

Family Involvement Questionnaire: A Multivariate Assessment of Family Participation in Early Childhood Education

John Fantuzzo and Erin Tighe
University of Pennsylvania

Stephanie Childs
School District of Philadelphia, Pennsylvania

The study developed and evaluated the Family Involvement Questionnaire (FIQ), a multidimensional scale of family involvement in early childhood education. The FIQ was guided by theory and coconstructed with parents and teachers in preschool, kindergarten, and 1st-grade programs in a large urban school district. Demographic and FIQ data were collected from 641 parents. Factor analyses revealed 3 involvement constructs: school-based involvement, home-school conferencing, and home-based involvement. Multivariate analyses of demographic and program differences in these constructs revealed that parents with education beyond high school were engaged in higher levels of school-based involvement and home-school conferencing than parents with less than high school education. There were higher levels of home-school conferencing and home-based involvement in 2-parent families than in single-parent households. Head Start evidenced the highest levels of school-based involvement activity. However, higher school-based contact was not associated with higher levels of home-school conferencing or home-based involvement.

Educators and policymakers are pressed to respond to the current crisis in American public education. High rates of grade failure and school dropout reflect unprecedented levels of low educational achievement and high student and parent disengagement in education (Steinberg, 1996). In international studies that compare the performance of U.S. students with students from other western nations, high school students in the United States are ranked very low in mathematics and science (Takahira, Gonzalez, Frase, & Salganik, 1998). Of 21 western nations, only 2 nations were significantly lower than the United States in both mathematics and science achievement. These deficiencies are most severe in large, low-income urban settings, where children are living in neighborhoods that are characterized by a disproportionate number of family and community risk factors and overburdened school and public service agencies (Children's Defense Fund, 1997; U.S. Department of Education, 1996).

Concerns about the crisis in public education have led to the establishment of the National Education Goals (U.S. Department

of Education, 1992). The goals represent a strategic plan to enhance learning opportunities for all students by targeting what experts believe to be the most fundamental components of effective intervention. Two cardinal foci of this strategic national plan are school readiness and parent involvement. Goal 1 is school readiness. This goal and its accompanying objectives highlight the need for quality early childhood educational programs and emphasize the importance of establishing and maintaining substantial parent involvement to promote student learning. Goal 8 stresses the importance of parental participation in students' education. A major objective of this goal states, "Every school will actively engage parents and families in a partnership which supports the academic work of children at home and shared educational decision making at school" (National Educational Goals Panel, 1996, p. xvii).

Empirical research on family involvement has documented positive relationships between specific parental participation behaviors and specific student outcomes for a variety of student populations. Stevenson and Baker (1987) found that one teacher survey item asking whether parents were involved in school activities was related significantly to teacher reports of academic performance for a sample of students ranging in age from 5 to 17 years. Parker et al. (1997) conducted a parent involvement study on a sample of Head Start children. They discovered that the number of parent volunteer hours and the frequency with which parents attend school workshops were related significantly to parent and teacher ratings of children's academic motivation, social competence, and school readiness. Reynolds (1994) reported various survey items on parent involvement to be correlated positively with reading and mathematics scores for a sample of 7-year-old low-income minority children.

A second major category of parent involvement research relates to how certain factors affect parent involvement. In research conducted by Grolnick and her associates (Grolnick, Benjet, Ku-

John Fantuzzo and Erin Tighe, Graduate School of Education, University of Pennsylvania; Stephanie Childs, School District of Philadelphia, Pennsylvania.

This research project was supported in part by grants received from the U.S. Department of Health and Human Services Head Start program. Special thanks go to Esther Kresh for her support as a Federal Project Officer for our research and to our Community Research Coordinator, Saburah Abdul Kabir. We also praise our collaborators at Head Start: Director Jennifer Plumer Davis, Denota Watson, and the Head Start staff and parents, who worked closely with us on this project. This outstanding group of educators and parents made notable contributions to this research.

Correspondence concerning this article should be addressed to John Fantuzzo, Graduate School of Education, University of Pennsylvania, 3700 Walnut Street, Philadelphia, Pennsylvania 19104-6216. Electronic mail may be sent to johnf@gse.upenn.edu.

rowski, & Apostoleris, 1997; Grolnick & Slowiaczek, 1994), marital status and parent education were related significantly to parent involvement. Dauber and Epstein (1993) found that higher parent education levels were related to more home- and school-based parent involvement reported by selected survey items, but that marital status was not related to these involvement activities.

Three major shortcomings have been identified in the current body of parent involvement research (Keith, Keith, Troutman, & Bickley, 1993; Parker, Piotrowski, & Peay, 1987; White, Taylor, & Moss, 1992). First, parent involvement is not defined adequately in the existing empirical literature (Ascher, 1988). Parent involvement is represented typically by small sets of survey items that fail to delineate the multiple ways in which parents can be involved in their children's education (Parker et al., 1987). Current definitions of parent involvement are, therefore, fragmented and unidimensional. To date, there are no empirically derived multidimensional scales of parent involvement to inform early childhood and primary grade education. Instead, surveys (Becker & Epstein, 1982; Chavkin & Williams, 1987; Dauber & Epstein, 1993; Epstein & Dauber, 1991), or worse, only a few items intended to measure parent involvement (Reynolds, 1992, 1994; Reynolds & Bezruczko, 1993; Stevenson & Baker, 1987), have been used in the majority of research. Second, parent involvement definitions are disconnected from an adequate consideration of developmental issues. Research on parent involvement has included children from kindergarten to high school without adequate regard for what constitutes developmentally appropriate parent involvement. Third, current definitions of parent involvement are unidirectional. Survey items of specific parent activities and number of hours volunteering fail to delineate fully the transactional relationship of home-school collaborations. For example, listing a tally of monthly volunteer hours does not capture the nature and level of exchange between teacher and parent. A more comprehensive theoretical model of parent involvement is necessary to advance our scientific inquiry.

A developmental-ecological model provides a conceptual framework for understanding the multidimensional nature of family involvement (Bronfenbrenner, 1986). This perspective recognizes that the family is the most important influence on the development of young children. According to developmental-ecological theory, there are many ways that parents can promote or hinder child development, as well as multiple manifestations of those influences. Informed by this model, Epstein (1995) developed a classification system to identify the multiple ways that families can participate in their children's education.

Epstein (1995) classified parental involvement behaviors into six discrete categories of influence, from proximal home influences to the more distal community influences. Two categories involve immediate home-based influences. The first home-based category describes specific ways in which parents meet their children's most basic needs (e.g., food, shelter, and safety). The second category relates to concrete things that parents do to establish a positive learning environment for their children. For example, this category includes providing learning materials, setting aside space for learning activities, and participating in these activities with their children. Two more direct school-based categories emphasize the importance of contact between family members and school on specific child issues. This involves both dynamic *communication* with school personnel and *active partic-*

ipation in classroom or school activities. The last two categories represent more distal school- and community-wide advocacy. These broader influences involve parents participating in decision-making processes related to school governance and political issues that affect children.

Epstein's (1995) multidimensional system provides a heuristic framework for assessing and evaluating parent involvement. To actualize the potential of the framework, the involvement categories must be translated into culturally appropriate behavioral items for targeted respondents that represent relevant involvement behaviors for targeted developmental periods. Next, these carefully developed items must be subjected to rigorous multidimensional scaling research to test for hypothesized involvement dimensions. This requires applying multiple decision criteria to examine the empirical relationships among items (i.e., latent structure among items) and to provide empirical documentation for the best multidimensional structure (McDermott, 1993). With empirically derived dimensions of family involvement, researchers can use these dimensions to assess simultaneously factors that influence family involvement and to evaluate the impact of these dimensions on children's educational outcomes.

Recently, Grolnick and Slowiaczek (1994) conducted a study seeking to document the multidimensionality of parent involvement and to examine the relationship between dimensions of parent involvement and the academic outcomes of middle school students. Although this empirical investigation recognized parent involvement as a multidimensional construct, the derived parent involvement factors were limited by shortcomings in the latent structure analysis methods that were used. Because latent structure analysis rests on the assumption that inherent and common meanings emerge from items (Gorsuch, 1983), the efficacy of this method is determined by the nature of the original item pool and the empirical basis for decisions about the relationships among items. In the Grolnick and Slowiaczek study, the authors borrowed items from unscaled checklists and questionnaires of various psychometric quality. In addition, they made a priori decisions about changes in the response formats of items, various groupings of items, and trimming items from different groupings of items before they subjected the sum totals of these groupings to latent structure analysis. These a priori decisions lessen the likelihood that the items were driving the analysis and that their meaning to the respondents was defining the dimensions. Furthermore, this study used a principal-components method of factor analysis on the sums of six a priori groupings of items. Using this extraction method with less than 40 variables spuriously inflates factor loadings (Snook & Gorsuch, 1989).

The purpose of the present study was to develop and validate a multivariate scale of family involvement for urban students in preschool, kindergarten, and first grade. This measure was designed to reflect the multiple dimensions of involvement represented in Epstein's (1995) classification system and was constructed intentionally with parent respondents to enhance cultural validity. The research addressed three primary questions. First, does the Family Involvement Questionnaire (FIQ) demonstrate acceptable construct validity for urban students representing these early childhood educational levels? Second, are there significant differences in family involvement constructs across key child and family demographic characteristics? Third, are there significant differences in family involvement across these important early

childhood educational levels? The first question involved using multiple, stringent criteria to identify the best factor solution as well as crossvalidation and confirmatory analyses to determine the integrity of the obtained factor structure. Multivariate analyses were used to address the second and third questions. These analyses provided a simultaneous consideration of differences in empirically derived family involvement dimensions across distinctive demographic and program variables.

Development of the FIQ

The FIQ is a rating scale that asks primary careproviders of young children (i.e., parents, other family members, or legal guardians) to indicate the nature and extent of their involvement in their children's early educational experiences. The FIQ was developed in partnership with parents and teachers in a large urban school district in the northeastern United States. The development process for this questionnaire was part of a major research project designed to assess family involvement in young students' education across the school district's preschool, kindergarten, and first-grade programs. This research project was built on a firm collaborative base of prior partnership research that explores parent ratings of children's social competence, parent involvement, and parenting practices.¹ Gaskins's (1994) model was used to guide the development of the FIQ. The model involves four progressive stages designed to enhance the cultural validity of psychological measurement for diverse populations. These include (a) discussing the rationale and benefit of the inquiry with representatives of the participant group, (b) reviewing the categories from which items will be generated, (c) finalizing the measure in terms of items and response formats, and (d) after data analysis, reviewing and interpreting the findings. For the process to be successful and optimally beneficial, it requires that a genuine partnership be established between the researchers and participant group members.

The FIQ's development began by forming a research committee, including university researchers, school administrators, teachers, and parent leaders representing preschool (Head Start and Comprehensive Day Care; CDC), kindergarten, and first-grade programs. The committee met over a 6-month period, during which several specific steps were followed. First, the research team introduced the six major categories from Epstein's (1995) model, and the relevance of the categories was discussed for these early childhood programs. Next, the committee formed focus groups with parents from each early childhood program to identify the most frequent and valued family behaviors under each category. After selecting the most relevant behaviors, questionnaire items were drafted, along with a standard response format. Finally, to support the cultural validity of the scale, the selected items were field tested with several groups of parents. This step helped to ensure that parents understood the items and that the items represented an accurate reflection of parent-child experiences related to school and learning. The development process resulted in a 42-item scale. The scale was designed in a 4-point Likert format (1 = *rarely*, 2 = *sometimes*, 3 = *often*, 4 = *always*). Parents were asked to report on the frequency of specific involvement behaviors.

Description of Sample and Data Collection Procedures

The primary careproviders of 641 children participated in this study. The children were enrolled in the school district's Head

Start, CDC, kindergarten, or first-grade programs. Respondents ranged in age from 19 to 72 years ($M = 32.7$, $SD = 7.3$) and were predominantly female (94%). Ninety percent were mothers of the child, 4% were fathers, and 5% were other family members. The number of children per household ranged from 1 to 10 ($M = 2.5$, $SD = 1.3$), and the number of adults per household ranged from 1 to 8 ($M = 2.1$, $SD = 1.0$).

According to the demographic data collected, 57% of the respondents were African American, 29% were Caucasian, and 11% were of other ethnic backgrounds. Of the sample, 32% were employed full time, 25% were employed part time, and 43% were unemployed. In addition, 47% of the respondents reported that they were single, 40% were married, and 13% were widowed, separated, or divorced. Finally, 20% of the sample reported to have less than a high school education, 38% reported to have received a high school diploma, and 42% had achieved beyond the high school level.

The school district is an urban district that serves approximately 250,000 children each year. Over 80% of the children served are from low-income families, as indicated by the number of families receiving Aid for Dependent Children or food stamps services. The early childhood programs serve approximately 40,000 children annually, with children distributed across preschool, kindergarten, and first grade. The kindergarten and first-grade programs serve 16,000 and 20,000 children per year, and Head Start and CDC are subsidized programs that assist 4,600 and 2,500 children, respectively, each year. Head Start is a federally funded early intervention program for low-income families, and the CDC program is a full-day program in the district that assists low- to low-middle-income families with working parents and parents in school.

For this study, we identified schools that had a full set of early childhood programs, including Head Start and CDC, and were geographically representative of all regions of the district. Teachers in the early childhood programs of the identified schools were invited to participate in the study. In each participating classroom, teachers were asked to randomly select children for the study. Specifically, for the preschool programs, teacher rosters were used to identify parents of the first boy and girl who were scheduled to enter kindergarten the following year. For the kindergarten and first-grade levels, the second boy and third girl in each class, as indicated by teacher rosters, were invited to participate.

The parents of the randomly selected children were invited to participate. Research assistants distributed packets to parents in each classroom. Parents who were willing to participate provided consent and completed a demographics questionnaire along with the FIQ. Research assistants collected packets as they were completed. Of the parents invited to participate, 77% of Head Start parents, 56% of CDC parents, 66% of kindergarten parents, and

¹ Published research projects that contributed to this collaborative base, which were antecedent to this research, include Fantuzzo, Davis, and Ginsburg (1995), Fantuzzo, Mendez, and Tighe (1998), and Fantuzzo et al. (1997). In addition, dissertation research conducted by Heller (1992), Davis (1996), and Coolahan (1997) was useful in creating a dialog with parents about how they interact with their children at home and school to enhance child learning and development.

60% of first-grade parents completed packets. The process yielded an average participation rate of 65%.

Construct Validity

To determine the construct validity of the 42-item FIQ, a series of common factor analyses was performed with both orthogonal (varimax, equamax) and oblique (promax) solutions. A three-factor varimax solution was selected because it best satisfies standard multiple criteria for retention (McDermott, 1993). First, the factors retained fell within the constraints indicated by Cattell's (1966) scree plot and parallel analysis (Lautenschlager, Lance, & Flaherty, 1989). Second, each of the factors accounted for greater than 5% of the total variance. Third, each factor demonstrated

adequate internal consistency, with alpha coefficients $\geq .70$. Fourth, the final solution minimized intercorrelation of retained unit-weighted factors and items with salient loadings on more than one factor. Finally, the proposed solution was psychologically meaningful and compatible with existing theoretical models.

The three-factor solution revealed through exploratory factor analysis is defined by the following constructs: school-based involvement, home-based involvement, and home-school conferencing. Each construct was found to be highly reliable, with Cronbach's alphas of .85, .85, and .81, respectively. Thirty-five of the 42 items (85%) loaded appreciably on only one dimension, with only 2 double-loading and 4 nonloading items. Table 1 presents the item content and factor loadings for each of these

Table 1

Exploratory Factor Analysis and Confirmatory Cluster Structures for Family Involvement Questionnaire Factors

Item content by factor	Varimax ^a	Promax ^b	R ² with own cluster	R ² with next cluster	Structure loading
School-Based Involvement ($\alpha = .85$)^c					
I volunteer in my child's classroom	.71	.72	.55	.16	.74
I participate in parent and family social activities with the teacher	.63	.61	.53	.20	.73
I participate in planning classroom activities with the teacher	.63	.61	.51	.19	.71
I go on class trips with my child	.61	.64	.41	.10	.64
I talk with other parents about school meetings and events	.61	.58	.50	.20	.65
I participate in planning school trips for my child	.55	.53	.43	.16	.65
I meet with other parents from my child's class outside of school	.50	.48	.33	.11	.57
I hear teachers tell my child how much they love learning	.47	.42	.37	.21	.61
I participate in fundraising activities in my child's school	.46	.45	.30	.09	.55
I feel that parents in my child's classroom support each other	.41	.39	.23	.08	.48
Home-Based Involvement ($\alpha = .85$)					
I spend time working with my child on number skills	.68	.68	.54	.12	.74
I spend time working with my child on reading/writing skills	.65	.67	.48	.14	.66
I talk to my child about how much I love learning new things	.65	.68	.54	.13	.73
I bring home learning materials for my child (videos, etc.)	.60	.62	.46	.09	.68
I spend time with my child working on creative activities	.59	.61	.44	.08	.66
I share stories with my child about when I was in school	.53	.56	.39	.10	.62
I see that my child has a place for books and school materials	.52	.53	.33	.06	.57
I take my child places in the community to learn special things (i.e., zoo, museum)	.50	.54	.38	.12	.62
I maintain clear rules at my home that my child should obey	.48	.49	.25	.04	.50
I talk about my child's learning efforts in front of relatives	.48	.48	.30	.07	.55
I review my child's school work	.42	.43	.21	.05	.45
I keep a regular morning and bedtime schedule for my child	.41	.42	.18	.02	.43
I praise my child for school work in front of the teacher	.39	.45	.27	.19	.52
Home-School Conferencing ($\alpha = .81$)					
I talk to the teacher about how my child gets along with his/her classmates at school	.63	.70	.58	.20	.76
I talk with my child's teacher about classroom rules	.60	.66	.52	.19	.72
I talk to my child's teacher about his/her difficulties at school	.58	.64	.51	.14	.71
I talk with my child's teacher about school work to practice at home	.58	.67	.54	.20	.77
I talk to my child's teacher about my child's accomplishments	.57	.67	.56	.24	.75
I talk to my child's teacher about his/her daily routine	.54	.63	.50	.20	.71
I attend conferences with the teacher to talk about my child's learning or behavior	.51	.54	.34	.12	.58
The teacher and I write notes about my child or school activities	.49	.52	.28	.08	.53
I schedule meetings with administration to talk about problems or to gain information	.45	.51	.30	.18	.55
I talk with my child's teacher on the telephone	.41	.43	.20	.09	.45
I talk with my child's teacher about personal or family matters	.41	.46	.24	.14	.49

Note. $N = 641$.

^a Factor loadings $\geq .40$ are considered appreciable. ^b Entries were derived from promaxian oblique rotation at $k = 3$, with the varimax solution serving as the initial orthogonal solution. ^c Interfactor correlations were School-Based Involvement-Home-Based Involvement, $r = .36$; Home-Based Involvement-Home-School Conferencing, $r = .42$; School-Based Involvement-Home-School Conferencing, $r = .52$.

factors. The School-Based Involvement factor is defined by activities and behaviors that parents engage in at school with their children. Such behaviors include volunteering in the classroom, going on class trips with children, and meeting with other parents in or out of school to plan events, fundraisers, and so on. The second factor, Home-Based Involvement, includes behaviors describing the active promotion of a learning environment at home for children. Home-based involvement activities include providing a place in the home for learning materials, actively initiating and participating in learning activities at home with children, and creating learning experiences for children in the community. Home-School Conferencing describes parents and school personnel communicating about a child's educational experience and progress. Items on this factor include talking with the teacher about a child's difficulties at school, the child's learning behavior, the child's accomplishments, and work to practice at home.

Integrity of the proposed solution was substantiated through crossvalidation and confirmatory analyses. The large sample that was used for the analyses described earlier was bifurcated randomly to assess the degree to which the final three-factor solution would replicate across two independent samples. The analyses conducted with each subgroup also supported a three-dimensional structure. Subsequently, the degree of congruence across the final factor solutions derived from the total and two bifurcated samples was statistically analyzed with Wrigley-Neuhaus coefficients of factorial congruence. The Wrigley-Neuhaus analyses involve comparisons across every possible combination of factors, yielding two types of coefficients: one that shows the extent of similarity across hypothesized like factors and, conversely, one that shows the degree of dissimilarity for hypothesized unlike factors (Gaudagnoli & Velicer, 1991). High levels of congruence (coefficients $\geq .98$) were found for like factors in comparisons between each subgroup and the large sample. Coefficients for unlike factors were

low ($\leq .50$), indicating a lesser degree of congruence. In addition, similar levels of congruence were found for hypothesized like and unlike factors in comparisons between male and female subgroups and the larger sample.

To confirm composition of the final three-factor structure, the 42-items retained during exploratory analyses were subjected to a confirmatory multiple-group cluster analysis (Harman, 1976). Hypothesized cluster membership was based on the exploratory analyses, and items were permitted to migrate iteratively to clusters that better explained item variance. In this analysis, the retention of items in the original hypothesized groupings serves to confirm the integrity of the exploratory structure. The empirically derived structure was superior to any of the alternatives, explaining a higher proportion of the item variance than the alternatives (see Table 1).

Assessment of Child and Family Demographic Differences

To determine whether there were differences in the School-Based Involvement, Home-Based Involvement, and Home-School Conferencing factors of the FIQ as a function of differences in demographic variables, a series of one-way multivariate analyses of variance (MANOVAs) were conducted for caregiver education, marital status, employment status, child gender, and number of children in the household. Descriptive statistics for these variables are presented in Table 2. The variable for caregiver education was comprised of three levels: parents with less than high school education, parents with a high school diploma, and parents with more than a high school education. A significant MANOVA was found for caregiver education level (Wilks's lambda test of significance), $F(6, 1164) = 4.88, p < .001$. Parents with more education were significantly more involved in school-based activ-

Table 2
Descriptive Statistics for Family Involvement Questionnaire Factors as a Function of Demographic Data

Variable	Factor					
	School-Based Involvement		Home-Based Involvement		Home-School Conferencing	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Caregiver education level						
Greater than high school	46.4	9.7	50.1	9.8	51.2	9.6
High school diploma or GED	49.3	10.7	49.4	10.2	48.6	10.9
Less than high school	46.4	9.7	47.6	11.4	46.6	9.7
Parent marital status						
Married	51.0	10.6	50.8	9.5	51.2	9.4
Single	48.8	10.3	48.5	10.9	48.1	11.0
Separated, divorced, or widowed	49.7	9.1	47.6	9.9	47.1	8.5
Parent employment status						
Presently employed	50.3	9.5	48.9	10.5	49.5	10.1
Not presently employed	48.9	11.3	49.7	10.1	48.8	10.5
Child gender						
Male	48.6	10.9	48.7	10.9	48.3	10.3
Female	49.8	10.7	49.6	9.9	49.9	10.4

Note. $N = 583$. Complete data were not available on 58 participants. Listwise deletion was used. GED = general equivalency diploma.

Table 3
Descriptive Statistics for Family Involvement Questionnaire Factors Across Program Levels

Variable	Factor					
	School-Based Involvement		Home-Based Involvement		Home-School Conferencing	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Head Start	53.6	8.3	48.3	10.3	49.6	9.8
Comprehensive Day Care	44.9	10.2	49.6	11.2	46.0	11.6
Kindergarten	49.9	9.6	50.9	9.7	50.0	9.3
First grade	49.8	10.3	48.7	9.9	50.8	10.4

Note. *N* = 583. Complete data were not available on 58 participants. Listwise deletion was used.

ities, $F(2, 584) = 12.31, p < .001$. Specifically, parents with a high school diploma were significantly more involved at their child's school than were parents who had not completed high school. In addition, parents with more than a high school education were significantly more involved in school activities than were parents from the other two groups. Higher parent education levels were associated with more conferencing with school personnel, $F(2, 584) = 9.44, p < .001$. Here, parents with more than a high school education reported to engage in significantly more home-school conferencing than parents with a high school diploma and parents with below a high school education (Tukey's HSD).

The MANOVA for marital status examined differences in FIQ factors across three levels: married, single, and other (i.e., widowed, separated, and divorced). A significant effect was found for marital status (Wilks's lambda test of significance), $F(6, 1156) = 3.27, p < .01$. Married parents engaged in significantly more home-based involvement activities with their children, $F(2, 580) = 4.55, p < .05$. Married parents were more actively involved at home than parents who were single or parents who were widowed, separated, or divorced. Married parents reported significantly more home-school conferencing, $F(2, 580) = 8.23, p < .05$. Married parents conferred with educators significantly more than parents who were single or parents who were separated, divorced, or widowed. (Tukey's HSD).

Differences in FIQ factors as a function of employment status (yes, no), child gender, and number of children in the household were also examined. For the number of children per household, two groups were formed above and below the median of two children per household (Group 1 < 2 children per household, Group 2 > 2 children per household). MANOVAs indicated no significant differences across employment, $F(3, 573) = 1.8, p > .05$, child gender, $F(3, 592) = 1.4, p > .05$, or number of children per household, $F(3, 370) = 1.8, p > .05$.²

Assessment of Early Childhood Program Differences

The third set of analyses examined differences in FIQ factors across the preschool (Head Start, CDC), kindergarten, and first-grade programs. A multiple analysis of covariance (MANCOVA) was used to examine differences in FIQ factors. Marital status and caregiver education levels, which were related significantly to the FIQ, were used as the controlled covariates in this analysis. There was a significant effect for education program (Wilks's lambda test of significance), $F(9, 1419) = 14.63, p < .001$ (see Table 3).

Significant program differences existed for School-Based Involvement, $F(3, 577) = 27.1, p < .001$, as well as for Home-School Conferencing, $F(3, 577) = 3.7, p < .05$. No significant effects were found in home-based involvement across program levels, $F(3, 577) = 1.7, p > .05$. For School-Based Involvement, Head Start parents were significantly more involved in school-based activities than were parents of children in CDC, kindergarten, or first grade. Moreover, kindergarten parents reported significantly more school-based involvement than parents of children in CDC and first grade. For Home-School Conferencing, parents of children in CDC showed significantly less conferencing than parents of children in Head Start, kindergarten, or first grade (Tukey's HSD).

Discussion

In response to the need for a multidimensional measure of family involvement that is appropriate for students' early educational experiences, the objectives of the present study were to develop and empirically test the FIQ. The FIQ was guided by developmental theory and Epstein's (1995) conceptual framework of parent involvement. In addition, the FIQ was coconstructed with parents and teachers representing preschool, kindergarten and first-grade programs to enhance the content validity and cultural sensitivity of FIQ items. The development process produced a multivariate scale that met multiple construct validity criteria and yielded three stable dimensions: school-based involvement, home-based involvement, and home-school conferencing.

The three empirically derived FIQ factors were congruent with Epstein's (1995) multidimensional framework of parent involvement. All of Epstein's categories were supported empirically by the FIQ, with the exception of the most distal involvement category: community-school involvement. The school-based involvement dimension of the FIQ reflects Epstein's volunteering and decision-making advocacy categories of involvement. This factor relates to the literature investigating the importance of parents' active participation in their children's school environment (Epstein, 1995; Stevenson & Baker, 1987). The Home-Based Involvement factor matches the basic obligations and home involvement

² Treating number of children in the household as a continuous measure and correlating it with the three scale scores of the FIQ revealed no significant correlations.

activities categories in Epstein's classification system. It is consistent with literature underscoring the significance of family members establishing and actively participating in a supportive learning environment for their children at home (Bempechat, 1992; Connors & Epstein, 1995; Stevenson & Baker, 1987). The factor also highlighted the importance for families to capitalize on community-based learning opportunities for their children. However, the factor did not include specific items related to involvement in establishing more macro community-school activities.

The Home-School Conferencing factor of the FIQ is a complex, interpersonal type of involvement between primary careproviders, teachers, and school personnel. The dimension of involvement comports with Epstein's (1995) communication category and captures the transactional nature of home-school collaboration (Christenson, 1995). The factor relates to the literature on the importance of continuity between home and school environments for young children making the transition to school (Slaughter-Defoe, 1995). This literature identifies genuine, two-way communication between primary careproviders and school personnel as the most essential ingredient in creating and maintaining continuity (Christenson, 1995; Epstein, 1995). The capacity to assess the level of home-school communication is important for vulnerable groups of students coming from low-income, minority households where there are potentially more barriers to establishing reciprocal communications with school personnel (Kerbow & Bernhardt, 1993).

The second major objective of the present research was to use the empirically derived dimensions of the FIQ to determine whether there were differences in these involvement constructs as a function of child and careprovider characteristics and preschool, kindergarten, and first-grade differences. To address these questions, two sets of multivariate analyses were conducted across different levels of demographic variables and across educational programs.

The first set of multivariate analyses indicated that levels of parental education and marital status relate to FIQ dimensions in meaningful ways. Parental education was associated significantly with the Home-School Conferencing and School-Based Involvement factors of the FIQ. Parents with more than a high school education reported significantly more home-school conferencing than did parents with just a high school education or less. With respect to the School-Based Involvement factor, parents' level of education was related positively to higher levels of school-based involvement. Parents with the highest level of educational attainment reported the highest level of school-involvement activities, and parents with a high school diploma evidenced higher levels of involvement in school activities than did parents with less than a high school education. In contrast to the school-based factors, parent education levels were not related significantly to levels of home-based involvement activity. Regardless of the educational level, parents participated in the same levels of home-based involvement activities.

The present findings support the research that has indicated that parents who are better educated are more involved in their children's school experiences (Dauber & Epstein, 1993; Stevenson & Baker, 1987). The FIQ extends this literature by providing a multivariate examination of key dimensions of involvement with levels of parent education. This simultaneous consideration of involvement dimensions suggests that education level is more specifically related to being in the school environment or interact-

ing directly with teachers or school personnel and has less to do with what parents are doing at home with their children. Higher education levels are associated with more experience in educational settings and more success in school. This may explain why parents with these experiences are more comfortable and self-assured in schools than those who did not complete their high school education. In addition, parents with limited educational experience may be less familiar with the educational terminology and concepts teachers use to discuss student academic progress (Moles, 1993). These communication barriers may account for the relatively low level of home-school conferencing for parents who have less education. However, these differences in school-based involvement were not found with respect to levels of parental support for home-based learning activities. The home-based involvement data suggest that parents at lower educational levels were as involved in their children's educational achievement in the home environment as parents of higher educational levels.

The findings on the relationship between FIQ factors and marital status suggest that having two parents who are married and living together is an important element of the involvement equation. Married parents were found to be significantly more involved in both home-school conferencing and home-based involvement activities than either single parents or widowed, separated, or divorced parents. Although the mean differences favored married parents, no significant differences ($p = .058$) were found in levels of school-based involvement activities as a function of marital status. The findings comport with the literature that suggests that the added resources and stability provided in a two-parent household enhance parents' capacity to be involved in all aspects of their children's learning. These findings on the School-Based Involvement factor may have been influenced by the Head Start and kindergarten requirement (regardless of marital status) for parent-school contact for enrollment.

In recognition of the importance of parental participation objectives in our national education strategy for early childhood education, a second multivariate analysis was conducted to determine whether there were significant differences in FIQ dimensions across preschool programs (Head Start and CDC), kindergarten, and first grade. Given that FIQ differences were found as a function of parental education and marital status, these variables were used as control covariates to assess program differences. This analysis revealed significant differences in FIQ factors across these early education programs. Differences were found in the level of school-based involvement activities and home-school conferencing across educational programs. Head Start parents were significantly more involved in school-based activities than parents from all other programs, and kindergarten parents were more involved than parents with children in CDC or first grade. The home-school conferencing results indicated that CDC parents were conferencing with teachers significantly less than Head Start, kindergarten, or first-grade parents and that there were no significant differences in conferencing among Head Start, kindergarten, and first-grade programs. In addition, the amount of home-based involvement activities did not differ significantly across these four educational programs.

Program differences on the school-based involvement dimension of the FIQ appear to reflect program priorities for family involvement. The Head Start and kindergarten programs in this school district encourage parents to have regular contact with

teachers. In addition, Head Start provides opportunities for family members to volunteer in the classroom or participate in other types of parent activities (e.g., parent workshop). The findings that Head Start parents reported the highest level of school-based activity on the FIQ attest to the value and priority assigned to family involvement in this program.

This multivariate examination of family involvement in early childhood education reveals two somewhat troublesome findings. First, despite a clear mandate in the National Educational Goals (U.S. Department of Education, 1992) that every school should actively engage families in a partnership that supports home-school contact, the results from this study show a significant decline in the actual level of school-based involvement across early childhood education programs. Parents reported successively lower levels of school-based involvement activity from Head Start to kindergarten to first grade. In a recent survey regarding parent-teacher contact, Fantuzzo, Childs, and Pugh (1998) found that teacher reports from the same school district were congruent with the parent findings from the present study. They asked Head Start, kindergarten, and first-grade teachers to indicate the average amount of time they spent per week in contact with parents. They found that Head Start teachers spent significantly more time with parents than both kindergarten and first-grade teachers and that there was no significant difference in time spent between kindergarten and first grade. The average weekly contact for Head Start, kindergarten, and first grade was 33.0 min per child, 9.2 min per child, and 7.8 min per child, respectively. These findings, in conjunction with the FIQ results, suggest a lack of continuity in home-school contact from preschool to kindergarten and first grade in large, urban public school systems.

A second troublesome finding is that these data show that more direct school-based contact between parents and educators was not associated with more home-school conferencing or more home-based involvement. Head Start parents evidenced more contact with school than CDC, kindergarten, and first-grade parents, and kindergarten parents reported more contact than CDC and first-grade parents, but these programs showed no significant differences in levels of home-school conferencing or home-based involvement. For Head Start, the mandates for these dimensions of family involvement are clear. The Head Start Performance Standards (U.S. Department of Health and Human Services, 1996) repeatedly call for multiple forms of parent-educator conferencing and the coconstruction of home-based learning activities. For kindergarten and the primary elementary school grades, the National Educational Goals (U.S. Department of Education, 1996) state emphatically that educators should be partnering with families to support the academic work of children at home and shared educational decision making at school. However, the findings from this study suggest that there are significant gaps between these national mandates and actual practice in large, urban public school systems.

To address these gaps, researchers must obtain a better understanding of the substantial family involvement challenges facing early childhood educators and low-income, minority families. Furthermore, researchers must identify the school and family resources that are needed to enhance family involvement. As indicated by a number of researchers, there are many factors that impede making beneficial connections between large urban school systems and these families (Christenson, 1995). The data in the

present study suggest that single parents with less education are at a greater-than-average risk for being disconnected from their children's educational experience at school and for having educators be unaware of their home-based efforts to support their children's education. To mitigate these risks, future research should go beyond the investigation of demographic antecedents to involvement and study ways to promote positive parental attitudes toward school and social supports for family involvement (Eccles & Harold, 1993; Hoover-Dempsey, Bassler, & Brissie, 1987). Moreover, it will be important to investigate how school system variables such as cohesion, organization, and resources for parent-educator contact affect parent involvement (Brooks-Gunn, Guo, & Furstenberg, 1993; Kellaghan, Sloane, Alvarez, & Bloom, 1993).

The present investigation makes three significant contributions to the parent involvement literature related to each of the investigation's primary objectives. First, this study represents the first empirical documentation of a multidimensional scale of family involvement in early childhood education. Specifically, content and cultural validity were carefully considered in the development of the FIQ (Gaskins, 1994), and the resulting items were subjected to stringent multidimensional scaling criteria (McDermott, 1993). This process produced three reliable dimensions of family involvement in preschool and early elementary school for an urban and low-income population that are congruent with Epstein's (1995) conceptual framework of involvement. Second, on the basis of these empirically derived dimensions, this study documents significant relationships between family demographic variables and specific involvement dimensions. The multivariate analyses of family and child characteristics corroborate previous univariate findings and thereby lend validity to the dimensions of the FIQ. Third, the study examined differences in family involvement across preschool, kindergarten, and first grade, and as such, represents the first empirical documentation of differences in multiple dimensions of family involvement across these critical early educational experiences.

Whereas the empirical investigation of the FIQ represents a contribution to the parent involvement literature, the unique characteristics of the sample and the limited scope of the study qualify these findings. The target population for this study was comprised of young children from preschool, kindergarten, and first-grade programs in a large urban school district, which serves a disproportionately large percentage of low- to low-middle-income minority families. Therefore, these findings are most generalizable to early childhood educational programs in school districts with similar characteristics. Moreover, the primary focus of this study was the examination of the construct validity of the FIQ and examination of basic demographic and program difference with empirically derived constructs. With three stable constructs identified, future research should examine additional aspects of concurrent validity for each of the FIQ factors and the relationship among FIQ dimensions and key student academic outcomes such as emergent literacy and numeracy. In addition, having established family involvement constructs that are appropriate for use in preschool through first-grade programs, it will be critical to investigate how FIQ factors relate to student outcomes across time.

Finally, future research should also examine the influence of multiple careproviders and culture. Although the FIQ provided a multidimensional picture of family involvement that was theoretically based and culturally sensitive, it did not examine reports

from multiple informants. The present research obtained reports on involvement behaviors from only one family member (typically the child's mother). Moreover, this research did not specifically explore cultural determinants of family involvement. Next steps should include identifying (a) the distinctive contributions of other key family members who assume responsibility for child care and (b) the cohesive cultural belief structures that define and sustain family involvement (Gadsden, 1998).

Given the reality that families are involved in their children's education in multiple and complex ways, educational researchers must take steps beyond unidimensional assessments of family involvement. Research that seeks to provide comprehensive information about home-school contact is needed to foster a dynamic two-way connection between home and school. Bringing these two important spheres of influence together in supportive collaborations holds great promise for maximizing the academic achievement of young students. The research in the present study is a step in that direction for a very important population of students.

References

- Ascher, C. (1988). *Improving the home-school connection for poor and minority urban students*. New York: Columbia University Teachers College. (ERIC Document Reproduction Service No. EJ 381-241)
- Becker, H. J., & Epstein, J. L. (1982). Parent involvement: A study of teacher practices. *Elementary School Journal*, 83, 85-102.
- Bempechat, J. (1992). The role of parent involvement in children's academic achievement. *School Community Journal*, 2(2), 31-34.
- Brofenbrenner, U. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology*, 22, 723-742.
- Brooks-Gunn, J., Guo, G., & Furstenberg, F. (1993). Who drops out of and who continues beyond high school? A 20-year follow-up of Black urban youth. *Journal of Research on Adolescence*, 3, 271-294.
- Cattell, R. (1966). The scree test for the number of factors. *Multivariate Behavioral Research*, 1, 245-276.
- Chavkin, N., & Williams, D. (1987). Enhancing parent involvement: Guidelines for access to an important resource for school administrators. *Education and Urban Society*, 19, 164-184.
- Children's Defense Fund. (1997). *The state of America's children*. Washington, DC: Author.
- Christenson, S. L. (1995). Families and schools: What is the role of the school psychologist? *School Psychology Quarterly*, 10, 118-132.
- Connors, L. J., & Epstein, J. L. (1995). Parents and school partnerships. In M. H. Bornstein (Ed.), *Handbook of parenting: Applied and practical parenting* (Vol. 4, pp. 437-458). Mahwah, NJ: Erlbaum.
- Coolahan, K. (1997). *Empirical relationships among parenting styles, determinants of parenting, and children's school readiness in urban Head Start families*. Unpublished doctoral dissertation, University of Pennsylvania.
- Dauber, S. L., & Epstein, J. L. (1993). Parents' attitudes and practices of involvement in inner-city elementary and middle schools. In N. Chavkin (Ed.), *Families and schools in a pluralistic society* (pp. 53-72). Albany, NY: State University of New York Press.
- Davis, G. (1996). *Parent involvement in education scale and its impact on families and preschoolers*. Unpublished manuscript.
- Eccles, J. S., & Harold, R. D. (1993). Parent-school involvement during the early adolescent years. *Teachers College Record*, 94, 555-587.
- Epstein, J. L. (1995). School/family/community partnerships: Caring for the children we share. *Phi Delta Kappan*, 76, 701-712.
- Epstein, J. L., & Dauber, S. L. (1991). School programs and teacher practices of parent involvement in inner-city elementary and middle school. *Elementary School Journal*, 91, 289-305.
- Fantuzzo, J., Childs, S., Hampton, V., Ginsburg-Block, M., Coolahan, K., & Debnam, D. (1997). Enhancing the quality of early childhood education: A follow-up evaluation of an experiential, collaborative training model for Head Start. *Early Childhood Research Quarterly*, 12, 425-437.
- Fantuzzo, J., Childs, S., & Pugh, W. (1998). *A report of transition activity for early childhood*. Unpublished manuscript.
- Fantuzzo, J., Davis, G., & Ginsberg, M. (1995). Effects of parent involvement in isolation or in combination with peer tutoring on student self-concept and mathematics achievement. *Journal of Educational Psychology*, 87, 272-281.
- Fantuzzo, J., Mendez, J., & Tighe, E. (1998). Parental assessment of peer play: Development and validation of the parent version of the Penn Interactive Peer Play Scale. *Early Childhood Research Quarterly*, 13, 659-676.
- Gadsden, V. L. (1998). Family cultures and literacy learning. In J. Osborn & F. Lehr (Eds.), *Literacy for all: Issues in teaching and learning* (pp. 32-50). New York: Guilford Press.
- Gaskins, S. (1994). Integrating interpretive and quantitative methods in socialization research. *Merrill-Palmer Quarterly*, 40, 313-333.
- Gaudagnoli, E., & Velicer, W. (1991). A comparison of pattern matching indices. *Multivariate Behavioral Research*, 26, 323-343.
- Gorsuch, R. (1983). *Factor analysis* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Grolnick, W. S., Benjet, C., Kurowski, C. O., & Apostoleris, N. H. (1997). Predictors of parent involvement in children's schooling. *Journal of Educational Psychology*, 89, 538-548.
- Grolnick, W. S., & Slowiaczek, L. M. (1994). Parents' involvement in children's schooling: A multidimensional model. *Child Development*, 65, 237-252.
- Harman, H. (1976). *Modern factor analysis* (3rd ed.). Chicago: University of Chicago Press.
- Heller, L. (1992). *Reciprocal peer tutoring and parent partnership: Does parent involvement make a difference?* Unpublished doctoral dissertation, University of Pennsylvania.
- Hoover-Dempsey, K. V., Bassler, O. C., & Brissie, J. S. (1987). Parent involvement: Contributions of teacher efficacy, school socioeconomic status, and other school characteristics. *American Educational Research Journal*, 24, 417-436.
- Keith, T. Z., Keith, P. B., Troutman, G. C., & Bickley, P. G. (1993). Does parental involvement affect eighth-grade student achievement? Structural analysis of national data. *School Psychology Review*, 22, 474-496.
- Kellaghan, T., Sloane, K., Alvarez, B., & Bloom, B. S. (1993). *The home environment and school learning: Promoting parental involvement in the education of children*. San Francisco: Jossey-Bass.
- Kerbow, D., & Bernhardt, A. (1993). Parental intervention in the school: The context of minority involvement. In B. Schneider & J. S. Coleman (Eds.), *Parents, their children, and schools*. Boulder, CO: Westview Press.
- Lautenschlager, G., Lance, C., & Flaherty, V. (1989). Parallel analysis criteria: Revised equations for estimating the latent roots of random data correlation matrices. *Educational & Psychological Measurement*, 49, 339-345.
- McDermott, P. A. (1993). National standardization of a uniform multisituational measure of child and adolescent psychopathology. *Psychological Assessment*, 5, 413-424.
- Moles, O. C. (1997). Reaching all families: The federal initiative in family-school partnerships (Publication No. ED413072). Washington, DC: Office of Educational Research and Improvement.
- National Educational Goals Panel. (1996). *The National Education Goals Report: Building a nation of learners*. Washington, DC: Author.
- Parker, F., Piotrowski, C., Kessler-Sklar, S., Baker, A., Peay, L., & Clark, B. (1997). *Final report: Parent involvement in Head Start*. New York: National Council of Jewish Women.
- Parker, F. L., Piotrowski, C. S., & Peay, L. (1987). Head Start as a social

- support for mothers: The psychological benefits of involvement. *American Journal of Orthopsychiatry*, 57, 220-233.
- Reynolds, A. J. (1992). Comparing measures of parental involvement and their effects on academic achievement. *Early Childhood Research Quarterly*, 7, 441-462.
- Reynolds, A. J. (1994). Effects of a preschool plus follow-on intervention for children at risk. *Developmental Psychology*, 30, 787-804.
- Reynolds, A. J., & Bezruczko, N. (1993). School adjustment of children at risk through fourth grade. *Merrill-Palmer Quarterly*, 39, 457-480.
- Slaughter-DeFoe, D. T. (1995). Revisiting the concept of socialization: Caregiving and teaching in the 90s: A personal perspective. *American Psychologist*, 50, 276-286.
- Snook, S. C., & Gorsuch, R. L. (1989). Component analysis versus common factor analysis: A Monte Carlo study. *Psychological Bulletin*, 106, 148-154.
- Steinberg, L. (1996). *Beyond the classroom: Why school reform has failed and what parents need to do*. New York: Simon & Schuster.
- Stevenson, D., & Baker, D. (1987). The family-school relations and the child's school performance. *Child Development*, 58, 1348-1357.
- Takahira, S., Gonzalez, P., Frase, M., & Salganik, L. (1998). Pursuing excellence: A study of U.S. twelfth-grade mathematics and science achievement in international context: National Center for Educational Statistics, U.S. Department of Education.
- U.S. Department of Education. (1992). *National education goals*. Washington, DC: Author.
- U.S. Department of Education. (1996). *Urban schools: The challenge of location and poverty*. Washington, DC: Author.
- U.S. Department of Health and Human Services. (1996). *Final rule—Head Start performance Standards* (Publication No. 45 CFR Part 1304). Washington, DC: U.S. Government Printing Office.
- White, K., Taylor, M., & Moss, V. (1992). Does research support claims about the benefits of involving parents in early intervention programs? *Review of Educational Research*, 62, 91-125.

Received April 9, 1999

Revision received July 22, 1999

Accepted July 22, 1999 ■