.

Moreover, aside from actual time spent at work, several other variables have been linked empirically to the degree of involvement that parents have with their children in

the home and with the school. These are characteristics such as economic status, age and sex of the child, distance that the family lives from the school, and parents' level of education (Epstein, 1995; Fantuzzo et. al., 2000; Stevenson & Baker, 1987). It has been suggested, for example, that less educated, single parents exhibit lower levels of home-school collaboration and involvement (Fantuzzo et. al., 2000). Of course, the reason for this may be that these parents feel less capable of helping their children (especially as the children age) (Fantuzzo et. al., 2000), but the many hours that many single parents work outside of the home may also prevent them from being involved. With respect to economic status, poorer parents may not have the option of working fewer hours—preventing them from investing more time in involvement activities at home and school. Whatever the reasons, the reality is that not all children have involved parents and these children are left academically vulnerable as a result.

Interestingly, some studies have found that children who are able to attend after-school programs or participate in another form of extracurricular activity outside of school also tend to perform at a higher level in school (Fletcher, Nickerson, & Wright, 2003; Prelow & Loukas, 2003). Extracurricular activity programs can include programs run by community centers, religious groups, park and recreation departments, and private businesses (e.g., karate school, music school) (Shumow, 2001). Participation in these types of activities has been shown to affect children's standardized test scores, academic aptitude, and social skills (Fletcher et. al., 2003; Prelow & Loukas, 2003).

Because participation in extracurricular activities may be linked to academic performance in children, it is possible that participating in extracurricular activities might

serve as a protective factor for children in the absence of parent involvement. In other words, in the circumstances where parents are not involved (or minimally involved), will participation in extracurricular activities buffer the academic performance of those children? This study sought to answer that question.

Parent involvement, participation in extracurricular activities, and academic performance were examined in a large sample of third grade children in order to determine if extracurricular activities alter the effect of parent involvement on academic performance. The involvement of parents was examined in two areas: home-based involvement and school-based involvement. The degree of parent involvement was measured by parent- and teacher-report questionnaires that assess parent involvement at home and at school. The extracurricular activities used in the study included participation in organized athletics, fine and performing arts, and clubs (e.g., Scouts, 4H). Participation in extracurricular activities for each child was measured by a parent-report questionnaire. Teacher perceptions of children's academic competence were recorded on a teacher-report questionnaire, which was used to measure academic performance.

Multiple regression analysis were conducted in order to examine the effects of each of the independent variables (parent involvement and extracurricular activities) on the dependent variable (academic performance), and to determine whether participation in extracurricular activities moderated the effect of parent involvement on achievement.

Children and families are faced with the reality that if parents are less involved, children are less likely to be high achievers. Clearly, in order to best meet the needs of children, parents need more options. This study addressed the academic vulnerability of

children with low parent involvement by examining extracurricular activities as a potential protective factor for their school success. Parents who cannot be actively involved with their children may benefit from research examining some alternative ways to help their children excel.

CHAPTER 2: LITERATURE REVIEW

Theoretical Context for the Present Study

Urie Bronfenbrenner's (1979) ecological approach to development emphasized the importance of the multiple immediate environments in which a child spends his or her time. According to Bronfenbrenner, these settings or environments are contained within the microsystem, which includes such realms as home, school, and day care. The child, by Bronfenbrenner's theory, is at the center of a set of "nested structures" (Bronfenbrenner, 1979, p. 3). The microsystem is the innermost structure. By this theory, the nature of the relationship between the child and his or her environment is an interactive one. The child is directly affected by the settings in which he or she spends time and, based upon the child's own characteristics, the child also influences the environment.

The next layer of the child's ecology is the mesosystem (Bronfenbrenner, 1979). The mesosystem comprises the connections or relations between the immediate settings contained in the microsystem. According to Bronfenbrenner (1979):

the capacity of a setting—such as the home, school, or workplace—to function effectively as a context for development is seen to depend on the existence and nature of social interconnections between settings, including joint participation, communication, and the existence of information in each setting about the other.

(p.5)

A great deal of research has acknowledged the importance that Bronfenbrenner placed on the environment and relations between contexts. Researchers, for example, have

examined interactions at the level of the microsystem (e.g., the effect of home environment variables on children, the effect of classroom variables on children) and the mesosystem (e.g., home-school relations, home-day care relations) (Fletcher et al., 2003; Walberg, 1984).

Studying the impact of parent involvement on children's achievement acknowledges the developmental importance that Bronfenbrenner (1979) placed on environmental variables, and involves analysis on both the micro- and mesosystemic levels. For example, parent involvement variables that examine time spent in the home are contained in the microsystem, whereas assessing contact and communication between the home and school taps into the mesosystem. The abundance of research exploring the effect of parent involvement on the adjustment of children and adolescents (e.g., Epstein, 2001b) reflects the adoption of Bronfenbrenner's principles on the part of the psychological and educational communities.

Although extracurricular settings, like home and school environments, are a prominent part of the microsystem (for those children involved in such activities), relatively less research exists on this aspect of children's development (Fletcher et. al., 2003). According to Bronfenbrenner's (1979) theory, participation in extracurricular activities will have an effect on the child by virtue of the setting being a part of the microsystem, and this change will inevitably have an effect on other settings in the child's life due to the reciprocal nature of influence between the child and his or her environment.

Erik Erikson's theory of the Psychosocial Stages of development lends further support to the particular importance of extracurricular activities in the absence of parent involvement during this period of childhood (Erikson, 1950). Children between the ages of six and 11 are in the stage of Industry versus Inferiority (Erikson, 1950). At this age, children are not only entering the school system, but they also begin to spend more time with peers in and outside of school, and under the guidance of adults other than their parents (e.g., dance teachers, coaches, camp counselors) (Eccles, 1999). According to Erikson (1950), children in this phase of development learn to cooperate and work with others. In school and in structured activities, children begin to develop competence and productivity with others and with the tasks set before them. Failures or negative experiences in settings such as school, home, and after-school activities can leave children feeling inferior and incompetent (Berk, 1997; Eccles, 1999; Erikson, 1950).

Supporting Erikson's developmental conceptualization, empirical evidence suggests that self-esteem and feelings of competence are positively associated with school performance (as well as psychological well-being) (Cairns, Cairns, & Neckerman, 1989). For example, children with relatively negative early school experiences, and consequently lower feelings of competence, are less likely to graduate from high school compared to their peers with greater feelings of competence (Cairns, Cairns, & Neckerman, 1989). From an ecological point of view, experiences of competence and incompetence outside of school may contribute substantially to the child's school performance (e.g., academic achievement). In a developmental examination of children in middle childhood, Eccles (1999) posits, "Children's experiences of success or

frustration...in organized activities outside school can also play a crucial role in development, as they either exacerbate or compensate for children's experiences in school (p. 32)." Thus, through positive experiences in an activity setting, a child may learn that he or she is capable of success with hard work. The child may then apply this knowledge to his or her schoolwork and, consequently, improve his or her academic performance. Taking this example further into Bronfenbrenner's (1979) territory, the child, having gained more confidence in his or her competence in the activity setting, may enter school with increased confidence and a greater willingness to work hard, thus evoking a more positive and helpful response from the teacher.

The implications of this theoretical proposition are quite substantial for children whose parents are less involved (and who are therefore at risk for lower achievement). The possibility that the school experience of these children may be positively affected by experiences in other settings is quite probable from an ecological perspective. Moreover, such a theory may help to explain why participation in extracurricular activities is suggested to be even more effective for the adjustment of children who are "at-risk" (Powell et. al., 2002; Shumow, 2001). From the ecological point of view, those children may be gaining skills and developing competencies via participation in extracurricular activities that they are otherwise lacking in their home settings or on less immediate but important levels of their environment (e.g., exosystem characteristics such as health and welfare services and parents' work schedules).

Herbert Walberg's (1984) Theory of Educational Productivity is also useful to examine in the context of this study as it synthesizes some of the key elements proposed

by Erikson and Bronfenbrenner as described above. Walberg proposed a nine-factor model for the “optimization” of learning—cognitively, behaviorally, and affectively (see Figure 1). The nine factors are divided into three groups. The first group is labeled “Student aptitude” and involves 1) ability or prior achievement; 2) development (chronological age/state of maturation); and 3) motivation or self-concept. The second group, “Instruction” involves 4) time spent in learning; and 5) quality of instruction. Finally, group three, “Environmental factors,” includes 6) the home; 7) the classroom social group; 8) the peer group outside of the school; and 9) use of out of school time.

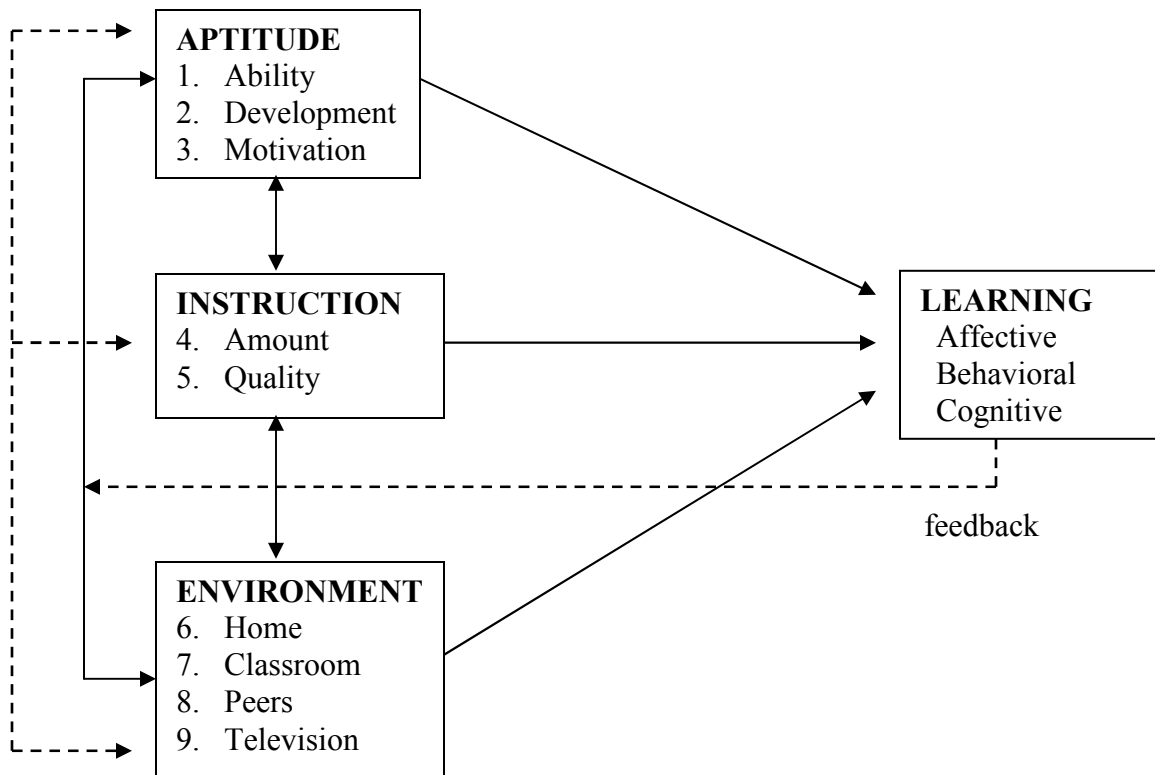


Figure 1. Walberg’s model of educational productivity (adapted from Walberg, 1984).

The first five factors are those that have historically been considered across many models of learning (Walberg, 1984). Although important, Walberg asserts that these commonly considered factors pose a great challenge for educators in creating change as they depend heavily on other variables such as socioeconomic and political conditions as well as prior learning and characteristics of the students and parents. According to Walberg, “educators are unlikely to raise achievement substantially by their own efforts alone” (p.20). On the other hand, he claimed, “improvements in the more direct and more alterable factors hold the best hope for increasing educational productivity” (p.21). These “more alterable” factors that Walberg refers to are three of the environmental factors: the home, the peer group outside of school, and the classroom climate.

The “home” factor described by Walberg (1984) is, in fact, referring to parent involvement. Also termed the “curriculum of the home” (1984), this factor of learning is described by Walberg as,

Informed parent-child conversations about school and everyday events, encouragement and discussion of leisure reading, monitoring [of]... peer activities, ... expressions of affection and interest in the child’s academic and other progress as a person, and perhaps, among such unremitting efforts, smiles, laughter, caprice, and serendipity. (p.25)

Thus, Walberg’s emphasis on the importance of the home environment is aligned with Bronfenbrenner’s (1979) conception of the microsystem and the critical role that the home environment, specifically interaction with caregivers, holds for the child.

Walberg (1984) has tested the connection between the home environment and school learning and has found empirical support for his theory. An analysis of approximately 3,000 studies revealed that Walberg's 9 proposed factors are, indeed, primary influences on learning. With respect to the environmental factors specifically, the analysis revealed consistent positive outcomes related to learning. For example, Walberg found a strong correlation between learning and the home (or parent involvement variable), which was, on average, twice that of the correlation between learning and family socioeconomic status. Moreover, studies supported the influence of the home involvement factor for students of all ages and some findings revealed effect sizes that were ten times that of SES (Reynolds & Walberg, 1991; Walberg, 1984).

Further echoing Bronfenbrenner (1979), Walberg (1984) cited the importance of cooperation between caregivers and schools to alter this influential home-based curriculum. The collaboration between educators and parents to which Walberg refers belongs to Bronfenbrenner's mesosystem. Walberg touted the environment of the home as being quite "alterable," asserting that joint efforts on behalf of parents and the school to make the home environment more conducive to learning "have an outstanding record of success in promoting achievement" (p.25). Walberg, like other researchers (e.g. Epstein) to be discussed in the following section, encouraged a partnership between caregivers and schools in the name of increasing achievement.

Again reflecting the ideas of Bronfenbrenner (1979) and Erikson (1950) Walberg (1984) emphasized the important role that can be played by the child's peer group outside of school. In meta-analyses, Walberg found a consistent positive correlation between the

peer group and learning. Walberg, in his conceptualization of the peer group, refers to “an out-of-school peer group with learning interests, goals, and activities” (p.20).

Certainly, spending time with peers engaged in an extracurricular activity falls under this definition. From this perspective, children learn with and from their peers while engaged in activities and, on a level once removed, extracurricular activities help shape this influential “out-of-school peer group” by bringing children together and thus facilitating friendships. Such a scenario might be particularly important from the perspective of all three theorists in the case of the “at-risk” child who may have a delinquent or unmotivated peer group at school but forms a positive group of friends via a sports team or club. Moreover, Walberg asserted that children benefit from these out of school environmental factors both directly and indirectly. Students gain directly via the specific skills gained from peers and activities, and these variables help students indirectly by “raising student ability, motivation, and responsiveness to instruction” in school (p.20).

Walberg’s (1984) theory emphasized the important role of factors in the child’s environment outside of school. Walberg also cited empirical evidence to support such a proposition. His theory, like those of Bronfenbrenner (1979) and Erikson (1950) thus supports the potential of outside of school variables, such as parent involvement and extracurricular activity participation, to positively influence student achievement. Accordingly, his theory lends further support to the proposed beneficial effect of extracurricular activity participation on learning in the absence of parent involvement.

Parent Involvement

A great deal of research exists on the impact of parent involvement on the school performance of children. Results of these studies are inconsistent, however, and one commonly noted reason for the inconsistency is the failure of researchers to adopt a common definition of “involvement” (Fan & Chen, 2001; Fantuzzo, Davis, & Ginsburg, 1995; Keith et. al., 1993; Kohl, Lengua, & McMahon, 2000; Miedel & Reynolds, 1999). In a meta-analysis involving 25 studies on parent involvement, Fan and Chen (2001) found that, across studies, researchers attributed vastly different meanings to the term “involvement.” Based on their analysis of the studies, Fan and Chen clustered the many definitions of parent involvement into five main categories: Parental Involvement-General, Parent-Child Communication (interest in home/school work, assistance with homework, discusses school progress), Home Supervision (time spent doing homework, time spent watching TV, home surroundings conducive to studying, should come home after school), Educational Aspiration for Children (educational expectations, values academic achievement), and School Contact and Participation (parents contact school and school contacts parents, parents volunteer at school, parents attend school functions).

Similarly, Keith and colleagues (1993) reported that definitions of parent involvement in the research literature tend to center on four constructs: parental academic aspirations and expectations for children, participation in school activities and programs, a home structure that supports learning, and communication between parents and children about school. Moreover, Keith et. al. suggested that there is research conducted on constructs such as “students’ home learning environment ” that are often conceptually

related to the term “involvement” and therefore need be explored in an examination of the parent involvement literature.

Epstein (1995; 2001c) offered a framework of involvement that focuses in on the more specific context of a “partnership” between the school, parents, and, at times, the community. Studies measuring the effect of parent involvement practices and variables related to parent involvement consistently cite Epstein’s (1987) five-part and, later, Epstein’s (1995) expanded six-part frameworks of parent involvement (e.g., Marcon, 1999). The “Framework of Six Types of Involvement for Comprehensive Programs of Partnership” outlined by Epstein (1995, 2001c) includes the five types of involvement reported by Epstein (1987) as the five “major” or most commonly used approaches that schools and teachers use to better connect parents with the children’s education, and the addition of a sixth type. The six components of involvement included in the Epstein (2001c) definition are: “Parenting,” “Communicating,” “Volunteering,” “Learning at Home,” “Decision Making,” and “Collaborating with the Community.”

The first type of involvement, Parenting, refers both to ensuring the basic needs of children are met (e.g., health), and to fostering parenting practices that prepare children for school and support their experience in school (e.g., learning, behavior) over the years. According to Epstein (2001c), schools help parents meet these goals by offering guidance in the form of support groups, workshops, and other forms of education along these lines. Communicating refers to keeping parents informed about the progress of their child (e.g., parent-teacher conferences, phone calls, report cards) and about events or programs that are taking place at the school. The third type of involvement, Volunteering, refers to

voluntary roles that parents and other adults play at the school (e.g., classroom/office aides) and to parents or others who come to school to support their children in school-related events. Epstein suggested that schools can increase the participation of parents and other family members at the school by making sure that opportunities for parents are accessible, ensuring that volunteers are well-trained, and by adjusting or shifting the scheduling of events and opportunities such that a greater number of parents and other volunteers can be present. Learning at Home, the fourth type of involvement included in the definition, requires the parent to take a more active role in the child's learning. This type of involvement refers to ways that parents help children at home with schoolwork, and to the conducting of activities at home that relate to the child's classroom lessons. Schools and teachers facilitate this involvement by educating parents on what is required of their child in terms of skills and competence at each grade level, and also by offering parents guidance on effective ways to assist their children at home (Epstein, 2001c). Type 5, Decision Making refers to the activism of parents and other community members in policy-making on issues that affect the school. This includes decision making that affects the school most directly (e.g., parent-teacher organizations) or via district and state policy (e.g., Title I programs). Epstein found that schools help parents and other volunteers to become involved in these decision making activities by offering useful school information to the groups and by educating or training volunteers in the most effective ways to manage these organizations. Finally, the sixth type of involvement outlined in this definition, Collaborating with the Community, includes resources and community services that are available to parents, students, and schools alike. The focus of this type of

involvement is informing families about what services are offered, and availing these services to families. Programs of this type include extracurricular activities, summer programs, counseling, health-related, cultural programs and other related services that are provided by community businesses and organizations (Epstein, 2001c).

Overall, examinations of the definitions of involvement across the literature are consistent in their findings. Based on the analyses of Fan and Chen (2001), Keith et. al. (1993), and Epstein (2001c), it appears that the definitions of parent involvement most commonly fit into one of 5 broad dimensions: home involvement/environment, communication, school involvement, educational aspirations, and policy and community involvement. Table 1 below illustrates the parallels in the involvement spheres identified by Epstein, Fan and Chen, and Keith et. al., and groups them into these broad dimensions.

Table 1

Broad Dimensions of Involvement Across the Literature

Dimension	Epstein (1995)	Fan & Chen (2001)	Keith et.al. (1993)
Home involvement/ Environment	Parenting; Learning at Home	Home supervision	Home structure supporting learning
Communication	Communicating	Parent-Child Communication	Communication
School Involvement	Volunteering	School contact and participation	School participation
Educational Aspirations		Educational Aspirations	Educational Aspirations
Policy/community involvement	Decision Making; Collaborating with the Community		

Efficacy of the Different Types of Parent Involvement

In an attempt to measure and empirically validate the many dimensions of parent involvement, Fantuzzo et. al. (2000) created the Family Involvement Questionnaire (FIQ). Based on Epstein's (1995) framework of involvement, this 42-item measure divides into three-factors: home-school conferencing (e.g., talking to teacher about child, parent-teacher conferences), home-based involvement (e.g., learning activities at home, promotion of a learning environment at home, visits to educational places in the community) and school-based involvement (e.g., volunteering at school, fundraising). The participants used by Fantuzzo et. al. (2000) in the development of this measure were predominantly African American, low income families with children in pre-school through first grade. According to Fantuzzo et. al., the FIQ provides empirical support for all of Epstein's dimensions of involvement, except for the sixth category, Community-School Involvement. Epstein's Communication category is reflected in the home-school conferencing factor of the FIQ. Epstein's Parenting and Learning at Home dimensions are combined in the home-based involvement factor; and the school-based involvement factor of the FIQ matches with Epstein's Volunteering and Decision Making categories (Fantuzzo et. al., 2000).

Studies examining the effects of the different types of involvement on achievement have also suggested that certain approaches may be more useful than others. Studies consistently cite Volunteering as the type of involvement most beneficial for achievement (Marcon, 1999; Miedel & Reynolds, 1999). For example, Marcon (1999) demonstrated significant effects for Epstein's (1995) Communicating and Volunteering

dimensions, but found that Volunteering had a greater influence on academic skills and adaptive development among preschoolers than did Communicating. Likewise, parent participation in educational activities at home (included in Epstein's Learning at Home domain) has been shown to be more important to academic achievement and social skills in children than the frequency of parent-teacher contact (Epstein's Communicating domain) (Izzo, Weissberg, Kaspro, & Fendrich, 1999).

Moreover, research suggests that the *quality* of the parent-child and parent-school involvement is also important (Izzo et. al., 1999; Kohl et al., 1994; Parker, Boak, Griffin, Ripple, & Peay,1999). The impact that the quality of the activities has on children has been demonstrated to be as great as, if not a greater than, the frequency of participation (Izzo et. al., 1999; Kohl et. al., 1994; Parker et. al., 1999). For example, the quality of the relationship between the teacher and the parent (as perceived by the teacher) is shown to be related to "improvements" in social behavior and academic achievement (Izzo et. al., 1999). Parker et. al. (1999) examined characteristics of the quality of the parent-child relationship among pre-school children in a Head Start program. In their analysis of school readiness, the authors found that parent-child home interactions in which parents were able to aid in their child's learning without tending to act too strict or become aggravated were the most beneficial for children in terms of preparing them for school. This study found that a high number of parent-child interactions at home regarding school were associated with poorer school behavior. The authors suggest that a differentiation be made between "supportive, reciprocal fostering of a child's interests in learning" and "overly demanding didactic attempts" (p.422) on the part of the parent to

engage the child in school, which may be perceived by the child as “overwhelming,” and therefore fail to produce increased school readiness.

Research has also found negative correlations between some types of involvement and school performance (Epstein, 1987; Izzo et. al., 1999). Izzo et. al. (1999) found that an increased number of parent-teacher contacts was associated with a higher level of classroom behavior problems. The authors suggested that this finding may reflect that teachers have a greater number of interactions with parents of children who were already demonstrating more behavior problems at the time of the study. Similar results were obtained by Epstein (1987) who found that lower achievement and a greater number of behavior problems in elementary school children were positively related to time spent helping the child with homework and the frequency of requests from teachers to do so. Epstein suggested that parents of children who have more trouble academically are more frequently involved by teachers as compared to the parents of children who are having few to no problems in the classroom.

Potential Influences on Parent Involvement

Variables such as the child’s gender, age, ethnicity, economic status, family structure, and parent education have been shown to influence the degree to which parents are involved with their children at home and at school (Barnard, 2004; Epstein, 2001c; Fantuzzo et. al., 2000; Kohl, Weissberg, Reynolds, & Kaspro, 1994; Moles, 1993; Reynolds, Weissberg, & Kaspro, 1992; Stevenson & Baker, 1987). Overall, research suggests that young, White, middle to upper class girls, with married and educated

parents, will experience the highest level of parent involvement (Barnard, 2004; Dauber & Epstein, 2001; Epstein, 2001c; Fantuzzo et. al., 2000; Stevenson & Baker, 1987).

Gender

Research has found that parent involvement may be higher among parents of girls than boys (Stevenson & Baker, 1987). Stevenson and Baker (1987) found that parents of girls were insignificantly more involved than parents of boys. The authors suggest that perhaps the involvement of parents with girls differs from the involvement with boys across all areas of children's lives, but note that more research is needed to draw substantial conclusions.

Age

Studies have suggested that parent involvement in school is negatively correlated with children's age and grade level (Barnard, 2004; Dauber & Epstein, 2001; Epstein, 2001c; Epstein & Dauber, 1991; Fantuzzo et. al., 2000; Izzo et. al., 1999; Stevenson & Baker, 1987). Both parents and teachers report a decline in involvement in school and at home from elementary to middle school (Dauber & Epstein, 2001; Epstein & Dauber, 1991). Influences that relate to higher levels of involvement in elementary school include greater feelings of competence among parents, more guidance on involvement practices from teachers and schools at the elementary level, and parents' perceptions that children, when in elementary school, are more willing and motivated to discuss school with their parents than when they are in middle school (Dauber & Epstein, 2001). Epstein (2001c) argued that schools must focus on maintaining involvement with parents from year to

year in order to prevent a waning in parent involvement as children advance in grade level.

Race and Ethnicity

Parents of minority children have been found to be less involved with the school than parents of White children (Kohl, Weissberg, Reynolds, & Kaspro, 1994; McKay, Atkins, Hawkins, Brown, & Lynn, 2003; Reynolds, Weissberg, & Kaspro, 1992). McKay et. al. (2003) found that one reason some African American parents are less involved with their children in activities at the school is that they believe that there is racism in the school. Interestingly, awareness of racism among parents was found to be positively associated with involvement in the home (McKay et. al., 2003).

Economic Status

Poorer communities tend to have weaker levels of parent involvement than more advantaged communities (Epstein, 2001c; Reynolds et.al.,1996). Researchers attribute this to stressors that are associated with economic disadvantage (e.g., attention to more immediate needs such as money and safety) (Reynolds et. al., 1996), and this relationship may also be partially explained by the relationship between involvement and parents' level of education described below. It has also been noted that poorer parents may avoid interacting with school personnel because they feel as though they are being looked down upon (Leitch & Tangri, 1988). According to Epstein (2001c), significant collaborative efforts on the part of schools in low-income communities are necessary to prevent this discrepancy in parent involvement across communities.

Family Structure

Having two parents in the home who are married is associated with higher levels of parent involvement at home and a higher degree of contact with the school, as compared to other family types (i.e., single parent, separated parents, divorced parents, widowed parent) (Fantuzzo et. al., 2000). In general, single parents are less involved with school than married parents (Epstein, 2001b; Kohl et. al., 1994; Reynolds et. al., 1992). Fathers, working parents (except for those who work at home), and parents who live farther away from the school are less involved in activities that take place at the school (Dauber & Epstein, 2001; Epstein, 2001c). The involvement of single parents may be inhibited by a decreased amount of time to spend with children, less money, and fewer social resources (Kohl, Lengua, & McMahon, 2000). The lower levels of involvement among single parents is reflected in the greater number of school problems that have been found among the children of single parents (Zill, 1996). Some research has found, however, that single parents are no less involved with their children in the home than married parents (Epstein, 2001d; Kohl et. al., 2000). Thus, it may be that decreased time, money, and social resources inhibit parent involvement in terms of school contact, but not in terms of time spent with children at home. Even so, one study found that single parents were no less involved at home *or* at school (Dauber & Epstein, 2001). These inconsistent findings may, again, reflect differences in the definition of parent involvement across studies. Still, the majority of the research does appear to demonstrate differences in involvement with respect to family structure. Research has also shown that the number of children in the home is negatively correlated with the level of parent

involvement in the home (Dauber & Epstein, 2001). The number of children in the home is not, however, predictive of parent involvement at the school (Dauber & Epstein, 2001).

Parent Education

Studies have demonstrated that parents' level of education is positively related to parent involvement at the school (Dauber & Epstein, 2001; Fantuzzo et. al., 2000; Kohl et. al., 2000). Fantuzzo et. al. (2000) found that parents who were more educated participated more in school-based involvement activities and spent more time communicating with the child's school. Findings are mixed, however, with respect to parent involvement with children at home. Some research has shown that parents' level of education is not related to involvement at home (Fantuzzo et. al., 2000), whereas other findings suggest that in fact it is (Dauber & Epstein, 2001; Kohl et. al., 2000). Although many factors could account for these findings, it has been found that parents who have more education (i.e., high school degree and above) feel both more comfortable and more competent when dealing with the school system (Dauber & Epstein, 2001; Fantuzzo et. al., 2000). Research also indicates that parents with more education are often more aware of the child's homework (Dauber & Epstein, 2001).

Achievement and Performance Implications for Children

Many studies have demonstrated that parent involvement is related to higher achievement in general among students, greater motivation to learn, and better behavior in school and at home (e.g., McWayne, Hampton, Fantuzzo, Cohen, and Sekino, 2004; Reynolds, 1992; Stevenson & Baker, 1987). The positive effects of parent involvement on children's performance and behavior in school have been demonstrated among

children as early as pre-school (Marcon, 1999; Reynolds et. al., 1996), and the effects of parent involvement have also been shown to extend throughout school. Children with involved parents are more likely to remain in school longer, graduate from high school, and are more likely to graduate high school on time, as compared to their peers with less-involved or uninvolved parents (Barnard, 2004). With respect to academic performance, studies tend to assess reading and mathematics achievement (e.g., Miedel & Reynolds, 1999; Stevenson & Baker, 1987). Hence, these are the areas that will be reviewed below (and included in the present study).

Reading Achievement

Several studies have demonstrated a positive link between parent involvement and children's reading achievement (Dauber & Epstein, 2001; Epstein, 2001b; Janiak, 2003; Leslie & Allen, 1999; Marcon, 1999; Miedel & Reynolds, 1999; Morrow & Young, 1997; Zellman & Waterman, 1998). Many of these studies focused on collaborative involvement programs between the parents and the schools in which parents are provided with and guided in employing techniques for helping their children at home with reading (Dauber & Epstein, 2001; Epstein, 2001b; Janiak, 2003; Leslie & Allen, 1999; Morrow & Young, 1997). Both parent involvement in general and parent involvement specifically targeted at reading appear to have a positive effect on children's reading achievement as measured by standardized test scores and teacher perceptions (Janiak, 2003; Leslie & Allen, 1999; Miedel & Reynolds, 1999; Morrow & Young, 1997). Miedel & Reynolds (1999) found that the frequency of parent involvement at school (e.g., volunteering in classroom, attending school meetings, going on class field trips) and the number of

different types of involvement activities that parents took part in at the school were both positively related to children's reading achievement. With an intervention using parent involvement specifically targeted at reading skills, Leslie and Allen (1999) found that children whose parents read with them at home and encouraged independent reading at home made more reading progress in elementary school compared to children whose parents were not involved in their reading outside of school. Additionally, parent involvement with children in reading activities has been shown positively affect children's attitudes toward both educational and voluntary reading (Janiak, 2003). These children also had more confidence on reading tasks in the classroom (Janiak, 2003). Such findings have held true even after parents' level of education was taken into account (Epstein, 2001b).

Math Achievement

Research has suggested positive associations between parent involvement and mathematics achievement among children (Hill & Craft, 2003; Marcon, 1999; Sheldon & Epstein, 2005). In general, high levels of parent involvement have been associated with a higher level of mathematics achievement in children (Marcon, 1999; Sheldon & Epstein, 2005). Sheldon and Epstein (2005) found that when parents are actively involved in curriculum-related math activities and homework with their children in the home, children perform better on tests of mathematics achievement. Hill and Craft (2003) tested for mediators in the effect of parent involvement on math achievement and found that the effect was mediated by the acquisition of academic skills in African American children. That is, parent involvement affected academic skills, and academic skills improved math

achievement. It appears, then, that parents can be effective in helping their children acquire math skills.

Hill and Craft (2003) demonstrated many more positive associations between parent involvement and math achievement than for reading achievement. In the case of parent involvement in the school (Volunteering), the researchers speculated that parents are already helping children a lot more with reading at home than with math, so involvement in the school did not boost reading achievement, but did increase parents' skills and ideas for helping their children with math (Hill & Craft, 2003; Christenson, Rounds, & Gorney, 1992).

On the other hand, some studies that have demonstrated a positive link between parent involvement and reading have failed to show the same for math. For example, although Epstein (2001b) demonstrated that teachers' efforts to involve parents in their child's learning were linked to gains in children's reading achievement, the same was not found for math achievement. In fact, findings from this study suggest that teacher practices of parent involvement were not correlated with math achievement scores at time two. Moreover, a higher education level among the parents was found to be significantly and positively associated with reading achievement, yet the education level of parents was not significantly related to change in children's math scores. The author offered several possible explanations for these results. First, findings indicate that teachers far more commonly assign reading activities for parents and children than they do math activities. Second, parents may feel less equipped to help their children with math homework as opposed to reading homework—especially as the children get older.

Similarly, Pezdek, Berry, and Renno (2002) were unable to find a significant association between parents helping children with math homework and children's math achievement. This result is consistent with research suggesting that there is little to no association between homework and achievement in the primary grades (Chen & Stevenson, 1989; Pezdek et al., 2002).

Fantuzzo, Davis, and Ginsburg (1995) likewise did not find a significant association between parent involvement and math achievement, however the *involvement* in this study did not consist of any direct math content. Involvement in this study referred to parents reinforcing their children for gains made in math in the classroom by engaging them in an activity such as a movie or visit to the zoo (Fantuzzo et al., 1995). Although parent involvement in general (non-reading/math related) is shown to positively influence reading, these results suggest that the same is not so for math. In order for involvement to contribute significantly to gains in math, perhaps the involvement must actually center on math skills or more closely related concepts.

Behavior in School, Attitude to School, and Dropout Rates.

Characteristics of the interactions between parents, children, and the school have been shown to affect behavioral characteristics of children, such as cooperative behavior, helpfulness, and attitude to school (Epstein, 2001a; McWayne et al., 2004). For example, Epstein (2001a) demonstrated that attitude toward school is positively related to parent awareness of and participation in children's homework and efforts on the part of the teacher to include parents in the children's learning (i.e., assigning homework for parent and child to work on together). Although Epstein noted that attitude to school is not

necessarily indicative of high achievement, children were found to do more homework when parents were involved. Further, the study lends support for the usefulness of parent involvement practices *directly* involving and focusing on school and school activities. For example, communication between parents and children specifically about school activities and homework assistance were shown to be particularly effective in terms of children's attitudes to school and likelihood of completing assigned homework (Epstein, 2001a).

Another aspect of school performance with which research has demonstrated a link to parent involvement is school dropout (Barnard, 2004). According to a study by Barnard (2004), examining involvement and school performance in a sample of predominantly poor African American students from elementary school through age 20, the more involved a parent was across their child's first through sixth grade years, the greater was the likelihood that the child would remain in school. Specifically, if a parent's involvement was rated by the teacher as being average or above for half of the six-year span, the child was found to be 63% less likely to drop out of school, as compared to children whose parents were less involved (Barnard, 2004). The study also examined the relation between early involvement and high school completion, which was differentiated from high school dropout because students who dropped out and later earned their GED were classified as high school graduates. Findings suggested that children of parents whose involvement was rated by teachers as average or above average for three years were 96% more likely to complete high school as compared to children of parents whose involvement was never rated at least average over the six year span

(Barnard, 2004). Based on the findings of this study, Barnard concludes that schools and students would be best served if the schools' curricula include a "parent involvement component" early on in children's schooling.

Ethnic Differences in the Effects of Parent Involvement

Research has revealed some differences in the effects of involvement variables with respect to ethnicity (Hill & Craft, 2003). In a sample of Euro-American and African American kindergarteners, Hill and Craft (2003) found differences in the impact of parent involvement on academic achievement for the two different ethnic groups. For example, a positive relation was found between parent involvement at school and the child's math performance for African American kindergarteners. Interestingly, the association between involvement and math performance among the Euro-American children was a negative one. The authors suggested that parents of the Euro-American children may have become involved in school more commonly when the child was having trouble. Among the parents of the African American children, however, it was hypothesized by the authors that the parent's involvement at school helps to increase their child's "academic skills" (e.g. on-task behavior). This hypothesis is supported by the mediating effect that academic skills had between parent involvement in school and math achievement for the African American children. The authors proposed that the parents of African American children may be less informed than parents of Euro-American children about how to help foster academic skills in their children due to the fact that they are "less likely to have informal social networks that include parents of other children in the school (p.80)." It

was suggested that being in the school helps them to learn more ways to aid their children.

On the other hand, involvement in the home and the perceived degree of value that the parent places on education (as indicated by the child's teacher) proved to be positively associated to math performance for the Euro-American children, yet these involvement variables were not related to the math achievement of African American children. Interestingly, for both Euro-American and African American children, the only involvement construct that was positively correlated to reading achievement was the value that the parent places on the child's education. It should be noted, however, that other studies have failed to demonstrate such differences with respect to ethnicity, suggesting consistency in the effects of parent involvement across Euro American and African American children (e.g., Keith et. al., 1993; Kohl et. al., 2000).

Summary

The research on parent involvement is inconsistent and this is largely attributed to the lack of a common definition across studies. Overall, the definitions of parent involvement in the empirical literature appear to fall into one of five broad categories: home involvement/environment, communication, school involvement, educational aspirations, and policy and community involvement. Across definitions, findings suggest that parent involvement is positively related to school performance. To date, there appears to be more empirical (and consistent) support for the effect of parent involvement on reading than there is for parent involvement and mathematics. Last, while one study

found differences in the impact of parent involvement across ethnicity, other studies have failed to substantiate such a finding.

Extracurricular Activity Participation Among Children

In defining extracurricular activities, researchers consistently differentiate between structured and unstructured extracurricular activities (Fletcher et. al., 2003; Mahoney, Cairns, & Farmer, 2003; Shumow, 2001). Extracurricular activity programs can include programs run by community centers (e.g., Boys/Girls Club, YMCA), religious groups, park and recreation departments, and private businesses (e.g., karate school, music school) (Shumow, 2001). Mahoney et. al. (2003) provided a comprehensive definition of extracurricular activities. The authors broadly define extracurricular activities according to three criteria. First, participation is optional in that it is not a required part of the school curriculum. The authors suggested that because participation is voluntary, the child is “intrinsically interested in the activity.” This may often be the case, but it is also not uncommon for parents to require their child to participate in an activity. In that situation, the child may not actually prefer the activity, but participates out of obedience to the parent. Thus, this aspect of the definition may be unrealistically narrow. The second part of the definition suggests that the activity is “structured,” led by an adult or multiple adults, and is held at a regular time and appropriate location. Third, the activity “requires effort” and may be “challenging.”

Although there has been a significant amount of research conducted on the effect of extracurricular activities on achievement among adolescents (e.g., Gerber, 1996; Jordan & Nettles, 1999; Mahoney & Cairns, 1997; Marsh, 1992), this is not the case for

younger children (Fletcher et. al., 2003; Powell, Peet, & Peet, 2002). Relatively speaking, researchers have neglected to examine the potential implications that time spent in extracurricular activities can have for children (Fletcher et. al., 2003; Powell et. al., 2002). In reference to this lack of research on elementary students, Fletcher et. al. (2003) asserted, “There is little reason to suspect that the benefits of structured activity involvement are age-dependent (p.643).”

Incidence

Relative to other types of after school arrangements and activities (e.g., homework, television viewing, outdoor unstructured play), few children participate in structured extracurricular activities after school (e.g., art, dance, scouts, sports) (Posner and Vandell, 1999). As of 1999, only 14% of elementary school children were reportedly enrolled in “formal after-school programs” (Brimhall et. al., 1999). One reason for the low percentage of children in after-school programs is, quite simply, that too few programs exist (Halpern, 1999). Research suggests that among elementary school children, age is positively related to time spent in after school care outside of the home (Pettit et. al., 1997). With respect to the type of activity, it has been found that increasing grade level is positively associated with enrollment in after-school “lessons” (e.g., dance class), and negatively associated with participation in structured “after-school programs” (e.g., community-based recreational programs) (Shumow, 2001). Moreover, as children get older they tend to engage in more than one type of after school arrangement (Pettit et. al., 1997).

Gender and Ethnicity

Overall, there appear to be differences in the extracurricular participation of boys and girls (Posner & Vandell, 1999; Powell et. al., 2002). Boys take part in more structured after-school sports, whereas girls spend more after-school time involved in art, socializing, doing homework, and reading (Posner & Vandell, 1999; Powell et. al., 2002). Different gender-related patterns have also been noted in Euro-American children versus African American children (Posner and Vandell, 1999). Among Euro-American children, boys spend more time playing video and computer games than girls. Similarly, African American boys spend more time watching television than African American girls, who spend more time participating in extracurricular activities than their male counterparts (Posner & Vandell, 1999).

Differences between Euro-American and African American children in general have also been noted with respect to participation in extracurricular activities. It has been found that among African American children, time spent in after-school “non-sport” extracurricular activities is positively associated with grade level in elementary school (Posner & Vandell, 1999). Conversely, after-school program participation was found to be negatively associated with grade among Euro-American elementary school children (Posner & Vandell, 1999).

Economic Status

A greater number of children from higher income backgrounds participate in extracurricular activities, while low income or at-risk children from poorer communities often have less access to extracurricular programs (Pettit et. al., 1997; Posner & Vandell,

1994; Shumow, 2001). Sadly, these children may actually benefit the most from such programs, as compared to middle and upper class children, as the neighborhoods they live in are often dangerous and their schools tend to be less resourced (Powell et. al., 2002; Posner & Vandell, 1994; Shumow, 2001). Furthermore, it is possible that after-school programs offer enrichment experiences to children from low income communities to which these children would otherwise not have access (Posner & Vandell, 1994). Not surprisingly, economically disadvantaged communities tend to have fewer extracurricular program options for children than areas of greater wealth (Shumow, 2001). Similarly, families with higher incomes can afford to enroll their children in more extracurricular lessons after school (Shumow, 2001). It has been suggested that in childhood (as compared to adolescence where the school offers a greater variety of activities) participation in extracurricular activities often requires certain family resources (e.g., transportation, money) (Fletcher et. al., 2003). These oft-necessary resources likely account for some of the discrepancy in participation between low and high or middle income children. Moreover, the quality of the extracurricular programs themselves has been shown to be associated with socioeconomic status (Pierce, Hamm, and Vandell, 1999). For example, Pierce et. al. (1999) found that extracurricular programs that offered a larger selection of activities and were more “flexible” in the sense that children were given more choices with respect to what activity they participate in, were far more common in middle and upper income communities. The programs in poorer communities tended to be more rigid in their structure and more limited in their offerings (Pierce et.

al., 1999). This difference may be due in part to larger child to staff ratios and less funding for the programs.

Achievement and Performance Implications for Children

Advocates of extracurricular activity participation among children state that children's broad personal development is positively impacted by such participation (Gerber, 1996). Proponents cite research linking extracurricular activity participation to outcomes such as higher educational aspirations, increased self-esteem and self-discipline, and lower levels of school dropout and delinquency (Finn, 1989; Gerber, 1996; Holland & Andre, 1987). Of course, research has linked such characteristics to higher achievement and better behavioral adjustment (Gerber, 1996). It is further asserted that in fostering experience and expression, extracurricular activities compliment the school curriculum (Joekel, 1985). Hence, extracurricular activities are regarded by some not as *extra*, but as a substantial piece of child development.

Academic

Some research has demonstrated positive associations between participation in extracurricular activities and academic achievement among children (Cooper, Valentine, Nye, & Lindsay, 1999; Fletcher et. al., 2003; Pettit et. al., 1997; Pierce et. al., 1999; Posner & Vandell, 1994). The research that has been conducted on this relationship differs in terms of the types of extracurricular activities examined and how those activities are defined. For example, some research looks at clubs and community centers (Cooper et. al., 1999; Fletcher et. al., 2003), some studies examine participation on sports teams or fine and performing arts (Cooper et. al., 1999; Gerber, 1996; Posner & Vandell,

1994), and other studies consider academic-oriented programs (Cosden, Morrison, Gutierrez, and Brown, 2004; Posner & Vandell, 1994). Moreover, research has also suggested that the relationship between extracurricular activity participation and school achievement is mediated by factors such as self-esteem (Holland & Andre, 1987). Overall, the children who seem to benefit the most from participation in extracurricular activities are children who are considered at-risk of failing out of school (Cosden et. al., 2004). Research also suggests that, depending upon child and program characteristics, different children may benefit from different types of extracurricular programs (Shumow, 2001). Again, there is a fair amount of research on the relation between extracurricular activities and performance among adolescents, but relatively little research exists on this association among younger children.

In a nationally representative sample of over 20,000 children, Gerber (1996) demonstrated that participation in extracurricular activities is positively correlated with academic achievement. The extracurricular activities examined in this study included school-related and outside of school activities. School-related activities included both academic and non-academic activities, such as varsity and intramural sports, dance, choir, drama club, math club, science club, cheerleading, and newspaper. Non school-related activities included activities such as 4-H, non-school sports, hobby clubs, Boys/Girls Club, and youth groups. Cosden et. al. (2004) also suggest that participation in after school academic programs has positive implications for children's achievement, such as the development of study skills, increased confidence, and help with homework (which may not exist at home). Similarly, Fletcher et. al. (2003) found that children who

participated in “clubs” such as Boy/Girl Scouts and 4H were perceived by teachers as having a higher level of academic competence than children who did not participate in club activities.

In a sample of mainly White, lower-middle to middle class, 6th through 9th graders, Cooper et. al. (1999) found that participation in after-school activities, such as clubs and sports, was positively related to grades and standardized test scores. Posner and Vandell (1994) also found a positive correlation between extracurricular activity participation and grades in a predominantly African American sample of third grade children. Similarly, Prelow and Loukas (2003) found that participation in extracurricular activities was related to higher language and math scores on a standardized measure of academic achievement among 10- to 14-year old economically disadvantaged Latinos. Thus, it appears as though extracurricular activity participation may be beneficial for the achievement of children across racial and ethnic lines. Based on their analyses, Cooper et. al. (1999) concluded that “parents and educators can profitably focus on student after-school activities as a potentially important influence on achievement” (p. 377).

According to a study by Ferguson, Clark, and Stewart (2002), students who participated in “language-enriched” extracurricular activities such as organized sports, hobbies, and youth clubs demonstrated higher scores on a standardized reading measure. This study and others (Posner & Vandell, 1994) also found that students who spent more out-of-school time in “unstructured” activities (e.g., talking on the telephone, playing video games) were lower-achieving than their counterparts who spent a greater amount of time “structured” after-school activities.

Some studies also suggest that a curvilinear relationship exists between achievement and extracurricular activity participation (Cooper et. al, 1999; Powell et. al., 2000). For example, Powell et. al. (2000) found a curvilinear effect of frequency of participation in extracurricular activities on school grades in a sample of low income, first grade children. The researchers found that as frequency of participation increased from low to moderate, there was a positive relationship to grades. On the other hand, grades decreased as frequency of participation in extracurricular activities increased from moderate to high. Similarly, Pettit et. al. (1997) found that girls who participated in one to three hours of extracurricular activities per week were higher achieving in school than girls who participated in four or more hours per week or those who did not participate in extracurricular activities at all. Hence, these findings suggest that participating in extracurricular activities is beneficial for the achievement of children to a point. Perhaps when children participate too often, other contributors to achievement, such as homework, do not receive enough time and attention (Pettit et. al., 1997; Powell et. al., 2002).

Pettit et. al. (1997) also found that participation in extracurricular activities serves as a moderator for the relationship between the time that children spend taking care of themselves after school (“self-care”) and academic achievement. In general, children who spent a substantial amount of time in self-care were found to exhibit more behavior problems in school and had lower achievement than their peers who spent less time or no time at all in self-care. When the interaction between extracurricular activities and time spent in self-care was tested, it was revealed that children who spend time in both self-

care and extracurricular activities during the week were higher achieving than children who spent time in self-care and did not participate in extracurricular activities. This finding is particularly relevant to the present study because children with low levels of parent involvement may often spend a great deal of time in self-care throughout the week. Thus, extracurricular programs can provide supervision to children who may otherwise be on their own (Cosden et. al., 2004). This supervision, in turn, may contribute to academic achievement in that it may prevent children from becoming involved in activities that may ultimately lead to school drop out (e.g., illegal activities). Evidence from the study by Pettit et. al. (1997) lends support to the interaction that will be tested in this study.

It has also been noted, however, that studies merely focusing on time spent in extracurricular activities—versus the *quality* of those activities—may be missing important information about the relationship between these activities and academic performance (Pierce et. al., 1999; Posner & Vandell, 1999). Pierce et. al. (1999) demonstrated a relation between the orientation of the staff in after-school programs (“positive” versus “negative”) and the academic outcomes for the students. Higher reading and math grades were associated with participation in after-school programs where staff members were relatively “positive” with the students (e.g., warm tone of voice, demonstrated acceptance, smiled). On the other hand, when children attended after-school programs where the staff was relatively “negative” (e.g., expressions of frustration, anger, impatience), their reading and math grades tended to be lower (Pierce et. al., 1999).

Despite the above findings, it has also been shown that extracurricular activity participation is negatively linked to academic performance (see Posner & Vandell, 1999). Like the research on parent involvement, it has been suggested that inconsistent findings on the effect of extracurricular activities may stem from inconsistent definitions of the term and the quality of the programs (Pettit, Laird, Bates, & Dodge, 1997; Posner & Vandell, 1994). Furthermore, it is also imperative to note that different studies use more or less nationally representative populations. The Posner and Vandell (1999) study, for example, only includes children from economically disadvantaged backgrounds. As was addressed above, research has demonstrated that the characteristics of extracurricular programs tend to differ based on the economic status of the community. Hence, it may be that the extracurricular programs available to the children in the Posner and Vandell study were relatively ineffective in structure and therefore the children were not benefiting.

Behavioral Adjustment

Participation in extracurricular activities has been associated with better behavior in the classroom (Pettit et. al., 1997; Pierce & Vandell, 1999). Children who participate in extracurricular activities after school have been found to exhibit better social skills and fewer problematic externalizing behaviors in the classroom (Pettit et. al., 1997). Likewise, children who participate in sports have been shown to have better social skills and to be more socially mature than children who do not participate in sports (Fletcher et. al., 2003). Similarly, Pierce et. al. (1999) found that first-grade boys who participated in after-school programs where the staff were considered to be “positive” in their approach

were perceived by teachers as exhibiting fewer externalizing and internalizing problems. This study also found that better classroom behavior was evident among boys who attended programs that offered them more options in terms of the variety of activities, as opposed to boys who attended more rigid programs.

Ethnic Differences

Extracurricular outcomes with respect to cultural differences are incredibly inconsistent. As was noted above, similar positive findings exist for the relationship between extracurricular activities and achievement for Euro-American, African American, and Latino children. Even so, some research suggests that differences exist across ethnicity. Posner and Vandell (1999) found that participation in non-sport extracurricular activities from third to fifth grade was negatively associated with grades in fifth grade among Euro-American children. A significant association between grades and non-sport extracurricular activity participation was not found for African American children in this study. On the other hand, African American children who participated in organized sports after school had lower grades in school, while those who spent more time socializing after school had higher grades; however, African American children who took part in non-sport extracurricular activities evidenced greater emotional adjustment (Posner & Vandell, 1999). Interestingly, participation in organized sports has been found to be positively associated with academic achievement among African American teenagers (Mahoney & Cairns, 1997). Several possible explanations exist for these findings; for example, it is suggested that perhaps the time involved in after school sports programs leaves those students with less time for school work (Posner & Vandell, 1999).

It is extremely important to note, however, that the cultural findings from the Posner and Vandell (1999) study also reflect economic differences and differences in family structure. The African American children in this study tended to be poorer, live in more dangerous neighborhoods, live in single-parent households, and spend more time “in transit” in the hours after school as compared to the Euro-American children. The researchers note that spending more time traveling after school lessens the time that could possibly be spent participating in activities after school (Posner & Vandell, 1999). Furthermore, all of the participants, Euro- and African American, were, for the most part, from families of low socioeconomic status living in high-crime communities (Posner & Vandell, 1999). Thus, these results can only be generalized to that population. It is likely that the relation between extracurricular activities and achievement, and the differences (or lack thereof) among ethnic groups, differ in middle- and upper-income populations.

Summary

Broadly, extracurricular activities can be defined as optional activities, with some amount of structure, that are led by adults and require varying degrees of effort on the part of the child. To date, there is a distinct paucity of research on the achievement implications for young children who participate in extracurricular activities. Existing research notes differences in participation based on characteristics of children such as economic status. With respect to school performance, some research has demonstrated positive academic and behavioral effects for children who participate in extracurricular activities.

Statement of Purpose

Parent involvement with children at the school and in the home positively affects academic achievement. Children with involved parents generally score higher on standardized tests and are perceived by teachers as more academically competent as compared to their peers with uninvolved parents (Janiak, 2003; Leslie & Allen, 1999; Stevenson & Baker, 1987). Children with low levels of parent involvement are also less likely to graduate from high school than children with involved parents (Barnard, 2004). In light of the resulting academic vulnerability of children with uninvolved parents, ways to help children succeed in lieu of parent involvement need to be identified and empirically validated. Parents and communities need alternative means of helping children become academically successful.

Because research has also suggested that extracurricular activity participation positively affects achievement among children (e.g., Fletcher et. al., 2003), this study aims to explore the role that extracurricular activity participation may play in the context of parent involvement and school performance. It is hypothesized that the achievement of children will be buffered by the presence of extracurricular activities in the absence of parent involvement. This study will examine the effects of parent involvement and participation in extracurricular activities on achievement in a sample of third grade children. The study will test whether, consistent with existing literature, parent involvement positively affects academic achievement when relevant background variables are controlled. Second, the study will contribute to the small amount of existing literature on the potential effects of extracurricular activity participation on the

achievement of children. Finally, this study will examine whether participation in extracurricular activities moderates the effect of parent involvement on achievement in children. A statistically significant interaction between parent involvement and extracurricular activities will suggest that the effect of parent involvement on achievement varies depending on children's participation in extracurricular activities.

CHAPTER 3: METHOD

This study used a pre-existing data set. As such, the data required a great deal of processing prior to addressing the proposed hypotheses. This section will report on this pre-processing by describing the selection of the variables as well as characteristics of the study participants. The section begins with a discussion of the participants that includes both a description of the participants included in the ECLS data set and the subset of participants chosen for this study. The procedures involved in the collection of data and in the creation of variables will then be addressed. Finally, the section discusses the proposed data analysis, hypotheses, and expected results.

Participants

Participants were drawn from the Early Childhood Longitudinal Study Kindergarten – Third Grade Public-Use Data File (ECLS K-3; National Center for Education Statistics, NCES, 2004). ECLS K-3 includes a nationally representative sample of 17,401 children who began kindergarten during the 1998-1999 school year (NCES, 2001). This longitudinal sample included children who were sampled during the base year (NCES, 2001) and remained in the study until third grade. Of this sample, the participants selected for the present study included all children for whom there was a child assessment during the spring of first and third grade and a parent questionnaire in Kindergarten and in first and third grade (NCES, 2004). Based upon these requirements, the present study included 8,410 children who were in the third grade during the 2002-2003 school year.

Of the sample, 4209 participants (50%) were male and 4201 (50%) were female. Most participants ranged in age from 8 to 9; the breakdown of participants' ages is shown in Table 2 with a mean age of 9 years and three months. With respect to the racial and ethnic makeup of the sample, 65.7% of the children were White, 10% were Black or of African American descent, 14.1% were of Hispanic descent, 4.6% were of Asian descent, 1.4% were of Native Hawaiian or Other Pacific Islander descent, 1.5% were of American Indian or Alaska Native descent, and 2.6% were of more than one race (non-Hispanic).

The sample was also examined by family type. Of the children in this sample, 94.9% lived with their biological mother and 75.9% lived with their biological father; there was no resident mother in 3.0% of households and no resident father in 17.2% of the households. Further, 71.6% of the participants lived with 2 parents plus siblings; 9.7% with 2 parents and no siblings; 12.0% with 1 parent plus siblings; 5.2% with 1 parent and no siblings; and 1.5% lived in a family arrangement not listed above. See Table 2 for additional information on the sex, age, race/ethnicity, and family structure of the participants.

Table 2

Sex, Age, Race/Ethnicity and Family Structure Demographics of the Sample Population

Variable	Number of participants	Percent
Sex		
Male	4209	50
Female	4201	50
Age (years - months)		
< 8-9	560	6.7
8-9 to < 9	1704	20.3
9 to < 9-3	1945	23.1
9-3 to < 9-6	1926	22.9
9-6 to < 9-9	1508	17.9
> 9-9	707	8.4
Missing	60	.7
Race/Ethnicity		
White	5527	65.7
Black or African American	845	10.0
Hispanic	1188	14.1
Asian	384	4.6
Native Hawaiian or Other Pacific Islander	116	1.4
American Indian or Alaska Native	126	1.5
More than one race (non-Hispanic)	220	2.6
Missing	4	.0
Family Structure		
2 parents plus siblings	6018	71.6
2 parents and no siblings	819	9.7
1 parent plus siblings	1007	12.0
1 parent and no siblings	438	5.2
Other arrangement	128	1.5
Resident Mother Type		
Biological	7978	94.9
Adoptive	111	1.3
Step	33	0.4
Foster	23	0.3
Partner	11	0.1

No resident mother	252	3.0
Don't know type	2	0
Resident Father Type		
Biological	6386	75.9
Adoptive	138	1.6
Step	258	3.1
Foster	17	0.2
Partner	159	1.9
No resident father	1449	17.2
Don't know type	3	0

Procedure

Data from the parent questionnaire were collected using computer-assisted telephone interviews or computer-assisted personal interviews in the event that the family did not have a telephone (NCES, 2001). Only one parent for each child completed the parent questionnaire. The parent respondent was most often the mother, but parent respondents also included fathers, stepparents, adoptive parents, foster parents, grandparents, other relatives, or non-relative guardians. It was required that the respondent be at least 18 years old, be familiar with the child's education and care, and reside with the child (NCES, 2001). The majority of parent interviews were conducted in English, but bilingual interviewers and translated questionnaires were also available in Spanish, Chinese, Hmong, and Lakota (NCES, 2001).

Items from the ECLS parent and teacher questionnaires administered in the spring of the children's third grade year (2003) were used to measure academic performance, parent involvement, and extracurricular activity participation. The teacher questionnaire was a self-report measure divided into three parts. Part C, for which the teacher was

asked to evaluate individual students and parents in his or her classroom, was used in the present study. With respect to teacher ratings of academic performance, the questionnaire required teachers to rate each child on his or her math and reading abilities using the scale: “far below average,” “below average,” “average,” “above average,” or “far above average” (NCES, 2001).

Items from the ECLS parent questionnaire were used to assess children’s participation in extracurricular activities (NCES, 2003). Parents were given a number of extracurricular activities to which they responded “yes” or “no” as to whether the child had participated in each activity “in the past year.” Items from both parent and teacher questionnaires were used to create a Parent Involvement composite. Items were selected to measure parent involvement based upon existing research (Epstein, 1995; Fantuzzo et al., 2000). Following a factor analysis of the items (as described in the following section), the items were included in two composites: School-Based Parent Involvement and Home-Based Parent Involvement. Table 3 provides the items and parent involvement components used in this study. The two components were combined to form the Parent Involvement Composite (PI Composite). This composite was then used as the measure of parent involvement in this study. The following section describes each variable used in the analysis in more detail.

Table 3

Parent Involvement Components and Their Respective Items w/ ECLS K-3 item numbers

Home-Based Involvement	School-Based Involvement
<i>Parent Questionnaire:</i>	<i>Parent Questionnaire:</i>
Question 1 [#2426] How often do you read to child?	Question 1 [#2386] This year, have you volunteered at school or served on a committee?
Question 2 [#2417] How often do you tell child stories?	Question 2 [#2388] This year, have you participated in fundraising for child's school?
Question 3 [#2418] How often do you all sing songs?	Question 3 [#2384] Have you attended a school or class event such as a play, sports event, or science fair this year?
Question 4 [#2419] How often do you help child do art?	Question 4 [#2378] Since the beginning of the school year, have any adults in the house attended an open house or back-to-school night?
Question 5 [#2421] How often do you all play games?	<i>Teacher Questionnaire:</i>
Question 6 [#2422] How often do you teach child nature?	Question 1 [#5078] This year, has parent/guardian volunteered to help in classroom or school?
Question 7 [#2423] How often do you all build things?	Question 2 [#5076] This year, have parents/guardians returned phone calls?
Question 8 [#2424] How often do you all do sports?	Question 3 [#5074] This year, have child's parents attended regularly scheduled conferences?
	Question 4 [#5075] This year, have parents/guardians attended parent-teacher informal meetings that were initiated by you to talk about child's progress?

Note: ECLS K-3 item numbers are shown in brackets.

Variables

Background Variables

Because past research has demonstrated differences in children's achievement (Rathbun & West, 2004), participation in extracurricular activities (Pettit et. al., 1997; Posner & Vandell, 1999; Shumow, 2001), and parent involvement (Epstein, 1995; McKay et. al., 2003) based on race/ethnicity, sex, family structure, and economic status, these variables were controlled in the present research. Prior research has also suggested that previous achievement is a likely common cause of parent involvement and achievement (Keith et al., 1993), and thus previous achievement was also controlled in this research. Participants' first grade reading, math, and general knowledge achievement test scores were used to control for previous achievement.

All of these background variables are represented in the ECLS data. Background variables for this study were selected from the ECLS kindergarten or first grade questionnaires and tests (NCES, 2004).

Race/Ethnicity

As shown in Table 2, for the race/ethnicity variable, the parent/guardian respondent reported that their child belonged to one of the following racial/ethnic categories: White, Black or African American, Hispanic, Asian, Native Hawaiian or other Pacific Islander, American Indian or Alaska Native, or More than one race, non-Hispanic. For this study, the race/ethnicity variable was recoded into two categories: Majority (White) = 1 and Minority (Black/African American, Hispanic, Asian, Native

Hawaiian/other Pacific Islander, American Indian/Alaska Native, more than one race, non-Hispanic) = 0.

Sex

The sex variable was coded Girls = 1 and Boys = 0.

Family Structure

The family structure variable in the ECLS database is divided into five categories: (1) two parents plus siblings; (2) two parents, no sibling; (3) one parent plus siblings; (4) one parent, no sibling; and (5) other. For this study, the family structure variable was recoded into two different variables: parents and siblings. The parents variable was coded: two parents = 1 and one parent or other arrangement = 0. The siblings variable was coded: has siblings = 1 and no siblings = 0. For this variable, those in the “other” category were coded as “missing” because there was too little information provided to accurately categorize them otherwise.

Previous Achievement

To measure previous achievement, *T*-score versions of standardized reading and math tests for each child were used. These tests were administered in the child’s first grade year. The reading and math scores were averaged into a previous achievement composite.

Socioeconomic Status

SES was measured by a continuous SES variable provided in the ECLS database. The data for this variable was collected in the child’s kindergarten year. This variable was a combination of household income, mother/ female guardian’s education, father/

male guardian's education, mother/ female guardian's occupation, and father/male guardian's occupation.

Independent Variables

Parent Involvement

To create the PI Composite, a series of exploratory factor analyses was first performed on all of the items derived from theory in order to determine which items best measured the three components of parent involvement. The primary purpose of the factor analyses was to help in creating equally weighted composites representing the components of parent involvement. In particular, the analyses were used to determine which of the previously identified items should be deleted from those composites. Toward this end, principal components analysis was used, followed by varimax rotation of retained factors. For these analyses, all items were coded in a positive direction. Several methods were used to determine the number of factors to retain. Factors with eigenvalues greater than one were initially retained, but alternative solutions with one or two additional and one or two fewer factors were routinely inspected as well. The factor solution making the most psychological sense, in relation to expected components, was ultimately retained.

The analysis revealed two distinct components, one with eight items that related to school-based involvement, and one with eight items relating to home-based involvement. Among the school-based items, the lowest factor loading was .411 and the highest was .683 on the school-based involvement factor; and among the home-based items, the lowest loading was .489 and the highest .608 on the home-based involvement

factor. A complete listing of each item with its factor loading is displayed in Appendix A. The individual items that were identified were then converted to similar scales (*z*-scores) and averaged to create the two distinct components of parent involvement: Home-Based Involvement (HBI) and School-Based Involvement (SBI) (see Table 3 above for the components and a listing of the items). The HBI and SBI components were then tested for internal consistency using Chronbach's Alpha. This reliability analysis further indicated, for each item, the reliability of the composite if that item was discarded. Based on this information, a few of the items were dropped from the components because without those items the reliability of the component was higher. The final SBI component had an alpha of .701 and the HBI component had an alpha of .688.

The SBI component and HBI component were averaged to create the PI Composite. The two components and the composite were then converted to *T*-scores to aid interpretation. The *T*-score versions of the SBI component, HBI component, and PI composite were used in subsequent analyses. See Table 4 below for the correlation matrix of all of the items in the PI Composite.

Table 4

Correlation Matrix of PI Composite Items

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.
1. Read to child	1.00	.316	.16	.228	.194	.153	.172	.137	.07	.098	.069	.020	.046	.025	.045	.047
2. Tell stories		1.00	.277	.269	.228	.249	.207	.189	.064	.086	.070	.065	.056	.038	.031	.033
3. Sing songs			1.00	.249	.189	.203	.104	.199	.033	.059	.076	.050	.015	-.003	-.028	-.023
4. Do art				1.00	.257	.245	.278	.187	.049	.059	.082	.064	.021	.002	.012	.010
5. Play games					1.00	.248	.291	.244	-.002	.054	.062	.020	.046	-.029	-.016	-.036
6. Teach nature						1.00	.308	.181	.042	.090	.081	.065	.056	.002	.006	.019
7. Build things							1.00	.226	.032	.057	.049	.050	.015	-.008	.00	-.021
8. Do sports								1.00	.053	.096	.067	.064	.021	-.019	.00	-.007
9. Attended open house									1.00	.258	.199	.245	.194	.156	.201	.173
10. Have you volunteered at school										1.00	.287	.264	.452	.181	.217	.197
11. Fundraiser											1.00	.211	.209	.113	.122	.115
12. Attended school event												1.00	.218	.146	.156	.120

13. Has parent volunteered	1.00	.268	.266	.276
14. Have parents returned phone calls	1.00	.450	.486	
15. Have parents attended conferences			1.00	.507
16. Have parents come to informal meetings				1.00

Note: Items 1-12 are parent report items and items 13-16 are teacher report items.

Extracurricular Activities

The Extracurricular Activities Composite (EAC) was made up of the following items: dance lessons, organized athletics, organized clubs/recreational programs, music/singing lessons, art classes/lessons, and crafts classes/lessons. Like the parent involvement items, a factor analysis was conducted with the extracurricular activity items. Because these items showed only low-level correlations with each other, the EAC was recoded to a zero/one range (thereby measuring the presence or absence of any extracurricular activity participation). Participants who did not participate in extracurricular activities were assigned a score of zero, and participants who participated in one or more extracurricular activities were given a score of one. Table 5 below displays the correlations among the extracurricular activity items.

Table 5

Correlation Matrix of Extracurricular Activity Composite Items

	1.	2.	3.	4.	5.	6.
1.Dance	1.00	.013	.064	.129	.091	.329
2.Athletics		1.00	.164	.101	.049	.083
3.Clubs			1.00	.116	.086	.129
4.Music				1.00	.126	.239
5.Art					1.00	.120
6.Performing Arts						1.00

Dependent Variable

The teacher-report items that were used for this variable (from the teacher questionnaire- part C) reflected the teachers' perceptions of each child's level of academic competence. The Academic Performance Composite included a teacher rating of each child's mathematics performance and a teacher rating of each child's language/literacy performance. To create this composite, each child's math and reading rating were averaged to create a single academic performance score.

Data Analysis and Hypotheses

Multiple Regression Analysis

Multiple regression was used to examine the effects of each of the independent variables on the dependent variable, and to determine whether parent involvement has

differential effects on achievement depending upon a students' participation in extracurricular activities. First, Academic Performance was regressed on the background variables, the Parent Involvement composite (centered), and the Extracurricular Activities composite in a simultaneous multiple regression; missing data were excluded listwise. The regression coefficients and their statistical significance were used to determine whether Parent Involvement and Extracurricular Activities have a statistically significant effect on third grade Academic Performance. The standardized regression coefficients were also interpreted as measures of the extent of the effect of each of these variables on Academic Performance.

Next, a Parent Involvement by Extracurricular Activities cross-product term was added to the regression equation to test the possible interaction of these two variables. The cross-product was created using the centered version of the parent involvement composite. A statistically significant increase in R^2 following the addition of the cross-product term would indicate that the interaction between Parent Involvement and Extracurricular Activities was statistically significant. It should be noted that testing for this significant interaction is synonymous with testing to see whether extracurricular activity participation moderates the effect of parent involvement on academic performance.

Hypotheses

Hypothesis 1

Parent involvement will have a statistically significant effect on academic performance. Children with higher parent involvement scores will achieve at a higher level than children with lower parent involvement scores.

Rationale

Past research suggests that parent involvement has positive effects on academic performance in school (McWayne et. al., 2004; Stevenson & Baker, 1987). Morrow and Young (1997) found that, relative to their peers with uninvolved parents, children whose parents were involved score higher on teacher ratings of reading achievement. Thus, it is expected that children who have more-involved parents will be perceived by teachers as being higher achieving as compared to the children with less-involved parents, even with relevant background characteristics statistically controlled. Figure 2 graphically demonstrates the expected outcome (such graphs are for illustration and are not to scale).

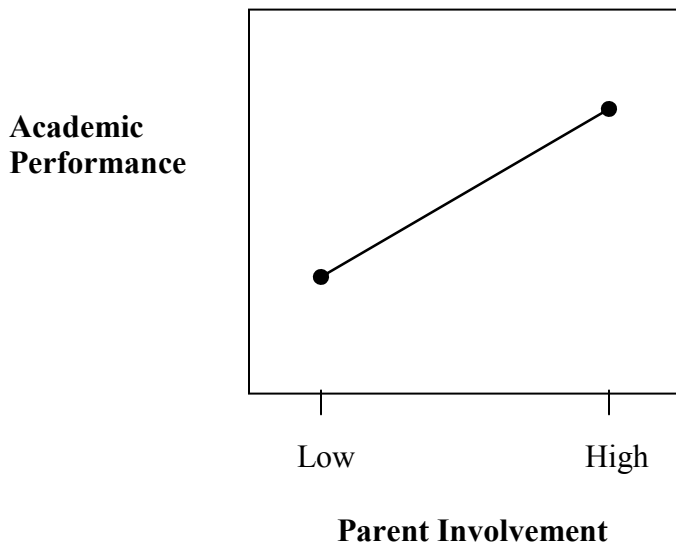


Figure 2. Expected main effect for Parent Involvement and Academic Performance.

Hypothesis 2

Participation in extracurricular activities will have a statistically significant effect on academic performance. Children who participate in extracurricular activities will perform at a higher level, as measured by teacher perceptions, than children who do not participate in extracurricular activities.

Rationale

Participation in extracurricular activities has, in some cases, been linked empirically to achievement in school (Ferguson et. al., 2002; Fletcher et. al., 2003; Prelow & Loukas, 2003). Children who participate in extracurricular activities outside of school, such as organized clubs, have been perceived by teachers as higher achieving than children who do not participate (Fletcher et. al., 2003). Thus, it was expected that the children in this sample who participated in extracurricular activities would achieve at a

higher level than the children who did not participate in extracurricular activities, even after relevant background characteristics were controlled. Figure 3 graphically demonstrates the expected outcome.

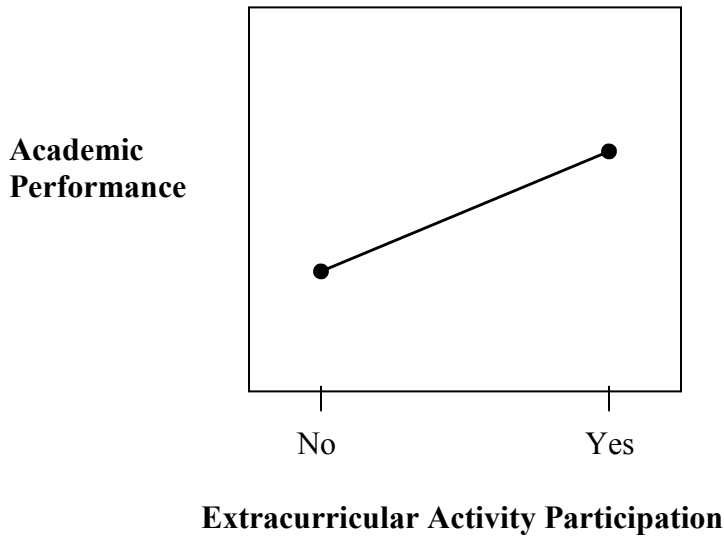


Figure 3. Expected main effect for Extracurricular Activity Participation and Achievement.

Hypothesis 3

The interaction between parent involvement and participation in extracurricular activities will be statistically significant. The effect of parent involvement on achievement in children will depend upon children's participation in extracurricular activities. Children whose parents are less involved but participate in extracurricular activities will perform at a higher level academically than those students whose parents are less involved but do not participate in extracurricular activities.

Rationale

Low levels of parent involvement have been linked to lower levels of achievement (McWayne et. al., 2004). Participation in extracurricular activities has been related to higher achievement (Ferguson et. al., 2002). Extracurricular activities may serve as a substitute for parent involvement. If so, it is expected that the effect of parent involvement on achievement will be moderated by participation in extracurricular activities. Figure 4 illustrates the expected outcome.

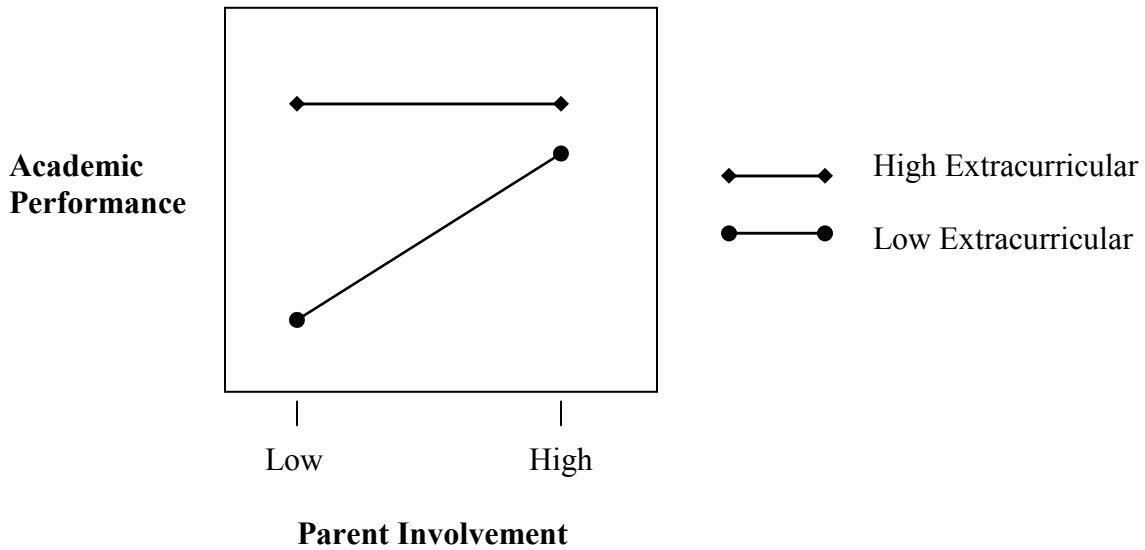


Figure 4. Expected interaction effect for the multiple regression used to evaluate the influence of Extracurricular Activity Participation on the effect of Parent Involvement on Academic Performance.

CHAPTER 4: RESULTS

This section includes characteristics of the main variables and results of the multiple regression. First, preliminary analyses of the data are presented. Characteristics of each of the main variables and correlations among those variables are displayed. Next, the two independent variables, the parent involvement variable and extracurricular activities variable, were explored in terms of their relation to the background variables. The hypotheses presented in the previous chapter are addressed and examined for significance. Additionally, supplementary analyses conducted after the multiple regression analysis are presented.

Preliminary Analyses

Descriptive Statistics of Main Variables

Means and standard deviations for the main variables are presented in Table 6. Correlations among the variables are presented in Table 7. As is shown in Table 15, there are small, positive correlations between each pair of variables. Means and standard deviations for all of the study variables are provided in Appendix B; refer to Appendix C for correlations among all study variables.

Table 6

Means and Standard Deviations for Main Study Variables

Variable	<i>M</i>	<i>SD</i>
Parent Involvement Composite (PI Composite)	50.00	10.00
Extracurricular Activities Composite (EAC)	.82	.38
Academic Performance	6.38	1.75

Note: PI Composite reported in *T*-score form; EAC variable coded 0-1, with 0 indicating no extracurricular activity participation and 1 indicating extracurricular activity participation; Academic Performance is on a 0-10 scale.

Table 7

Correlations Among Main Variables

	1.	2.	3.
1. PI Composite	1.00	.26**	.13**
2. EAC		1.00	.17**
3. Academic Performance			1.00

** $p < .01$.

Relation of PI Composite, HBI and SBI to Background Variables

The PI Composite, HBI component and SBI component were each examined for statistically significant differences by gender, race/ethnicity, family type and socioeconomic status. A one-way analysis of variance (ANOVA) revealed no statistically

significant differences in parent involvement on the whole (as measured by the PI Composite) by sex; however, when the components were examined separately, it was found that the girls received significantly more parent involvement at school ($p < .01$) whereas boys received significantly more parent involvement at home ($p < .05$) (see Table 8). Still, despite the statistical significance that was found with respect to parent involvement and sex, the magnitude of the differences was small (SBI, $\eta^2 = .03$; HBI, $\eta^2 = .02$).

Table 8

Mean Level of Parent Involvement by Sex of Child (T-scores)

Sex	PI Composite	SBI	HBI
Girls	50.0697	50.3178** ($\eta^2 = .03$)	49.7565* ($\eta^2 = .02$)
Boys	49.9336	49.6971	50.2430

* $p < .05$. ** $p < .01$.

Statistically significant differences in parent involvement were found by racial/ethnic classification for the PI Composite, $F(1, 6974) = 256, p = .001; \eta^2 = .04$ and SBI, $F(1, 7008) = 562.16, p = .001; \eta^2 = .07$. Differences in parent involvement by race/ethnicity were not found, however, for HBI, $F(1, 8364) = .82, p = .367; \eta^2 = .00$. Figure 5 displays the mean level of parent involvement (T -scores) for each racial/ethnic group. Overall, the degree of involvement (or relative position) of the different ethnic

groups was dependent upon the type of involvement (PI Composite, HBI, SBI). Across all three categories of involvement (total, HBI, SBI), parents of children of American Indian or Alaskan native descent provided the least amount of involvement. Parents of White children provided the most involvement in overall parent involvement (PI Composite) and SBI, and parents of Native Hawaiian or Other Pacific Islander descent provided the greatest amount of HBI. Although Black or African American parents were relatively low on overall involvement and at school (in the bottom 3 for both categories), they ranked the third highest in involvement at home (behind Native Hawaiians/Other Pacific Islanders and those of more than one race, respectively).

Using the Scheffe multiple comparison procedure, the sources of the significant differences for the PI Composite, SBI, and HBI were examined. In overall parent involvement (PI Composite), parents of White students provided statistically significantly more involvement than parents of children from all other racial/ethnic groups with the exception of those from Hawaiian/other Pacific Island descent and those of more than one race, non-Hispanic. Similarly, White students received significantly more parent involvement at school (SBI) than all other groups with the exception of children of more than one race, non-Hispanic.

Interestingly, White children did not receive significantly more parent involvement in the home (HBI) than any other group. In fact, White children received significantly less parent involvement at home than did children of Native Hawaiian/other Pacific Islander descent. Those children of Hawaiian/other Pacific Islander descent

received significantly more parent involvement at home than all other groups but those children of more than one race, non-Hispanic.

Children of American Indian or Alaska Native descent experienced significantly less parent involvement both at home (HBI) and at school (SBI) than children from three out of the remaining six racial/ethnic groups. Similarly, Black or African American children experienced significantly less parent involvement at school than four out of the six other racial/ethnic groups. See Tables 9,10, and 11 for more information on the results of the post-hoc comparisons between parent involvement and race/ethnicity.

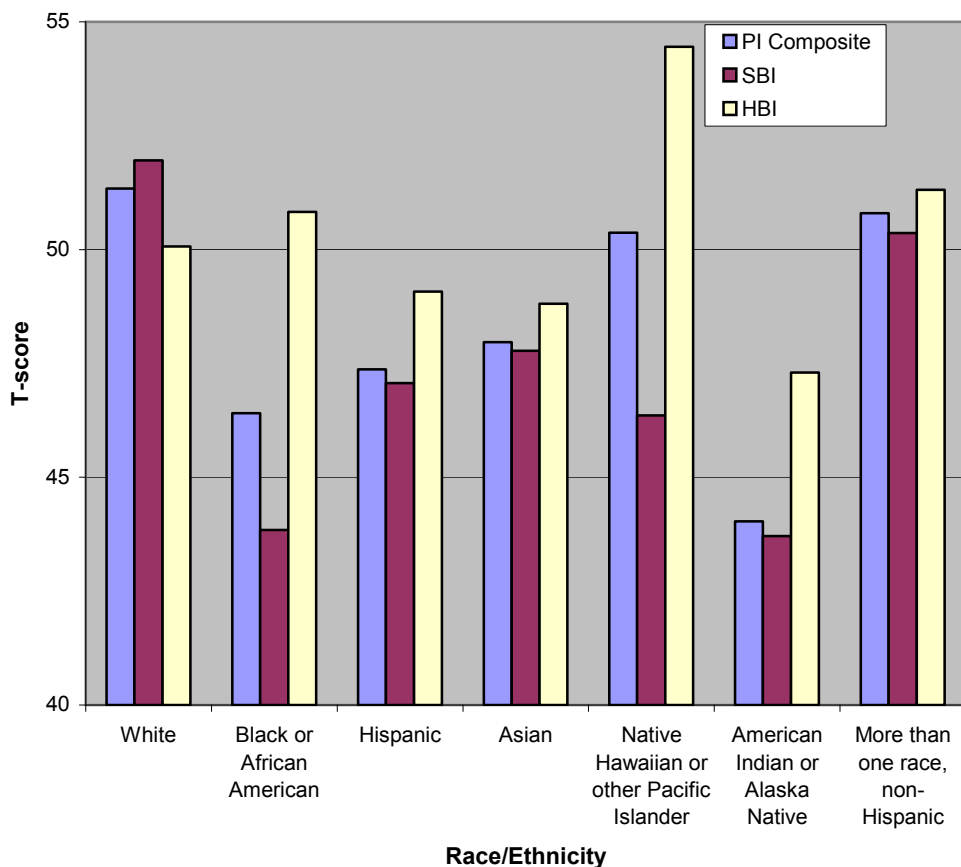
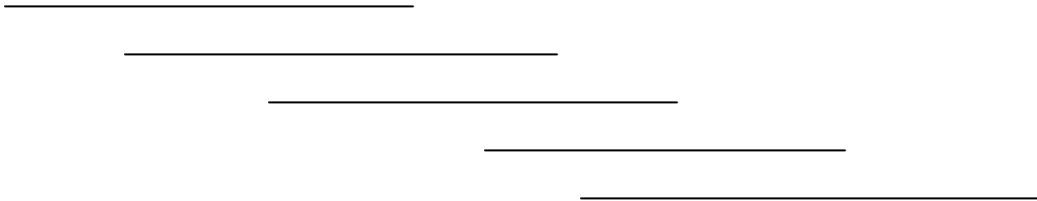


Figure 5. Mean Level of Parent Involvement by Race/Ethnicity.

Table 9

Scheffe results: PI Composite Means by Race/Ethnicity (T-scores)

Race/ Ethnicity	White	More than one race	Native Hawaiian/ other Pacific Islander	Asian	Hispanic	Black/ African American	American Indian/ Alaska Native
Mean	51.34	50.8	50.37	47.97	47.37	46.41	44.03

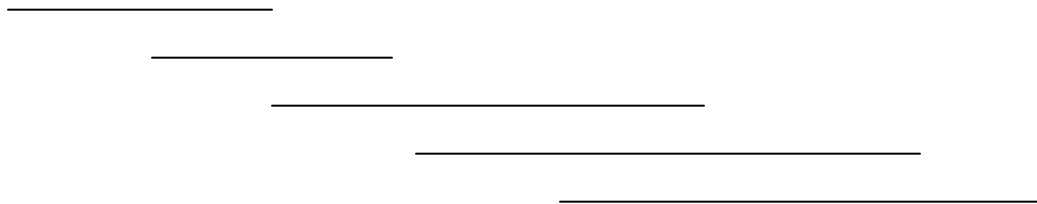


Note: Each line represents means that do not differ significantly, $p > .05$. Means that do differ significantly, $p < .05$, are not grouped along the same line.

Table 10

Scheffe results: SBI Component Means by Race/Ethnicity (T-scores)

Race/ Ethnicity	White	More than one race	Asian	Hispanic	Native Hawaiian/ other Pacific Islander	Black/ African American	American Indian/ Alaska Native
Mean	51.96	50.36	47.78	47.07	46.36	43.84	43.71



Note: Each line represents means that do not differ significantly, $p > .05$. Means that do differ significantly, $p < .05$, are not grouped along the same line.

Table 11

Scheffe results: HBI Component Means by Race/Ethnicity (T-scores)

Race/ Ethnicity	Native Hawaiian/ other Pacific Islander	More than one race	Black/ African American	White	Hispanic	Asian	American Indian/ Alaska Native
Mean	54.45	51.31	50.83	50.07	49.08	48.81	47.5

Note: Each line represents means that do not differ significantly, $p > .05$. Means that do differ significantly, $p < .05$, are not grouped along the same line.

Examinations of family type and parent involvement also revealed statistical significance at the school-based, $F(4, 7008) = 114.3, p = .001; \eta^2 = .06$, home-based, $F(4, 8365) = 4.25, p = .001; \eta^2 = .00$ and PI Composite, $F(4, 6974) = 41.83, p = .001; \eta^2 = .02$, levels. For the PI Composite and SBI, children with two parents and no siblings received the greatest amount of involvement. In contrast, children with one parent and no siblings received the greatest amount of parent involvement at home. For the composite and both components of parent involvement, children from families identified as “other” received the least amount of parent involvement. This category encompasses any family structure not included in the categories: two parents plus siblings; two parents no sibling; one parent plus siblings; and one parent, no sibling. Hence, this family type is likely to identify children from one or two parent homes with more than two siblings, children

cared for by non-parent family members such as grandparents or aunts/uncles with or without multiple siblings, or children from homes with more than two caretakers, such as group homes. It may be the case that these families have less time and fewer resources per child. Figure 6 displays the degree of parent involvement in each of the three involvement categories by family type.

The Scheffe multiple comparison procedure was used to determine the source of the significant differences among the different family structures with respect to the PI Composite, SBI component, and HBI component. Regarding the HBI component, none of the pairwise comparisons among family types achieved significance according to the conservative Scheffe criterion. Statistically significant differences were found within the PI Composite and the SBI component. Tables 12 and 13 display the results from those analyses. Not surprisingly, the results suggest that children from two-parent homes with or without siblings experience a greater amount of parent involvement both overall (PI Composite) and at school (SBI).

Finally, a statistically significant Pearson correlation ($r = .28, p < .01$) was demonstrated between socioeconomic status and the PI Composite, as well as socioeconomic status and SBI ($r = .41, p < .01$). The correlation between socioeconomic status and HBI was not statistically significant, however ($r = .01, p > .05$). Logically, it follows that parents with greater financial resources may have more time to spend at school as one of the parents may not work full time (or at all) and they may have jobs with more flexible hours. Additionally, those in a higher socioeconomic bracket are likely to be relatively more educated and therefore may place a higher value on school and may

be more comfortable visiting the school as they may have better associations with school themselves (Dauber & Epstein, 2001; Fantuzzo et. al., 2000). Conversely, parents of lower socioeconomic status may have more negative associations with school or place less value on school and educational outcomes (Leitch & Tangri, 1988). These parents may also have to work longer hours or may have jobs with less flexible schedules. Despite these potential setbacks, it appears, encouragingly, that parents of children with a lower socioeconomic status still spend time with their children at home.

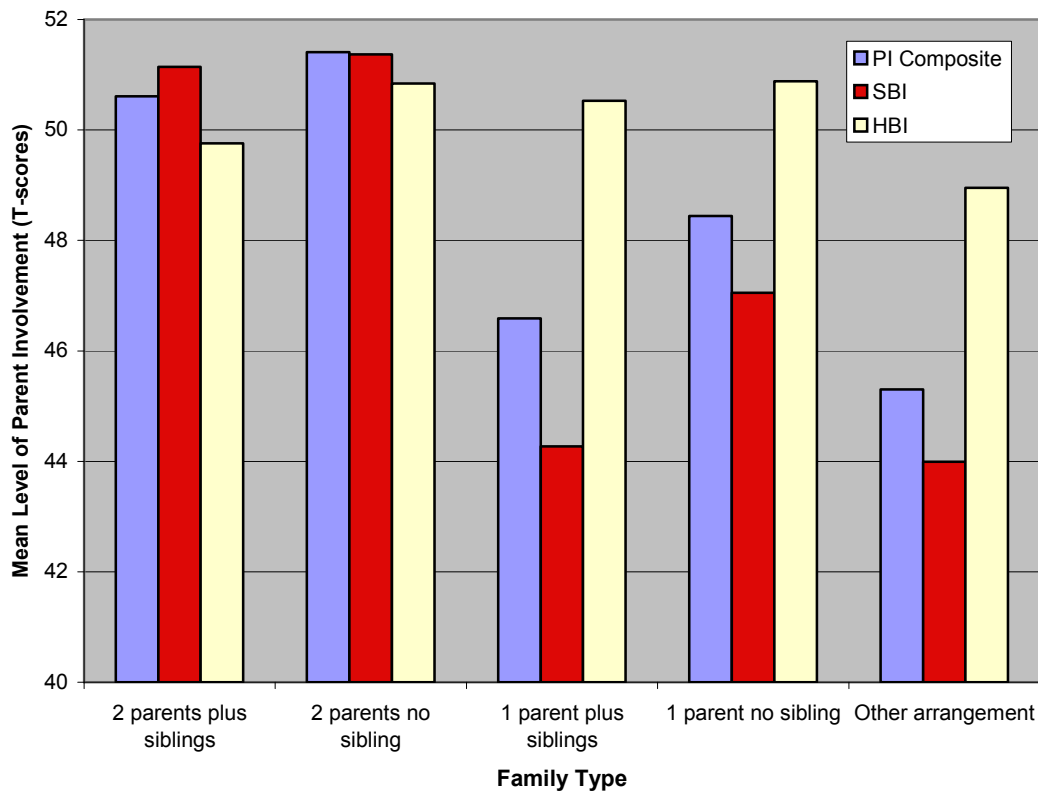


Figure 6. Mean Level of Parent Involvement by Family Type.

Table 12

Scheffe results: PI Composite Means by Family Type (T-scores)

Family Type					
	2 parents no sibling	2 parents plus siblings	1 parent no sibling	1 parent plus siblings	Other arrangement
Mean	51.41	50.61	48.44	46.59	45.3

Note: Each line represents means that do not differ significantly, $p > .05$. Means that do differ significantly, $p < .05$, are not subsumed under a line.

Table 13

Scheffe results: SBI Component Means by Family Type (T-scores)

Family Type					
	2 parents no sibling	2 parents plus siblings	1 parent no sibling	1 parent plus siblings	Other arrangement
Mean	51.37	51.14	48.44	46.59	43.99
	_____		_____	_____	

Note: Each line represents means that do not differ significantly, $p > .05$. Means that do differ significantly, $p < .05$, are not subsumed under a line.

Relation of EAC to Background Variables

Of the 8,410 children in the sample, 6,834 (81%) participated in extracurricular activities. No statistically significant differences were found in terms of extracurricular activity participation by gender. The extracurricular activities variable was also examined by race/ethnicity, family type, socioeconomic status, and parent involvement.

A crosstabulation was conducted on extracurricular activity participation by race/ethnicity to reveal the number of participants in each racial/ethnic category (see Table 14). Moreover, the chi-squared test revealed a statistically significant difference between the number of participants by race/ethnicity, $\chi^2 (7, N = 8361) = 424.35, p = .001$. These differences, however, are fairly consistent with the representation of each racial/ethnic group in the sample (which, in turn, is derived from a nationally representative sample). The children who participated in extracurricular activities were 70.4% White (65.8% of the sample), 11.4% Hispanic (14.1% of the sample), 8.8% Black or African American (10.1% of the sample), 4.2% Asian (4.6% of the sample), 2.6% more than one race, non-Hispanic (2.6% of the sample), 1.4% Native Hawaiian/other Pacific Islander (1.4% of the sample), and 1.2% American Indian or Alaska Native (1.5% of the sample). Hence, relative to the sample, White children were slightly overrepresented in the group of extracurricular activity participants, whereas the minority groups were slightly underrepresented. Figure 7 displays a comparison of the percentage of racial/ethnic extracurricular activity participants and the percentages of those racial/ethnic participants in the sample.

Table 14

Number of Extracurricular Activity Participants by Racial/Ethnic Identification

Race/Ethnicity	# of Participants	% EA Participants	% Sample
White	4839	70.4	65.8
Hispanic	784	11.4	14.1
Black or African American	605	8.8	10.1
Asian	291	4.2	4.6
More than one race, non-Hispanic	177	2.6	2.6
Native Hawaiian or other Pacific Islander	95	1.4	1.4
American Indian or Alaska Native	85	1.2	1.5

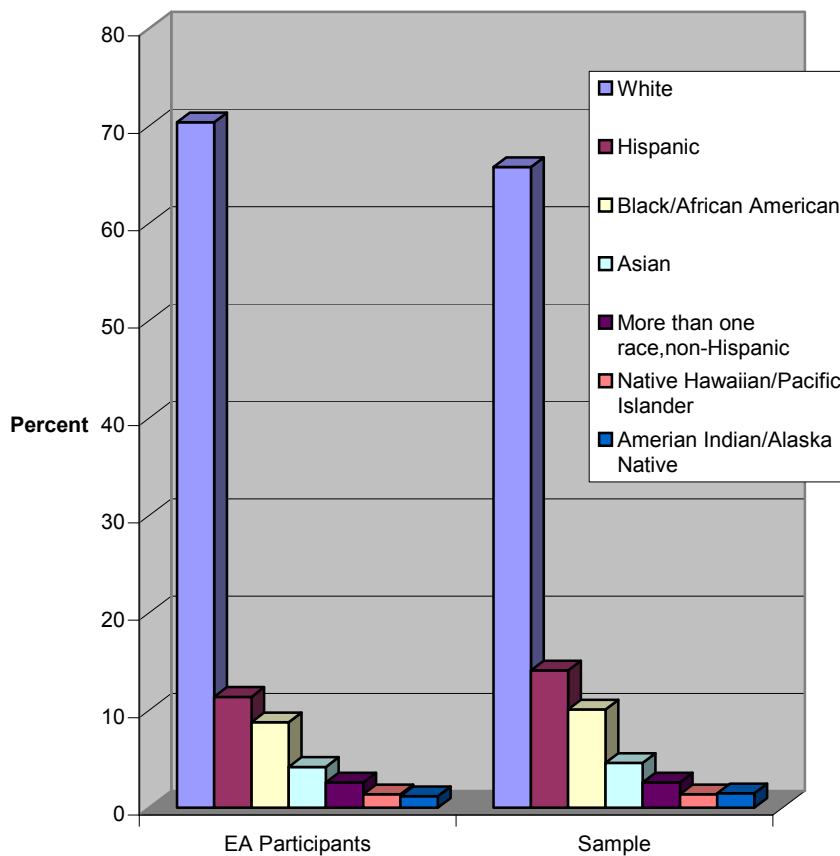


Figure 7. Extracurricular Activity Participants by Racial/Ethnic Identification.

Similarly, a crosstabulation was conducted on extracurricular activity participation by family type to reveal the number of participants from each type of family structure and the differences were, again, consistent with the overall makeup of the sample (see Table 15 and Figure 8). A χ^2 test also revealed statistical significance for the differing number of participants by family type, $\chi^2(4, N = 8365) = 162.28, p = .001$. Children from two-parent homes with siblings were far more likely to participate in extracurricular activities than were children from any other type of family. Children from

families that fell into the “other” category (meaning that the family did not fit into a common structure), were the least likely to participate in extracurricular activities. As was discussed previously, it is likely that these children come from homes with fewer resources. Statistical significance was also found in a one-way Anova of SES by the EAC, $F(1, 8363) = 837.13, p = .001$. Finally, statistically significant positive Pearson correlations were found between the EAC and SBI ($r = .31, p < .01$), HBI ($r = .08, p < .01$), and the PI Composite ($r = .26, p < .01$).

Table 15

Extracurricular Activity Participation by Family Type

Family Type	# of Participants	% EA Participants	% Sample
2 parents plus siblings	5088	74	71.6
1 parent plus siblings	704	10.2	12
2 parents no sibling	673	9.8	9.7
1 parent no sibling	325	4.7	5.2
Other arrangement	89	1.3	1.5

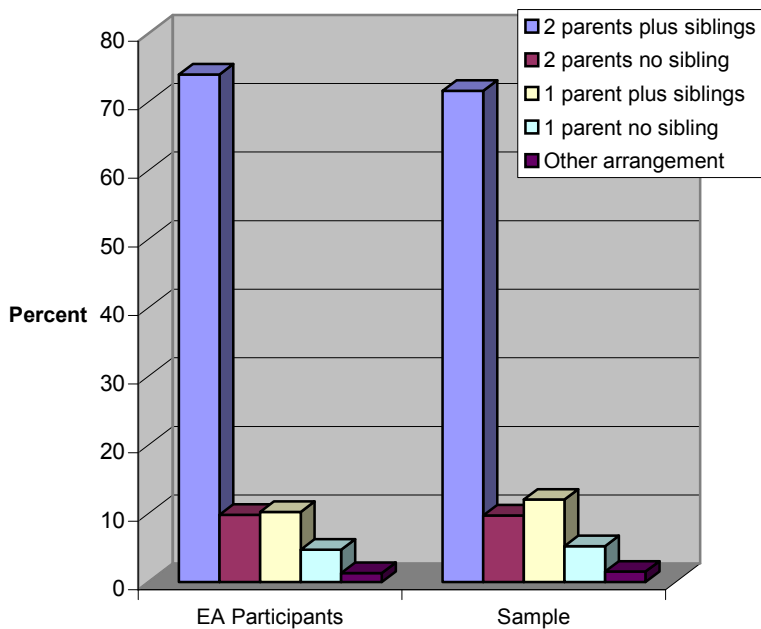


Figure 8. Extracurricular Activity Participants by Family Type.

Multiple Regression Analysis

Adding the background variables (Sex, Race/Ethnicity, SES, Parents, Siblings and Previous Achievement) to the model (without the PI Composite or Extracurricular Activities Composite) accounted for 33.6% of the variance in third grade Academic Performance ($\Delta R^2 = .336$, $F [6, 7580] = 640.68$, $p < .001$). The background variables plus the Parent Involvement variable (PI Composite-centered) accounted for 34.4% of the variance ($R^2 = .344$, $F [7, 6349] = 475.53$, $p < .001$). In total, Parent Involvement, Extracurricular Activity participation, and the background variables together accounted for 34.7% of the variance in third grade Academic Performance ($F = 428.31 [8, 6436]$, p

< .001). Sex, Race/Ethnicity, SES, Parents, and Previous Achievement were all statistically significant predictors of Academic Performance. The only large effect (β greater than .20, Keith, 2006) was from Previous Achievement.

The crossproduct term representing the interaction was not statistically significant, however ($\Delta R^2 = .000$, $F [1, 6435] = .662$, $p = .416$), meaning that Parent Involvement has the same effect on children regardless of whether or not they participate in Extracurricular Activities. The regression coefficients in Table 16 show the extent of the influence of Parent Involvement, Extracurricular Activities, and the background variables on Academic Performance.

Table 16

Effects of Parent Involvement, Extracurricular Activity Participation, and the Background Variables on the Academic Performance of Third Grade Children

Variable	β	b (SE_b)	p
Parent Involvement (Centered)	.007	.016 (.026)	.529
Extracurricular Activity Participation	.032	.156 (.052)	.003
Sex	.030	.107 (.036)	.003
Race/Ethnicity	-.060	-.230 (.042)	< .001
SES	.034	.077 (.027)	.005
Previous Achievement	.569	.039 (.001)	< .001
Parents	.027	.125 (.050)	.013
Siblings			

Note: Parent Involvement is scaled in T -score form; Extracurricular Activity Participation is coded 0 = no extracurricular activity participation and 1 = extracurricular activity participation; Sex is coded 1 = girls and 0 = boys; Race/Ethnicity is coded 1 = majority (White) and 0 = minority (all other groups); SES is a continuous variable including household income, mother/female guardian's education, father/male guardian's education; Previous Achievement is scaled in T -score form; Parents is coded 1 = 2 parents and 0 = 1 parent or "other"; Siblings is coded 1 = no siblings and 0 = has siblings.

Tests of Hypotheses

Hypothesis 1

Hypothesis 1 stated that Parent Involvement would have a statistically significant effect on Academic Performance. Children with higher Parent Involvement scores were predicted to achieve at a higher level than children with lower Parent Involvement scores.

The effect of Parent Involvement on Academic Performance was not statistically significant ($\beta = .007$, $b = .016$, $p > .05$). Children with higher Parent Involvement scores

did not demonstrate higher Academic Performance compared to children with lower Parent Involvement scores.

Hypothesis 2

Hypothesis 2 stated that participation in Extracurricular Activities would have a statistically significant effect on Academic Performance. Children who participate in Extracurricular Activities were predicted to perform at a higher level than children who do not participate in Extracurricular Activities.

The effect of Extracurricular Activity participation on Academic Performance, although small, was, indeed, statistically significant ($\beta = .032$, $b = .156$, $p < .05$).

Children who participated in Extracurricular Activities performed, on average, .156 points higher academically than did children who did not participate in Extracurricular Activities.

Hypothesis 3

Hypothesis 3 stated that the interaction between Parent Involvement and participation in Extracurricular Activities would be statistically significant. The effect of Parent Involvement on Academic Performance in children was predicted to depend on children's participation in Extracurricular Activities. Children whose parents were less involved but participated in Extracurricular Activities were predicted to perform academically at a higher level than those students whose parents were less involved but did not participate in Extracurricular Activities. As stated above, the cross-product term representing the interaction was not statistically significant ($\Delta R^2 = .000$, $F [1, 6435] = .662$, $p = .416$). The absence of a statistically significant interaction between Parent

Involvement and Extracurricular Activity participation suggests that Parent Involvement has the same effect on children regardless of whether or not they participate in Extracurricular Activities.

Supplementary Analyses

Additional variations of the parent involvement composite were tested in an effort to further explore the effects of parent involvement on the academic performance of these third graders. Results of these analyses are reported below.

SBI versus HBI

Past research has demonstrated differential effects of school-based and home-based parent involvement (Hill & Craft, 2003; Izzo et. al, 1999). In other words, some studies have found that a stronger relation exists between parent involvement in the home and academic performance (Izzo et. al, 1999), while others have found greater support for the association between school-based involvement and school performance (Reynolds, 1992). To determine whether such differences exist in this sample, the regressions were conducted using SBI (the school-based parent involvement component) and HBI (the home-based parent involvement component) separately (instead of using the PI Composite).

First, Academic Performance was regressed on SBI, the EAC, previous Achievement, Sex, SES, Race/Ethnicity, child's number of Parents (two versus one/other arrangement), and the absence or presence of Siblings; the SBI variable was centered. Next, a cross-product term (SBI-centered \times EAC) was added to the model to test the

possible interaction between SBI and Extracurricular Activities in their effects on Academic Performance.

School-Based Parent Involvement, Extracurricular Activity participation and the background variables (Sex, Race/Ethnicity, SES, Parents, Siblings, and Previous Achievement) together accounted for 35% of the variance in third grade Academic Performance ($F = 433.68$ [8, 6436], $p < .001$). As in the analysis with the overall composite, Sex, Race/Ethnicity and Previous Achievement were statistically significant predictors of Academic Performance. In addition, SBI was a statistically significant predictor of Academic Performance, although the effect size was small ($\beta = .062$). Interestingly, in this model, SES and Parents were no longer statistically significant predictors of Academic Performance (as they were in the model using the PI Composite).

The interaction was not statistically significant, ($\Delta R^2 = .000$, $F [1, 6435] = .085$, $p = .770$), suggesting that School-Based Parent Involvement has the same effect on children regardless of whether or not they participate in Extracurricular Activities. The regression coefficients in Table 17 show the extent of the influence of School-Based Parent Involvement, Extracurricular Activities, and the background variables on Academic Performance.

Table 17

Effects of School-Based Parent Involvement, Extracurricular Activity Participation, and the Background Variables on the Academic Performance of Third Grade Children

Variable	β	b (SE_b)	P
SBI (Centered)	.062	.011 (.002)	< .001
Extracurricular Activity Participation	.023	.113 (.052)	.031
Sex	.028	.100 (.036)	.007
Race/Ethnicity	-.065	-.250 (.042)	< .001
SES	.021	.047 (.028)	.086
Previous Achievement	.559	.038 (.001)	< .001
Parents	.0201	.096 (.051)	.059
Siblings	.016	.076 (.049)	.125

Note: SBI is scaled in T -score form; Extracurricular Activity Participation is coded 0 = no extracurricular activity participation and 1 = extracurricular activity participation; Sex is coded 1 = girls and 0 = boys; Race/Ethnicity is coded 1 = majority (White) and 0 = minority (all other groups); SES is a continuous variable including household income, mother/female guardian's education, father/male guardian's education; Previous Achievement is scaled in T -score form; Parents is coded 1 = 2 parents and 0 = 1 parent or "other"; Siblings is coded 1 = no siblings and 0 = has siblings.

Next, the same regression was conducted using a centered HBI variable (rather than the SBI variable), and the HBI-centered \times EAC cross-product term was added to the model in the second step. Results of this regression suggested that Home-Based Parent Involvement is predictive of Academic Performance. Although the effect size was small, the relation between the two variables was negative. That is, these results suggest that as home based involvement increases, students' academic performance decreases. Unlike

the previous regression, the variables Parents and SES were significant predictors of Academic Performance in this regression equation.

The interaction was not statistically significant, ($\Delta R^2 = .000$, $F [1, 7649] = .175$, $p = .676$), suggesting that Home-Based Parent Involvement has the same effect on children regardless of whether or not they participate in Extracurricular Activities. The regression coefficients in Table 18 show the extent of the influence of Home-Based Parent Involvement, Extracurricular Activities and the background variables on Academic Performance.

Table 18

Effects of Home-Based Parent Involvement, Extracurricular Activity Participation, and the Background Variables on the Academic Performance of Third Grade Children

Variable	β	b (SE_b)	P
HBI (Centered)	-.040	-.007 (.002)	< .001
Extracurricular Activity Participation	.029	.139 (.047)	.003
Sex	.024	.084 (.032)	.010
Race/Ethnicity	-.068	-.256 (.038)	< .001
SES	.039	.088 (.025)	< .001
Previous Achievement	.561	.038 (.001)	< .001
Parents	.026	.114 (.046)	.012
Siblings	.013	.062 (.045)	.170

Note: HBI is scaled in T -score form; Extracurricular Activity Participation is coded 0 = no extracurricular activity participation and 1 = extracurricular activity participation; Sex is coded 1 = girls and 0 = boys; Race/Ethnicity is coded 1 = majority (White) and 0 = minority (all other groups); SES is a continuous variable including household income, mother/female guardian's education, father/male guardian's education; Previous Achievement is scaled in T -score form; Parents is coded 1 = 2 parents and 0 = 1 parent or "other"; Siblings is coded 1 = no siblings and 0 = has siblings.

Reading versus Math

Some of the research on the effect of parent involvement on school performance has shown statistical significance for reading performance only (Epstein, 2001b), whereas other research has more strongly supported a relation between parent involvement and math performance (Hill & Craft, 2003). The regression was therefore retested by separating the Academic Performance composite into Reading Performance and Math

Performance. Two separate regressions were conducted, one with Reading Performance as the dependent variable and one with Math Performance as the dependent variable, in order to determine if the main effects and interaction differ for Reading versus Math Performance.

First, Reading Performance was regressed on the PI Composite, the EAC, previous Achievement, Sex, SES, Race/Ethnicity, child's number of Parents (two versus one/other arrangement), and the absence or presence of Siblings; the PI Composite variable was centered. Next, a cross-product term (PI Composite-centered \times EAC) was added to the model to test the possible interaction between the Parent Involvement and Extracurricular Activities in their effects on Reading Performance. Next, the same regression was run except that this time the dependent variable was Math Performance.

Like the original regression using the Academic Performance Composite, Parent Involvement failed to predict Reading Performance or Math Performance. Moreover, Extracurricular Activity Participation was still significantly related to performance in both regression equations. Of note was the statistically significant negative relationship between Sex and Math Performance, suggesting that the third grade boys outperformed the third grade girls in math.

Neither of these interactions was statistically significant (Reading Performance \times EAC: $\Delta R^2 = .000$, $F [1, 6486] = .096$, $p = .756$; Math Performance \times EAC: $\Delta R^2 = .000$, $F [1, 6467] = .837$, $p = .360$). Consequently, these analyses do not suggest differential effects for parent involvement on Reading versus Math, or differences in interaction effects. See Tables 19 and 20 below for results of these analyses.

Table 19

Effects of Parent Involvement, Extracurricular Activity Participation, and the Background Variables on the Reading Performance of Third Grade Children

Variable	β	b (SE_b)	P
PI Composite (Centered)	.008	.010 (.015)	.478
Extracurricular Activity Participation	.026	.072 (.029)	.015
Sex	.104	.206 (.020)	< .001
Race/Ethnicity	-.065	-.140 (.023)	< .001
SES	.035	.044 (.015)	.004
Previous Achievement	.553	.021 (.000)	< .001
Parents	.018	.045 (.028)	.109
Siblings	.008	.021 (.028)	.447

Note: Parent Involvement is scaled in T -score form; Extracurricular Activity Participation is coded 0 = no extracurricular activity participation and 1 = extracurricular activity participation; Sex is coded 1 = girls and 0 = boys; Race/Ethnicity is coded 1 = majority (White) and 0 = minority (all other groups); SES is a continuous variable including household income, mother/female guardian's education, father/male guardian's education; Previous Achievement is scaled in T -score form; Parents is coded 1 = 2 parents and 0 = 1 parent or "other"; Siblings is coded 1 = no siblings and 0 = has siblings.

Table 20

Effects of Parent Involvement, Extracurricular Activity Participation, and the Background Variables on the Math Performance of Third Grade Children

Variable	β	b (SE_b)	P
PI Composite (Centered)	.006	.007 (.014)	.610
Extracurricular Activity Participation	.033	.082 (.028)	.003
Sex	-.057	-.102 (.019)	< .001
Race/Ethnicity	-.046	-.089 (.022)	< .001
SES	.030	.034 (.015)	.018
Previous Achievement	.510	.018 (.000)	< .001
Parents	.033	.076 (.027)	.005
Siblings	.019	.047 (.026)	.073

Note: Parent Involvement is scaled in T -score form; Extracurricular Activity Participation is coded 0 = no extracurricular activity participation and 1 = extracurricular activity participation; Sex is coded 1 = girls and 0 = boys; Race/Ethnicity is coded 1 = majority (White) and 0 = minority (all other groups); SES is a continuous variable including household income, mother/female guardian's education, father/male guardian's education; Previous Achievement is scaled in T -score form; Parents is coded 1 = 2 parents and 0 = 1 parent or "other"; Siblings is coded 1 = no siblings and 0 = has siblings.

CHAPTER 5: DISCUSSION

Summary

Research has demonstrated that when parents are involved in the learning experiences of their children, children are more successful in school (e.g., McWayne, et.al, 2004). Children with relatively high levels of parent involvement have been shown to perform better in reading and math (Epstein, 2001b; Sheldon & Epstein, 2005). These children are also more likely to graduate from high school than are children with little or no parent involvement (Barnard, 2004).

Realistically, however, many parents cannot be—or simply are not—involved in the education or enrichment of their children. A number of explanations may be provided to account for a lack of parent involvement; for example, parents may work long hours, lack the confidence to engage in academic activities with their child, or simply choose not to be involved. Regardless of the reason, the truth is that children who receive little to no parent involvement are at a distinct academic disadvantage.

This study was designed to address that disadvantage. Given that many children will not experience the parent involvement that they need, it seemed clear that research on alternative beneficial options for the success of these children was needed. This research turned to the possibility of extracurricular activities.

Research on the impact of extracurricular activity participation on academic achievement has suggested that children who participate in extracurricular activities perform better in school than their peers who do not participate (Fletcher et. al., 2003; Prelow & Loukas, 2003). Therefore, in light of the encouraging findings with respect to

academic performance and participation in extracurricular activities, this study sought to determine whether participation in extracurricular activities might serve to protect the otherwise lower level of achievement of children without parent involvement.

This study tested three hypotheses: (1) Parent involvement will have a statistically significant effect on academic performance; (2) Participation in extracurricular activities will have a statistically significant effect on academic performance; and (3) The interaction between parent involvement and participation in extracurricular activities will be statistically significant. Of these three hypotheses, only the second was supported; participation in extracurricular activities had a small, but statistically significant, effect on academic performance. Neither the main effect of parent involvement on academic performance nor the interaction between parent involvement and extracurricular activity participation were statistically significant.

In response to these findings, supplemental multiple regression analyses were conducted. These analyses revealed a statistically significant main effect for School-Based Parent Involvement (SBI) and Academic Performance. Such a finding was anticipated based upon previous research. What was not expected, however, was the statistically significant negative relation found between Academic Performance and Home-Based Parent Involvement (HBI). Significance was not found for the tested interactions between SBI and Extracurricular Activity Participation or HBI and Extracurricular Activity Participation. Finally, analyses also failed to find statistical significance for the relation between Parent Involvement and Reading Performance or Parent Involvement and Math Performance.

Conclusions

Parent Involvement

Once sex, race/ethnicity, family structure, SES and previous achievement were controlled for, the Parent Involvement Composite in this study was not found to be significantly related to student's subsequent Academic Performance. This finding was unexpected, given the large body of research supporting such a relationship (Epstein, 2001b; Hill & Craft, 2003). Interestingly, when each component of the composite (School-Based Parent Involvement and Home-Based Parent Involvement) was examined separately, statistically significant associations were detected between each of the components and School Performance.

Like many of its predecessors (e.g., Hill & Craft, 2003), this study demonstrated that a statistically significant relationship exists between parent involvement at school and academic performance. Such a result not only supports previous research, but also extends it. Studies by Izzo et. al. (1999), Marcon (1999) and Hill and Craft (2003), for example, all found a significant and positive relationship between school-based parent involvement and academic performance. None of these studies, however, controlled for children's previous achievement. The present study thus demonstrates that the significant and positive relationship between parent involvement at school and academic performance holds true even when controlled for previous achievement. Moreover, while Izzo et. al examined children from Kindergarten through third grade, Marcon and Hill and Craft only included preschoolers and Kindergarteners, respectively. Thus, the present

study also contributes to the literature supporting the relationship between school-based involvement and achievement in mid-elementary aged children.

Unlike much previous research, however, this examination of home-based parent involvement and academic performance suggests that home-based parent involvement is significantly and negatively related to students' subsequent academic performance, once their previous achievement, sex, race/ethnicity, SES and family structure are taken into account. This result is especially puzzling in light of the ample existing support for a positive relation between the two (e.g. Epstein, 2001b). Epstein (2001b) found, for example, that parent involvement at home was positively related to reading achievement in children. Sheldon and Epstein (2005) found similar results for the relation between home-based parent involvement and math achievement.

Despite reasonable internal consistency reliability, it may be that the home-based parent involvement component used in this study was not a valid reflection of actual parent involvement at home. On the other hand, the fact that the HBI component was developed based on research and was validated via factor analysis argues against this conclusion. Another possible explanation for the discrepant finding may be parents' social desirability. In other words, perhaps parents wanted to appear as though they were more involved than they actually were. This does not explain why other studies that used parent report data found a positive association (e.g., Hill & Craft, 2003), however.

An examination of the sample used in this study and those used in prior research may also shed some light on the current findings. The sample of children in this study, as previously described, is representative of the national population of children. Hence,

while a number of minority groups are represented, the majority of children in this sample are White. Also, the children included represented a broad range in socioeconomic status. By contrast, many of the studies examining parent involvement and academic achievement in children, such as most of those referenced in this study (e.g., Fantuzzo et. al., 2000), used samples predominantly made up of disadvantaged minority (usually African American) children.

The lack of support found in the current study for a positive connection between home-based parent involvement and academic performance—and the lack of a stronger effect size for the relationship between school-based parent involvement and performance—may therefore be related to the sample involved. In essence, this study took a concept that was previously supported mostly with minority samples and applied it to a more heterogeneous group of children. The relatively limited (and in the case of home-based involvement, negative) relationship between parent involvement and school performance in this diverse sample may suggest that strategies for improving children’s academic performance cannot be generalized across racial or ethnic groups.

Also of note with respect to differences between the current and previous studies is the scope of parent involvement activities tested. That is, as was noted previously, studies of parent involvement commonly use different definitions of parent involvement. This study is no exception. The home-based parent involvement variable in this study included activities that might be considered *enriching*, such as reading with the child or singing songs with the child, but did not measure the time a parent may have spent in activities more specifically related to the child’s school curriculum. In other words, in

some earlier studies, the parent involvement activities assessed are best described as *tutoring* activities. The parent may have worked on homework or engage in math or spelling exercises with the child, for example. It may be that, overall, parent involvement is most effective when it involves practices that parallel the school curriculum.

Along those lines, studies by Epstein (2001b) and Sheldon and Epstein (2005), along with many others (e.g., Pezdek et. al., 2002; Morrow and Young, 1997), found promising results for the effectiveness of programs utilizing home-based parent involvement activities that were teacher promoted. In these studies, teachers instructed parents in how to be involved with schoolwork at home or provided structured activities in which parents and children engaged. Such programs not only helped parents to provide what is likely more effective parent involvement, but also involved a level of school-based involvement as there is some form of communication between parents and teachers in these classrooms. In the these studies then, one cannot necessarily deduce that results found in support of home-based involvement and achievement actually represent a pure assessment of home-based involvement. Most importantly, however, it may be that the nature of the home-based involvement is crucial to the effectiveness of the involvement when it comes to academic performance.

Considering the above findings, two factors that may be greatly influenced by such programs that promote and guide parent involvement in the home are time spent engaged in parent involvement practices and the *quality* of the parent involvement provided. With respect to quality, it may be that the present study underestimated the importance of this characteristic. As previously mentioned, the quality of parent

involvement has been shown to be of importance to the relationship between parent involvement and school performance (Izzo et. al., 1999; Kohl et al., 1994; Parker et. al, 1999). Many of the studies that have demonstrated positive significance for the relationship between involvement and achievement tested specific parent involvement practices that teachers or parents were trained to implement (e.g., Epstein, 2001b). In the study by Epstein (2001b), where significance was found for the impact of parent involvement on reading achievement, teachers had been trained to engage parents in involvement activities with their children.

Similarly, in the study by Sheldon and Epstein (2005) that found significance between parent involvement and math achievement, all of the schools included were part of a John's Hopkins affiliated program called "Focus on Results in Math," which had a set of outlined involvement activities for teachers and schools to implement with parents. This program provided teachers and schools with a list of 14 "partnership practices." The study then examined which of the practices were used by the school and whether there was a significant relationship between the involvement practices and school outcomes. Even though all of the schools in the study may not have encouraged all of the same activities, the teachers and schools were arguably more aware than most schools of how to implement the activities (or at least which activities to implement) and thus the interventions were probably of a higher quality.

By virtue of the fact that the teachers and schools in these studies were actively trying to engage the parents, it may be reasonable to assume that the involvement provided by the parents in these studies was, on average, of a higher quality than that of

parents who are not helped by the school. In other words, the teachers and schools in these studies were trained in techniques to engage parents and to help parents be involved with their children. It is therefore likely that the parents in those studies were better equipped to provide a higher quality of involvement than they may have otherwise implemented on their own. Moreover, if the parents are being aided in their involvement by the school, then these parents are already of a different home-based involvement stratum because they are also involved with the school. So, regardless of how or if they implement the strategies at home, they are already involved by practicing school-related parent involvement.

Although there are studies that have found statistical significance for a positive relationship between parent involvement in the home that does not appear to be teacher promoted (Hill & Craft, 2003; McWayne et. al., 2004; Stevenson & Baker, 1987) these studies did not measure previous academic performance as a background variable. Research has demonstrated that aptitude, ability, or previous achievement has a significant effect on current school learning (Walberg, 1984). Controlling for previous achievement assures that any significance found between the predictor variable (e.g., parent involvement) and academic performance cannot be explained away by the child's previous achievement. Hence, the absence of such a control variable in some previous studies may have accounted for some of the significant findings.

Extracurricular Activity Participation

This study demonstrated that third grade children who participate in extracurricular activities perform at a significantly higher level academically than their

peers who do not participate in extracurricular activities. Given the adequacy of the model tested, this finding suggests that extracurricular activities may positively affect young students' academic performance. This finding backs the assertion by Fletcher and colleagues (2003) that participation in extracurricular activities has positive potential for the school success not just of older children, but of elementary aged children as well. Furthermore, not only does this finding echo previous research that found positive correlations between extracurricular activity participation and academic performance (Cooper et. al, 1999; Ferguson et. al, 2002; Fletcher et. al, 2003; Gerber, 1996; Pettit et. al, 1997; Pierce et. al, 1999; Posner & Vandell, 1994; Powell et. al, 2000), but expands upon this research with the use of longitudinal data.

The Interaction

Findings from this study did not support the proposed hypothesis that among third grade children the effect of parent involvement on academic achievement depends upon participation in extracurricular activities. In other words, extracurricular activity participation did not significantly modify the relationship between parent involvement and academic performance. Although the notion was suggested by previous research, interactions are, in fact, rare in nonexperimental research (Keith, 2006). The lack of statistical significance found for this interaction suggests that extracurricular activities are not an adequate substitute for parent involvement in third grade with respect to academic performance. Thus, in terms of possible alternatives to parent involvement, this study has contributed to the literature by casting doubt on extracurricular activity participation as a suitable option.

Limitations

Although there are several advantages to using a large, nationally representative, pre-existing dataset as was used in this study, one key limitation of such an endeavor is the dependence on pre-existing items. That is, the items used to measure parent involvement, extracurricular activity participation, and academic performance were created by those who created the database and not specifically for this study. Although the items (and resulting composites) were empirically and statistically validated prior to their use in this research, the measurement of the dependent and independent variables was still limited to the items provided.

Another limitation of this study is the reliance on self-report questionnaires. Parents, for example, may desire to appear more involved with their children than they actually are, and, of course, self-report items are unavoidably subjective. Similarly, subjective interpretation of the items measuring extracurricular activities may have affected the results. To one parent, reporting that their child has participated in dance lessons may mean that this child dances several times a week from an experienced teacher; to another parent, a response of yes to the same question may indicate that the child takes a dance lesson once a month from a physical education teacher. This is, again, a limitation not only of self-report data, but also of being restricted to the questions provided by the database. Had the questions been tailored to this study, they could have been created to more specifically assess the quality and quantity of participation in extracurricular activities.

Moreover, due to limitations of the database, this study was unable to determine the amount of time spent in extracurricular activities. Studies have suggested that time spent is a crucial factor in terms of the potential benefit of extracurricular activities (Cooper et. al, 1999; Powell et. al., 2000). In light of those findings, the inclusion of information on time spent in extracurricular activities would have been a useful addition to this study.

This study also has several advantages. It contributes useful information to the literature bases of both parent involvement and extracurricular activities. This is especially important for research on extracurricular activities, as it adds to the small amount of information that exists on the relationship between extracurricular activities and achievement in elementary age children. The use of a large, nationally representative sample furthers the import of this study because the results are highly generalizable to third grade children in the United States.

Furthermore, this study is a valuable addition to both areas of interest because it used longitudinal data to control for several important potentially confounding variables in examining the possible effects of parent involvement and extracurricular activities. Unlike many other studies, this study controlled for previous achievement and family structure, along with sex, race/ethnicity, and SES. Relatively few other studies of this nature have controlled for previous achievement (for exception see, Epstein, 2001b), and no other identified study has controlled for family structure. Moreover, even with respect to sex, race/ethnicity, and SES, many studies have incorporated only one or two of these variables.

Similarly, most of the studies that have examined the relationship between extracurricular activity participation and achievement included one or two different activities (for an exception, see Gerber, 1996). Conversely, the present study included a greater variety of activities, which likely served to include a more diverse group of children than in most research of this nature.

Implications for Practice and Future Research

The difference in findings with respect to the effectiveness of parent involvement between the present study and those involving more formal involvement practices may suggest that children stand to gain more from parent involvement when schools and teachers encourage, train, and support parents in their at-home involvement. Such a notion supports Epstein's (1995; 2001c) "Framework of Six Types of Involvement for Comprehensive Programs of Partnership," which outlined avenues for a proactive partnership between parents and the school. Epstein (2001e) further explores the benefits of such an alliance in her examination of parents' reactions to efforts by teachers to promote involvement. This survey of teacher practices and parent reactions revealed that when teachers more actively promote involvement activities for parents and children to do at home, parents feel more compelled to be involved and are in fact more involved (Epstein, 2001e). Schools and teachers therefore may be best served by developing programs that connect teachers with parents in promoting home-based involvement practices.

Additionally, although the results from Epstein (2001e) held true when controlled for parent education, results of the study still indicated that parents' feelings of

competence are related to their level of education. To this, Epstein (2001e) suggests that teachers and schools provide workshops for parents on how to help. In the absence of workshops, it is suggested that teachers at least provide comprehensive directions for parents to accompany at-home activities (Epstein, 2001e).

It may be that while a majority of parents are helping when teachers prompt them to do so, not all help, or involvement, is equal in terms of academic outcomes for children. Future research might explore more specifically what home-based techniques are most highly correlated with school performance. Also, an examination of the qualitative differences between the parent involvement provided by parents who are helped by the school and parents who are on their own may be beneficial. Furthermore, a study directly comparing the two groups in terms of the relative performance implications for children in each category would be fruitful.

Results from this study not only support a positive relationship between the extracurricular activity participation and academic performance, but also suggest that (given the adequacy of the model) extracurricular activities may lead to slight improvements in subsequent academic performance, even when previous achievement is controlled. To increase our understanding of this positive and potentially useful finding, future researchers may wish to further probe into the extracurricular activities variable in order to understand more precisely where the benefits lie. For example, future research might examine the relative academic outcomes of different types of extracurricular activities.

As is the case with previous research on parent involvement, past research on extracurricular activity participation has indicated that the *quality* of extracurricular programs can play an important role in terms of the academic benefits reaped from participation (Pierce et. al, 1999). To expound upon the promising finding that extracurricular activity participation positively impacts academic performance and the Pierce et. al (1999) finding on the qualitative importance of staff orientation (positive versus negative), future researchers may wish to focus their efforts on learning more about the qualitative differences across extracurricular activities. Once more specific qualitative characteristics are identified, a study examining and comparing the relative importance of different program qualities may be beneficial. Perhaps the inclusion of the time spent in extracurricular activities variable (Cooper et. al, 1999; Powell et. al., 2000) would further enhance such a study.

Moreover, there are a variety of different after school arrangements for children. Pettit et. al (1997) demonstrated that participation in extracurricular activities after school was more academically beneficial to children than spending time at home alone (in “self care”). There are other arrangements, however. For example, some children attend day care centers or attend after school programs solely focused on academics. Cosden et. al (2004) suggested that after school academic programs aid children academically in that they provide homework help, develop study skills, and build confidence in children. A comparison of academic outcomes for the different types of outside of school arrangements might serve as useful addition to the body of literature on this topic. This

type of examination would again aid parents and policymakers in making the best choices for their children.

Finally, given that the majority of research suggests that parent involvement is important to academic achievement, it may still be worthwhile to explore other alternatives for children who do not experience parent involvement. As was previously mentioned, many of the studies that have demonstrated significance for the relationship between parent involvement and academic performance have involved schools and teachers that promote parent involvement. It may be advantageous in the future to conduct similar research using participants from one such program.

Perhaps with a more homogenous, specific style of parent involvement, a significant main effect for parent involvement on academic performance would be found. Assuming that occurs, it would be worthwhile to examine whether the interaction between parent involvement and extracurricular activities is significant. In other words, maybe the interaction in the present study was not significant because the parent involvement was, on average, of relatively lower quality than it would be if parents were actively engaged. Were the involvement to be of higher quality, perhaps the interaction term would have a significant effect.

Although there is still a great deal to be learned, findings from this study are a valuable contribution to the literature on parent involvement and extracurricular activities, and their relation to academic performance. The finding that extracurricular activity participation is positively and significantly related to academic performance in third grade children is a promising one in that it may offer more options to parents and

educators in their efforts to help children succeed in school. The unexpected finding with respect to parent involvement is also useful in that it brings to attention more of the potentially important, yet subtle, factors upon which that relationship may depend. The conclusions drawn from this study may help educators and future researchers to identify and focus on those aspects of parent involvement and extracurricular activity participation that appear to be the most salient for the academic success of young children.

APPENDIX A: FACTOR LOADINGS OF SCHOOL-BASED AND HOME-
BASED INVOLVEMENT COMPONENTS

School Based Involvement Items	School-Based Involvement Factor Loading	Home-Based Involvement Factor Loading
This year, have you volunteered at school or served on a committee [#2386]	.598	.154
This year, have you participated in fundraising for child's school? [#2388]	.411	.169
Have you attended a school or class event such as a play, sports event, or science fair this year? [#2384]	.442	.125
Since the beginning of the school year, have any adults in the house attended an open house or back-to-school night? [#2378]	.474	.081
This year, has parent/guardian volunteered to help in classroom or school? [#5078]	.634	.036
This year, have parents/guardians returned phone calls? [#5076]	.652	-.101
This year, have child's parents attended regularly scheduled conferences? [#2423]	.683	-.089
This year, have parents/guardians attended parent-teacher informal meetings that were initiated by you to talk about child's progress? [#5075]	.678	-.104

Home-Based Involvement Items		
How often do you read to child? [#2426]	.098	.489
How often do you tell child stories? [#2417]	.088	.597
How often do you all sing songs? [#2418]	.007	.512
How often do you help child do art? [#2419]	.038	.608
How often do you all play games? [#2421]	-.030	.598
How often do you teach child nature? [#2422]	.061	.575
How often do you all build things? [#2423]	.001	.576
How often do you all do sports? [#2424]	.043	.504

Note: ECLS K-3 item numbers are shown in brackets.

APPENDIX B: MEANS AND STANDARD DEVIATIONS OF ALL STUDY
VARIABLES

Variable	<i>M</i>	<i>SD</i>
Parent Involvement Composite (PI Composite)	50.00	10.00
Extracurricular Activities Composite (EAC)	.82	.38
Academic Performance	6.38	1.75
School-Based Parent Involvement (SBI)	50.00	10.00
Home-Based Parent Involvement (HBI)	50.00	10.00
Sex	.50	.50
SES	.13	.78
Race/Ethnicity	.66	.47
Parents	.81	.39
Siblings	.85	.36

Note: Academic Performance is scaled in 0-10 form; Parent Involvement, SBI and HBI are scaled in *T*-score form; Extracurricular Activity Participation is coded 0 = no extracurricular activity participation and 1 = extracurricular activity participation; Sex is coded 1 = girls and 0 = boys; Race/Ethnicity is coded 1 = majority (White) and 0 = minority (all other groups); SES is a continuous variable including household income, mother/female guardian's education, father/male guardian's education; Previous Achievement is scaled in *T*-score form; Parents is coded 1 = 2 parents and 0 = 1 parent or "other"; Siblings is coded 1 = no siblings and 0 = has siblings.

APPENDIX C: CORRELATIONS AMONG ALL STUDY VARIABLES

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. PI Composite	1.00	.26	.13	.74	.74	.01	.28	.19	.15	-.01	.18
2. EAC		1.00	.17	.31	.08	-.00	.30	.21	.14	.03	.24
3. Academic Performance			1.00	.27	-.07	.04	.31	.14	.15	.02	.58
4. SBI				1.00	.1	.03	.41	.27	.24	.01	.355
5. HBI					1.00	-.02	.01	.01	-.02	-.04	-.078
6. Sex						1.00	.00	-.02	-.02	.00	.03
7. SES							1.00	.29	.27	.06	.47
8. Race/ Ethnicity								1.00	.24	.06	.28
9. Parents									1.00	.19	.22
10. Siblings										1.00	.01
11. Previous Achievement											1.00

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