Parental Involvement: Model Revision through Scale Development

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Abstract

In 1995 and 1997 Hoover-Dempsey and Sandler proposed a theoretical model of the parental involvement process. Taking a psychological perspective, the model explained why parents become involved in their children's education and how their involvement makes a difference in student outcomes. In this article we describe our efforts to operationalize Hoover-Dempsey and Sandler's explanation and how, in turn, those efforts led to revisions in their theoretical model. Because investigations of the full model are ongoing, in this article we discuss only revisions in the original model's first 2 levels, which focus on psychological and contextual contributors to forms of parent involvement. We conclude with a discussion of how our work exemplifies the reciprocal relation between theory and measurement and suggest how other researchers might use our scales to assess links between parents' psychological motivations for involvement and their involvement behavior.

Parental involvement in children's education has long been associated with a range of enhanced student outcomes including academic achievement and motivation for schoolwork (e.g., Clark, 1983; Comer & Haynes, 1991; Grolnick & Slowiaczek, 1994; Henderson & Mapp, 2002; Steinberg, Lamborn, Dornbush, & Darling, 1992). Much of this work, however, fails to explain why parents get involved and how their involvement improves student outcomes. Focusing on the need to more fully understand families' contributions to student outcomes, Hoover-Dempsey and Sandler (1995, 1997) proposed a theoretical model of the parental involvement process (see Fig. 1).

Grounded in review of educational, developmental, and social psychology research, this model presented current "best

Level 5

Student outcomes, including:	
Skills and knowledge	Self-efficacy for school success

Level 4

Tempering/mediating variables	
Parent's use of developmentally appropriate strategies	Fit between parent's involvement actions & school expectations

Level 3

Mechanisms of parental involvement's influence on child's school outcomes		
Modeling	Reinforcement	Instruction

Level 2

Parents' choice of involvement forms, influenced by:		
Parent's skills & knowledge	Other demands on parent's time and energy	Specific invitations from the child and school

Level 1

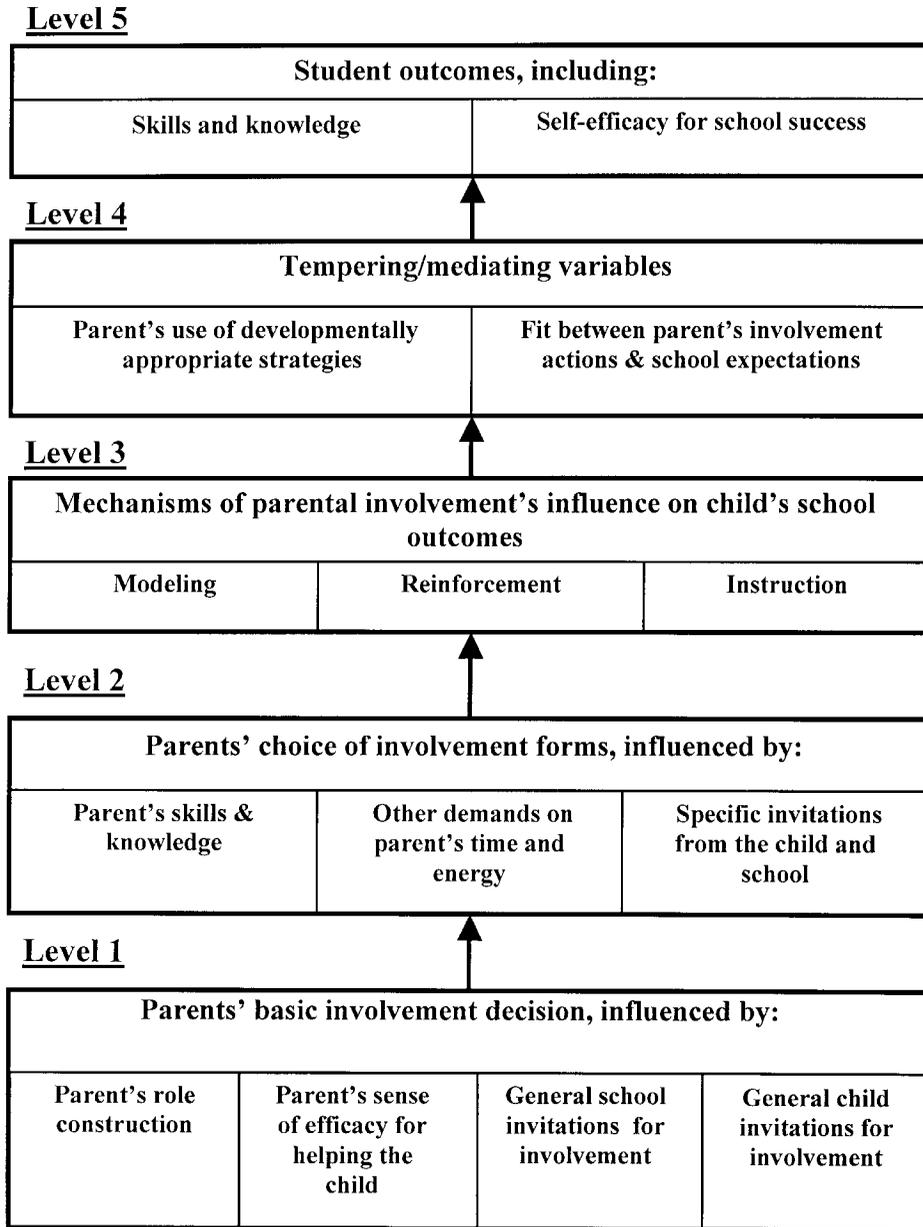| Parents' basic involvement decision, influenced by:			
Parent's role construction	Parent's sense of efficacy for helping the child	General school invitations for involvement	General child invitations for involvement

FIG. 1.—Hoover-Dempsey and Sandler's (1995, 1997) original theoretical model of the parental involvement process.

guesses" for why parents get involved, what forms their involvement takes, and how their involvement influences students. Although the model supported the ultimate goal of enhancing parental involvement, it was intended more to explain the process of involvement and its influence than to pre-scribe educational or parental practice. Thus, although recognizing that sociological factors influence family-school interactions (e.g., Lareau & Horvat, 1999), the model provided a strictly psychological perspective on parents who *are* involved in children's schooling.

Constructed in five sequential levels, the model's first level identified four psychological contributors to parents' decisions to become involved. These included (1) parental role construction, or parents' beliefs about what they should do in the context of their child's education; (2) parental self-efficacy for helping the child succeed in school, or how much parents believed they could improve children's school outcomes; (3) parents' perceptions of general invitations for involvement from the school; and (4) perceptions of general invitations for involvement from the child. The second level of the model assumed that once a decision to become involved had been made, contextual factors (e.g., time and energy, perceptions of specific invitations for involvement from the child and the child's teacher) influenced parents' choice of involvement forms.

Level 3 of the model identified mechanisms of parental involvement's influence (i.e., modeling, reinforcement, and instruction) or the specific means by which parents affect children's school outcomes. Level 4 hypothesized that these mechanisms are influential to the extent that there is a "goodness of fit" between the parents' actions and (1) the child's developmental needs and (2) the school's expectations for involvement. The model culminated in a fifth level, student outcomes (i.e., skills and knowledge, self-efficacy for school success). Constructed in this way, the model was a theoretical "map" that connected existing bodies of knowledge and created avenues for constructing new knowledge.

In this article we describe our explorations of Hoover-Dempsey and Sandler's map. Because our examinations of the full model are ongoing, we limit our discussion here to revisions in the original model's first two levels. Our primary purpose is to introduce our revised representation of psychological factors underlying parents' involvement behaviors (see Fig. 2) and describe the conceptual and methodological processes underlying their development. Although we report findings from our empirical tests of the model's hypotheses, we focus largely on the reciprocal relationship between theory and measurement.

Comparison of the Original and Revised Models

Comparison of the first and second levels of the original and revised models yields several notable differences. First, ideas originally arrayed across levels 1 and 2 are now subsumed under three overarching constructs at level 1. Specifically, parental role construction and self-efficacy now comprise one overarching idea: parents' motivational beliefs. Similarly, we have organized parents' perceptions of general invitations for involvement from the school (originally at level 1) and perceptions of specific invitations for involvement from the child and from the child's teacher (originally at level 2) under a second broad construct: parents' perceptions of invitations for involvement from others. The third overarching idea, parents' perceived life context, subsumes two constructs formerly at level 2, parents' perceptions of their available time and energy, and specific skills and knowledge for involvement. These three overarching constructs represent the psychological underpinnings of parents' involvement behavior.

A second difference between the models is that the revised model is a more dynamic representation, with links expressing hypothesized relations within and between levels. For instance, consistent with the sequencing of levels in the original model, we hypothesize that parents' perceived life context moderates the influence of other level 1 constructs. That is, we believe that any distance between what parents think they can and should do and what they actually do is influenced by their perceptions of available resources. Thus, Figure 2 is a theoretical model that also serves as an analytical framework.

A third notable difference between the models pertains to our construal of the dependent measures. Originally, each level had its own dependent measure: psycho-
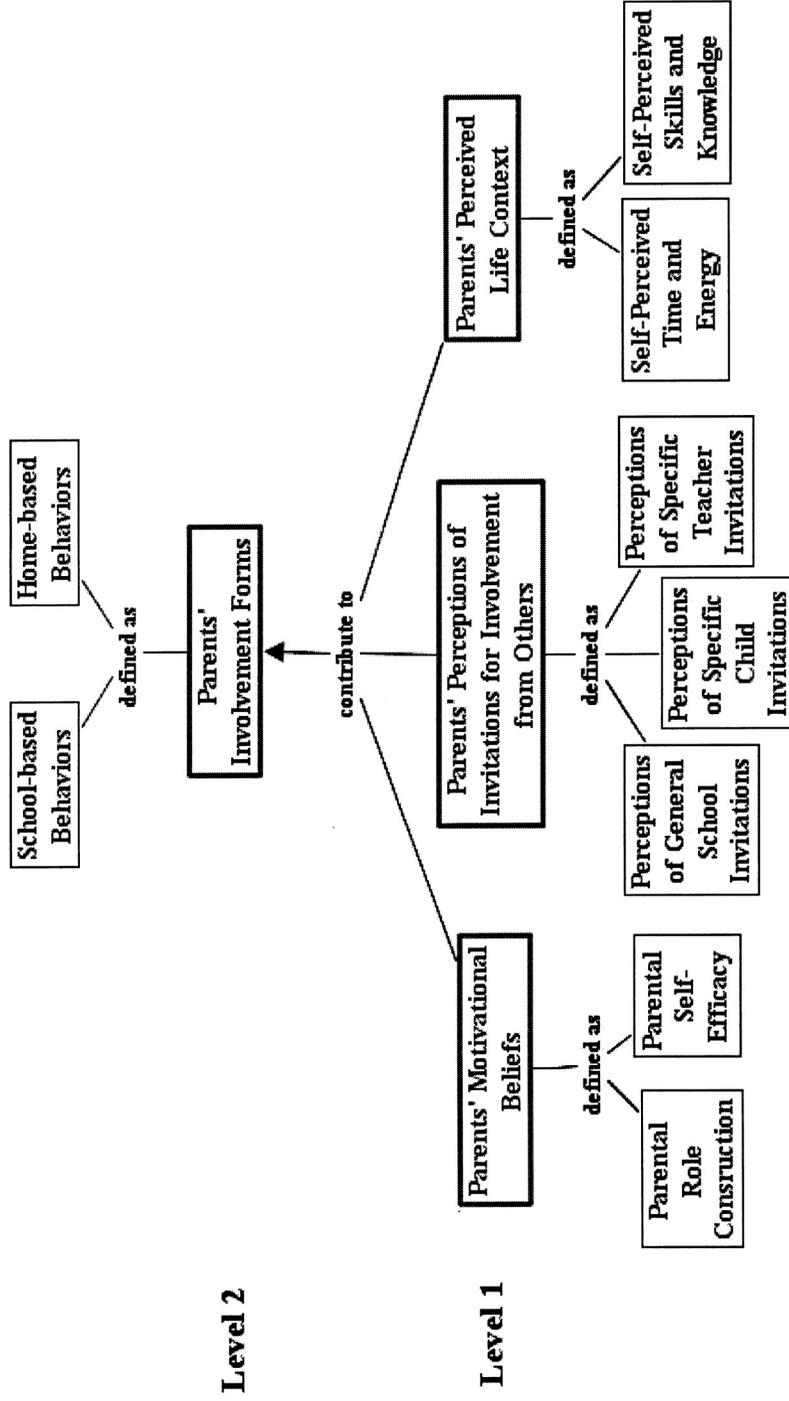
Level 2

School-based Behaviors   Home-based Behaviors

defined as

Parents' Involvement Forms

contribute to

Level 1

Parents' Motivational Beliefs

defined as

Parental Role Consruction   Parental Self-Efficacy

Parents' Perceptions of Invitations for Involvement from Others

defined as

Perceptions of General School Invitations   Perceptions of Specific Child Invitations   Perceptions of Specific Teacher Invitations

Parents' Perceived Life Context

defined as

Self-Perceived Time and Energy   Self-Perceived Skills and Knowledge

FIG. 2.—Levels 1 and 2 of Hoover-Dempsey and Sandler's theoretical model of the parental involvement process

logical factors at level 1 predicted parents' basic involvement decisions; contextual factors at level 2 predicted parents' choice of involvement forms. Collapsing these predictor variables into a single level led us to eliminate the dependent measure at level 1 and directly link psychological factors to the dependent measure at level 2 of the original model, parents' choice of involvement forms. We have defined this construct as parents' home- and school-based behaviors.

Our discussion of the processes underlying these revisions is structured in five sections. The first three sections focus, respectively, on the broad psychological predictors at level 1 of the revised model (i.e., parents' motivational beliefs regarding their involvement, parents' perceptions of invitations for involvement from others, and parents' perceived life context). Within these sections we define each construct, describe how it was operationalized, and, where appropriate, explain how conceptual and methodological issues were integrated across empirical tests. We repeat this structure in the fourth section, which describes the revised model's second level, parents' involvement forms. Finally, we conclude with a discussion of how our work exemplifies the reciprocal relation between theory and measurement and suggest how others might use our scales to assess links between parents' psychological motivations for involvement and their involvement forms. When possible, the scales we describe were adapted from the extant literature; others were created as part of this project.

Participants were parents of children enrolled in a socioeconomically and ethnically diverse metropolitan public school system in the mid-south of the United States. Parents were recruited through questionnaire packets sent home with, and returned by, children from participating schools. Data were collected during two studies. Details about race, ethnicity, school size, and response rates are summarized in Table 1.

Parents' Motivational Beliefs Regarding Their Involvement

The original model hypothesized that parents' basic involvement decisions were primarily influenced by what they believe they should and can do in the context of their child's education. These beliefs were reflected by two constructs: parental role construction for involvement and parental self-efficacy for helping the child succeed in school. In our revised model these two ideas are organized under one conceptual umbrella: parents' motivational beliefs regarding their involvement. Table 2 summarizes the evolution of scales assessing these beliefs across our empirical work.

Parental Role Construction for Involvement in Children's Education

Defining the construct. Psychological and sociological literature suggests that individuals' understanding of their roles is essential to the productive functioning of the groups to which they belong (Babad, Birnbaum, & Beene, 1983; Biddle, 1979, 1986; Hoover-Dempsey & Sandler, 1997). Roles include beliefs about one's own and other group members' responsibilities, rights, and obligations; they also include social expectations and scripts that guide group members' behavior in various situations (Biddle, 1979, 1986; Bronfenbrenner, 1979; Forsyth, 1990).

Parental role construction for involvement in children's education may best be defined as parents' beliefs about what they should do in relation to the child's education. Role construction functions as a motivator of parental involvement because it helps parents imagine and anticipate how they might behave in relation to a host of activities relevant to the child's educational success. In turn, role construction influences student outcomes because it defines the range of activities that parents construe as important, necessary, and permissible for their own engagement in the child's schooling (Hoover-Dempsey & Sandler, 1997).

Operationalizing the construct. Building on existing theoretical work (e.g., Bid-

TABLE 1. Demographics on Participating Schools and Parents in Studies 1 and 2

Variable	Study 1	Study 2
Schools:		
Developmental level	4 elementary, 2 middle	3 elementary, 2 middle
Student enrollment range	284–494	217–452
Number questionnaires sent home	2,301	1,646
Complete data obtained (n)	889	495
Response rate (%)	33	30
Parents (%):		
Race:		
Caucasian	32	31
African American	36	17
Hispanic	10	25
Asian American	3	6
Other	6	8
Gender:		
Female	82	78
Education:		
Some high school	10	18
High school graduate	38	37
Some college	33	30
College graduate	11	9
Some graduate work/graduate degree	8	6
Income:		
Less than $10,000/year	22	23
$10,001–$30,000/year	34	41
$30,001–$50,000/year	26	22
+$50,000/year	18	14

dle, 1979), we began our investigations of parental role construction by interviewing a sample of 20 parents of public elementary school students. We asked parents about their beliefs, ideas, and behaviors regarding their involvement responsibilities and activities in children's education (Hoover-Dempsey & Jones, 1996). Content analyses suggested a coding scheme that was then applied to a new set of interviews with 74 parents of public elementary school students (Hoover-Dempsey & Jones, 1997). Coding of over 9,000 statements in the interview set suggested three major patterns of parental role construction (interrater agreement across categories = .83).

The first pattern, parent-focused role construction, reflected parental beliefs and behaviors that the parent is ultimately responsible for the child's education. A second pattern, school-focused role construction, reflected parental beliefs and behaviors that the school is ultimately re-sponsible for the child's education. Finally, partnership-focused role construction reflected beliefs and behaviors that parents and schools together are responsible for the child's education.

We used this qualitative work to create a questionnaire assessing these three parental role constructions. Pilot tested with a sample of 50 parents of elementary school-children, a 75-item scale yielded satisfactory reliabilities (parent-focused = .88, school-focused = .70, partnership-focused = .83). Use of a shorter version (14 items) with 250 parents of prekindergarten through middle school students also yielded acceptable reliabilities (parent-focused = .63, school-focused = .55, partnership-focused = .82; Reed, Hoover-Dempsey, & Flynn, 2001); however, concerns about reduced conceptual power in holding the scale to such a small number of items led us to lengthen the instrument again. Subsequently tested with 887 parents, a 23-item version yielded

Construct and Methodology	N	Child Grade	Result or Reliability Coefficient	Publication/Presentation
Parental role construction:				
Interview	20	K–5	Yielded 3 parental role constructions (parent-, partner-, and school-focused)	Hoover-Dempsey & Jones, 1996
Interview	75	K–6	Confirmed 3 parental roles; kappa = .83	Hoover-Dempsey & Jones, 1997
Questionnaire:				
25 items	50	K–4	Parent-focused = .80 Partnership-focused = .83 School-focused = .70	Reed et al., 2001
14 items	250	K–6	Parent-focused = .63 Partnership-focused = .82 School-focused = .55	Hoover-Dempsey et al., 2002
23 items	887	1–6	Passive = .67, Active = .65	Unpublished measure
16 items	50	K–6	Role activity beliefs (10 items) = .80;	Unpublished measure
			Valence toward school (6 items) = .85	Unpublished measure
Parental self-efficacy:				
12 items	390	K–4	.81	Hoover-Dempsey et al., 1992
11 items	887	K–6	.80	
7 items	495	1–6	.78	
Perception of invitations:				
General invitations:				
Child:				
7 items	64[a]	7, 9, 11	.75	Walker & Hoover-Dempsey, 2001
4 items	887	K–6	.37	
3 items	495	1–6	.61	
School:				
11 items	887	K–6	.88	Adapted from Griffith, 1996
6 items	495	1–6	.88	
Specific invitations:				
Child:				
6 items	495	1–6	.70	Unpublished measure
Teacher:				
6 items	495	1–6	.81	Unpublished measure
Perceived life context:				
Time and energy:				
6 items	495	1–6	.84	Unpublished measure
Skills and knowledge:				
9 items	495	1–6	.83	Unpublished measure
Parents' involvement forms:				
Hypothetical behaviors:				
13 items	885	K–6	.89	Unpublished measure
6 items	885	K–6	home-based = .84	
7 items	885	K–6	school-based = .84	
Self-reported behaviors:				
12 items	421	4–6	home-based = .91	Unpublished measure
10 items	421	4–6	school-based = .87	
5 items	421	4–6	home-based = .85	
5 items	421	4–6	school-based = .82	

[a]Administered to parents of children attending public middle and high schools in a rural county school system.

satisfactory results (parent-focused = .62, school-focused = .63, partnership-focused = .72).

Integrating conceptual and methodological issues. A small set of theoretical and methodological issues emerged in assessing this dynamic social construct in survey form. One concern centered on the categorical approach to role construction we had adopted following qualitative work. Of particular concern were consistently low reliabilities for school-focused role construction and the realization that the core of passivity in this role orientation is difficult to capture well with objective items. In other words, it is difficult to measure what parents do not do.

Responding to this concern and to ongoing conceptual discussions and cluster analyses, we subjected previously gathered survey data to principal-components factor analyses. Our objective was to confirm whether the items were best represented as the three patterns of role construction observed in the qualitative data or as a two-factor (i.e., active vs. passive) solution. Results suggested that parent- and partnership-focused survey items loaded on one factor that we construed as active role beliefs, and school-focused items loaded onto a second factor that we construed as passive role beliefs (factor 1, eigenvalue = 2.38, 21.64% of the cumulative factor; factor 2, eigenvalue = 2.07, 18.8% of the cumulative factor). Reliability analyses of items organized into these two factors yielded acceptable results (α = .67 for the active factor and α = .65 for the passive factor). However, because assigning conceptual meaning to a "passivity score" continued to be difficult, we adopted a 10-item role activity beliefs scale. This decision reflected the idea that, rather than assessing activity and passivity with separate scales, one continuous active role beliefs scale could assess the beliefs component of role construction (i.e., high scores would indicate more active role beliefs, low scores more passive beliefs).

Another concern emerged as we moved from focusing on role as a free-standing construct to role as one component of the full theoretical model. Although role theory clearly identified roles as composed of beliefs and behaviors, we found ourselves on uncertain ground as we confronted the reality that it is neither logical nor reasonable to use characteristic role behaviors (even when integrated with role beliefs) to predict parents' involvement behaviors. In response to these concerns, we began looking for an alternative, conceptually sound approach to operationalizing and assessing a second nonbehavioral component of role as a predictor of parental involvement behavior. Returning to an idea that had emerged earlier in parent interview data, we focused on parents' personal history with and affective responses to school. In combination with role activity beliefs, we expected this concept, valence toward school, to be a useful and theoretically reasonable definition of parental role construction for involvement.

Pilot tests of the new role activity beliefs and valence toward school scales with 50 parents of elementary schoolchildren yielded acceptable reliabilities (activity beliefs, α = .80; valence, α = .85). The scales were also uncorrelated (r = .08), suggesting the appropriateness of treating the two components of role construction as orthogonal dimensions. Construing role as the combination of activity beliefs and valence toward school also allows us to treat role construction as a categorical variable when such a characterization is useful for analytic or applied purposes. For instance, parents who score high in both activity beliefs and valence toward school represent one type of parent (e.g., partnership oriented), whereas those who score low in both dimensions represent another (e.g., passive). Scales for role activity beliefs and valence toward school are included in Appendix A.[1] These scales represent our current thinking and efforts to assess parental role construction for involvement.

Parental Self-Efficacy for Helping the Child Succeed in School

Defining the construct. Self-efficacy refers to beliefs in one's capability to act in ways that will produce desired outcomes and has been identified as a significant influence on people's goal selection, effort, persistence, and ultimate goal accomplishment (Bandura, 1986, 1997). Thus, self-efficacy theory offers one explanation of how ability beliefs shape personal behavior. Further, it underscores the value of viewing parental involvement in psychological terms: understanding parents' behavior requires understanding the beliefs that support and guide their actions.

Applied to parental involvement in children's education, self-efficacy theory suggests that parents' involvement is influenced, in part, by the outcomes they expect will follow their actions and their appraisal of their personal capabilities (Hoover-Dempsey, Bassler, & Brissie, 1992). For instance, parents who believe that their involvement will make a difference for the child are more likely (than parents who doubt that their involvement will make any difference) to take on varied involvement tasks. Further, positive self-efficacy also enables more active conceptualization of one's parental contributions to the child's learning (e.g., "The school *and* I have something to contribute to my child's success"). Finally, because self-efficacy for helping the child succeed influences parental goals and persistence, it is also likely to shape parents' beliefs about what they should do as well as their involvement choices in uncertain or discouraging situations.

Operationalizing the construct. Adapted from teacher self-efficacy scales (Ashton, Webb, & Doda, 1983; Dembo & Gibson, 1985), our original parental self-efficacy scale included 12 items. Administered to 390 parents of public elementary school students, the scale's alpha reliability was .81 (Hoover-Dempsey et al., 1992). Subsequently, we reviewed the scale and modified it by dropping one item because it included multiple contingencies ("Most of a student's success in school depends on the classroom teacher, so I have only limited influence" [reverse scored]). We also changed the response format from a five-point to a six-point Likert-type scale to eliminate a middle neutral point on the response scale. Used with over 800 parents of public elementary and middle school students, the modified 11-item scale achieved an alpha reliability of .80.

Integrating conceptual and methodological issues. Because our full parent questionnaire assessed multiple constructs in the model, we wanted to keep the length of each scale as short as possible. To further shorten the 11-item self-efficacy scale, we looked for items with the lowest interitem correlations that, when removed, resulted in the least drop in alpha reliability. This analysis yielded four potential items for elimination. The phrasings of three items in the scale were similar to other items, and these three were subsequently eliminated. A fourth item was dropped because it contained multiple contingencies (i.e., "If I try hard, I can get through to my child, even when s/he has difficulty understanding something"). Administered to 495 parents, our final seven-item scale had an alpha reliability of .78 (see App. B).

Parents' Perceptions of Invitations for Involvement from Others

Other major predictors of parents' decisions to become involved and their involvement forms are their perceptions of invitations for involvement from others (or perceptions that their involvement is sought, welcomed, and valued by the child, the child's teacher, and the child's school). In the original model, invitations were hypothesized to take two forms, general and specific. Reflecting this conceptual distinction, invitations variables were arrayed across levels 1 and 2 (i.e., general invitations from the school and child were placed on level 1; specific invitations from teachers were placed on level 2). The revised model now subsumes all invitations

variables under a single construct at level 1. Table 1 summarizes the evolution of scales assessing various forms of this construct across our empirical work.

Perceptions of General Invitations for Involvement from the School

Defining the construct. Several researchers have suggested that parents' perceptions of general invitations for involvement from the school, in turn, influence parents' decisions to become involved (e.g., Eccles & Harold, 1993; Epstein, 1986). General school invitations include broad school attributes or activities that convey to the parent that his or her involvement is welcome and useful in supporting student learning and success (Hoover-Dempsey & Sandler, 1997). An overtly welcoming school climate and clear, manageable suggestions for parents' home-based support of the child's learning are examples of general school invitations.

Operationalizing the construct. Our scale assessing parents' perceptions of general invitations for involvement from the school was adapted from Griffith's (1996) measure of parent satisfaction with schools. This measure includes several subscales, each with alpha reliabilities above .73. From these, we selected three subscales that encompassed general invitations for involvement from the school: school climate (five items, e.g., "I feel welcome at this school"); school empowerment of parents (three items, e.g., "Parent activities are scheduled at this school so that I can attend"); and school-parent communication (three items, e.g., "Teachers at this school are interested and cooperative when they discuss my child"). We used this 11-item composite scale with a sample of over 800 parents of elementary and middle school children; the scale achieved an alpha reliability of .88.

Integrating conceptual and methodological issues. Because the alpha was sufficiently high, it was deemed appropriate to trim the scale to make it more amenable to inclusion in larger studies. We examined alpha coefficients and the interitem correla-

tions when various items were deleted; we also examined the face validity of the items to ensure that we retained those most related to general school invitations. The end product of these analyses was a six-item scale (two items from each of the three subscales). Administered to 495 parents, the reduced scale had an alpha reliability that remained at .88 (see App. C). This scale represents our current measure of parents' perceptions of general invitations for involvement from the school.

Perceptions of General Invitations for Involvement from the Child

Defining the construct. Parents often respond to their children's implicit and explicit needs, as well as their general characteristics (Scarr & McCartney, 1983). Within the context of children's schooling, general invitations for parental involvement from the child may come in the form of child attributes (e.g., age) and characteristic child behaviors (e.g., difficulty and success with schoolwork, valuing of parental help; Dauber & Epstein, 1993; Eccles & Harold, 1993; Hoover-Dempsey, Bassler, & Burow, 1995). Thus, general child invitations are likely to contribute to parents' decisions to be involved because they convey to the parent a need for his or her active involvement (Grolnick, Benjet, Kurowski, & Apostoleris, 1997; Grolnick & Slowiaczek, 1994) and an affective response to involvement (Eccles & Harold, 1993; Hoover-Dempsey & Sandler, 1997). In short, general invitations to involvement from the child are influential because they express the child's need for and willingness to accept parental help.

Operationalizing the construct. Our measure of parents' perceptions of general invitations to involvement from the child was derived from a seven-item questionnaire assessing adolescent and parent perceptions of the parent's involvement in homework (reliability = .75; Walker & Hoover-Dempsey, 2001). From this scale, we selected four items. Two items assessed the parent's perception of affective invita-

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tions (e.g., "I get involved in my child's education because s/he appreciates it when I get involved"). A third item related to the cognitive demands of homework ("I get involved in my child's education because s/he has a hard time with schoolwork"). A fourth item related to the child's general academic success ("I get involved in my child's education because I want him/her to do well in school"). Administered to over 800 parents, this four-item scale had an alpha reliability of .37.

Integrating conceptual and methodological issues. We responded to this low reliability coefficient by removing the cognitive demands item from the scale. This increased the alpha to .60. Administered subsequently to 495 parents, the three-item scale showed an alpha of .61. Although this reliability coefficient is relatively low, it is acceptable according to Nunnally (1978), who states that for scales with only a few items, low alpha reliabilities are acceptable if the average item-total correlation is greater than or equal to .25. The average item-total correlation for this scale was .34.

Issues of internal consistency aside, examination of this construct's predictive power raised concerns about its validity. Specifically, hierarchical regressions predicting parents' involvement behavior revealed that—when entered as a second block of predictors—parents' perceptions of general invitations (i.e., invitations from the child and from the child's school) explained less than 1% of the variance in parents' involvement behavior. By contrast, parents' perceptions of specific invitations for involvement (entered in a third block and discussed in the section that immediately follows) accounted for 27% of the variance.

Substantial discussion of these findings and reference to earlier comprehensive parent interview data led us to conclude that the power of general child invitations as a contributor to parents' involvement is subsumed under parental role construction. That is, parents' perceptions of children's general invitations are one type of social in-

formation parents use to construct their ideas about an appropriate parental role. Given its relatively weak internal consistency and poor predictive power, we decided to remove parents' perceptions of general invitations for involvement from the child from the model.

Specific Invitations for Involvement
from the Child and the Child's Teacher

Defining the constructs. Although research has shown that children's general attributes and actions create a context for parent-child interactions (Grolnick et al., 1997; Maccoby, Snow, & Jacklin, 1980), few studies have examined specific invitations from the child as a contributor to parents' involvement behaviors. In one of the few studies to do so, Balli, Demo, and Wedman (1998) found that parents became involved in home-based activities (i.e., homework) when children asked their parents for help. Specific invitations from children are important contributors to parent involvement because they encourage the parent to become involved and shape parents' choice of involvement forms (Hoover-Dempsey & Sandler, 1995).

Other work highlights the power of specific teacher invitations as a motivator of parental involvement (Epstein, 1986, 1991; Epstein & Van Voorhis, 2001; Hoover-Dempsey et al., 1995). Examples of such invitations include encouraging parents to visit the classroom and to contact the teacher regularly, making the classroom a place where parents feel welcome, and assigning homework that specifically involves parents (Balli et al., 1998; Epstein & Dauber, 1991; Shumow & Miller, 2001). These invitations seem to have especially strong effects when other factors, such as parents' time and energy, are optimal (Grolnick et al., 1997).

Operationalizing the constructs. Each scale for specific invitations for involvement from the child and from the teacher includes six parallel items focused on common home- and school-based involvement activities. Derived from conceptual discussion in our lab and from the relevant literature (e.g., Epstein

& Salinas, 1993), the six items are supervising homework, actively helping with homework, attending school events, helping out at the child's school, communicating with the child about the school day, and communicating with the child's teacher. Sample items include "My child asked me to help out at the school"; "My child's teacher asked me to help out at the school." Administered to 495 parents, the scale measuring parents' perceptions of specific invitations from the child achieved an alpha of .70; the scale assessing parents' perceptions of specific invitations from the teacher achieved an alpha of .81. We made no further revisions to these scales, which are included, respectively, in Appendixes D and E.

Parents' Perceived Life Context

The original model hypothesized that, in addition to parents' perceptions of specific invitations from children and teachers, parents' choice of involvement forms is influenced by parents' perceptions of their available time and energy and their knowledge and skills for involvement. The revised model organizes these perceptions under one construct: parents' perceived life context. Further, we hypothesize that parents' perceived life context moderates the relation between other broad level 1 constructs (i.e., motivational beliefs, perceptions of invitations for involvement from others) and parents' forms of involvement.

Defining the Constructs

Parents report that time and energy variables (e.g., inflexible work schedules) are often barriers to their involvement (Gettinger & Waters, 1998). Other research, however, has suggested that employment status is not significantly related to involvement (Smock & McCormick, 1995). Mixed evidence about the role of time and energy in parents' involvement may be a function of the populations surveyed. For instance, families that experience barriers to involvement may have variable levels of resources for overcoming them. Supporting this pos-

sibility is the finding that family involvement is significantly related to having two parents in the household (Balli et al., 1998).

Parents' skills and knowledge also affect the level and type of involvement in their child's education (Lareau, 1989; Leitch & Tangri, 1988). Lareau (1989) argued that parents with little education not only feel less able than their more educated counterparts to assist their children with homework, they also feel less able to communicate with teachers and more like they do not belong at the school. Further, she argued that teachers' requests for parental involvement often presume educational competence such as reading and math skills and the ability to understand teacher requests. These beliefs may reinforce some parents' feelings that they do not "have what it takes" to help their child succeed in school.

Other researchers have challenged this idea by showing differences in the nature and quality of the involvement of parents with similarly low levels of education (Clark, 1983; Scott-Jones, 1987). Further, there is evidence that parents can be involved productively regardless of educational background when teachers actively help them become involved (Dauber & Epstein, 1993). Taken as a whole, mixed findings about the role of status variables such as hours worked per week and parental level of education suggest the wisdom of assessing these factors subjectively as well as objectively.

Operationalizing the Constructs

We operationalized parents' perceived life context as the parents' self-reported time and energy, as well as skills and knowledge for engaging in the same six common involvement activities included in the specific child and teacher invitations scales. Six items were developed to assess the parents' time and energy for involvement (e.g., "I have enough time and energy to help my child with homework"). Nine items were developed to assess skills and knowledge for involvement; three items re-

lated to parents' knowledge of events (e.g., "I know about special events at my child's school"); and six items related to parents' knowledge or skills for engaging in specific activities or events (e.g., "I have the skills for helping out at my child's school"). Tested with 495 parents, the time and energy scale achieved an alpha reliability of .84; the skills and knowledge scale achieved an alpha of .83. These scales are in Appendix G. Having described all of the predictor variables, we now discuss the model's dependent measures.

Parents' Involvement Forms

The original model hypothesized that parents' beliefs and perceptions of general invitations motivated their basic involvement decisions, whereas parents' perceptions of specific invitations and contextual factors influenced their choice of involvement forms. Given this, our initial work focused on developing scales to assess these two outcome variables. As we revised the model, however, our thinking about and efforts to assess these outcomes changed. This section describes the development of our initial measure of the level 1 outcome variable, parents' decisions to become involved, and how conceptual and methodological issues led us to develop that scale into our existing measure of the revised model's second level, parents' involvement forms.

Defining the Constructs

Researchers have suggested that increasing the incidence and effectiveness of parental involvement requires understanding the psychological factors that influence whether or not the parent becomes involved (Grolnick et al., 1997; Hoover-Dempsey & Sandler, 1995, 1997). Such factors include what parents believe (about themselves, their children's developmental and educational needs, their children's schools, their roles in children's schooling) and what they think about their choices, options, and best courses of action given personal, family, child, and school circumstances.

Taking this focus, we defined the dependent measure of the original model's first level (i.e., parents' decisions to become involved) as their hypothetical behavior. We focused on parents' hypothetical rather than actual involvement behavior for two reasons. First, we were interested in what parents would choose to do when presented with an array of involvement possibilities. A second reason pertained to measurement: consistent with role theory, one of the predictors of parents' basic involvement decisions (i.e., parental role construction) already included assessment of involvement behaviors.

Operationalizing the Constructs

We developed the parents' basic involvement decisions scale based on work by Epstein and Salinas (1993). These researchers asked parents how often they engaged in 16 involvement activities, ranging from talking to the child about school to going to PTA/PTO meetings (reported alpha = .77). Using this information, we developed a 13-item scale asking parents to rate how likely they were to participate in a similar range of activities. Drawing from distinctions in the literature (e.g., Shumow & Miller, 2001), we included a variety of home-based (six items) and school-based (seven items) activities pertinent to the academic and social dimensions of children's schooling (e.g., helping with homework, attending a school program) on the scale. Used with a sample of 889 parents, the full 13-item scale achieved an alpha reliability of .89. Internal consistency for each subscale was robust (home-based, alpha = .84; school-based, alpha = .84). Principal components factor analyses confirmed the presence of home- and school-based distinctions.

Integrating Conceptual and Methodological Issues

Although the scale was fruitful in helping us understand parents' preferences and self-perceived capacities for various involvement activities, conceptual and methodological issues prompted us to rethink

our use of this scale. First, conceptual discussions had repeatedly led us to question how the construct "parents' decisions to become involved" is different from the construct "parental role construction" (i.e., parents' beliefs about what they should do in the context of their children's education). Second, as we looked ahead to assessing multiple levels of the model simultaneously, we were reminded of the need to assess parents' actual involvement behaviors. For instance, we would not be able to explain how parental involvement influenced children's school outcomes unless we assessed what parents actually did.

As noted in the discussion of parental role construction, we resolved these issues by breaking with sociological definitions of role. That is, we removed the behavioral component of role and replaced it with parents' valence toward (personal history with and feelings about) school. A measure of parental role construction that focused only on perceptions offered us a more differentiated assessment of that construct. Further, it left us free to assess parents' actual involvement behavior, which we operationalized as the dependent measure at level 2, parents' choice of involvement forms.

We developed our parents' involvement forms scale by modifying items in our scale assessing parents' decisions to become involved. Specifically, instead of asking parents to indicate how likely they were to participate in a range of home- and school-based activities, we asked them to indicate how frequently they had engaged in those activities during the school year. We also increased the number of items in each subscale. Used with 421 parents, a 12-item home-based and a 10-item school-based involvement scale achieved an alpha of .91 and .87, respectively (Walker, Dallaire, Green, Sandler, & Hoover-Dempsey, 2004).

Always mindful of the length of the full parent questionnaire, we inferred from these robust reliabilities that we could trim these subscales without damaging their internal consistency. We conducted a confirmatory factor analysis requesting a two-factor solution and then deleted items that loaded on both factors and appeared to measure similar activities. This work yielded a five-item home-based involvement scale (alpha = .85) and five-item school-based involvement scale (alpha = .82). These subscales represent our current measure of parents' involvement forms (see App. G).

Summary: How the Constructs Work in Concert

A detailed recounting of our empirical findings is beyond the scope of this article; however, to demonstrate the predictive validity of our measures, we briefly report findings from hierarchical regression analyses. We entered parents' motivational beliefs (i.e., role and efficacy) in a first block followed by perceptions of invitations from others in a second block and perceived life context in a third block. Within each block, the ordering of the constructs was not constrained.

Collectively, the level 1 constructs explained 33% of the variance in parents' home-based involvement and 19% of the variance in parents' school-based involvement. With regard to their individual predictive power, perceptions of specific invitations from the child was the strongest predictor of parents' home-based involvement (accounting for 21% of the total variance), whereas parents' motivational beliefs was the biggest predictor of school-based involvement (accounting for 12% of the total variance).

To test whether parents' perceived life context moderates the influence of motivational beliefs and perceptions of invitations, we used mean-splits to create groups of parents with higher and lower levels of time and energy (lower group, $M = 3.69$, $SD = .68$; higher group, $M = 5.03$, $SD = .38$, range = 1–6) and skills and knowledge for involvement (lower group, $M = 4.02$, $SD = .65$; higher group, $M = 5.24$, $SD = .36$, range = 1–6). Although the restricted range on these scores suggests that this sample of

parents reported moderately high levels of time, energy, skills, and knowledge for involvement, such a sample is consistent with the theoretical model's focus on involved rather than uninvolved parents. Hierarchical regression analyses suggested different relations among the variables for the two groups. For example, perceived life context was a strong predictor of home-based involvement for parents who reported lower time and energy and skills and knowledge and a strong predictor of school-based involvement for parents who reported higher levels of time and energy and skills and knowledge.

Discussion

This article describes the evolution of scales designed to operationalize a theoretical model of the parental involvement process. Although our work may be of particular interest to researchers in the field of parental involvement, it is also relevant to broader research issues. We structure our discussion of these general and specific issues in two parts. Using the simile of theories as maps, we first describe how our work exemplifies the reciprocal relation between theory and measurement. We illustrate this reciprocity by discussing the development of one construct, parental role construction. Second, we suggest how our scales might be used to assess links between parents' psychological motivations for involvement and their involvement behavior. Within each of these sections we discuss "lessons learned" from our journeys between theory and measurement.

The Reciprocal Relation between Theory and Measurement

Theories are like maps. They are approximations of reality; however, when continually updated with new information, they can be valid and reliable representations. By connecting existing bodies of theoretical and empirical work, Hoover-Dempsey and Sandler constructed a representation of the parental involvement process. Discrepancies and ambiguities in the original map were only revealed after numerous empirical explorations. But without the first map, we would have had nothing to test and nothing to amend.

An important lesson learned from our journey between theory and measurement is the importance of carefully defining theoretical constructs. For instance, the model suggested that parents' beliefs about their responsibilities for children's schooling were important factors underlying their involvement behavior. Although this premise is certainly logical, creating objective items that reliably tapped those beliefs across large numbers of parents was a challenging task. We began meeting this challenge by listening to the words of parents. That is, we crafted survey items by extracting statements from interviews in which parents talked about their beliefs and responsibilities regarding their children's education. We chose statements on the basis of their ability to discriminate various patterns of beliefs that had emerged during these conversations. For example, seeking to understand parents' beliefs about how actively they should be involved (i.e., role activity beliefs), we asked parents how strongly they agreed or disagreed with the statement, "It's my job to stay on top of things at school."

Although theories drive measurement, their broad contours may clash with specific tenets of research. Thus, another lesson learned is that measurement can drive theory revision. This lesson is exemplified in our need to reconcile sociological definitions of role construction (i.e., roles are comprised of both beliefs and behaviors) with statistical assumptions of independence (i.e., we could not measure behavior as part of parental role construction and as our dependent variable of interest). Fortunately, we were able to meet the need for methodological precision with a theoretically grounded solution, that is, we decided to assess parental role construction as a beliefs-only construct. This decision eliminated the theoretically posed confound of

measuring parents' involvement behavior as part of a predictor variable and as an outcome. It also allowed us to create a more differentiated measure of the beliefs component of role, which we accomplished by including questions about parents' personal history with and feelings about school (i.e., valence toward school).

Tension between theoretical definitions of role construction and issues of measurement touches on a final lesson learned: constructs do not operate in isolation. Like reading a map, successfully navigating one's way through a theory requires understanding one's point of origin and orientation to other landmarks. Efforts to measure one construct may necessitate changing definitions and assessing others.

Implications for Research on Belief-Behavior Links

A map represents encoded information. The reader extracts the relevant meaning of these codes and then uses them for problem-solving and decision making (Cuff & Mattson, 1982). In this vein, our original and revised representations of the parental involvement process offer frameworks for examining the relation between parents' subjective involvement experiences and their actual involvement in children's schooling. To understand how parents' beliefs relate to their involvement behaviors, much further work is needed. We hope that researchers will use the scales we present here across a range of cultures and ethnicities, making adjustments to theory and scales as warranted. At present, we and others are investigating how the model and its constructs work among ethnic and cultural groups with a focus on differences among Hispanic, African-American, and Caucasian families (Chrispeels & Rivero, 2000; Closson, Wilkins, Sandler, & Hoover-Dempsey, 2004). We also encourage others to test the explanatory power of the model's constructs across the transition from elementary to secondary school (e.g., Sheldon, 2002).

Finally, it is important to recognize limi-

tations in our measures. First, several important parental beliefs are not included in our model, such as parents' perceptions of the value of school and their expectancies for children's school success. We encourage otehrs to use our scales in concert with measures that tap those beliefs. Second, the range of parents' responses is constrained. For instance, our scales assessing parents' perceptions of specific invitations from others tap the frequency, not the quality, of those interactions. Without understanding the content of parent-teacher and parent-child interactions, frequency provides limited information. For this reason, we hope that researchers will use our questionnaires in tandem with parent interviews and observations of parent-child and parent-teacher interactions. Such triangulation is likely to offer a more complete picture of belief-behavior links than use of quantitative surveys alone.

Appendix A

Parental Role Construction for Involvement in the Child's Education

Part 1: Role Activity Beliefs
Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about *the current school year* as you consider each statement.

Response format
1 = Disagree very strongly; 2 = Disagree; 3 = Disagree just a little; 4 = Agree just a little; 5 = Agree; 6 = Agree very strongly.

I believe it is my responsibility to . . .

1. volunteer at the school.
2. communicate with my child's teacher regularly.
3. help my child with homework.
4. make sure the school has what it needs.
5. support decisions made by the teacher.
6. stay on top of things at school.
7. explain tough assignments to my child.
8. talk with other parents from my child's school.
9. make the school better.
10. talk with my child about the school day.

Part 2: Valence toward School

People have different feelings about school. Please *mark the number* on each line below that best describes your feelings about *your school experiences when you were a student.*

Items

My school:	disliked	1	2	3	4	5	6	liked
My teachers:	were mean	1	2	3	4	5	6	were nice
My teachers:	ignored me	1	2	3	4	5	6	cared about me
My school experience:	bad	1	2	3	4	5	6	good
I felt like:	An outsider	1	2	3	4	5	6	I belonged
My overall experience:	failure	1	2	3	4	5	6	success

Appendix B

Parental Self-Efficacy for Helping the Child Succeed in School

Instructions to respondent

Please indicate how much you AGREE or DISAGREE with each of the following statements. Please think about *the current school year* as you consider each statement.

Response format

1 = Disagree very strongly; 2 = Disagree; 3 = Disagree just a little; 4 = Agree just a little; 5 = Agree; 6 = Agree very strongly.

Items

1. I know how to help my child do well in school.
2. I don't know if I'm getting through to my child. (reversed)
3. I don't know how to help my child make good grades in school. (reversed)
4. I feel successful about my efforts to help my child learn.
5. Other children have more influence on my child's grades than I do. (reversed)
6. I don't know how to help my child learn. (reversed)
7. I make a significant difference in my child's school performance.

Appendix C

Parents' Perceptions of General Invitations for Involvement from the School

Instructions to respondent

Please indicate how much you AGREE or DISAGREE with each of the following statements.

Please think about *the current school year* as you consider each statement.

Response format

1 = Disagree very strongly; 2 = Disagree; 3 = Disagree just a little; 4 = Agree just a little; 5 = Agree; 6 = Agree very strongly.

Items

1. Teachers at this school are interested and cooperative when they discuss my child.
2. I feel welcome at this school.
3. Parent activities are scheduled at this school so that I can attend.
4. This school lets me know about meetings and special school events.
5. This school's staff contacts me promptly about any problems involving my child.
6. The teachers at this school keep me informed about my child's progress in school.

Appendix D

Parents' Perceptions of Specific Invitations for Involvement from the Child

Instructions to respondent

Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.

Response format

1 = never; 2 = 1 or 2 times; 3 = 4 or 5 times; 4 = once a week; 5 = a few times a week; 6 = daily.

Items

1. My child asked me to help explain something about his or her homework.

2. My child asked me to supervise his or her homework.
3. My child talked with me about the school day.
4. My child asked me to attend a special event at school.
5. My child asked me to help out at the school.
6. My child asked me to talk with his or her teacher.

Appendix E

Parents' Perceptions of Specific Invitations for Involvement from the Teacher

Instructions to respondent
Please indicate HOW OFTEN the following have happened SINCE THE BEGINNING OF THIS SCHOOL YEAR.

Response format
1 = never; 2 = 1 or 2 times; 3 = 4 or 5 times; 4 = once a week; 5 = a few times a week; 6 = daily.

Items

1. My child's teacher asked me or expected me to help my child with homework.
2. My child's teacher asked me or expected me to supervise my child's homework.
3. My child's teacher asked me to talk with my child about the school day.
4. My child's teacher asked me to attend a special event at school.
5. My child's teacher asked me to help out at the school.
6. My child's teacher contacted me (for example, sent a note, phoned, e-mailed).

Appendix F

Parents' Perceived Life Context

Instructions to respondent
Please indicate how much you AGREE or DISAGREE with each of the following statements with regard to *the current school year.*

Response format
1 = Disagree very strongly; 2 = Disagree; 3 = Disagree just a little; 4 = Agree just a little; 5 = Agree; 6 = Agree very strongly.

Time and Energy

I have enough time and energy to . . .

1. communicate effectively with my child about the school day.
2. help out at my child's school.
3. communicate effectively with my child's teacher.
4. attend special events at school.
5. help my child with homework.
6. supervise my child's homework.

Knowledge and Skills

1. I know about volunteering opportunities at my child's school.
2. I know about special events at my child's school.
3. I know effective ways to contact my child's teacher.
4. I know how to communicate effectively with my child about the school day.
5. I know how to explain things to my child about his or her homework.
6. I know enough about the subjects of my child's homework to help him or her.
7. I know how to communicate effectively with my child's teacher.
8. I know how to supervise my child's homework.
9. I have the skills to help out at my child's school.

Appendix G

Parents' Involvement in Home-Based and School-Based Activities

Instructions to respondent: Families do many different things when they are involved in their children's education. We would like to know how true the following things are *for your family.* Please think about the *current school year.*

Response format
1 = never; 2 = 1–2 times this year; 3 = 4–5 times this year; 4 = once a week; 5 = a few times a week; 6 = daily.

Home-Based Involvement

Someone in this family . . .

1. talks with this child about the school day.
2. supervises this child's homework.
3. helps this child study for tests.

4. practices spelling, math, or other skills with this child.
5. reads with this child.

School-Based Involvement

1. helps out at this child's school.
2. attends special events at school.
3. volunteers to go on class field trips.
4. attends PTA meetings.
5. goes to the school's open house.

Note

1. The appendixes represent the scales in their most current form. However, as the full model is tested, the scales may evolve. For the most current form, please contact the authors.

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