

Links between Family Social Status and Preschoolers' Persistence: The Role of Maternal Values and Quality of Parenting

Irina L. Mokrova*, Marion O'Brien, Susan D. Calkins,
Esther M. Leerkes and Stuart Marcovitch

The University of North Carolina at Greensboro, Greensboro, NC, USA

Children who develop persistence in the preschool years are likely to function more effectively during the transition into school. In this study of 231 3-year-old children and their mothers, we examined the relations among family social status, maternal values of self-direction, quality of parenting, and children's persistence in challenging tasks. Results of structural equation modelling path analysis indicated that family social status was related to maternal values of self-direction, which in turn were associated with the quality of maternal cognitive stimulation and emotional support and child persistence at preschool age. Family social status and maternal values were indirectly related to child persistence through emotional support. Focusing on parental values of self-direction and provision of support during challenging tasks may help to reduce the gap in school success between children from lower and higher social status families. Copyright © 2012 John Wiley & Sons, Ltd.

Key words: parenting; family social status; maternal values; child motivation; preschoolers

School readiness has been a concern of US educators and parents for many decades, and that concern is equally acute today (Holmes, 1927; US Department of Education, 2010). The role of social status in the school preparation of young children has been extensively discussed in the literature to date. Research has indicated that at the time of school entry, children from families with higher social status fare better than their lower status counterparts in the acquisition of academic skills, such as language proficiency, reading, math, and general cognitive abilities (Aikens

*Correspondence to: Irina L. Mokrova, Department of Human Development and Family Studies, The University of North Carolina at Greensboro, 248 Stone, PO Box 26170, Greensboro, NC, 27402-6170, USA. E-mail: ilmokrov@uncg.edu

& Barbarin, 2008; Phillips, Brooks-Gunn, Duncan, Klebanov, & Crane, 1998; Raviv, Kissenich, & Morrison, 2004). The reasons for this gap have not been clearly established.

A number of individual and family factors can predict young children's academic accomplishments. Children's motivation for learning has been identified as one of these predictors (Pintrich & Schunk, 2002). The US Department of Education (2005) includes children's ability to actively explore their environment and approach tasks with enthusiasm in its definition of children who are ready to learn. Furthermore, motivation has been associated with academic outcomes in middle childhood and adolescence (Eccles, Wigfield, & Schiefele, 1998; Gottfried, 1985), indicating that motivation to learn plays a critical role during the school years. Empirical evidence indicates that children differ in their levels of motivation and in their reactions to success and failure upon their entry to kindergarten (Dweck, 2000; Turner & Johnson, 2003). Yet, little research has systematically explored familial factors that predict preschool-age children's motivation when they are presented with challenging tasks.

Motivation is an internal process that is associated with children's task engagement and goal achievement. As such, motivational processes cannot be observed directly and have to be inferred from a range of behavioural manifestations of an individual's response to contextual events. Several component processes are considered to reflect an individual's level of motivation, including effort and persistence, use of cognitive strategies, self-regulated learning, coping, and engagement (for a review, see Elliot & Dweck, 2005). Of these component processes, children's persistence in difficult tasks appears to be particularly important in children's school readiness. Indeed, successful acquisition of knowledge and skills is possible only when children are able to persist in challenging activities (i.e., to sustain their engagement) long enough for learning to occur.

Children develop persistence during early childhood usually within their family context. According to Vygotsky's sociocultural theory, development of any higher psychological process is a socially mediated phenomenon (Vygotsky, 1935/1978). Children acquire ways of thinking and behaving specific to their culture through interactions with more knowledgeable members of their social group and through appropriating their culture's values, beliefs, and practices. Thus, in order to develop persistence, children need to be encouraged to work at difficult tasks without giving up quickly and to see important others, particularly parents, showing persistence in their day-to-day activities.

Parents are the most frequent social partners of young children, and they are undoubtedly culture bearers. Parents tend to structure interactions with their children in a way that supports their own values and the development of behaviours that they view as important for success in their cultural group. Moreover, parents themselves are subject to cultural influences; their culture's conceptions of the good life and how to live it contribute to the development of parental values and practices of child rearing and are evident in daily parent-child interactions (Shweder et al., 1998).

This study used a Vygotskian perspective to examine the question of whether children reflect their parents' values in their independent functioning (Vygotsky, 1935/1978). Consistent with sociocultural theory, variation in life circumstances that are typical for families of higher and lower social status can lead to differences in parenting values and practices and, in turn, to different child outcomes. Members of higher and lower social status families vary in terms of educational attainment and occupational responsibilities. According to Kohn (1979), these status differences translate into dissimilarities in life conditions in terms of standards of

living and demands of day-to-day working environments. As a result, people of higher and lower social status form different views of social reality and acquire different conceptions about what it takes to lead a good, successful life. Kohn suggested that people's conception of what is important, or their values, influences what they see as desirable characteristics for their children to have. Although parents of both higher and lower social status value characteristics such as personal integrity and happiness and place a great value on having a good education (Irwin & Elley, 2011), they usually differ in terms of values of self-direction. Kohn suggested that these differences arise from differences in parental occupations, which prescribe different roles and sets of skills that people need to perform their jobs. Successful execution of higher social status jobs usually requires a degree of self-direction and autonomy. Individuals who hold lower social status jobs are more likely to be successful when they can accurately follow the rules set by others. As a result, occupations of higher social status employees tend to promote self-direction and initiative, while occupations of lower social status employees tend to promote explicit adherence to authority. Thus, higher social status parents tend to value self-direction in their children, and lower social status parents tend to value conformity to externally imposed rules (Foucault & Schneider, 2009; Kohn, Slomczynski, & Schoenbach, 1986). In the present study, we measure family social status and maternal values of self-direction in their children and anticipate that mothers in lower social status families will be less likely to report values of self-direction than those in higher social status families.

Family social status has also been related to parenting behaviour. Parents of lower social status tend to request obedience to authority without negotiation, to use more directives and physical intrusions (Lareau, 2002; Weininger & Lareau, 2009), and to be less supportive of their children than parents of higher social status (e.g., DeGarmo, Forgatch, & Martinez, 1999). In contrast, parents of higher social status tend to use reasoning rather than directives as their discipline strategy (Lareau, 2002), to actively stimulate their children cognitively through promotion of decision making, negotiating skills, and fostering of curiosity (Weininger & Lareau, 2009), and to be more nurturing toward their children (Aunola, Vanhatalo, & Sethi, 2001). Some investigators have suggested that parental values serve as a proximal mechanism linking social status with parenting practices (Luster, Rhoades, & Haas 1989; Wright & Wright, 1976). Parents who value self-direction tend to be emotionally supportive of their children's endeavours, to provide positive feedback and information (Gerris, Dekovic, & Janssens, 1997), to allow and encourage exploratory behaviour (Luster et al., 1989), to be low in restriction (Aunola et al., 2001), and to have lower levels of conflict with their children (Park, Kim, Chaing, & Ju, 2010). As a result, children of higher status parents receive more cognitive stimulation and emotional support when compared with children of lower social status parents and demonstrate more initiative taking (Tudge et al., 1999) and higher levels of academic success (Wu & Qi, 2006). Furthermore, literature suggests that parental values mediate the link between family social status and parenting practices in a more complex manner than all-or-nothing support for children's self-direction. There are certainly occasions or developmental periods when higher social status parents value obedience in their children and lower social status parents allow autonomy to their children (Weininger & Lareau, 2009; Tudge et al., in press). We propose, however, that parents of higher social status and those parents who value self-direction more than their counterparts are more cognitively stimulating and emotionally supportive of their children's endeavours in independent or collaborative completion of challenging activities. To date, the links between family social status, maternal values of self-direction,

parenting practices, and preschoolers' motivational development have not been thoroughly examined. In this study, we explore maternal values of self-direction and parenting behaviours as potential mediators of the relation between family social status and child persistence.

In previous research, parenting quality has been shown to relate to the development of children's motivation (Grolnick & Slowiaczek, 1994; Pomerantz, Grolnick, & Price, 2005), with parental cognitive stimulation and emotional support among the aspects of particular importance. Age-appropriate cognitive stimulation, the degree to which parents provide their children with new information, engage them in cognitively challenging activities, and use higher-level cognitive reasoning, has been associated with the development of persistence, curiosity, and orientation toward mastery among school-age children (Gottfried, Fleming, & Gottfried, 1998; Gottfried, Gottfried, & Guerin, 2006; Grolnick & Slowiaczek, 1994). Research evidence also indicates positive associations between parental emotional support and motivational development in school-age children. Parental willingness to help and encourage children's activities, the affective quality of parent-child interactions, parental supportive awareness, and affirmation of children's attempts to accomplish a task have been positively linked to children's achievement motivation, sense of mastery, and academic success (Furrer & Skinner, 2003; Grolnick & Ryan, 1989; Salonen, Lepola, & Vauras, 2007).

Parental cognitive stimulation and emotional support provided to children are at times examined jointly as a global construct of parenting quality (e.g., Hubbs-Tait et al., 2006). There are theoretical and empirical grounds, however, to examine these parenting domains separately in their relations to young children's motivation. From a theoretical viewpoint, Grusec and Davidov (2010) argue that cognitively stimulating parenting behaviours, such as provision of information, strategies, and feedback to children, and emotionally supportive behaviours, such as responsiveness, encouragement, warmth, and lack of negativity, comprise separate domains of child socialization with different goals, mechanisms, and related child outcomes. Cognitively stimulating behaviours have a goal of passing information and knowledge from parents to children in order to help children develop their intellectual skills, adapt to their societies, and construct successful and productive lives. This goal requires that information be provided within the child's zone of proximal development and continuously adjusted to the child's current skill level. As such, the likely child outcomes in this domain involve the acquisition of knowledge and skills. Emotional support has a goal of establishing ties of unconditional mutuality and regard for each others' needs between parents and children. This goal involves accommodation of children's reasonable requests, respect for their opinions, and expression of positive affect between parents and children. The likely child outcomes in this domain involve children's affective development and self-regulation (Grusec & Davidov, 2010).

Motivation is a multifaceted psychological phenomenon that requires both the use of various skills and the presence of positive affect in order to accomplish any goal; thus, it is logical to assume that both maternal cognitive stimulation and emotional support will be related to preschooler persistence in challenging tasks. Cognitive stimulation and emotional support have been found to uniquely predict child motivation and related outcomes, such as academic skills. Two studies to date that examined both cognitive stimulation and emotional support as they relate to motivation in early childhood suggest that emotional support but not cognitive stimulation predict child task orientation in early childhood (Salonen et al., 2007; Young & Hauser-Cram, 2006). Studies that focused on academic outcomes indicated that cognitive stimulation and parental emotional

support tend to be positively and independently associated with young children's early academic skills (e.g., Bradley, Corwyn, Burchinal, McAdoo, & Garica-Coll, 2001; Hubbs-Tait, Culp, Culp, & Miller, 2002; Leerkes, Calkins, O'Brien, & Marcovitch, 2011), their level of attention (Barocas et al., 1991), and early school success (Mokrova, O'Brien, Calkins, Leerkes, & Marcovitch, 2011; Neitzel & Stright, 2003). Some studies have found, however, that only maternal emotional support, when entered simultaneously in the analysis with cognitive stimulation, was related to children's task performance and early academic skills (e.g., Diaz, Neal, & Vachio, 1991; Merlo, Bowman, & Barnett, 2007). Thus, in the present study, we examined the unique role of both cognitive stimulation and emotional support as mediators in the relations between family social status, maternal values, and child motivation.

The Present Study

The current report extends earlier findings by systemically examining the relations among family social status, maternal values, maternal cognitive stimulation and emotional support of their children during a challenging task, and children's motivation, operationalized as persistence, at preschool age. The model tested in the study is presented in Figure 1. The hypotheses of the study were as follows: (1) mothers of higher social status value children's self-direction more than do mothers of lower status; (2) family social status is positively related to cognitive stimulation and emotional support during a challenging activity, and these relations are mediated by maternal values of self-direction; and (3) family social status and maternal values are associated with children's persistence in challenging tasks through parenting practices of cognitive stimulation and emotional support.

METHOD

Participants

The participants were 231 3-year-old children ($M = 42.1$ month, $SD = 2.0$) and their mothers who were participating in a larger longitudinal study that focused on cognitive and socio-emotional development of young children. The dyads were recruited from child care centres and preschools in two counties of the southeastern

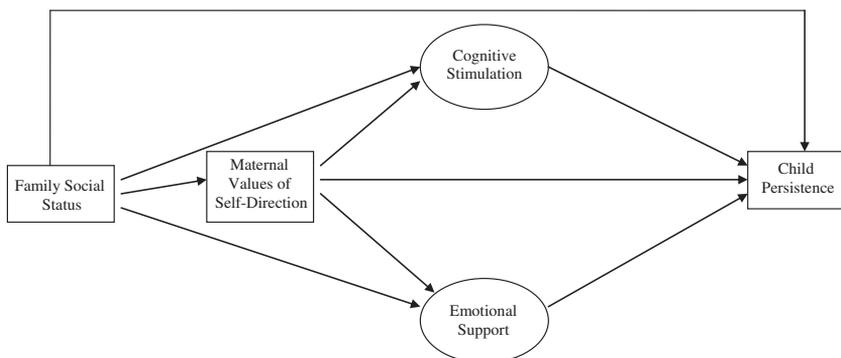


Figure 1. The hypothesized model of the relations among family social status, maternal values, and practices and child persistence.

USA. Child care centres and preschools were located through the state licensure registry that provides information about both private and publicly subsidized facilities. The resulting sample was of diverse ethnic and economic backgrounds and contained middle-class and working-class minority and middle-class and working-class majority families. The use of the census data verified that the sample reflected the composition of the local population.

About half of the children participating in this study were boys (48%). Mothers were 33 years of age on average ($SD = 5.91$). Approximately half (51%) had a 4-year college degree or higher; 74% of the respondents were married and living with their partner; and 79% were currently working outside the home. Average income-to-needs ratio, derived by dividing the total family income by the poverty threshold for that family size, was 2.89 ($SD = 1.73$); approximately 37% of the sample had an income-to-needs ratio of less than 2.0, indicating low income; 53% between 2 and 5; and 10% greater than 5. Sixty-one per cent of the mothers self-identified as European American and 39% as ethnic minority (31% as African American and 8% as of other ethnic backgrounds).

Procedures and Measures

Participating families were recruited through letters sent home with the children. Families interested in participating returned contact information to the researchers who then contacted the families to schedule laboratory visits. Mothers provided written consent before the start of the session. During the lab session, mothers completed a variety of questionnaires, including demographic information; mothers and children were videotaped while playing together, and children participated in a series of assessments. All tasks were videotaped. At the end of the visit, children selected prizes, and mothers received \$40 incentive payments.

Demographic information

Family demographic information, including child gender, maternal ethnicity, occupation, education, and family income, was obtained by maternal report. Families' social status was calculated using the Hollingshead Index of Social Status (Hollingshead, 1975), which takes into account parental occupation and education in single earning families and occupation and education of both parents in dual earning families. The Hollingshead Index ranks occupations depending on complexity of responsibilities and required level of skills, such as decision making, creativity, initiative, planning, employee supervision, and person-to-person interactions. As new occupations appear in the current labour market, they can be successfully included into the Hollingshead Index on the basis of the prescribed responsibilities and skills. The Index also ranks levels of educational attainment from 'some high school' to 'graduate degree'. A social status score is derived through a weighted formula in which occupational ranking accounts for almost twice as much as education. The possible range of scores is 8 to 66, with higher scores indicating higher levels of family social status. The use of the Hollingshead Index of Social Status was particularly appropriate for this study as it capitalizes on parental day-to-day job responsibilities and reflects Kohn's hypothesis about the role of parental occupation in shaping their values of self-direction. This measure is widely used in current developmental and medical literature (e.g., Daniel, Grant, Chawla, & Kothare, 2010; Hong, Nelesen, Krohn, Mills, & Dimsdale, 2006; Kobrosly et al., 2011).

Maternal values

Maternal values were assessed using a questionnaire form of the Parental Values Q-sort (Kohn & Schooler, 1973) adapted by our research team. The questionnaire consists of a list of 13 characteristics considered as desirable for all children including five self-direction values (e.g., 'Is responsible' or 'thinks for him/herself'), four conformity values (e.g., 'has good manners' or 'obeys his/her parents well'), and four social values (e.g., 'is honest'). Mothers were asked to choose three characteristics that they believed to be the most important and three that were the least important for them. They were also asked to indicate which one out of the top three had the utmost importance and which one characteristic out of the bottom three held the lowest importance for their child to have. The placement of the five self-direction values and the four conformity values determined the total value score. The most important characteristic received a score of 5; the other two values in the top three received a score of 4. The least important value received a score of 1, and the two next least important values received scores of 2. Those not selected received a score of 3. First, we calculated subscales by summing the scores of self-direction and conformity items separately. Prior research indicates that parental values of self-direction are highly and negatively correlated with their values of conformity (Kohn, 1979; Tudge et al., 1999), and this was true in our sample as well ($r = -0.65$, $p < 0.001$). Thus, we used a total self-direction values score calculated as the sum of the self-direction and reversed conformity subscales. The possible range of the total score was 19 to 35. Higher scores indicated higher levels of maternal endorsement of self-direction in their children and lower levels of endorsement of conformity. In prior work, maternal self-direction values measured through the Parental Values Q-Sort positively predicted maternal responsiveness and the amount of exploratory behaviour mothers permitted in their children (Luster et al., 1989) and the level of initiative taking among children (Tudge et al., 1999).

Maternal cognitive stimulation and emotional support

Mother-child interaction was observed during a problem-solving game created for this study. In the *treasure game*, the child moved a bear along a path on a game board from the start position to a treasure chest located on an island at the far end of the board. Steps along the path were marked by colours that matched a die the child rolled to determine where to move the bear. Before getting to the treasure chest, the bear had to be moved to two other locations, in a correct order (i.e., retrieve a key to unlock the boat, take the boat across the river). Mothers were instructed to help the child get to the treasure chest. The task ended when the child reached the treasure or after 7 min. The task was videotaped and later rated by trained coders.

The frequency and quality with which mothers engaged in cognitively stimulating and emotionally supportive behaviours during the task were rated on a 5-point scale (1 = low, 3 = moderate, 5 = high). The rating system was adapted from Neitzel and Stright (2003) and captures the following five dimensions: (1) *Metacognitive information* reflects the extent to which the mother provided a complete and understandable overview of the game, including explanations of how to complete the game and why those steps were needed as opposed to merely focusing on individual steps; (2) *Cognitive information* reflects the degree to which the mother provided the child with appropriate information about the task at hand, including information on how to roll the die, how to match the colour on the die to a colour on the game board, and reminders of individual steps in the task; descriptions of

how components of the task are used in real life; or any other information that provided an opportunity for the child to learn something or to gain understanding about the task; (3) *Emotional responsiveness* represents the extent to which the mother was sensitive, appeared to enjoy being with the child, praised or encouraged the child, anticipated and minimized potential problems, and was flexible and creative in keeping the child focused on the task; (4) *Intrusiveness* represents the extent to which the mother gave many directions with very little time in between for her child to make decisions or take independent action, or took over large portions of the game thereby undermining her child's autonomy; and (5) *Negativity* represents the extent to which the mother displayed negative verbal or nonverbal emotions, such as direct criticism, frowning, irritability, and impatience. Inter-rater reliability on these rating scales was calculated using intra-class correlation coefficients (ICC) (Winer, 1971) on the basis of 25% of the interactions which were double coded. ICCs ranged from $r = 0.79$ to 0.94 , all $p < 0.01$. In prior work, ratings of this type predicted children's kindergarten reasoning abilities and self-regulation in the classroom (Neitzel & Stright, 2003; Stright, Herr, & Neitzel, 2009).

A second index of cognitive support was obtained by coding the frequency with which mothers used *mental state language involving cognitive terms* using procedures outlined by Jenkins, Turrell, Kogushi, Lollis, and Ross (2003). Eleven cognitive state terms reflecting the mother, child, or a third party's thoughts, memories, knowledge, mental state, or mental strategies were counted. Nine of these were used by Jenkins et al. (*think, know, believe, wonder, remember, forget, guess, pretend, understand, and expect*), and two terms were added for this study: *confused* and *figure out*. Instances in which the mother used these words repetitively in succession or simply repeated comments made by her child were not coded. Examples of the types of comments that were common include 'What do you think we should do next?', 'Do you remember how we unlock the door at home?', and 'I wonder how the bear can get across the river.' Inter-coder reliability for the frequency counts based on 25% of the videotapes was $r = 0.92$. Given variation in session length, the frequency score was divided by task duration such that the resulting scores reflect the rate per minute that mothers used cognitive mental state language. In previously published work, the frequency of parents' use of mental state language predicted their children's subsequent mental state language use and false-belief understanding (Jenkins et al., 2003; Ruffman, Slade, & Crowe, 2002).

To ensure that the creation of two distinct parenting latent variables (and composites used in correlations analysis) was justified, a confirmatory factor analysis was conducted using AMOS 18 software (IBM Corporation, Armonk, NY, United States). A two-factor model was fit to the data, and the root mean square error of approximation (RMSEA; Steiger & Lind, 1980) and comparative fit index (CFI; Bentler, 1990) were used to estimate the relative goodness-of-fit of the model. As a general rule, preferred values of RMSEA are smaller than 0.10 and of CFI are near 1.0. The chi-square statistic was also computed. In addition to the two-factor model, we also tested an alternative one-factor model, where all indices of maternal behaviour were loaded on one latent variable. Results suggested the two-factor model fit the data well (RMSEA = 0.04; CFI = 0.99) and was a better fit than a one-factor model ($\Delta\chi^2 = 4.1$, $df = 1$). Thus, two latent variables were used in structural equation modelling analyses, and parenting composites were created by standardizing and averaging scores for correlational analysis (standardized factor loadings onto latent variables are presented in parentheses for each indicator): *cognitive stimulation* included metacognitive information (0.53), cognitive information (0.61), and mental state language (0.42); and *emotional support* included emotional responsiveness (0.75), intrusiveness (reversed, 0.72), and negativity (reversed, 0.57).

Child persistence

Child persistence was assessed during two tasks. One was a 5-min challenging solitary task. Children were presented with a wooden shape-sorter in a form of a clock with 12 uniquely shaped slots and 18 wooden pieces of which 12 corresponded to the slots and six were extra, and a clear plastic jar containing the pieces. The objective of the task was to find and put correct pieces into the slots. The child was asked to play with these toys by himself or herself. In pilot work, this task was shown to be challenging but achievable for most 3-year-old children, which is precisely the situation that can elicit persistence. The mother was seated away from the child and was asked not to interact with or help the child. *Persistence* was scored as time (in minutes) the child spent trying to put the puzzle together (non-task oriented activities such as using pieces as building blocks or playing with the hands of the clock were not counted as persistence). Inter-coder reliability for the duration of behaviour based on 25% of the videotapes was $r=0.96$, $p<0.001$. In previously presented work with this sample, persistence scores predicted children's subsequent cognitive-linguistic abilities during the transition to kindergarten over and above children's initial level of cognitive skills (Mokrova et al., 2011).

A second measure of child persistence was obtained by rating child behaviour during the treasure game described earlier. Trained coders used a 5-point coding system (1 = off task; 5 = highly persistent), which reflects the extent to which a child was engaged in the game and tried to complete the task, including expression of interest in the task, initiation of strategies, continuous attempts to find a correct way and to roll the die for a colour needed, and insistence on continuing the task. Inter-rater reliability on this rating scale was calculated using ICC (Winer, 1971) on the basis of 25% of the interactions, $r=0.77$, $p<0.01$. The *child persistence* composite was created by standardizing and averaging scores from these two tasks. The correlation between the two indices of child persistence was $r=0.21$, $p<0.01$. It should be noted that separate analyses of each index of persistence showed patterns very similar to the analysis using the composite score. Thus, only the latter is reported as follows.

Covariates

To account for mother and child characteristics as they may relate to study variables, maternal race, child gender, temperament (attention focusing, effortful control skills), and cognitive skills were examined as potential covariates. Child *attention focusing* and *effortful control skills* were assessed using the Child Behaviour Questionnaire Short Form, a 94 item measure of child temperament (Rothbart, Ahadi, Hershey, & Fisher, 2001), completed by the mothers. Mothers rated their child's reactions to different situations using a 7-point Likert scale ranging from 1 (extremely untrue of your child) to 7 (extremely true of your child). *Attention focusing* and *effortful control* subscales represent averages of 6 (Cronbach's $\alpha=0.64$) and 12 (Cronbach's $\alpha=0.75$) individual items, respectively. *Child cognitive skills* were measured through the Peabody Picture Vocabulary Test-III (PPVT; Dunn & Dunn, 1997), a nationally standardized measure of receptive vocabulary. The standard scores were used in the analysis.

RESULTS

Descriptive data for study variables are shown in Table 1. The analysis of missing data indicated that the overall missingness was minimal (<2%) and was estimated

Table 1. Descriptive statistics for study variables

	M	SD	Min-max
Family social status	45.18	11.90	14.00–66.00
Maternal values of self-direction	27.94	2.76	20.00–33.00
Maternal cognitive stimulation			
Metacognitive information	3.47	1.33	1.00–5.00
Cognitive information	3.48	0.63	2.00–5.00
Mental state language	0.53	0.56	0.00–3.35
Maternal emotional support			
Emotional responsiveness	3.81	0.93	2.00–5.00
Intrusiveness	3.15	0.99	1.00–5.00
Negativity	1.65	0.87	1.00–5.00
Child persistence			
Solitary puzzle task	4.05	0.83	2.00–5.00
Mother-child interaction task	3.08	1.55	1.00–5.00
PPVT standard score	99.09	14.77	57.0–133.0

PPVT, Peabody Picture Vocabulary Test.

using full information maximum likelihood in AMOS. Correlations were calculated among study measures and mother and child characteristics to identify potential covariates. Maternal race and child cognitive skills were significantly related to most study variables and were included in primary analysis as covariates. Child gender and temperamental characteristics did not correlate with any of the study variables and thus were not included. Zero-order correlations among study variables are presented in Table 2. Consistent with our hypothesis, family social status was positively related to maternal values of self-direction ($r=0.41$, $p<0.001$). Moreover, family social status was positively and significantly related to maternal cognitive stimulation ($r=0.36$, $p<0.001$) and emotional support ($r=0.39$, $p<0.001$), and less strongly, but significantly, to child persistence in challenging tasks ($r=0.18$, $p<0.01$).

Path analysis mediation models with latent variables were conducted using AMOS 18 to test the hypotheses. Maternal cognitive stimulation and emotional support were estimated as latent variables with three indicators each as described earlier, and their residuals were allowed to covary to account for their non-independence. Other variables were entered as observed because there was a non-sufficient number of indicators (i.e., less than three) to identify them as latent

Table 2. Zero-order correlations among study variables

Variable	1	2	3	4	5	6
1. Maternal race	—					
2. PPVT standard score	0.30***	—				
3. Family social status	0.29***	0.30***	—			
4. Maternal values of self-direction	0.30***	0.22***	0.41***	—		
5. Maternal cognitive stimulation	0.41***	0.31***	0.36***	0.34***	—	
6. Maternal emotional support	0.33***	0.37***	0.39***	0.35***	0.52***	—
7. Child persistence	0.11	0.32***	0.18**	0.21***	0.24***	0.36***

Note. Maternal race is coded as 0 (Non-White) and 1 (White); PPVT, Peabody Picture Vocabulary Test.

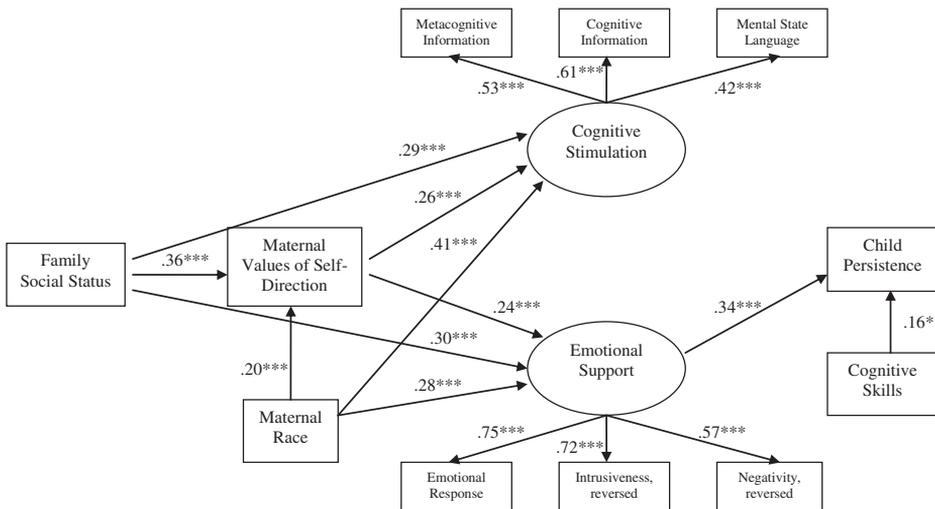
** $p<0.01$.

*** $p<0.001$.

constructs (Kenny, 1979; Kline, 2005). First, a full path analysis model that estimated direct and indirect effects among study variables as presented in Figure 1 and included maternal race and child cognitive skills as covariates was fitted to the data. This model had an adequate fit (RMSEA=0.08; CFI=0.92; $\chi^2=66.2$, $df=30$, $p < 0.001$) and indicated the non-significance of direct effects between predictor variables—family social status, maternal values of self-direction, cognitive stimulation, and race—and child persistence. The reduced model that excluded these non-significant direct effects then was fitted to the data. The results of the reduced model are displayed in Figure 2. This model did not significantly differ from the full model ($\chi^2=68.5$, $df=34$, $p < 0.001$) but was more parsimonious and had better fit indices (RMSEA=0.07; CFI=0.93).

As was hypothesized, family social status was positively and significantly related to maternal values of self-direction. Both social status and maternal values were significantly and directly related to maternal cognitive stimulation and emotional support and after accounting for maternal race. The indirect effects were tested using bootstrapping technique with the number of bootstrap samples set at 200 and bias-corrected confidence intervals (CI) set at 90%. The standardized indirect effects of social status through maternal values were 0.10 ($p=0.003$, $CI=0.05-0.19$) onto cognitive stimulation and 0.09 ($p=0.004$, $CI=0.04-0.16$) onto emotional support. Thus, the second hypothesis was partially supported insofar maternal values mediated the relations between family social status and parenting practices in addition to the direct links between family social status and parenting practices.

Of the estimated direct paths predicting child persistence and after accounting for child cognitive skills, only the path from maternal emotional support was significant. Contrary to our hypothesis, cognitive stimulation was not significantly related to child persistence. The direct paths from family social status and maternal values to child persistence were also non-significant. The standardized indirect effects from both family social status and maternal values to child persistence



Note: * $p < .05$; *** $p < .001$

Figure 2. The trimmed model of the relations between family social status, maternal values, and practices and child persistence.

through emotional support were significant (0.21, $p = 0.008$, CI = 0.10–0.23; and 0.12, $p = 0.005$; CI = 0.04–0.15, respectively). Thus, our third hypothesis regarding the mediational role of parenting between family social status and maternal values and child persistence was supported for emotional support but not cognitive stimulation.

DISCUSSION

The present study was designed to examine family factors contributing to child persistence prior to the point of school entry, specifically family social status, maternal values for self-direction in their children, maternal cognitive stimulation, and maternal emotional support. As we expected, family social status was related to maternal values and to the quality of parenting, in that mothers from higher status families valued self-direction in their children more than did mothers of lower status families and were more cognitively stimulating and emotionally supportive during interactions with their children. As suggested elsewhere (e.g., McLoyd, 1990), parents from higher status families tend to have more time and psychological and material resources they can supply to their children, and this may partially explain the school readiness gap between children from higher and lower social status families. Our study indicates another important factor that may contribute to this gap: parental values for self-direction in their children. Our findings support the notion of Kohn and his colleagues (Kohn, 1979; Kohn et al., 1986), who argued that because of the nature of their daily working environments, parents of higher social status come to value self-direction over conformity in their children, whereas parents of lower social status come to value conformity over self-direction, regardless of nationality, religion, or type of social structure in their country. In our sample, the relation between social status and values was independent of ethnic background.

We also found that family social status was both directly and indirectly, through maternal values, related to parenting practices. Mothers of higher social status were more likely to provide more cognitive stimulation and emotional support to their children. Moreover, the direct links between maternal values and parenting practices suggest that mothers of any social status who place a high value on self-direction tend to be more supportive of their children during a challenging task. This finding indicates that there are important variations in values of self-direction not only between mothers of higher and lower social status but also among mothers of similar social status. Further research is needed to add to our understanding of the development of parental beliefs and values because they provide the framework for parental behaviour; attempts to change parents' behaviour with their children could benefit from an increased focus on the underlying values parents hold for their children.

A major contribution of the present study to the current literature is the finding that children of mothers of higher social status and who value self-direction are more persistent in challenging activities. Additionally, we found that maternal emotional support mediates these relations. Consistent with limited evidence available on the relations of maternal cognitive stimulation and emotional support in preschool age (Young & Hauser-Cram, 2006), we found that only emotional support was a significant predictor of child persistence. Perhaps for children of this young age, maternal supportive emotions provide a base from which children feel comfortable and confident to engage and persist in challenging activities. Prior research studies that have highlighted cognitive support as a significant aspect of

children's motivational development were conducted mainly with school-age children (Gottfried, 1985; Gottfried et al., 2006; Grolnick & Ryan, 1989). For young preschoolers, it may be the case that motivational development begins at the emotional level whereas cognitive aspects of motivation become important later in childhood. Further research is warranted to examine the age at which parental cognitive stimulation begins to foster motivation in children.

Because of the limitations of its cross-sectional design, the present study does not provide information about the direction of effects. It is possible that children appropriate their mothers' values for self-direction and begin to act in accord with these values. It is also possible that mothers value and support the characteristics their children express, such as persistence and self-determination. According to Vygotsky (1935/1978), children tend to internalize their parents' and their culture's values and eventually use them as a guide for their independent functioning. At the same time, the dynamic nature of Vygotsky's theory suggests that parents appreciate their children's characteristics and begin to value and support them. From this theoretical perspective, both processes are likely to take place in a transactional fashion; however, a longitudinal design would be required to examine these relations. One of the main points of the present report is that the associations between maternal values of self-direction and child persistence become evident as early as 3 years of age and that maternal emotional support mediates this link.

This study makes several important contributions to the field of child development. First, it addresses the issue of development of motivation in early childhood, an area that has been understudied in current literature but remains critical to understanding of children's subsequent academic achievement. Children who are interested in learning and are willing to persist through challenging tasks are likely to be successful in school. Research has shown that children vary in their motivational dispositions by the time they reach kindergarten (Turner & Johnson, 2003), but little work has been carried out to identify the precursors to motivation prior to school entry (for exceptions, see Dweck, 2000; Kelley, Brownell, & Campbell, 2000). Development of process components of motivation, such as persistence, needs to be examined more thoroughly during the preschool age. In this study, we also examined several child characteristics, such as attention focus, effortful control, and cognitive skills, as potential covariates to child persistence. Temperamental characteristics were not related to persistence whereas cognitive skills were. We also found that both distal factors, such as family social status, and more proximal factors, such as maternal values and behaviours, were predictors of children's levels of motivation. The study had a large and diverse sample and utilized observations and parent report measures that minimized the problem of shared method variance.

We also acknowledge limitations of the present report. Factors predicting preschoolers' level of persistence were examined only cross-sectionally. It remains a possibility that persistent children elicit more parental support and that parents of persistent and independent children come to value these traits because their children express them. It will be important in future research to trace the development of persistence longitudinally. Furthermore, the trajectories of motivational development over the preschool and elementary school years are yet to be examined. Also, as no information was available on the families that did not respond to the call to participate in this research project, our results may be subject to a self-selection bias. Lastly, the present study included only mothers, whereas fathers' parenting behaviours and values are known to vary from those of mothers (Parke, 2002) and may contribute differently to the development of children's motivation, as has been shown previously with other child outcomes (NICHD ECCRN, 2008).

In sum, the present study provides evidence that family social status is related to maternal values of self-direction and to quality of maternal parenting. In turn, both family social status and self-direction values are associated with child persistence at preschool age through maternal emotional support. The potential importance of persistence at the preschool years to subsequent achievement motivation and school success remains to be examined, but taking into account that persistence and motivation play a role in academic success in later years, it is likely that persistent children can function more effectively during the transition to school. One reason that children from lower social status families are at a disadvantage at school entry may be that they have not been encouraged to be persistent. Family educators and other professionals working with families of young children may have limited ability to influence family social status but may be able to inform parents about the importance of self-direction and provision of emotional support to young children during challenging activities. If the distal factors of young children's lives, such as family social status, cannot be altered, perhaps more proximal factors that link them to child outcomes can be. Thus, focusing on parental values of self-direction and provision of support during challenging tasks may help to reduce the gap in school success between children from low and higher social status families.

ACKNOWLEDGEMENTS

This research was supported by grant 5R01HD050806 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Eunice Kennedy Shriver National Institute of Child Health & Human Development or the National Institutes of Health. The authors wish to express their gratitude to the families who participated in the study and the staff working on this project.

REFERENCES

- Aikens, N. L., & Barbarin, O. (2008). Socioeconomic differences in reading trajectories: The contribution of family, neighborhood, and school contexts. *Journal of Educational Psychology, 100*, 235–251.
- Aunola, K., Vanhatalo, O., & Sethi, R. (2001). Sosiaalinen tausta, arvot ja vanhemmuus (= Social background, values, and parenting). *Psykologia, 36*, 148–158.
- Barocas, R., Seifer, R., Sameroff, A. J., Andrews, T. A., Croft, R. T., & Ostrow, E. (1991). Social and interpersonal determinants of developmental risk. *Developmental Psychology, 27*, 479–488.
- Bentler, P. M. (1990). Comparative fit indices in structural equation models. *Psychological Bulletin, 107*, 238–246.
- Bradley, R. H., Corwyn, R. F., Burchinal, M., McAdoo, H. P., & García Coll, C. (2001). The home environments of children in the United States Part II: Relations with behavioral development through age thirteen. *Child Development, 72*, 1868–1886.
- Daniel, L. C., Grant, M., Chawla, A., & Kothare, S. V. (2010). Sleep patterns in an urban-dwelling minority pediatric population. *Vulnerable Children and Youth Studies, 5*, 322–329.
- DeGarmo, D. S., Forgatch, M. S., & Martinez, C. R. (1999). Parenting of divorced mothers as a link between social status and boys' academic outcomes: Unpacking the effects of socioeconomic status. *Child Development, 70*, 1231–1245.

- Diaz, R., Neal, C., & Vachio, A. (1991). Maternal teaching in the zone of proximal development: A comparison of low- and high-risk dyads. *Merrill-Palmer Quarterly*, *37*, 83–108.
- Dunn, L. M., & Dunn, L. (1997). *Peabody Picture Vocabulary Test* (3rd ed.). [Test Materials]. Circle Pines, MN: American Guidance Service.
- Dweck, C. S. (2000). *Self-Theories: Their role in motivation, personality, and development*. New York: Psychology Press.
- Eccles, J. S., Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In N. Eisenberg (Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (5th ed., pp. 1017–1095). New York: John Wiley & Sons.
- Elliot, A. J., & Dweck, C. S. (2005). Competence and motivation. In A. Elliot & C. Dweck (Eds.), *Handbook of competence and motivation* (pp. 3–12). New York: Guilford Press.
- Foucault, D. C., & Schneider, B. H. (2009). Parenting values and parenting stress among impoverished village and middle-class city mothers in the Dominican Republic. *International Journal of Behavioral Development*, *33*, 440–450.
- Furrer, C., & Skinner, E. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology*, *95*, 148–162.
- Gerris, J. R. M., Dekovic, M., & Janssens, J. M. A. (1997). The relationship between social class and childrearing behaviors: Parents' perspective taking and value orientations. *Journal of Marriage and Family*, *59*, 834–847.
- Gottfried, A. E. (1985). Academic intrinsic motivation in elementary and junior high students. *Journal of Educational Psychology*, *77*, 631–645.
- Gottfried, A. E., Fleming, J. S., & Gottfried, A. W. (1998). Role of cognitively stimulating home environment in children's academic intrinsic motivation: A longitudinal study. *Child Development*, *69*, 1448–1460.
- Gottfried, A. W., Gottfried, A. E., & Guerin, D. W. (2006). The Fullerton longitudinal study: A long-term investigation of intellectual and motivational giftedness. *Journal for the Education of the Gifted*, *29*, 430–450.
- Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology*, *81*, 143–154.
- Grolnick, W. S., & Slowiaczek, M. L. (1994). Parent's involvement in children's schooling: A multidimensional conceptualization and motivational model. *Child Development*, *65*, 237–252.
- Grusec, J. E., & Davidov, M. (2010). Integrating different perspectives on socialization theory and research: A domain-specific approach. *Child Development*, *81*, 687–709.
- Hollingshead, A. B. (1975). Four factor index of social status. *Unpublished manuscript*. New Haven, CT.
- Holmes, M. (1927). Investigations of reading readiness of first grade entrants. *Childhood Education*, *3*, 215–221.
- Hong, S., Nelesen, R. A., Krohn, P. L., Mills, P. J., & Dimsdale, J. E. (2006). The association of social status and blood pressure with markers of vascular inflammation. *Psychosomatic Medicine*, *68*, 517–523.
- Hubbs-Tait, L., Culp, A. M., Culp, R. E., & Miller, C. E. (2002). Relation of maternal cognitive stimulation, emotional support, and intrusive behavior during Head Start to children's kindergarten cognitive abilities. *Child Development*, *73*, 110–131.
- Hubbs-Tait, L., Page, M. C., Huey, E. L., Starost, H., Culp, A. M., Culp, R. E., et al. (2006). Parenting quality: Confirmation of a higher-order latent construct with mothers of head start children. *Early Childhood Research Quarterly*, *21*, 491–506.
- Irwin, S., & Elley, S. (2011). Concerted cultivation? Parenting values, education, and class diversity. *Sociology*, *45*, 480–495.
- Jenkins, J., Turrell, S., Kogushi, Y., Lollis, S., & Ross, H. (2003). A longitudinal investigation of the dynamics of mental state talk in families. *Child Development*, *74*, 905–920.
- Kelley, S. A., Brownell, C. A., & Campbell, S. B. (2000). Mastery motivation and self-evaluative affect in toddlers: Longitudinal relations with maternal behavior. *Child Development*, *71*, 1061–1071.
- Kenny, D. A. (1979). *Correlation and causality*. New York: Wiley.
- Kline, R. B. (2005). *Principles and practice of structural equation modeling*. New York: Guilford Press.

- Kobrosly, R. W., van Wijngaarden E., Galea, S., Cory-Slechta, D. A., Love, T., Hong, C., et al. (2011). Socioeconomic position and cognitive function in the Seychelles: A life course analysis. *Neuroepidemiology*, *36*, 162–168.
- Kohn, M. L. (1979). The effects of social class on parental values and practices. In D. Reiss & H. Hoffman (Eds.), *The American family: Dying or developing* (pp. 45–68). New York: Plenum.
- Kohn, M. L., & Schooler, C. (1973). Occupational experiences and psychological functioning: An assessment of reciprocal effects. *American Sociological Review*, *38*, 97–118.
- Kohn, M. L., Slomczynski, K. M. & Schoenbach, C. (1986). Social stratification and the transmission of values in the family: A cross-national assessment. *Sociological Forum*, *1*, 73–102.
- Lareau, A. (2002). Invisible inequality: Social class and childrearing in black families and white families. *American Sociological Review*, *67*(5), 747–776.
- Leerkes, E. M., Calkins, S. D., O'Brien, M., & Marcovitch, S. (2011). The relation of maternal emotional and cognitive support during problem solving to pre-academic skills in preschoolers. *Infant and Child Development*, *20*, 353–370.
- Luster, T., Rhoades, K., & Haas, B. (1989). The relation between parental values and parenting behavior: A test of the Kohn hypothesis. *Journal of Marriage and Family*, *51*, 139–147.
- McLoyd, V. C. (1990). The impact of economic hardship on Black families and children: Psychological distress, parenting, and socioemotional development. *Child Development*, *61*, 311–346.
- Merlo, L. J., Bowman, M. & Barnett, D. (2007). Parental nurturance promotes reading achievement in low SES children. *Early Education and Development*, *18*, 51–69.
- Mokrova, I. L., O'Brien, M., Calkins, S. D., Leerkes, E. M., & Marcovitch, S. (2011). *The role of persistence at preschool age in academic skills at kindergarten*. Paper presented at the Society for Research in Child Development biennial meeting, Montreal, Canada.
- Neitzel, C., & Stright, A. D. (2003). Mothers' scaffolding of children's problem solving: Establishing a foundation of academic self-regulatory competence. *Journal of Family Psychology*, *17*, 147–159.
- NICHHD Early Child Care Research Network (2008). Mothers' and fathers' support for child autonomy and early school achievement. *Developmental Psychology*, *44*, 895–907.
- Park, Y. S., Kim, B. S. K., Chiang, J., Ju, C. M. (2010). Acculturation, enculturation, parental adherence to Asian cultural values, parenting styles, and family conflict among Asian American college students. *Asian American Journal of Psychology*, *1*, 67–79.
- Parke, R. D. (2002). Fathers and families. In M. H. Bornstein (Ed.), *The handbook of parenting, 2nd Ed, Vol. 3, Being and becoming a parent*, (pp. 27–73). Mahwah, NJ: Erlbaum.
- Phillips, M., Brooks-Gunn, J., Duncan, G. J., Klebanov, P., & Crane, J. (1998). Family background, parenting practices, and the Black–White test score gap. In C. Jencks & M. Phillips, (Eds.), *The Black–White test score gap* (pp. 103–145). Washington, DC: Brookings Institution Press.
- Pintrich, P. R., & Schunk, D. H. (2002). *Motivation in education: Theory, research, and applications*. Upper Saddle River, NJ: Prentice-Hall.
- Pomerantz, E. M., Grolnick, W. S., & Price, C. E. (2005). The role of parents in how children approach achievement. In A. Elliot & C. Dweck (Eds.), *Handbook of competence and motivation* (pp. 259–278). New York: Guilford Press.
- Raviv, T., Kissenich, M., & Morrison, F. J. (2004). A mediational model of the association between socioeconomic status and three-year-old language abilities: The role of parenting factors. *Early Childhood Research Quarterly*, *19*, 528–547.
- Rothbart, M. K., Ahadi, S. A., Hershey, K., & Fisher, P. (2001). Investigations of temperament at 3 to 7 years: The children's behavior questionnaire. *Child Development*, *72*, 1394–1408.
- Ruffman, T., Slade, L., & Crowe, E. (2002). The relation between children's and mothers' mental state language and theory-of-mind understanding. *Child Development*, *73*, 734–751.
- Salonen, P., Lepola, J., & Vauras, M. (2007). Scaffolding interaction in parent-child dyads: Multimodal analysis of parental scaffolding with task and non-task oriented children. *European Journal of Psychology of Education*, *22*, 77–96.
- Shweder, R. A., Goodnow, J., Hatano, G., LeVine, R. A., Markus, H., & Miller, P. (1998). The cultural psychology of development: One mind, many mentalities. In W. Damon & R. Lerner (Eds.), *Handbook of child psychology: Volume 1. Theoretical models of human development* 5th ed. (pp. 865–937). New York: John Wiley & Sons.

- Steiger, J. H., & Lind, J. C. (1980). *Statistically-based tests for the number of common factors*. Paper presented at the Annual Spring Meeting of the Psychometric Society. Iowa City, IA.
- Stright, A. D., Herr, M. Y., & Neitzel, C. (2009). Maternal scaffolding of children's problem solving and children's adjustment in kindergarten: Hmong families in the United States. *Journal of Educational Psychology, 101*, 207–218.
- Tudge, J. R. H., Hogan, D. M., Lee, S., Tammesveski, P., Meltsas, M., Kulakova, N. N., et al. (1999). Cultural heterogeneity: Parental values and beliefs and their preschoolers' activities in the United States, South Korea, Russia, and Estonia. In A. Goncu (Ed.), *Children's engagement in the world: Sociocultural perspectives* (pp. 62–96). New York: Cambridge University Press.
- Tudge, J. R. H., Lopes, R. S. C., Piccinini, C. A., Sperb, T. A., Chipenda-Dansokho, S., Marin, A. H., et al. (in press). Child-rearing values in southern Brazil: Mutual influences of social class and parents' perceptions of their children's development. *Journal of Family Issues*.
- Turner, L. A., & Johnson, B. (2003). A model of mastery motivation for at-risk preschoolers. *Journal of Educational Psychology, 95*, 495–505.
- U.S. Department of Education (2005). *Helping your child succeed in school*. Washington: Author.
- U.S. Department of Education (2010). *Department of education high priority performance goals*. Washington: Author.
- Vygotsky, L. S. (1935/1978). *Mind in society: The development of higher mental processes*. M. Cole, V. John-Steiner, S. Scribner, & E. Souberman (Eds.). Cambridge, MA: Harvard University Press.
- Weininger, E. B., & Lareau, A. (2009). Paradoxical pathways: An ethnographic extension of Kohn's findings on class and childrearing. *Journal of Marriage and Family, 71*(3), 680–695.
- Winer, B. J. (1971). *Statistical principles in experimental design* (2nd ed.). New York: McGraw.
- Wright, J. D., & Wright, S. R. (1976). Social class and parental values for children: A replication and extension of the Kohn hypothesis. *American Sociological Review, 41*, 527–537.
- Wu, F., & Qi, S. (2006). Longitudinal effects of parenting on children's academic achievement in African American families. *The Journal of Negro Education, 75*, 415–429.
- Young, J. M., & Hauser-Cram, P. (2006). Mother-child interactions as a predictor of mastery motivation in children with disabilities born preterm. *Journal of Early Intervention, 28*, 252–263.