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Parent–school relationships and children’s academic and social outcomes in public school pre-kindergarten

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Abstract

Two dimensions of parent–school relationships, parental school involvement and parents’ perceptions of teacher responsiveness to child/parent, were examined in state-funded pre-kindergarten classrooms in a large urban school district. Children’s social and academic outcomes were individually assessed in the fall and spring. Hierarchical Linear Modeling analyses revealed that parental school involvement positively predicted children’s social skills ($d=.55$) and mathematics skills ($d=.36$), and negatively predicted problem behaviors ($d=.47$). Perceived teacher responsiveness to child/parent was positively related to children’s early reading ($d=.43$), and social skills ($d=.43$), and negatively to problem behaviors ($d=.61$). All analyses controlled for quality of teacher interaction with children in the classroom, parental home involvement, parental education level, and child race/ethnicity.

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A key question in current efforts to strengthen the impact and accessibility of pre-kindergarten programs is whether parent–school relationships contribute to improvements in children’s school readiness. Although early childhood program policies and standards include provisions for parent–school connections (e.g., Cople & Bredekamp, 2009), a

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tenuous empirical base supports claims about the benefits of parent–school relationships for young children (Henrich & Blackman-Jones, 2006). Research that identifies characteristics of parent–school relationships that are associated with children’s school readiness may inform initiatives to improve pre-kindergarten.

Two dimensions of parent–school relationships — parent involvement in school activities and perceived teacher responsiveness to children and parents — hold particular promise of enhancing pre-kindergarten effects on children and are the focus of the current study. Providing parental school-involvement opportunities is the most common way schools attempt to facilitate relationships with parents, whereas the construct of teacher responsiveness reflects a more recent interest in how schools embrace parents and students.

The pre-kindergarten year may be an optimal period to promote parent–school relationships. Parents may develop or refine knowledge and skills in how parents and school personnel can work collaboratively to support children’s learning during the pre-kindergarten year and beyond (Epstein, 1996). For pre-kindergarten classrooms in public schools, the transition to pre-kindergarten includes the beginning of a parent–school relationship that may span 7 or more years in the same school building. Parent–school relationships may be especially beneficial in the early childhood years for promoting early academic and social skills that are predictive of later school success. For example, studies indicate that preschool literacy and language skills are key to subsequent reading ability (National Early Literacy Panel, 2008) and that pre-kindergarten social competencies, including attention skills (Duncan et al., 2007) and behavioral regulation (Bronson, 2000), are associated with early and subsequent school success (Miles & Stipek, 2006). Longitudinal research also indicates that parenting practices in the early childhood years are powerful predictors of later school-related outcomes (Hart & Risley, 1985).

1. Parental school involvement

Parent–school relationship practices and research are dominated by the concept of parental school involvement, typically defined as parent participation in school activities such as volunteering or observing in the classroom, attending parent–teacher conferences, planning or serving on advisory committees, and participating in school social events (Hill & Taylor, 2004). Parental school involvement is the primary focus of family–school relationship standards established by leading national organizations (e.g., National Parent Teacher Association, 1997) and of surveys conducted by the National Center for Education Statistics (e.g., Carey, Lewis, & Farris, 1998; Planty et al., 2009). Theoretical perspectives on parent–school relationships often frame parental school involvement as a path to parent–school partnerships that bolster children’s outcomes (Christenson, 2004; Epstein & Sanders, 2002). Participation in school activities provides parents with information about children’s learning and development plus insight into their child’s abilities that leads to improvements in how parents promote the development of their child’s school-related abilities (Powell, 2001). Children may also receive messages about the importance of school (e.g., Pomerantz, Moorman, & Litwack, 2007) and form a concrete connection between home and school when they see their parents contribute to or participate in school activities (Fantuzzo, Tighe, & Perry, 1999). In addition to facilitating parental familiarity with and support of school goals and functions, some parental involvement activities have

the potential to increase teacher understanding of parents' goals for and views of their child (e.g., parent–teacher conferences) and school personnel's awareness of parent perspectives on school functioning (e.g., school-level advisory committees).

A critical, unanswered question is whether parent participation in school-based activities is of sufficient strength to contribute to pre-kindergarten children's academic and social outcomes. Research points to mixed evidence that may be a function of methodological differences across a small number of studies. The strongest relations between parental school involvement and children's outcomes were found by [Marcon \(1999\)](#) in a sample of children enrolled in public school pre-kindergarten, including Head Start classrooms. Higher levels of parent–school communication and more active types of parent involvement (i.e., help with a class activity) were associated with children's adaptive behavior and progress in meeting curriculum-based learning objectives as assessed through an early childhood progress report card. Shared method variance is a limitation of this study in that all data came from teacher reports. In a retrospective longitudinal study, [Miedel and Reynolds \(1999\)](#) found that the number of activities in which parents participated during preschool or kindergarten was significantly associated with higher reading achievement, lower rates of grade retention, and fewer years in special education in eighth grade as measured through school records. This study is problematic, however, in its use of parents' recall (in 1997) of involvement in their child's preschool and kindergarten (in 1983–1986).

A methodologically stronger study by [Fantuzzo, McWayne, Perry and Childs \(2004\)](#) found that school-based involvement and home–school conferencing (measured in the fall) did not predict late spring child outcomes when considered simultaneously with a measure of home-based parental involvement (e.g., reading to child). Child outcomes included approaches to learning, problem behaviors, and receptive vocabulary. This investigation used three data sources (parent and teacher reports plus individual child assessments). An earlier, related investigation by [Fantuzzo et al. \(1999\)](#) found that school-based involvement was related to lower levels of children's disruptive peer play at school and at home. [Mantzicopoulos \(1997\)](#) also found that parental school involvement did not predict academic competence but marginally predicted children's school adjustment as measured with individually administered, standardized tests of achievement and teacher reports, respectively. Each of the studies used one child data point only, in the spring, and low-income populations. With the exception of [Mantzicopoulos's \(1997\)](#) largely European American sample in one Head Start center, the study samples were primarily African American.

2. Perceived teacher responsiveness

Parent–school relationships entail more than the frequency and type of visits a parent makes to the school. In specifying a model of relationships among children, families and schools, [Pianta and Walsh \(1996\)](#) draw on the work of [Hinde \(1987\)](#) to argue that, over time, interactions form stable patterns that involve expectations and “a quality separate from the interactions themselves” ([Pianta & Walsh, 1996](#), p. 66). Moreover, perceptions of participants in a relationship may affect the future course of interactions ([Hinde, 1997](#)).

Parents' perceptions of the extent to which their child's teacher is responsive to children and parents may be a salient expectation that functions as a unique dimension of parent–school relationships. In general, teachers show responsiveness to children and parents when

they “meet families where they are” (Christenson, 2004, p. 93). Teachers demonstrate responsiveness to a parent by communicating openness to new information, suggestions, and other forms of feedback about the classroom, and maintain a welcoming, supportive stance toward parents (Powell, 2001). Teacher responsiveness to children, such as showing individualized interest in a child’s experiences, helping a child feel valued and accepted, and engaging in emotionally warm and positive interactions, has long been considered a core feature of high-quality early childhood classrooms (Hyson, Copple, & Jones, 2006). Parents’ perceptions of the extent to which their child’s teacher is responsive to their child has received far less attention in the literature, however. Perceptions of teacher responsiveness may be viewed as a component of relationship quality, which is a broader construct comprised of related, yet distinct, elements of interpersonal relationships such as ease of communication.

The construct of responsiveness is integral to a conceptualization of parent–school relationships as a bidirectional flow of influence between parents and schools, particularly at the classroom level (Epstein & Sanders, 2002). This perspective emerged in the late 1970s partly in response to concerns that parent–school relationships, including parental school involvement, may emphasize school-to-parent directionality (Lightfoot, 1978). Especially influential was Bronfenbrenner’s (1979) theoretical perspective on family–school relationships as a system that enhances child development when there is two-way communication, a balance of power, and multiple linkages (i.e., more than one person who is active in both settings). Eventually the practice standards in early education adopted this view by recommending that teachers establish “reciprocal relationships with families” (Copple & Bredekamp, 2009, p. 22). A notable change in practice standards developed by the National Association for the Education of Young Children occurred in 1997 when the phrase “and parents” was added to the following revision of a guideline originally issued in 1986: “teachers *and parents* will share their knowledge of the child and understanding of children’s development and learning...” (Bredekamp & Copple, 1997, p. 22, italics added). The rationale for reciprocity as a desirable feature of parent–school relationships also stems from mandates for parents of students with special needs to contribute to decisions about a child’s educational program (e.g., Sandall, Hemmeter, Smith, & McLean, 2005) and interest in how schools respectfully accommodate the growing diversity of U.S. families. One prominent idea, for example, is that early school success depends in part on a “ready school” that responds to a range of child and family characteristics (National Education Goals Panel, 1998).

It appears there is no published research on relations between perceived teacher responsiveness and children’s outcomes in pre-kindergarten. In a kindergarten study by Kohl and colleagues, however, three of the six items on a measure of parent–teacher relationship quality did pertain to perceived teacher responsiveness (e.g., teacher pays attention to my suggestion). Results indicated that the quality of the parent–teacher relationship was more strongly associated with child outcomes than the amount of parent–teacher contact (Kohl, Weissberg, Reynolds, & Kaspro, 1994, cited in Kohl, Lengua, & McMahon, 2000).

Why might a parent’s perception of teacher responsiveness be linked to child outcomes? One possibility is that parents’ perception of teacher responsiveness may contribute to the frequency and flow of information in parent–teacher interactions that affect the child. For example, the perception of a teacher as minimally responsive may prompt a parent to refrain from communicating a request or concern because “it won’t do any good anyway” (Pianta

& Walsh, 1996, p. 67). Another possible explanation is that a parent's perception of a teacher's responsiveness is communicated to the child in ways that enhance a child's engagement in the classroom. For example, parents may encourage children to "tell your teacher when something's bothering you because she'll do what's best for you."

Both interpretations of a possible relation between parents' perception of teacher responsiveness and child outcomes conceptualize perceived responsiveness as a relationship variable, consistent with the idea that perceptions are a unique dimension of relationships (Hinde, 1997; Pianta & Walsh, 1996). Alternately, parents' perception of teacher responsiveness may be an indicator of the quality of teacher interactions with children based on direct observation of teacher behaviors in the classroom and/or indirect information sources such as child reports of teacher actions or views of a teacher communicated by other parents. In the latter interpretation, a parent's perception of teacher responsiveness functions as a proxy measure of teacher sensitivity to children. Accordingly, perceived teacher responsiveness may be linked to child outcomes through the quality of teacher interactions with children in the classroom. To determine the extent to which parents' perception of teacher responsiveness is an attribute of parent–school relationships, it is useful to include an independent measure of teacher interactions with children as a control variable to more precisely estimate the contribution of teacher responsiveness to child outcomes. This analytic approach will help determine whether perceived teacher responsiveness is a unique dimension of the parent–school relationship.

3. Family contexts of parent–school relationships

Parent–school relationships exist in a family context that may contribute to associations between parent–school relationships and children's outcomes. Maternal education level and involvement in children's learning at home are two potentially influential elements of family contexts. Some pre-kindergarten studies (e.g., Castro, Bryant, Peisner-Feinberg, & Skinner, 2004; Fantuzzo, Tighe, & Childs, 2000), but not others (e.g., McWayne, Campos, & Owsianik, 2008; Waanders, Mendez, & Downer, 2007), have found higher levels of school involvement among parents with higher levels of education. The low-income samples of most existing studies on parental education and parent–school relationships yield a restricted range of parental education levels. Research also indicates that maternal education level is associated with the quality of young children's learning at home (Magnuson, Sexton, Davis-Kean, & Huston, 2009). Parental home involvement is a strong predictor of children's developmental outcomes (Hong & Ho, 2005; Magnuson et al., 2009; Sénéchal, 2006) and, importantly, has been found to co-vary with dimensions of parent–school relationships (Waanders et al., 2007).

The shared variance among parent–school relationships, parental home involvement, and parental education may confound the impact of parent–school relationships on children's development. Prior studies, however, have not adequately addressed the family context of parent–school relationships. For example, some investigations have combined dimensions of parental involvement at home and school into one global or composite scale (e.g., Arnold, Zeljo, Doctoroff, & Ortiz, 2008). Of the studies of associations between parent–school relationships and child outcomes described earlier, only Fantuzzo et al. (1999) and Fantuzzo et al. (2004) included a measure of home environment.

4. Current study

The current study investigated the association between parent–school relationships and children’s academic and social outcomes at the end of the pre-kindergarten year while controlling for children’s academic and social skills at the beginning of the school year. Two dimensions of parent–school relationships, parental school involvement and parents’ perceptions of teacher responsiveness to children and parents, were examined as unique predictors of children’s outcomes. We investigated parent–school relationships in public school pre-kindergarten, a segment of early education that is growing rapidly as part of the expansion of state-funded pre-kindergarten. State-funded pre-kindergarten now exists in 38 states (Barnett, Epstein, Friedman, Boyd, & Hustedt, 2008). Most studies of parental school involvement in pre-kindergarten have been conducted in Head Start, a federal program with a long history of providing parent-involvement activities (e.g., Zigler & Freedman, 1987). Some of Head Start’s provisions for parent involvement are not common in pre-kindergarten programs supported through other organizational auspices, such as regular home visits, 51% parent composition of local decision-making policy council, or development of an individualized plan with each family to ensure access to social, health, and education services (Powell, 2009).

The current study sought to improve upon methodological shortcomings of prior research on the relation of parent–school relationships to student outcomes. The study was a prospective design in which children’s school readiness was assessed at the beginning and again at the end of the school year with widely used standardized measures. Analyses controlled for classroom-level variance, including observed quality of teacher interactions with children, and family factors, including parental home involvement as well as maternal education level and child race/ethnicity. Data were collected from parents, teachers, individually administered student assessments, and observations of teacher interactions with children in the classroom. The sample, drawn from state-funded pre-kindergarten classrooms in one urban school district, was heterogeneous in terms of race/ethnicity and parent education levels.

5. Method

5.1. Participants

5.1.1. Classrooms and teachers

The study was conducted in 13 pre-kindergarten classrooms in a large urban school district in the Midwest. The classrooms were located in 12 elementary schools (Pre-K to Grade 5 or Pre-K to Grade 8). The pre-kindergarten classrooms were partially funded with state monies as part of a universal state-funded preschool program. The classrooms were targeted for children expected to enter kindergarten the following year, and enrolled an average of 25 children each (range = 24–27) for 6-hour sessions, 5 days per week. There was a lead teacher and a part- or full-time aide in each classroom. All lead teachers had a bachelor’s (54%) or graduate (46%) degree. Lead teachers had on average 11.5 years of teaching experience, with an average of 8.4 years of experience teaching pre-kindergarten. All lead teachers were European American females. Approximately one-half of classroom aides represented racial/ethnic minority backgrounds. Only lead teachers were participants in the study.

Table 1
Participant characteristics.

<i>N</i>	140	
Child race		
African American	60	43%
European American	50	36%
Other	20	14%
Not reported	10	7%
Child ethnicity: Latino	20	14%
Not reported	<10	<7%
Child gender: male		53%
Child age in years: <i>M</i> (<i>SD</i>)	4.1	(0.3)
Maternal education		
Less than high school	20	14%
High school diploma	40	29%
Some college	40	29%
Bachelor's degree or higher	30	21%
Not reported	10	7%
Maternal employment		
Full or part time	100	71%
Other (e.g., looking for work) or not reported	40	29%

Note: The unweighted sample sizes are rounded to the nearest ten, per Institute of Education Sciences policy regarding reports of restricted-use data.

School district policy called for staff in each school building, including teachers, to develop and offer opportunities for parental school involvement. A review of published, non-standardized profiles of individual school accomplishments for the year in which data were collected indicated that collectively the elementary schools participating in the study offered a range of opportunities for parental school involvement, including social events, fund-raising activities, classroom- and school-level volunteering, workshops on curriculum and learning areas (e.g., Family Math), Parent Teacher Associations, school building-level advisory governance councils, and parent–teacher conferences. As part of parental school-involvement opportunities, school district policy specified that each school should provide an advisory governance council for parents, teachers, community members, students and principals to work together in improving school performance. The school district calendar provided 2 days for parent–teacher conferences during the year in which data were collected.

5.1.2. Children and parents

The sample was comprised of 140² children and their parents or primary caregivers. Nearly all of the parents who participated in the study were the child's mother, biological (90%) or adoptive (7%). Others were grandmothers, other female relatives, or foster mothers. Sample characteristics are reported in Table 1. About two-thirds of the children represented racial/ethnic minority backgrounds, and slightly more than one-half of parents had some post-secondary education. The child sample represented 42% of all children

² The unweighted sample size for this study is rounded to the nearest ten, per Institute of Education Sciences policy regarding reports of analyses of restricted-use data.

enrolled in the participating classrooms at the time of study recruitment. An average of 10.6 children per classroom participated in the study ($SD=2.4$; range=7–15).

5.2. Measures

Standardized assessments were used to measure three academic and two social outcome areas focused on children's school readiness. The study's measures have been used widely in early childhood program research, including the Head Start Family and Child Experiences Survey (FACES) study (Zill, Sorongon, Kim, Clark, & Woolverton, 2006) and the Head Start Impact Study (Puma et al., 2005). Each child measure yields standardized scores with a mean of 100 and a standard deviation of 15.

5.2.1. Peabody picture vocabulary test-III

The PPVT-III is a measure of children's receptive vocabulary skills, using standard American English. Children point to a picture that best represents the meaning of a spoken word. The authors report high internal consistency reliability (.93–.95) and test–retest reliability (.91–.94) (Dunn & Dunn, 1997). Studies have established the concurrent validity of the PPVT-III (e.g., Qi, Kaiser, Milan, & Hancock, 2006), and preschool PPVT-III scores have been found to predict letter knowledge in kindergarten (Blair & Razza, 2007).

5.2.2. Woodcock–Johnson III tests of achievement: letter–word identification

This measure of children's identification of letters and words is appropriate for children aged 2 years and older. It has a test–retest reliability of .87–.96 and significant correlations with measures of literacy-related abilities (McGrew & Woodcock, 2001). Predictive validity also has been established (e.g., McClelland et al., 2007).

5.2.3. Woodcock–Johnson III tests of achievement: applied problems

This measure assesses children's ability to solve numerical and spatial problems presented verbally with the assistance of pictures of objects. It is appropriate for children 2 years and older, has a test–retest reliability of .85–.90, and is significantly correlated with other measures of cognitive ability (McGrew & Woodcock, 2001).

5.2.4. Social skills rating system

The Social Skills and Problem Behaviors scales of the preschool level of the SSRS (Gresham & Elliott, 1990) were used to assess children's social outcomes. We used the teacher version of the SSRS because our primary interest was children's social behaviors at school that are related to school readiness. The Social Skills scale is comprised of three subscales (Cooperation, Assertion, Self-control). The Problem Behaviors scale is comprised of two subscales (Externalizing and Internalizing behaviors), with higher scores indicative of more problem behaviors. The Social Skills and Problem Behaviors scales yield standardized scores, and the subscales yield raw scores, per SSRS scoring procedures. Gresham and Elliott (1990) reported high internal consistency (preschool-level teacher version, social skills=.94; problem behaviors=.82) and test–retest reliability (elementary level, social skills=.85, problem behaviors=.84). In the current study, Cronbach's alphas for the Social Skills and Problem Behaviors scales were .93 and .84, respectively.

Concurrent validity of the teacher version of the preschool-level SSRS has been established with other measures of child behavior (Rich, 2008). Agostin and Bain (1997) found kindergarten (teacher version) scores on the Cooperation and Self-control subscales to be predictive of academic achievement at the end of first grade, and scores on Cooperation, Self-control, Internalizing, and Externalizing subscales to be predictive of retention in first grade and placement in intensive classrooms in second grade.

5.2.5. Parental school involvement

Eleven items pertaining to parental school involvement, drawn from the parent interview schedule of the FACES study (O'Brien et al., 2002) and aligned with the collective offerings of schools participating in the current study (see Participants section), were used to assess the extent of parental participation in school activities. A recent review of research on parent involvement in early childhood programs recommended the use of the FACES to achieve greater standardization in measurement across studies (Henrich & Blackman-Jones, 2006). The 11 parent-involvement items included the following activities: attend a parent–teacher conference, volunteer in child's classroom, observe in child's classroom (30 min), help with child's classroom field trip, prepare/deliver materials/newsletters, attend school social events, attend workshops or meetings, participate in planning group, participate in fund raising, prepare food for events or classroom, and call another parent. Parents reported the frequency of participation in each activity using a 5-point scale (not yet, 1–2 times, several times, once a month, at least once a week). The procedure of securing parent report on the frequency of involvement in each school-based activity parallels the format of the family involvement measure developed by Fantuzzo et al. (2000) employed in the Fantuzzo et al. (2004) study and others (e.g., McWayne et al., 2008). All participants responded to each of the 11 items on our measure. Two scores were derived from these data: (a) the *number of different school-involvement activities* in which a parent participated once or more often (possible range=0–11), and (b) the *average frequency of parental school involvement* across all activities. The latter score was computed by dividing the sum of responses by 11, the number of possible involvement items (possible range=1.0–5.0). For analyses testing the impact of frequency of parental school involvement, we standardized each item and then took the average to counter potential differences across items in the extent of school provision of parent-involvement activities. For the current study, the Cronbach's alpha for the frequency of parental school involvement was .76.

5.2.6. Perceived teacher responsiveness

Nine items from the parent interview schedule of the FACES study (O'Brien et al., 2002) were used to measure parents' perceptions of the responsiveness of their child's teacher. Specifically, we selected six child-related items (teacher is warm and affectionate towards child; child is treated with respect by teacher; teacher takes an interest in child; child feels accepted by teacher; child gets lots of individualized attention; child is happy in the program) and three parent-related items (teacher is open to new information and learning; teacher is supportive of parent; parent feels welcomed by the teacher). Parents responded to "how often" for each item using a 4-point scale (never, sometimes, often, always). Parents also had the option of a "don't know" response, which was coded as 0 and omitted in computing a perceived teacher responsiveness score. In calculating the average,

we computed scores for each participant who provided a “never” to “always” response to at least 7 of the 9 items by dividing the sum of responses by the number of items for which a response was given (possible range = 1.0–4.0). Each of the parent participants responded to 7 of the 9 items. “Don’t know” or no response was given by 4 parents (3%) to one item and by 14 parents (10%) to two items. For analyses, the “never” to “always” response to each item was converted to a Z score, and an average of standardized scores served as a score of perceived teacher responsiveness. Cronbach’s alpha was .90 for the current study.

5.2.7. Parental home involvement

Nine items from the “Activities With Your Child” section of the FACES parent interview were selected as a measure of parental home involvement that involves explicit support for academic-related skills. The items included: telling the child a story; teaching letters, words or numbers; teaching songs or music; playing counting games; playing with blocks; playing with puzzles; playing with shapes; counting different things; and reading to the child. For each item, parents used one of three possible options to report the frequency of engaging in the activity during the past week (never, 1 or 2 times, 3 or more times). Parents also had the option of a “don’t know” response which was coded as 0 and omitted in computing a parental home involvement score. In calculating the average, we computed scores for each participant who provided a “never” to “3 or more times” response to at least 7 of the 9 items by dividing the sum of responses by the number of items for which a response was given (possible range = 1.0–3.0). Each of the parent participants responded to 8 of the 9 items. “Don’t know” or no response was given by 3 parents (2%) to one item. For analyses, the “never” to “2–3 times” response to each item was converted to a Z score, and an average of standardized scores served as a score of parental home involvement. Cronbach’s alpha was .75 for the current study.

5.2.8. Quality of teacher interaction with children

The positive interaction factor of the *Arnett Caregiver Interaction Scale* (CIS; Arnett, 1989) was used to assess the quality of teacher interactions with children. This factor is sometimes called a teacher sensitivity scale (e.g., Puma et al., 2005). It is comprised of 10 items, each rated on a 4-point scale by a trained observer, pertaining to attentiveness to individual children (e.g., listens attentively when children speak; when talking to children, kneels, bends, or sits at their level to establish better eye contact), teacher warmth (e.g., speaks warmly to the children), and developmental appropriateness of communications with children (e.g., when children misbehave, explains the reason for the rule they are breaking). The score represents an average of ratings (1 = not at all, 4 = very much) across all items. In addition to the aforementioned Head Start studies, the measure has been used in numerous early childhood studies (e.g., de Kruif, McWilliam, Ridley, & Wakely, 2000). In the current study, the Cronbach’s alpha was .93, similar to reports of other studies employing this scale (e.g., $\alpha = .91$ in Kontos, Howes, & Galinsky, 1996).

5.3. Procedures

School and teacher recruitment occurred in late spring prior to the academic year in which the study was conducted. All elementary schools that offered a general curriculum, operated on an academic year calendar, and included a pre-kindergarten classroom not

supported by Head Start were identified in the school district. Of the 120 elementary schools with a pre-kindergarten classroom, 13% were eliminated because they functioned on a year-round calendar or implemented a particular education model (e.g., Montessori, language immersion) that might appeal to parents with a unique interest in education. An additional 8% of schools with Head Start funding were excluded from the pool of prospective participants to avoid the influence of Head Start program mandates for parent involvement. This left a potential pool of approximately 90 elementary schools from which to recruit a sample of 12 schools, a target determined by available resources for the study. In accordance with school district policy, school principals were first approached to request permission for the pre-kindergarten classroom in their building to participate in the study. Twenty-five principals gave permission, and pre-kindergarten teachers in their buildings were invited to participate in the study. Researchers offered to meet at the teacher's school to discuss the study and provide additional written information. Teachers in 7 schools immediately declined or did not return repeated follow-up messages; teachers in an additional 6 schools declined after learning more about the study in a meeting with a principal investigator; and, teachers in 12 schools agreed to participate. Consent was secured from 13 pre-kindergarten lead teachers in the 12 schools (one school had two pre-kindergarten classrooms). Teachers received a book store gift certificate as compensation for participation in the study.

At the beginning of the academic year in which the study was conducted, all parents of children enrolled in each of the 13 classrooms were invited to participate in the study. Of the 180 parents who consented to participate, 3% of parents and their children moved to a different school mid year, and we were unable to conduct a complete interview with an additional 21% of parents at the spring data point because they could not be reached or declined to participate in the spring interview. Thus, complete data were secured for 76% of the original sample of parents and their children. Compared to the analyzed sample, the sample lost to attrition included a significantly smaller percentage of European American children (14% vs. 36%; $\chi^2 = 8.87, p = .01$) and a higher percentage of mothers with less than a high school diploma (30% vs. 12%; $\chi^2 = 9.52, p = .02$). There were no significant differences in child age, ethnicity, gender, and initial scores on measures of social and academic outcomes. Parents received a small cash stipend for study participation.

Child assessments were conducted individually in early fall semester and again at the end of the school year for the PPVT-III, WJ Letter–Word Identification, and WJ Applied Problems measures. Typically children were assessed in one session of approximately 60 min in length. Teachers completed the SSRS for each child at each of these two data points. Parent interviews were conducted in fall semester (demographic data) and again at the end of the school year (parent–school relationship and parental home involvement measures) via telephone. The intent of the fall administration was to secure family demographic information concurrent with the child's baseline rather than retrospectively at the end of the school year. The average length of the second parent interview was 45 min and included FACES interview items (e.g., health status) not analyzed for the current study. All parents gave telephone numbers at the time of consent to participate in the study. If telephones were disconnected at the time of data collection, research staff attempted to use workable numbers obtained through teachers or information given by parents on alternative telephone numbers.

The child assessments and parent interviews were conducted by graduate research assistants. Prior to each of the two child data collection points, the child assessors received 3 days of training. The lead assessor (supervisor of the child assessors) received an additional half-day of training prior to the fall assessments. At each of the two data collection periods, the lead assessor periodically observed child assessment sessions for integrity checks. Parent interviewers received two days of training prior to the fall data collection and one day of refresher training prior to the spring data collection. Fidelity of the parent interviews was regularly assessed by one of the study's investigators (third author). During the study year, there was minimal staff turnover among research assistants and no change in supervisors.

Trained research assistants, all with backgrounds in early childhood education and experience in conducting classroom observations, conducted observations of teacher interactions with children in each classroom near the end of the school year, using the CIS positive interaction measure. Each observation spanned approximately 75 min and included both large-group and free-play (center time) periods. Observers received 2 days of training on the measure plus 2 days of classroom observation practice prior to conducting the observations. The practice observations were conducted in pre-kindergarten classrooms not participating in the study. Inter-rater reliability was calculated using rate of agreement between pairs of observers. The average inter-pair agreement was 92%; each pair achieved at least 90% agreement prior to data collection.

5.4. Data analyses

We examined the unique relation of parent school involvement and perceived teacher responsiveness to children's academic and social outcomes at the end of the school year. First, we calculated the Intra-Class Coefficient (ICC) for parental school involvement and perceived teacher responsiveness and for spring child outcome measures to assess the significance of the classroom-level variance. Because children were nested within classrooms (i.e., children shared same teachers), children's academic and social skills and the quality of teachers' interactions with children may vary across classrooms. In addition, the parental school involvement and teacher responsiveness measures might have significant classroom-level variance. HLM results indicated that only 0.98% of the variance in parental involvement was at the classroom level, which was not statistically significant, $\chi^2 (df=12)=13.19, p >.355$; however, 7.68% of the variance in perceived teacher responsiveness was at level 2, $\chi^2 (df=12)=22.37, p <.05$. Variance at the classroom level was statistically significant in the three academic outcomes. For early reading, 9.31% of the variance existed among classrooms, $\chi^2 (df=12)=24.80, p <.05$; for mathematics, 11.96% of the variance was at level 2, $\chi^2 (df=12)=29.31, p <.01$; and for language, 19.05% was attributable to classroom level, $\chi^2 (df=12)=42.87, p <.001$. Children's social outcomes also were found to have significant classroom-level variance; for social skills, 24.43% of the variance was between classrooms, $\chi^2 (df=12)=50.03, p <.001$, and the problem behaviors scale had 26.04% of its variance at level 2, $\chi^2 (df=12)=51.36, p <.001$.

Because each child outcome and the teacher responsiveness measure had nesting effects with significant level-2 variance, we decided to use Hierarchical Linear Modeling (HLM; Raudenbush & Bryk, 2002) for our main analyses. That is, the assumption of independence

of observations was violated for participating children who were in the same classroom. The use of HLM enabled us to obtain accurate standard error estimates by partitioning the variance in a child-level outcome into child (level 1) and classroom (level 2) sources (Raudenbush & Bryk, 2002).

We calculated effect sizes with the *t* statistics and the degree of freedom provided in HLM output (Karney & Bradbury, 1997) using the formula Cohen's $d = 2t/df$ (Hill, Bloom, Black, & Lipsey, 2008). We used Cohen's (1988) guidelines to interpret the effect sizes (.2=small; .5=medium; .8=large).

6. Results

Descriptive statistics for all study variables are reported in Table 2. The parental school involvement, perceived teacher responsiveness, and parental home involvement information reported in Table 2 represents scores prior to conversion to *Z* scores for analyses.

6.1. Preliminary analyses

Two preliminary analyses were conducted. First, we examined correlations among parent–school relationship measures. Before computing correlations, we group-mean centered variables to eliminate the clustering effect of classrooms. Second, we identified possible covariates in analyses of links between parent–school relationship dimensions and child outcomes.

Table 2
Descriptive statistics for study variables.

	Time 1				Time 2			
	<i>N</i>	Mean	<i>SD</i>	Range	<i>N</i>	Mean	<i>SD</i>	Range
No. of schl. involvement act. (1–11)	–	–	–	–	140	5.65	2.10	0–11
Freq. of schl. involvement (1–5)	–	–	–	–	140	1.80	0.47	1.0–4.3
Perceived teacher responsive. (1–4)	–	–	–	–	140	3.62	0.50	1.4–4.0
Teacher interact. w/ children (1–4)	–	–	–	–	13	2.39	0.79	1.2–3.4
Parental home involvement (1–3)	–	–	–	–	140	2.18	0.39	1.1–3.0
PPVT-III	140	92.98	16.98	42–126	140	98.67	14.49	53–128
WJ Applied Problems	140	97.08	17.51	45–137	140	102.09	13.48	65–131
WJ Letter–Word Identification	140	102.77	17.44	70–184	140	108.35	14.06	75–172
SSRS social skills ^a	120	103.66	14.37	64–130	130	108.65	12.77	75–130
Cooperation ^b		15.25	3.63	7–20		16.35	3.18	8–20
Assertion ^b		12.16	4.67	1–20		13.93	4.20	1–20
Self-control ^b		14.66	4.29	0–20		15.47	3.64	5–20
SSRS problem behaviors ^a	130	100.07	13.90	85–142	130	98.21	12.37	85–135
Externalizing ^b		3.03	3.36	0–12		2.88	2.89	0–11
Internalizing ^b		1.29	1.60	0–6		0.90	1.35	0–5

Note. The unweighted parent and child sample sizes are rounded to the nearest ten, per Institute of Education Sciences policy regarding reports of analyses of restricted-use data.

^aRepresents standardized scores ($M=100$, $SD=15$).

^bRepresents raw scores.

6.1.1. Parent–school relationship measures

Perceived teacher responsiveness was not significantly correlated with the number of parental school-involvement activities ($r=.10$). The correlation between perceived teacher responsiveness and frequency of parental school involvement ($r=.15$), however, approached statistical significance ($p=.079$). Observed quality of teacher interactions with children was not significantly correlated with the number or frequency of parental school involvement or with perceived teacher responsiveness ($r_s=.00$). Parental home involvement was significantly correlated with the frequency of parental school involvement ($r=.23$), but not with the number of school-involvement activities ($r=.10$). The correlation between parental home involvement and perceived teacher responsiveness was significant ($r=.18$). The number of activities in which parents participated and the frequency of their involvement were positively and strongly correlated ($r=.84$). We used the frequency of parental school-involvement measure in all subsequent analyses involving parental school involvement. This decision was based on the strength of the correlation between number and frequency of parental school involvement, the contribution of number of involvement activities to our measure of frequency of parental school involvement, and the similarity of our scoring approach to the [Fantuzzo et al. \(2000\)](#) measure, as noted earlier.

6.1.2. Possible covariates

As reported above, we included parental home involvement and quality of teacher interactions with children as covariates to examine the unique relationship between parent–school relationship dimensions and children’s outcomes. The relation of child and family background characteristics to the spring scores on children’s academic and social measures was examined using multilevel modeling to identify additional possible covariates. Two background factors, child minority status and maternal education, were identified as significant predictors of child outcomes, which is consistent with prior research (e.g., [McLoyd, 1998](#)). Racial/ethnic minority children scored lower than European American children on language ($t=-3.44$, $p<.001$) but not on mathematics ($t=.25$), reading ($t=1.19$), problem behavior ($t=.26$), and social skills ($t=-.19$). Maternal education level significantly predicted children’s spring scores on the mathematics ($t=1.99$, $p<.05$) and early reading ($t=3.29$, $p<.01$) measures, but not on language ($t=1.59$), social skills ($t=1.16$) or problem behaviors ($t=-1.71$, $p<.10$).

Additional multilevel modeling indicated that there were no statistically significant effects of child race/ethnicity, maternal education, or parent employment status on the frequency of parental school involvement and perceived teacher responsiveness. Child gender, however, significantly predicted the frequency of school involvement ($t=-2.38$, $p<.05$) and perceived teacher responsiveness ($t=-2.52$, $p<.05$).

6.1.3. Building the final model

To assess the unique relation of parental school involvement and perceived teacher responsiveness to children’s outcomes at the end of the pre-kindergarten year, we simultaneously examined the contribution of the two dimensions of parent–school relationships in one HLM model. Spring scores on each of the five child measures were outcomes which were modeled, controlling for children’s fall scores on the same outcomes measures, child minority status, maternal education, and parental home involvement in

level 1 (i.e., child level) and quality of teacher interactions with children in level 2 (i.e., classroom level). Child minority status and maternal education level were included because, as reported earlier, preliminary analyses revealed that they were significant predictors of child spring outcomes. Parental home involvement was controlled to specify the impact of parental school involvement on children's development that is not confounded with home involvement. Quality of teacher interactions with children was included as a control variable to rigorously test the unique impact of perceived teacher responsiveness on child outcomes. To get unbiased estimates of the level-1 coefficients, we group-mean centered all the predictors at level 1 and grand-mean centered the predictor at level 2 (Enders & Tofghi, 2007).

For each HLM model, random effect (i.e., level-2 variance) was tested for the coefficient of average spring outcome (i.e., intercept) and for the coefficient of perceived teacher responsiveness. That is, the coefficients were allowed to vary across classrooms. After initial runs with freed level-2 variance, non-significant random effects were trimmed, and only significant random effects were kept and estimated in the final model with its level-2 predictor, observed quality of teachers' interactions with children. Thus, the quality of teachers' interactions was not included in the models of mathematics and language where non-significant level-2 variance was fixed. The final model for the case of early reading is presented below:

$$Y_{ij} = \gamma_{00} + \gamma_{01} (\text{quality of teacher interaction with children}) + \gamma_{10} (\text{fall initial skills}) + \gamma_{20} (\text{minority status}) + \gamma_{30} (\text{maternal education level}) + \gamma_{40} (\text{frequency of parental home involvement}) + \gamma_{50} (\text{frequency of parental school involvement}) + \gamma_{60} (\text{perceived teacher responsiveness}) + u_{0j} + r_{ij}.$$

The outcome, spring early reading (Y_{ij}) for child i in classroom j , is a function of the coefficients (γ_{n0}) which is the fitted group means as they related to observed quality of teachers' interactions with children in the classroom, a child's initial skills, minority status, maternal education level, the frequency of parental home involvement, the frequency of parental school involvement, perceived teacher responsiveness, and the residual, or unique error for each class (u_{0j}) and the individual child (r_{ij}). The effect of these predictors did not vary at the classroom level and thus were fixed.

HLM results are presented in Table 3. Overall, children with stronger parent–school relationships, controlling for all other variables, demonstrated higher scores in academic as well as social outcomes. Children with higher academic and social skill scores in the fall tended to earn higher scores in spring (all $ps < .01$). There was no racial/ethnic difference in each of the five child outcome measures. Children whose mothers had more years of education had lower scores in problem behaviors, $t = -2.14$, $p < .05$, but did not differ from children whose mothers had fewer years of education in social skills or academic outcomes. Parental home involvement did not uniquely predict child outcomes as a covariate in the model.

6.2. Parental school involvement and child outcomes

Compared to participants who reported low levels of parental school involvement, children whose parents reported relatively high levels of involvement in school had a lower

Table 3
Summary of hierarchical linear modeling of the impact of parent–school relationships on spring child outcomes ($N=140$).

Fixed effect	Early reading (WJ letter–word identification)		Mathematics (WJ applied problems)		Language (PPVT-III)		Social skills (SSRS)		Problem behaviors (SSRS)	
	Coef.	<i>t</i> -ratio	Coef.	<i>t</i> -ratio	Coef.	<i>t</i> -ratio	Coef.	<i>t</i> -ratio	Coef.	<i>t</i> -ratio
Intercept, β_{0j}										
Spring skills, γ_{00}	108.52	60.93 ***	102.31	110.04 ***	98.92	94.27 ***	107.69	68.47 ***	98.78	46.91 ***
Quality of teacher interaction with children, γ_{01}	–0.18	–0.07	–	–	–	–	5.66	2.52 *	–1.10	–0.37
Fall initial skills, β_{1j} , γ_{10}	0.55	11.32 ***	0.51	8.02 ***	0.48	6.00 ***	0.25	3.10 **	0.18	2.33 *
Child minority status, β_{2j} , γ_{20}	0.75	0.36	4.45	1.71 ~	–5.43	–1.80 ~	0.33	0.11	0.70	0.25
Maternal education level, β_{3j} , γ_{30}	1.22	1.25	1.34	1.15	1.18	0.90	1.39	1.13	–2.49	–2.14 *
Parental home involvement, β_{4j} , γ_{40}	–0.34	–1.38	–0.57	–1.88 ~	–0.31	–0.91	–0.56	–1.74 ~	0.09	0.30
Parental school involvement, β_{5j} , γ_{50}	0.22	0.14	3.81	1.99 *	0.69	0.32	5.79	2.82 **	–4.74	–2.46 *
Perceived teacher responsiveness, β_{6j} , γ_{60}	2.62	2.35 *	2.66	1.94 ~	2.95	1.92 ~	3.14	2.21 *	–4.28	–3.23 **
Random effect	Var.	χ^2	Var.	χ^2	Var.	χ^2	Var.	χ^2	Var.	χ^2
Intercept, u_{0j}	33.51	61.54 ***	–	–	–	–	17.26	24.33 **	45.06	50.03 ***
Level 1, r_{ij}	71.79		–		–		113.86		105.00	

Coef. = Fixed effect coefficient estimate. Var. = variance component. Child minority status was coded as Racial/Ethnic Minority = 1; Others = 0. Significant predictors of the outcome are in bold type.

The unweighted sample size is rounded to the nearest ten, per Institute of Education Sciences policy regarding reports of restricted-use data.

~ $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

score in problem behaviors and a higher score in mathematics skills and social skills at the end of the school year. Parental school involvement did not significantly predict children's early reading and language. For social skills, one standard deviation (about .55 points) difference in parental school involvement was positively associated with a 3.18 point difference in children's social skills, $t=2.82$, $p<.01$. The corresponding effect size d for parental involvement was medium and significant, $d=.55$. For problem behaviors, the effect size was also medium and significant, $d=.47$; every .55 point difference in parental school involvement was negatively associated with a 2.61 point difference in problem behavior, $t=-2.46$, $p<.05$. Effect size for mathematics was small but significant, $p<.05$, $d=.36$. For early reading and language skills, the effect size was very small and non-significant, $ds=.03$ and $.06$ respectively.

6.3. Perceived teacher responsiveness and child outcomes

Children whose parents rated their teachers as relatively higher in responsiveness demonstrated higher scores on three of the five outcomes. For the two other outcomes, the impact of perceived responsiveness approached significance. These findings emerged while holding all other level-1 variables constant at their group (i.e., class) means and a level-2 variable at its grand mean.

Perceived teacher responsiveness uniquely and significantly predicted children's reading outcomes. Children whose parents reported relatively higher levels of teacher responsiveness had higher scores in reading, $t=2.35$, $p<.05$. Specifically, every one standard deviation (.75 point) difference in perceived teacher responsiveness was associated with a 1.97 score difference in spring reading, $d=.43$. The effect of perceived teacher responsiveness approached statistical significance with a medium effect size for mathematics, $t=1.94$, $p<.10$, $d=.35$ and language, $t=1.92$, $p<.10$, $d=.35$.

In addition, perceived teacher responsiveness significantly contributed to children's social outcomes. For social skills, one standard deviation change in teacher responsiveness was associated with higher scores in children's social skills by 2.36 points, $t=2.21$, $p<.05$. The corresponding effect size was $d=.43$. For problem behaviors, every .75 increase in teacher responsiveness was associated with scores lowered by 3.21 points, $t=-3.23$, $p<.01$. The effect size for problem behaviors was $d=.61$. The significant impact of parent–school relationships on social skills and problem behaviors was closely replicated when subscales (i.e., cooperation, assertion, self-control, externalizing, internalizing) were employed in analyses.

7. Discussion

The question of whether parent–school relationships in pre-kindergarten are positively associated with children's school readiness has been far from settled. A handful of studies have investigated this topic, yielding mixed evidence that focuses primarily on parental school involvement, the most common indicator of parent–school relationships. The current study examined two dimensions of parent–school relationships in pre-kindergarten — parental school involvement and parent perceptions of teacher responsiveness to children and parents — in relation to academic and social aspects of school readiness. The study

attempted to provide a methodological advance in the extant literature by examining (a) children's academic and social outcomes at the end of the pre-kindergarten year while controlling for academic and social skills at the beginning of the school year, (b) nesting of children within classrooms, (c) quality of teacher interactions with children and parental home involvement as control variables, and (d) a more heterogeneous urban population than has been studied to date. The study was conducted in state-supported pre-kindergarten classrooms, a growing segment of early education.

Our findings support the expectation that parents' participation in activities at their child's school is associated with children's outcomes. Parental school involvement uniquely predicted children's social outcomes (social skills and problem behaviors) and one academic skill (mathematics). These results are generally consistent with findings of several prior parental school-involvement studies that measured children's social development and work habits (Marcon, 1999), school adjustment (Mantzicopoulos, 1997), and disruptive peer play (Fantuzzo et al., 1999). In the later Fantuzzo et al. (2004) study, only home-based parental involvement was related to children's classroom behavior as assessed at the end of the school year, whereas we found that parental school involvement was linked to lower problem behaviors in the classroom when controlling for parental home involvement.

Our findings suggest that parents' perception of teacher responsiveness warrants further consideration as a potentially distinct dimension of the parent–school relationship. Theoretically, we conceptualized perceptions as a relationship attribute that can exist separately from interactions in a relationship (Pianta & Walsh, 1996). Parent ratings of teacher responsiveness were high, consistent with other research indicating a tendency toward positive bias in parent ratings of teachers (Zellman & Perlman, 2005), yet our measure of perceived teacher responsiveness discriminated across teachers. Importantly, perceived teacher responsiveness uniquely predicted children's social outcomes and early reading while controlling for observed quality of teacher interactions with children and parental home involvement.

A conceptualization of perceived teacher responsiveness as a parent–school relationship dimension rests partly with the adequacy of controlling the quality of teacher interactions with children in HLM analyses. We employed as a control variable a widely used measure of teacher sensitivity to children that included items conceptually similar to three of the six child-focused items rated by parents (i.e., is affectionate/warm, takes interest in child, provides individualized attention). However, the measurement strategies were considerably different. The absence of a correlation between parents' perceptions of teacher responsiveness and independent observations of teachers' interactions with children supports the idea that parents' views of teacher responsiveness are an attribute of the parent–school relationship. Although our aim was not to determine the level of congruence between parent reports and direct observations of the same phenomenon, it is possible that the low correlation is a function of different measurement procedures. Our measure of parents' perceptions of teacher responsiveness may have captured teacher practices associated with child outcomes that structured classroom observations did not assess. Further research is needed to clarify the extent to which parent perceptions of teacher responsiveness to children and parents is a relationship variable.

Our results suggest that parents' perceptions of teacher responsiveness may function as a unique dimension of parent–school relationships. Perceived teacher responsiveness was not

correlated with the number of parental school-involvement activities ($r = .10$), although the correlation with the frequency of parental school involvement ($r = .15$) approached statistical significance. This finding is salient because prior research on the multidimensionality of parent–school relationships has found significant overlap among dimensions. For example, [Waanders et al. \(2007\)](#) found that the home-based school involvement and home–school conferencing subscales of the [Fantuzzo et al. \(2000\)](#) measure were significantly correlated ($r = .74$). They further found in a canonical correlational analysis that the dimensions of home involvement, school involvement, home–school conferencing, and teachers’ connections with parents loaded significantly on a single canonical variate.

Effect sizes in the current study were medium and relatively higher than the effect size reported by [Marcon \(1999\)](#) for a similar social outcome measure. This may be due to our attempt to examine a more precise estimate by controlling for nesting of children in classrooms and other confounding variables. In the current study, parental school involvement significantly predicted higher levels of social skills and lower levels of problem behaviors of children with effect sizes of .55 and .47, respectively, compared to Marcon’s effect size of .28 for children’s social development and work habits. Placed in a larger context, a recent five-state study of the overall effects of state-funded preschool programs (although not specifically parent-involvement measures) found average effect sizes of .17 for the PPVT-III and .26 for Woodcock–Johnson Applied Problems ([Wong, Cook, Barnett, & Jung, 2008](#)). In the current study, perceived teacher responsiveness had a higher effect size of .43 for children’s Woodcock–Johnson Letter–Word Identification scores, and parental school involvement had an effect size of .36 for children’s Woodcock–Johnson Applied Problems scores.

The social context of parent–school relationships has received important research attention in terms of family status variables associated with parents’ involvement and interactions with schools ([Waanders et al., 2007](#)). In our examination of parent–school relationship dimensions and children’s academic and social outcomes, we used statistical controls for three family factors — child race/ethnicity, maternal education level, and parental home involvement — that are often linked to children’s outcomes and to parent–school relationship variables. Although this approach is an advance in the literature on parent–school relationships in pre-kindergarten, a random assignment study that systematically varies parental school-involvement level or another dimension of parent–school relationships would be a superior strategy for handling issues of shared variance.

Future research on possible mechanisms through which parent–school relationships contribute to child outcomes may deepen our understanding of how dimensions of parent–school relationships are causally linked to children’s school readiness. For example, does parental involvement contribute to children’s social outcomes through school-based participation that is highly visible to children and, thus, affects their classroom behaviors, or through information parents secure at school that enhances their efforts to promote skills they view as central to their child’s success at school? The former path suggests that any form of visible parental presence at school is an active ingredient of parental school involvement, whereas the latter mechanism implies that parents acquire and use information about their child’s learning through formal and informal points of school contact. From our findings, we speculate that school involvement may have increased parents’ awareness of the importance of early mathematics skills in pre-kindergarten which,

in turn, resulted in a stronger emphasis on mathematics skills by parents. A related question is whether parents seek out particular types of information during their participation in activities at school. Our findings regarding social outcomes mirror results of other research on parents' ideas about school readiness. In a recent national study, parents of preschool-age children rated one particular social skill (i.e., sharing) higher than academic skills as essential to preparing children for kindergarten (O'Donnell, 2008).

Research on how perceived teacher responsiveness is linked to children's outcomes may help clarify the extent to which parents' perceptions of teacher responsiveness is an attribute of the parent–school relationship and/or a unique indicator of the quality of teacher interactions with children. As discussed earlier, perceptions may affect the reciprocal flow of information in parent–teacher interactions and/or bias parents' communications to their child about the teacher. A direction for future research is to discern the types and sources of information parents use to form perceptions of teacher responsiveness. Parents' visits to or observations in the classroom are one obvious source of information for parents. The content of parent–teacher exchanges (e.g., notes, telephone calls), children's reports to parents of their experiences at school, information from other parents about the teacher, and the extent to which the school provides a welcoming environment may all contribute to parents' perceptions of their child's teacher. In addition to clarifying the status of perceived teacher responsiveness, this type of information may be of practical benefit to teachers and administrators interested in improving parent–school relationships.

7.1. Limitations

This study used a correlational design that cannot claim causal relations among the variables of interest. In addition, parent recall of participation in various activities during the year may not fully represent all instances of involvement. Some characteristics of measures may also limit our interpretations. More direct measures of parent–school relationships such as logs of parental school involvement (Castro et al., 2004) and observations of parent–teacher interactions (Rimm-Kaufman & Pianta, 1999) may yield more reliable data. In addition, our measure of perceived responsiveness used only non-missing items to calculate its average, a procedure which might affect the validity of the measure. Our measure of parent–school relationship reflected one data point only, at the end of the school year. Thus, parent reports of engagement in learning activities with their child “during the past week” may not be representative of engagement in learning activities for the school year. Also with one data point, change and stability in dimensions of the parent–school relationship were not examined across the school year.

Another limitation of this study is that teachers may have rated the social behaviors of children of involved parents more highly than children of parents who were minimally involved; highly involved parents may be viewed as being more educationally supportive of children (see Rimm-Kaufman & Pianta, 1999). In addition, the sample of schools in this study was not randomly selected, and the parents and teachers who agreed to participate may have a special interest in parent–school relationships. Finally, nearly a quarter of the parent sample was lost to attrition. Characteristics of attrited study participants (lower level of parental education, lower percentage of European American children) may be indicative of challenges faced by schools in engaging a demographically wide spectrum of parents in school activities.

7.2. Implications

Our findings have several important implications for pre-kindergarten education and parent–school relationships. First, our results strengthen the empirical basis for promoting parent–school relationships in public school pre-kindergarten. Parental school involvement and parent perceptions of teacher responsiveness uniquely and significantly predicted school readiness outcomes in a large urban school district. These two dimensions of parent–school relationships deserve attention in efforts to expand and improve the quality of pre-kindergarten.

Second, schools may wish to rethink the prevalent focus on academic outcomes in their efforts to connect with parents. It may be beneficial for schools to systematically help parents strengthen their pre-kindergarten child's social competencies. A focus on social outcomes builds on our finding that parent–school relationships were predictive of children's outcomes primarily with regard to social skills and problem behaviors. As noted earlier, a growing research literature documents the role of social competencies in school success and suggests that, in general, parents of pre-kindergarten children are keenly interested in this developmental domain.

Third, our findings regarding parent perceptions of teachers' responsiveness to children and parents suggest that parent–school relationships entail more than providing opportunities for parents to participate in activities at school. Perceived teacher responsiveness predicted children's social and early reading outcomes above and beyond the observed quality of teacher interactions with children and parental home involvement. Conceptually, teacher responsiveness is a key element of reciprocity in parent–school relationships and accommodation of a range of child and family circumstances emphasized in recent standards and policy recommendations. Pending results of additional research, schools may wish to provide professional development and consultation with teachers focused on ways that teachers exhibit genuine interest in and support for individual children and parents. Providing school-involvement activities for parents alone may not be the most useful approach to strengthening parent perceptions of teacher responsiveness. The marginally significant correlation between parental school involvement and perceived teacher responsiveness in the current study is conceptually consistent with literature indicating that teachers and schools do not gain the cooperation of parents primarily by offering school-involvement activities (e.g., Christenson, 2004). Different dimensions of parent–school relationships may need distinctive forms of school support.

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