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Predictors of Parent Involvement in Children's Schooling

Wendy S. Grolnick, Corina Benjet, Carolyn O. Kurowski, and Nicholas H. Apostoleris
Clark University

The authors combined a multilevel model of parental context with a multidimensional conceptualization of parent involvement to examine the factors influencing parents' involvement in their children's schooling. Three sets of factors were identified: parent and child characteristics, family context, and teacher behavior and attitudes. A diverse sample of 209 mothers, their 3rd–5th grade children, and 28 teachers participated. Parents, teachers, and children reported on 3 types of involvement: school, cognitive, and personal. Mothers who felt efficacious, who saw their roles as that of teacher, and who viewed their children as less difficult were more involved in cognitive activities. A difficult context, social support, and teacher attitudes and practices were associated with both school and personal involvement, though some of these relations were moderated by gender with contextual factors affecting involvement of mothers of boys and classroom factors affecting those of girls. The importance of a multilevel approach to increasing parent involvement is discussed.

Parents' involvement in their children's schooling is associated with children's school success, with the positive effects of parent involvement having now been demonstrated across a wide range of age levels and populations (e.g., Epstein, 1983; Fehrmann, Keith, & Reimers, 1987; Reynolds, 1989; Stevenson & Baker, 1987). Researchers know less, however, about the factors that determine how involved parents become. Understanding such factors should assist in developing interventions to increase parent involvement in all families.

To date, the focus of most work on predictors of parent involvement has been demographic factors. For example, lower income, less educated (Hoover-Dempsey, Bassler, & Brissie, 1987; Lareau, 1987), and single parents (Epstein, 1990b) are less involved than are more educated, higher income, or married parents. However, little work has gone beyond the "social address" (Bronfenbrenner, 1986) model to explain how such factors affect involvement. Further, the majority of studies on this issue have used narrow, unidimensional measures of parent involvement that don't take into account the diverse ways in which parents can be involved (Auerbach, 1989). In this study, we add to the literature by using a multilevel model of intra- and extrafamilial factors that might influence multiple facets of parent involvement.

Parent Involvement: Definitions and Dimensions

Parent involvement in children's schooling has been measured in a number of ways, including attendance at school events (e.g., Stevenson & Baker, 1987), reading at home (e.g., Morrow, 1989), and helping with homework (Walberg, 1984). There is growing consensus that parent involvement cannot be conceived as a unitary phenomenon (Cone, Delawyer, & Wolfe, 1985; Epstein, 1990a) and that a broad and multidimensional perspective is needed that includes emotional and personal aspects in addition to school-like activities. Thus, Grolnick and Slowiaczek (1994) defined *parent involvement* as the dedication of resources by the parent to the child within a given domain. These authors described three types of involvement in children's schooling: behavior, cognitive–intellectual, and personal. The parent's behavior concerns participation in activities at school (e.g., attending parent–teacher conferences and school activities) and at home (e.g., helping with homework, asking about school). Cognitive–intellectual involvement includes exposing the child to intellectually stimulating activities such as going to the library and talking about current events. The third category, personal involvement, is knowing about and keeping abreast of what is going on with the child in school.

In a study of sixth through eighth graders, Grolnick and Slowiaczek (1994) found that the three dimensions were relatively independent and were associated with children's motivational resources (Grolnick, Ryan, & Deci, 1991) and school performance. Specifically, mothers who were high in behavioral and cognitive involvement had children who felt more competent in school and more in control of school outcomes than those who were less involved. In turn, these motivational resources predicted school grades. In the current study, we examine factors that predict these types of involvement.

A Model of Factors Affecting Parent Involvement

In this study, we use an ecological cross-disciplinary perspective in which action is seen as situated in its contextual and institutional settings (Bronfenbrenner, 1986; Wertsch, 1991). On the basis of this approach, we postulated

Wendy S. Grolnick, Corina Benjet, Carolyn O. Kurowski, and Nicholas H. Apostoleris, Frances L. Hiatt School of Psychology, Clark University.

This research was supported by a William T. Grant Foundation Faculty Scholars award. Correspondence concerning this article should be addressed to Wendy S. Grolnick, Frances L. Hiatt School of Psychology, Clark University, 950 Main Street, Worcester, Massachusetts 01610-1477. Electronic mail may be sent via Internet to wgrolnick@vax.clarku.edu.

a hierarchical model specifying three levels of factors: individual, contextual, and institutional. At the first or individual level, we focused on parent and child characteristics that might influence involvement. At a higher level of analysis, these individuals may be seen as acting within a context. In this study, family circumstances are seen as providing the context in which parent involvement occurs. Finally, at a still higher level, other institutions that interact with that of the family are taken into consideration. In this way, the school may set the parameters for parent involvement. We consider, at this level, teacher practices of involving parents. In this study we take into account each of these levels and use hierarchical modeling to assess their individual and interactive contributions to parent involvement.

Individual Level: Parent and Child Influences

Parents' levels of involvement in school may be influenced by qualities of the parent–child dyad and, within the dyad, by characteristics of each member. Within this category, parents' thoughts and beliefs about themselves as parents are one set of such characteristics (Goodnow, 1984). First, parents differ in terms of their ideas about their role in their child's learning (Strom & Slaughter, 1978). To the extent that they believe strongly that parents have a role in the teaching–learning process, they may be more likely to take on involvement activities. Further, personal efficacy is also likely to impact on behavior (Bandura, 1986). Parents who believe they can "make a difference" are more likely to be involved (Hoover-Dempsey, Bassler & Brissie, 1992).

The second construct concerns characteristics of the children themselves. Several theorists have stressed the idea that children create their own contexts (Bell, 1968) and that parents use their children's behavior as regulators of their actions, tailoring parenting efforts to them (Maccoby, Snow, & Jacklin, 1984). Grolnick, Weiss, McKenzie, and Wrightman (1996), for example, demonstrated that parents who saw their adolescents as more difficult were less involved with them.

Contextual Level: Family Context

The parent's behavior cannot be taken out of the context within which the parent and family live (Belsky, 1984; Bronfenbrenner, 1986). From an ecological perspective, the social context of parenting will be a key contributor to the way resources are allotted to the child.

Although no studies to date have examined effects of social–contextual factors on involvement in schooling per se, there is now much evidence that economic hardship undermines parenting more generally (e.g., Elder & Caspi, 1988; McLloyd, 1990). We suggest, as have others (e.g., Conger, Ge, Elder, Lorenz, & Simons, 1994), that beyond demographic measures per se, it is the parents' experienced inadequacy of resources that will be most likely to disrupt involvement.

Relatedly, there is much evidence that high levels of stress negatively influence parenting characteristics such as warmth and responsiveness (Belsky, 1984; Roberts, 1989). Stressful events might take time from parents, usurp energy and attention, or both, making parents less psychologically available for or aware of involvement activities. Conversely, social support has been positively associated with the provision of a nurturant family environment (Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983). Such support may provide the parent with the time to be involved and help the parent mobilize resources to cope with stress.

Institutional Effects: Attitudes and Practices of Teachers

The strength of the connections between families and schools may also be a function of characteristics of the school institution and its representatives. Teachers are parents' primary contacts within the school and thus practices in the classroom are potential influences on parent involvement.

There are wide variations in whether teachers believe involving parents is an effective strategy for enhancing children's educations (Epstein & Becker, 1982; Johnson & Pugach, 1990). Some teachers believe that parents are interested and willing to help and that it is time-effective to involve parents in their children's educations, whereas others feel it will be a source of conflict between parent and child and that parents will not wish to or be able to carry through commitments (Epstein & Becker, 1982).

Teacher practices can affect parents' behavior. When teachers make parent involvement part of their regular teaching practice, parents are more involved and feel more positive about their abilities to help (Ames, 1993; Epstein, 1991). Students whose teachers used more parent involvement practices were more positive toward school and achieved greater gains in reading from fall to spring than those of teachers who used fewer of these practices (Epstein, 1991).

Moderating Effects of Family Configuration and Child Gender

Although arguments have been made for the importance of parent, child, contextual, and classroom influences on parent involvement, it is also the case that some of these influences may not be equally important in all families. For example, stress may be particularly undermining for single- as opposed to two-parent families (Forgatch, Patterson, & Skinner, 1988). Thus, two-parent family status may buffer adverse circumstances from disrupting parent involvement.

Gender is another variable that may act as a moderator. For example, in the employment literature, it has been found that boys are more adversely affected by mothers' employment than girls. It has been argued that mothers believe daughters are more vulnerable than sons and, under stress, may pull resources from their sons but not their daughters, who they believe require more attention and responsiveness (Chase-Lansdale, Michael, & Desai, 1991). If this is true, difficult life circumstances may be more predictive of parent involvement for mothers of boys relative to girls. Thus, we

consider possible moderating effects of family configuration and gender in our analyses.

The purpose of this study then was to examine multiple factors at several levels that might affect various aspects of parent involvement. Mothers are the focus of interest because they are most involved in their children's schooling (Cone et al., 1985; Grolnick & Slowiaczek, 1994) and most likely to be the conduit for school–home contact (Stevenson & Baker, 1987).

Because they are seen as regulating behavior more generally, we hypothesized that parent attitudes would be associated with all three types of involvement: school, cognitive, and personal. Child difficulty was predicted to be most associated with cognitive and personal involvement given that these types of involvement include the most interaction with the child. We expected that contextual variables, such as stress, support, and family resources, would impact most on involvement at school because school involvement requires the most time (and other physical and financial resources such as a car, babysitting, etc.) and is the least flexible given that activities must be scheduled during school hours. We also expected contextual variables to have their greatest impact on mothers in single-parent families and mothers of boys. Teacher attitudes and practices are expected to impact most on school involvement.

Of additional interest is the extent to which classroom practices can moderate the effects of other categories. For example, controlling for classroom practices, parents living in difficult contexts may show low involvement. However, if the parent's child is in the classroom of a teacher who feels parent involvement is important and who actively involves parents, the effects of such a context may be lessened.

Table 1
Variables in the Model

Characteristic	Measured constructs	Final variables in model	α
	Predictors		
Hierarchical level			
Individual			
Parent	Parent efficacy, parent as teacher	Parent attitudes	.68
Child	Child difficulty	Child difficulty	.83
Contextual	Stressful life events, family resources	Difficult context	.87
	Satisfaction with social support	Social support	.73
Institutional	Teacher attitudes, teacher behavior	Teacher attitudes	.91
	Outcomes		
Type of involvement			
School	Parent report, child report, teacher report	School involvement	.91
Cognitive	Parent report, child report	Cognitive involvement	.70
Personal	Parent report, child report	Personal involvement	.66
	Moderators		
Variable			
Gender	Male–female	Gender	
Family configuration	Single–two-parent	Family configuration	

Method

Participants

Participants were 209 mothers (81% Caucasian, 11% Hispanic, 4% African American, and 4% other minority) of third- (n = 76), fourth- (n = 69), and fifth-grade (n = 64) children from four urban public elementary schools in the Northeast. The children (111 girls and 98 boys) and their 28 teachers also participated.

Families were distributed across Hollingshead's (1975) social classes, with 59 (28%) falling into Social Class I, 65 (31%) into Social Class II, 28 (13%) into III, 12 (6%) into IV, and 45 (22%) into V. Twenty-two percent of the families received some form of governmental assistance. Educational levels of the mothers also varied: 8% had attained less than a high school education, 16% completed high school, 33% completed some college, 24% received a college degree, and 18% had an advanced degree.

Sixty-nine percent of the children came from two-parent families, 23% from single-parent families, and 8% from stepfamilies. Seventy-four percent of the mothers and 85% of the fathers were employed either part- or full-time.

Procedure

The children were told about the project in their classrooms and given letters to take home that asked for their parents' permission for the researchers to call the parents to tell them more about the project. Sixty-four percent of the parents returned slips. Seventy percent of the parents who returned slips responded positively.

Interviews with the parents were conducted individually either at the parents' homes, at the university, or at the child's school in a private room. All interviews were conducted in the spring to ensure adequate time for the parents to get involved, and for teachers to get to know the children and parents. Parents were given either English or Spanish versions of the measures depending on their language proficiency.[1] Parents were paid $20 for their participation. At the time of the interview, permission was secured to allow the child to complete questionnaires, which were administered in a group format in the children's classrooms, and for the teacher to complete ratings on the family. Each teacher received $25 for completing ratings on the participating families in his or her classroom and questionnaires regarding their general parent involvement attitudes and practices.

Measures

Parent Involvement Indices

Measures of parent involvement, grouped under involvement category, are presented in Table 1.

[1] The Spanish questionnaires were translated using a backwards translation method wherein the questionnaires are translated from the original to the target language by one person and then translated from the target language back to the original language by another person to ensure language equivalency.

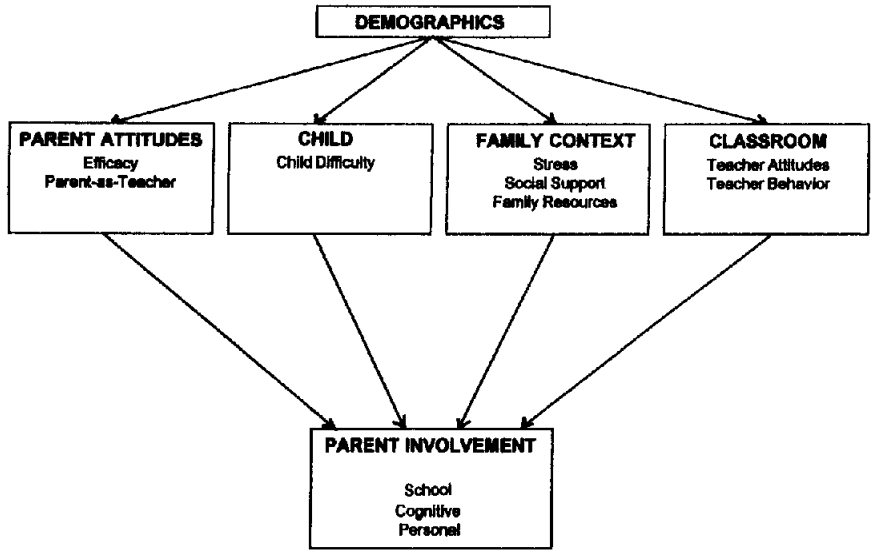

Figure 1. Model depicting predictors of parent involvement in children's schooling.

School Involvement

Behavioral involvement at school was measured by child, parent, and teacher report.

Parent–School Interaction Questionnaire-Child Report (Grolnick & Slowiaczek, 1994). This questionnaire assesses children's perceptions of their parents' levels of involvement at school. The children rated how often their parents engaged in five specific involvement behaviors at school, such as going to school events or talking with the teacher before or after school. Each item was rated from 1 (*never*) to 3 (*a lot*).

Parent–School Interaction Questionnaire-Parent Report. This measure includes 16 parent involvement activities at school (e.g., attending parent–teacher conferences, going to school activities and events). Items were obtained from activities described by Grolnick and Slowiaczek (1994) and Epstein and Salinas (1993). Mothers rated the number of times this school year that they engaged in the activities on a scale from 1 (*never*) to 4 (*many times*).

Parent–School Interaction Questionnaire-Teacher Report. Teachers rated behavioral involvement at school on this questionnaire, which included similar items to those completed by parents and children. Teachers rated the frequency of the parents' attendance at seven different school events and activities such as parent–teacher conferences, open houses, and volunteering in the classroom on a scale from 1 (*never*) to 5 (*regularly*).

Cognitive Involvement

Child Report. The degree to which the parents engaged in cognitive–intellectual type activities was assessed by a shortened version of a checklist developed by Grolnick and Slowiaczek (1994). On this measure, children rated how often on a scale from 1 (*never*) to 4 (*a lot*) his or her parent engages with them in five activities at home (e.g., going to the library, talking about current events).

Parent Report. Parents also rated the frequency with which they engaged in six similar activities on a scale from 1 (*never*) to 5 (*daily*).

Personal Involvement

Child Report. This measure assessed children's perceptions of their parents' interest in and knowledge about their school activities and endeavors. Sample items include "My mother knows what I am doing in school," and "My mother wants to know about my school day." For each of the six items, the children rated how true the statement was on a scale from 1 (*not at all true*) to 4 (*very true*).

Parent Report. This measure includes five items similar to the child report of personal involvement. These items (e.g., "I know what my child is currently doing in school" and "I know the names of my child's classmates") were rated on a scale from 1 (*strongly disagree*) to 4 (*strongly agree*).

Predictor Variables

Measured constructs are listed in Table 1.

Child Index

The Parent Report of Child Behavior Toward Parent Inventory—Short Form (Schaefer, Finkelstein, & Edgerton, 1977). This measure was used to assess parents' perceptions of their children's behavior on dimensions of positive involvement, resisting control–controlling, compliance–obedience, detachment–distancing, and instrumental independence. The 20 items from the first four dimensions were included in the current study. Parents rate these items (e.g., "works hard to please me" "doesn't show much interest in me") on a scale from 1 (*not very like their child*) to 4 (*very much like their child*). The positive items were inverted and the four subscales combined to yield a child difficulty score.

Parent Attitude Indices

Parent as Teacher Inventory (Strom & Slaughter, 1978). This measure assesses parents' attitudes toward their role as a teacher of their children. The Teaching–Learning subscale was used for this study. This subscale includes six items such as "Parents are their child's best teacher" and "Parents should continue to teach their

child even after the child enters school," which are rated from 1 (*strongly disagree*) to 5 (*strongly agree*). Alphas for the Teaching–Learning subscale have been found to range from .55–.60 (Strom & Slaughter, 1978).

The Parental Locus of Control Scale (Campis, Lyman, & Prentice-Dunn, 1986). The six items of the Parental Efficacy subscale were rated on 5-point scales yielding a score for a parent's perceived level of efficacy with his or her child. Example items are "What I do has little effect on my child's behavior" or "When I set expectations for my child, I can help him (or her) meet them."

Familial Context Indices

The Life Experiences Survey (Sarason, Johnson, & Seigel, 1978). This scale, which lists negative and positive life events, was adapted for this study. The resulting scale lists 46 life events. For each event, the parent indicates whether the event happened to him or her in the past year and, if so, rates how negative or positive the experience was on a scale from 1 (*extremely negative*) to 5 (*extremely positive*). A score is computed by adding the number of life events weighted by their degree of impact on the person's life. In this study, the weighted score for negatively rated items was used. Sarason et al. reported a test–retest reliability of .88 for the negative event index.

Parenting Social Support Scale (Telleen, 1985). This measure, based on the Barrera Arizona Social Support Interview Schedule (Barrera, 1981), includes seven types of support: relationship with confidant, material aid, advice on childrearing, positive feedback, physical assistance with household tasks, child care, and social participation with others. For each of these categories, parents rate, for the past month, their need for that type of support on a 5-point scale, the number of people in their social network who can provide them with that support, and their degree of satisfaction with the support received from 1 (*very dissatisfied*) to 6 (*very satisfied*). The scale was validated on a sample of 69 parents (Telleen, 1985) and found to be correlated with the Wilcox Social Support Scale and the Social Isolation subscale of the Parenting Stress Index. Telleen reported alphas for the three subscales (Need, Satisfaction, and Network Size) to range from .79 to .92. Scores for satisfaction with social support were used in this study.

Family Resource Scale (Dunst, 1986). This 30-item scale measures the extent to which different types of resources are adequate for families with children. The items range from most basic needs (e.g., food, clothing, shelter) to less basic needs (e.g., money for travel). Parents rate how adequate different types of resources are for their family from 1 (*not at all adequate*) to 5 (*almost always adequate*). Dunst reported the alpha coefficient of the scale to be .92, using a sample of 45 mothers of preschool-aged children.

Teacher Attitudes and Practices

Teacher Attitudes Towards Importance of Parent Involvement Questionnaire. This measure assesses the degree to which teachers view parent involvement as important and includes items from Epstein and Salinas's (1993) survey as well as items designed for this study. Teachers rate the importance of eight different involvement activities (e.g., involving parents as volunteers, surveying parents for their ideas about their children or school) from 1 (*not important*) to 4 (*very important*).

Teacher Behavior Inventory. This measure, adapted from Epstein and Salinas's (1993) survey, assesses the frequency with which teachers solicit parent involvement in various ways. Teachers rated the percentage of their students' families that they contact in each of 30 different ways in a typical year, such as calling families, asking parents to check the child's homework daily, and inviting parents to observe in the classroom.

Results

Preliminary Analyses: Predictor Variables

Because several variables from each set of factors were measured, correlations between variables within each set were computed to determine whether these variables could be combined. This strategy was used because of the a priori designation of variables into categories and to avoid placing multiple correlated variables into predictive models. Where variables were combined, alphas were reported as validation for combining variables, rather than as indices of reliability.

Two of the three a priori designated context variables were negatively correlated: stressful life events and family resources ($r = -.52$). However, these two variables were only weakly related to the third, satisfaction with social support ($r = -.14$ and $r = .25$, respectively). We therefore created two context variables, the first, difficult context, represented stressful life events minus family resources. The second was social support.

The two-parent attitude variables, efficacy and parent-as-a-teacher, were positively correlated ($r = .47$) and were combined to form a parent attitudes variable. Finally, the teacher attitude and behavior variables were similarly correlated ($r = .48$) and were combined to form a teacher attitude variable.

In summary, we were able to combine variables resulting in five predictors: difficult context, social support, parent attitudes, teacher attitudes, and child difficulty (one measured variable). These variables, listed in Table 1 along with relevant alphas, were used in the primary analyses examining relations between predictors and parent involvement outcomes.

Preliminary Analyses: Parent Involvement Measures

Analyses were conducted to determine whether assessments of the same types of involvement by different raters could be combined. Teachers, parents, and children rated mothers' school involvement. A principal components factor analysis of the three measures revealed a one-factor solution with an eigenvalue of 1.95 and factor loadings above .75. This factor accounted for 65% of the total variance. The three indices were thus combined to form one measure of school involvement. Parent and child ratings of cognitive involvement and of personal involvement were moderately related ($r = .45$ and $r = .48$, respectively), and these ratings were also combined. Alphas for the combined ratings appear in Table 1.

The three composite parent involvement indices were moderately related (see Table 2), in the $r = .4$ range.

Relations Among Predictor Variables

Generally, there were moderate correlations among the predictors (see Table 2) but the correlations ranged from

Table 2
Correlations Among Major Variables

Variable	1	2	3	4	5	6	7
1. Parent attitudes	—						
2. Child difficulty	−.32***	—					
3. Context	−.25***	.17*	—				
4. Social support	.11	−.13*	−.19**	—			
5. Teacher attitudes	.14*	−.08	−.18*	.15*	—		
6. School involvement	.32***	−.19**	−.18*	.13	.11	—	
7. Cognitive involvement	.28***	−.26***	−.07	.16*	.15*	.40***	—
8. Personal involvement	.27***	−.23***	−.25***	.12	.09	.41***	.43***

*$p < .05$. **$p < .01$. ***$p < .001$.

−.08 (teacher attitudes and child difficulty) to −.32 (parent attitudes and child difficulty). Mothers who saw their role as less active and efficacious tended to rate their children as more difficult, as did those who described their context as difficult. Mothers describing a difficult context tended to describe less active–efficacious roles for themselves as parents. Mothers with higher social support also tended to describe their children and contexts as less difficult. Finally, positive teacher attitudes toward involvement were associated with active parent attitudes, less difficult contexts, and more social support.

Primary Analyses

To examine relations between predictor variables and the three parent involvement indices, we used Hierarchical Linear Modeling (HLM; Bryk & Raudenbush, 1992). This procedure was chosen because the predictor variables were organized hierarchically—teacher variables were at the level of classroom whereas the parent, child, and context variables were measured at the individual level within the classroom. When data are grouped in this way, regression is inappropriate because within-class observations are not independent, thus violating a fundamental assumption of regression analysis. HLM allows one to examine variation within and between groups (classrooms) by partitioning the variance into different components.

The HLM analyses were conducted in two steps. First, simple models were constructed for each predictor variable. These descriptive analyses were computed to determine if random within-classroom effects were apparent and to determine whether each predictor variable was related to involvement indices, controlling for socioeconomic status (SES). For each involvement outcome, the predictor and the Hollingshead index were entered. Teacher was the random-effects variable. In a second set of analyses, complex models evaluating unique effects of predictors and interactions were constructed.

Simple Models

In this set of analyses (see Table 3), HLM was used to assess relations between each predictor and each involvement outcome, controlling for family SES. Controlling for SES, parent attitudes were associated with all three types of involvement. In each case, parents expressing a greater and more efficacious role of parents tended to be more involved. Ratings of child difficulty were associated with two of the three indices. Mothers who rated their children as more difficult were less involved personally and in cognitive

Table 3
Simple Hierarchical Linear Models Entering Socioeconomic Status (SES; Hollingshead Index) and One Predictor Variable

Predictor variable	Parent involvement indices					
	School		Cognitive		Personal	
	F	b	*F*	b	*F*	b
SES	16.94***	.01	16.89***	.01	3.77*	.00
Parent attitudes	8.94**	.30	4.86*	.17	8.24**	.16
SES	23.83***	.01	20.65***	.01	6.70**	.00
Child difficulty	3.04	−.19	8.11**	−.23	7.33**	−.17
SES	23.28***	.01	27.24***	.01	4.19*	.00
Difficult context	0.55	−.01	0.81	.01	7.19**	−.01
SES	26.55***	.01	23.91***	.01	9.63**	.00
Social support	1.61	.06	4.55*	.08	2.18	.04
SES	28.44***	.01	25.05***	.01	9.43**	.00
Teacher attitudes	0.13	.03	0.92	.05	0.30	.02

Note. Betas for each predictor variable are unstandardized coefficients for the full sample.
*$p < .05$. **$p < .01$. ***$p < .001$.

activities. For context variables, there was one effect, mothers who described a difficult context were less involved personally. There was also one effect for social support, with mothers who were more satisfied with their levels of social support more involved at home in cognitive activities. There were no effects of teacher attitudes. Finally, tests for random within-class effects were nonsignificant.

Multistage Models

Next, HLM was used to examine the unique effects of predictor variables as well as hypothesized interactions between child gender and family configuration and the predictors, and hypothesized interactions between predictor variables and teacher attitudes. To examine the interaction of two continuous variables, we used the product of the two main effects, for example, Parent Attitudes × Teacher Attitudes. When main effects are entered into the model first, the product of the two terms represents the interaction when it enters the equation (Aiken & West, 1991; Cohen & Cohen, 1983).

For each dependent variable (involvement indices), models were constructed in a series of steps. At each step, a set of variables (demographic, parent and child, context, teacher, interactions) was entered into the model. As each set of variables was entered, the *F*s at entry for the set of variables (by creating contrasts) were evaluated as were the effects of individual variables in the set.

The sets of variables were entered in the following manner. First, a model with only the random-effects variable (teacher) was estimated. Next, the four demographic variables—SES, child gender, family configuration[2] (single-parent vs. two-parent), and mothers' work status—were added to the model. A third model added the two parent–child variables, parent attitudes, and child difficulty. Next, we estimated a model with teacher, demographics, parent–child variables, and the two context variables. A fifth model added teacher attitudes. Next, a model was estimated that added predicted interactions: the five interactions between predictors and child gender, the five between predictors and family configuration, and the hypothesized interactions between teacher attitudes and both context and parent attitudes. Specifically, it was expected that the effects of a difficult context and nonoptimal parent attitudes would be less apparent when teacher attitudes and behaviors were strongly positive. In a final model, we eliminated nonsignificant interactions and included all main effects and significant interactions. Statistics for each set of variables at entry into the model (*F*s and bs) and for the final model are presented in Tables 4, 5, and 6.

Table 4
Statistics for Hierarchical Linear Models for School Involvement

Hierarchical linear model	At entry into model		Final model	
	F	b	*F*	b
Model 1: Random effects	1.76	.06	1.23	.09
Model 2: Demographics	8.88***		5.99***	
Socioeconomic status	12.91***	.01	10.17**	.01
Gender	0.72	.07	0.87	.08
Family configuration	6.57**	.29	5.85*	.27
Mothers' work status	0.41	.07	0.92	.10
Model 3: Parent–Child	2.59		1.43	
Parent attitudes	1.80	.15	0.36	.01
Child difficulty	2.00	−.16	1.91	−.15
Model 4: Context	0.12		0.26	
Difficult context	0.01	.00	0.51	−.01
Social support	0.24	.02	0.01	.11
Model 5: Teacher	0.16		0.00	
Teacher attitudes	0.16	−.03	0.00	−.01
Model 6: Interactions	7.56***		7.56***	
Context × Gender	6.30**	−.05	6.30**	−.05
Social Support × Gender	5.27*	−.24	5.27*	−.24
Teacher Attitudes × Gender	13.49***	.44	13.49***	.44

Note. bs are unstandardized coefficients.
*$p < .05$. **$p < .01$. ***$p < .001$.

School Involvement

There was no significant systematic random variability associated with classroom in the model including only the random-effects variable. Adding demographics to the model resulted in a significant effect for the set. In our analysis of individual variables within the set, the higher the SES of the mother, the greater the tendency for her to be involved at school. In addition, controlling for other demographic variables, mothers in two-parent families tended to be more involved than those from single-parent families. There were no effects of child gender or mothers' work status on school involvement.

Model 3 added parent and child characteristics. Controlling for demographics, there were no significant effects of the set at entry into the model. Further, there were no effects for the set of context variables or teacher attitudes in Models 4 and 5. However, there was a significant effect of the set of interactions, indicating that the effects of context and of teacher attitudes were moderated by child gender. In equations estimated for boys and girls separately, a difficult context predicted school involvement of mothers of boys, $t(1, 168) = -2.02$, $p < .05$, $b = -.03$, with a more difficult context associated with less school involvement, but the result was not significant for those of girls, $t(1, 168) = 1.37$, *ns*). Similarly, social support was positively associated with school involvement for mothers of boys, $t(1, 168) = 2.89$, $p < .01$, $b = .13$, but not girls, $t = -1.47$, *ns*. Finally, teacher attitudes were associated with school involvement for mothers of girls, $t(1, 168) = 2.20$, $p < .03$, $b = .22$, but not boys, $t(1, 168) = -1.55$, *ns*.

In the final model, higher levels of involvement at school were associated with higher SES and two-parent family

[2] Stepfamilies were excluded from these analyses because there were not enough of such families to be considered a separate group. Stepfamilies share characteristics with intact two-parent families (number of parents available) but also may share the stress associated with divorce, remarriage, or increased conflict with single-parent families.

Table 5
Statistics for Hierarchical Linear Models for Cognitive Involvement

Hierarchical linear model	At entry into model		Final model	
	F	b	*F*	b
Model 1: Random effects	1.33	.17	1.38	.11
Model 2: Demographics	7.16***		4.08**	
Socioeconomic status	18.38***	.001	11.96***	.01
Gender	1.90	−.08	1.83	−.08
Family configuration	0.20	−.04	0.50	−.05
Mothers' work status	1.06	−.08	0.20	−.03
Model 3: Parent–child	4.39**		5.94**	
Parent attitudes	3.93*	.16	8.51**	.10
Child difficulty	4.64*	−.17	7.81**	−.21
Model 4: Context	2.66†		1.36	
Difficult context	2.39	.01	0.80	.01
Social support	3.57†	.07	2.15	.05
Model 5: Teacher	0.05		1.54	
Teacher attitudes	0.05	.01	1.54	−.07
Model 6: Interactions	7.68***		7.68***	
Teacher Attitudes × Family Configuration	10.51**	.36	10.51**	.36
Teacher Attitudes × Parent Attitudes	7.70**	−.31	7.70**	−.31
Teacher Attitudes × Context	5.50*	−.03	5.50*	−.03

Note. bs are unstandardized coefficients.
†$p < 1.0$. *$p < .05$. **$p < .01$. ***$p < .001$.

status. In addition, the effects of context were apparent for mothers of boys and teacher attitudes for mothers of girls.

Cognitive Involvement

As was the case for school involvement, there was no systematic random variation associated with teacher in the random-effects model. At entry, the set of demographic variables was strongly associated with cognitive involvement; however, this effect was accounted for only by family SES. Controlling for SES, there were no effects of family configuration or mothers' work status. In Model 3, adding parent and child characteristics, there was a significant contribution of both of these variables and the set together. Thus, controlling for other variables, mothers who perceived themselves as having an active and efficacious role were more involved in cognitive activities as were those seeing their children as easier. When context variables were entered, they were marginally predictive of cognitive involvement. Teacher attitudes did not contribute significantly to the model.

There were three significant interactions for cognitive involvement, all involving teacher attitudes. In each case, the effects of teacher attitudes was moderated by other variables. For family configuration, teacher attitudes were positively associated with involvement in two-parent families, $t(1, 168) = 3.44$, $p < .001$, $b = 1.56$, but not in single-parent families. To interpret the other two interactions, which involved continuous variables, context and parent attitudes, regressions lines were plotted for high (75th percentile), medium (50th percentile), and low (25th percentile) values of the moderators (Aiken & West, 1991). We found that at more difficult levels of context, teacher attitudes had less of an effect than at more optimal levels. Similarly, teacher attitudes had a stronger effect at more efficacious values of parent attitudes but not at less.

In the final model there were significant effects of SES, parent attitudes, child difficulty, and interactions, as described above.

Table 6
Statistics for Hierarchical Linear Models for Personal Involvement

Hierarchical linear model	At entry into model		Final model	
	F	b	*F*	b
Model 1: Random effects	1.01			
Model 2: Demographics	3.80**		1.90	
Socioeconomic status	3.45†	.00	0.00	−.00
Gender	1.78	−.07	3.28†	−.92
Family configuration	2.47	.10	2.26	.10
Mothers' work status	0.23	−.03	1.28	−.07
Model 3: Parent–child	4.17*		3.41*	
Parent attitudes	2.82†	.10	2.22	.10
Child difficulty	3.22†	−.12	2.76†	−.11
Model 4: Context	2.66†		3.69*	
Difficult context	3.58*	−.01	4.76*	−.01
Social support	0.02	.00	2.52	.21
Model 5: Teacher	0.03		0.03	
Teacher attitudes	0.03	−.01	0.03	−.01
Model 6: Interactions	6.70**		6.70**	
Social Support × Gender	6.70**	.16	6.70**	.16

Note. bs are unstandardized coefficients.
†$p < .10$. *$p < .05$. **$p < .01$.

Personal Involvement

As with the other types of involvement, there was no effect of the random variable in the random-effects model. In

fact, because there was no systematic random variance, the model could not be estimated. Adding demographic variables resulted in significant prediction of the set, though only SES was marginally positively related to personal involvement. There were also effects of the parent and child variables, though each variable only marginally predicted personal involvement individually. Addition of context variables resulted in a marginally significant contribution to the model, with a significant effect for difficult context, with parents reporting a more difficult context less personally involved. Teacher attitudes did not contribute significantly to the model. Finally, there was one significant interaction, that between gender and social support. As was the case for school involvement, there was a positive effect of social support for mothers of boys, $t(1, 168) = 2.59, p < .05, b = .15$, but not girls.

In the full model, demographics no longer contributed to personal involvement controlling for other variables. However, both parent and child characteristics, context, and the interaction between social support and context added significant variance to the model.

To facilitate interpretation of the results, we summarized the results of the final models for the three types of involvement in Table 7.

Discussion

The results of this study underscore the complexity of understanding factors associated with parents' involvement in their children's schooling. A hierarchical model of factors at several levels (individual, contextual, institutional) was posited. Factors from each level predicted parent involvement. However, as expected, the effects of predictors depended on the type of involvement examined. Although only examining mothers and including only a subset of potential predictors of parent involvement, we believe that the results of the study add to the growing literature on parent involvement.

Table 7
p Values for Significant Effects of Sets and Predictor Variables in the Final Models

Predictor variable	Type of involvement		
	School	Cognitive	Personal
Demographics	***	**	
Socioeconomic status	***	***	
Family configuration	**		
Parent–Child	**		*
Parent attitudes	**		
Child difficulty	**		†
Context			*
Difficult context			*
Social support			
Teacher			
Teacher Attitudes			
Interactions	***	***	**
Context × Gender	**		
Social Support × Gender	*		**
Teacher Attitudes × Gender	***		
Teacher Attitudes × Family Configuration		**	
Teacher Attitudes × Parent Attitudes		**	
Teacher Attitudes × Context		*	

†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .01$.

To date, the literature on predictors of involvement has highlighted the importance of demographic factors. However, even these studies have not looked at unique effects of different demographic variables nor addressed effects of demographics on different types of involvement. As has been found in other studies, family SES was a strong predictor of involvement, especially school and cognitive. Interestingly however, taking into account other factors, personal involvement was not associated with SES, suggesting that the more affective types of involvement may occur equally at all parental occupational and educational levels.

Also with regard to demographics, though mothers from single-parent families were less involved on all three dimensions than those in two-parent families, only school involvement was lower when SES was held constant. We hypothesize in explaining these results that involvement at school may be most difficult for mothers from single-parent families and it may be most useful to consider targeting other types of involvement that do not require day-time availability.

Beginning with the individual level of our model, as predicted, child and parent characteristics had strong relations with cognitive involvement, and to a lesser extent personal involvement, when considering other factors together. Thus, the strongest effects of individual characteristics were in parents' provision of exposure to cognitively stimulating activities. As we reasoned in predicting such relations, parents who see their children as difficult may find working with their children aversive and may withdraw from such interactions. Given this finding, we suggest that parents may need strategies to help them work with their children if involvement efforts are aimed at increasing home involvement. Again, as expected, when parents see themselves as efficacious and when they view their role as that of teacher, they are more likely to become involved in these stimulating activities. In general, we suggest that cultural factors such as parents' ideas about children's learning must be considered in efforts to increase parent involvement.

We predicted that a difficult context and lack of social support would undermine school involvement. These effects emerged, as predicted, for mothers of boys. In explaining these findings, we follow the reasoning of Chase-Lansdale, Michael, and Desai (1991) in suggesting that mothers may perceive their boys and girls as differentially needy of support. When environmental circumstances are difficult, mothers may withdraw resources from boys given that they are seen as relatively independent. However, parents of girls may be less likely to do so, despite the burden it may place on them. Interestingly, Stevenson and Baker (1987) similarly found that demographic factors (age of child, education of mother) were more predictive of involvement in parents of boys relative to girls. One unpredicted finding was the direct relationship between a difficult context and mothers'

personal involvement. We speculate that having a difficult context may make it hard for parents to attend to the subtleties of what is going on in school.

We also predicted and found that teacher characteristics were associated with involvement at school. Again, this findings was moderated by gender. In this case, however, the effect was significant for mothers of girls but not boys. We hypothesize, on the basis of these findings, that girls may be more connected to their teachers and act as stronger conduits, taking teachers' messages to their homes. It could also be argued that for reasons described above, parents may keep a closer eye on their girls, checking in with teachers and following their suggestions more closely. It must be kept in mind in interpreting these findings that levels of parent involvement did not differ in parents of boys and girls.

We were also interested in whether classroom practices might moderate the effects of predictor variables on involvement. This was the case but in an unexpected manner. Our data suggest that teacher practices have their strongest impact when other factors (e.g., context, attitudes) are optimal. For example, parents who see themselves as teachers and feel efficacious, as well as those in more optimal contexts, become more involved when teachers are active users of involvement, whereas those who do not see themselves in this manner or are in difficult contexts are less affected by teachers' attitudes and behaviors. This makes sense in that parents who are extremely stressed or whose values and attitudes clash with those of the teacher may not receive the teacher's message, even if he or she is attempting to involve them. We hypothesize, on the basis of these findings, that interventions beyond traditional classroom-based activities are necessary to reach all families. Although teachers' attempts to involve parents may succeed (especially for parents of girls), these attempts may not reach those most in need. As suggested earlier, without considering the "social realities" and cultural characteristics of parents, school practices targeting parents may lead to larger discrepancies in educational outcomes rather than greater equality (Auerbach, 1989).

In summary, in the present study, we found that multiple factors at several levels are necessary to explain parents' involvement. Further, these factors varied for different types of involvement. The results can be used to develop interventions to assure parent involvement across all families.

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