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Educational Progress and Parenting Among Mexican Immigrant Mothers of Young Children

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Abstract

This study examined the potential for educational investments in Mexican immigrant mothers to enhance their management of their children's pathways through an educational system in the U.S. that often disadvantages them. We tested this hypothesis with data on 816 Mexican immigrant women and their children in the Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K). The results suggest that mothers who pursued their own schooling over a four year period, regardless of degree attainment, increased their engagement with their children's schools during that same period. These results appeared to be robust to a wide range of factors selecting women into continuing education.

Keywords

Mexican immigrants; parenting; parental involvement in education; parent education; policy

Mexican immigrant parents in the U.S. have several characteristics that can enhance young children's academic success, including high marital stability, a commitment to mutual assistance among family members, high educational aspirations, beliefs in the value of schooling, and responsiveness to teachers and schools (Goldenberg, Gallimore, & Reese, 2005; Goldenberg, Gallimore, Reese, & Garnier, 2001). Yet, their relatively low levels of human capital can pose risks for their children in an educational system historically stratified by parental human capital (Hernandez, 2006; Lareau, 2004). Efforts to raise human capital among Mexican immigrant parents, therefore, could reduce key institutional disadvantages their children face at school that potentially counterbalance other family-based resources. In one such intergenerational approach (Smith, 1995), educational investments in Mexican immigrant mothers *now* may be a promising avenue for promoting the *future* prospects of their children.

Recent developments suggest that parenting is key to understanding why maternal education may matter to children's achievement in this population. First, although not focusing on

immigrants, Magnuson (2007) provided quantitative, national-level evidence linking maternal education to home parenting behaviors that promote children's academic success in socioeconomically disadvantaged families. Second, in a summary of decades of mixed-methods research, Goldenberg and colleagues (2005) highlighted the role of parenting in promoting the academic development of young Spanish-speaking children, specifying multiple hypotheses about the role of parents' own interactions with academic environments in the everyday learning opportunities they provide to their children. Third, Kalil and Crosnoe (2009) recently integrated diverse literatures into a conceptual model positing that Mexican immigrant women who return to school will be better positioned to manage their children's education. Finally, in the policy arena, No Child Left Behind (NCLB) has labeled many Mexican-origin youth as "at risk" and prioritized family-school partnerships for risk reduction (U.S. Department of Education, 2002).

The present study, therefore, assesses the potential for changes in mothers' education to translate into changes in learning-focused parenting behavior among Mexican immigrants. We test this hypothesis with nationally representative data, studying the primary managers of children's education in this population (mothers) in a period in which such management has heightened impact (the primary grades). In doing so, we focus on home-based activities that support children's early learning as well as behaviors that involve actual home-school contact (e.g., participating in parent-teacher conferences and other school events). The distinction between involvement at home and at school is relevant because the two may reflect distinct, culturally influenced, and differentially rewarded ways that parents become involved in children's learning with distinct effects on children (Pomerantz, Moorman, & Litwack, 2007).

Education Across Family Generations

Two thirds of Mexican immigrant mothers have not graduated from high school, compared to 18% of all mothers, and a third have fewer than nine years of schooling (Hernandez, 2006). According to theoretical perspectives on immigration, such disparities reflect the intersection of the political, economic, and cultural conditions of the Mexican sending context and the racial and class stratification of the American receiving context (Bean & Stevens, 2003; Portes & Zhou, 1993). The children of Mexican immigrant women, in turn, tend to score lower than their peers on most academic indicators from childhood into young adulthood. These disparities have been linked to reduced access to preschool, poor school quality, inadequate school services, discrimination, and language barriers (Fry, 2007; Glick & Hohmann Marriott, 2007; Glick & White, 2003; Hao & Bornstead-Bruns, 1998; Kao & Thompson, 2003; National Task for Early Childhood Education for Hispanics, 2006; Reardon & Galindo, 2007).

Not surprisingly, given the strong intergenerational transmission of educational inequality in the U.S. (Attewell, Lavin, Domina, & Levey, 2007; Lareau, 2004), educational disparities in the parent generation in the Mexican immigrant population are crucial to understanding academic disparities in the child generation. Indeed, studies have shown that the latter often narrow in magnitude, and occasionally even reverse, when the former are controlled (Crosnoe, 2006; Feliciano, 2005; Kao, 1999). One conclusion from this evidence, therefore,

is that altering parents' educational experiences may improve children's educational prospects. Compared to more child-focused remediation efforts (e.g., universal preschool, language services), this intergenerational strategy seeks to improve the current and future prospects of two generations rather than only one (Duncan, Huston, & Weisner, 2007; Takanishi, 2004).

Such an idea has empirical support from studies of nonimmigrant families. Quasi-experimental evidence suggests causal associations between maternal education and child outcomes, especially health but also grade retention, dropout, and other academic indicators (Currie & Moretti, 2003; Oreopolous, Page, & Stevens, 2006). *Changes* in maternal education are studied less often, despite evidence that education is increasingly acquired discontinuously and that many low-income mothers pursue education after childbirth (Astone, Schoen, Ensminger, & Rothert, 2000). Magnuson (2007) recently applied fixed effects techniques to a national sample to show that gains in maternal education, especially among the *least* educated women, are associated with contemporaneous achievement gains among children.

These intergenerational patterns are likely more pronounced in Mexican immigrant families. In addition to the disadvantages and stressors of low socioeconomic status (SES) found in most demographic groups, Mexican immigrant women with low education face at least two more barriers to navigating their children through American schools. Compared to their low-SES native-born peers, they have more language difficulties and less (if any) experience in the American educational system themselves (Stanton-Salazar, 2001; Suarez-Orozco & Suarez-Orozco, 1995; Valenzuela, 1999). If these additional barriers can be broken down by greater investment in mothers' education, the value of a two-generation approach to improving Mexican immigrant children's academic progress could increase accordingly.

A Two-Generation Approach for Mexican Immigrant Families

In the general population, multiple channels link parents' and children's educational experiences, and the same is true for Mexican immigrants. As highlighted by Kalil and Crosnoe's (2009) model, one channel is learning-focused parenting. This model asserts that increased human capital among Mexican immigrant women will improve their children's achievement by altering their strategies for actively managing children's schooling.

The first piece of this model, which applies across ethnic and immigrant groups, posits that more educated parents engage in more management behaviors (with greater returns) for several reasons (Pomerantz et al., 2007). Education cultivates a better *understanding* of how schools work and what provides a competitive edge in them (Baker & Stevenson, 1987). It also fosters *socialization* into the values, norms, and expectations of school personnel (Bowman, 1997; Taylor, Clayton, & Rowley, 2004). The *status* associated with education in American society can also give parents more power to advocate for their children in school and have their views taken seriously by school personnel (Entwisle & Alexander, 1996; Lareau, 2004). Because education has implications for time use (e.g., more efficient organization of routines), work (e.g., higher quality jobs with potentially more flexibility), and psychosocial well-being (e.g., greater sense of efficacy), more educated parents also

have greater *opportunity* to act on their knowledge, motivation, and socialization (Cheadle, 2008; Lareau, 2004; Mirowsky & Ross, 2003). The second piece of the model posits that children of all backgrounds demonstrate more academic progress when parents manage their education through direct interaction with schools and parallel support for learning at home. These patterns occur because such actions give parents a voice in school and give children instrumental assistance and support they need to meet intellectual and academic challenges (Cohen, 1987; Epstein et al., 2002; Hill & Taylor, 2004).

Although generalizable to other populations, this model is especially relevant for Mexican immigrant parents and children. Despite their many academically oriented behaviors, Mexican-origin parents tend to engage less in specific kinds of parenting that are *valued and rewarded by American schools*, including structured stimulation of children at home and visible participation in school activities (Barrueco, Lopez, & Miles, 2007; Crosnoe, 2006; Lopez, 2001; Reese, Balazano, Gallimore, & Goldberg, 1995; Suarez-Orozco & Suarez-Orozco, 1995). These institutionally rewarded types of parenting follow a strong parent education gradient among Latino/as, including Mexican Americans (Crosnoe, 2006; Pomerantz et al., 2007). The context and circumstances of parents' educational attainment, not just quantity, also matter. As just one example, immigrant parents in the U.S. educated in an urban setting in Mexico tend to read to their children sooner than their counterparts educated in rural settings (Goldenberg et al., 2005). Partly, this pattern is due to the higher rates of educational attainment in urban areas of Mexico in general, but it also reflects cultural variation in beliefs about when literacy develops.

Echoing the spirit of this model, qualitative work by Goldenberg and colleagues (2005) suggests that Mexican immigrant mothers incorporate into their natal cultural schema of formal schooling new features of parenting as a result of contact with U.S. models of learning. In that study, children had higher academic progress when their mothers took classes in the U.S. or gained familiarity with the educational system through relatives. Drawing from the theoretical basis for the links between maternal education and parenting detailed above, such patterns could occur because a Mexican immigrant mother who enrolls in a U.S. school better sees how courses are organized, assigned, and connected (understanding). She might also see how assertive advocacy affects grades and assignments (socialization). Furthermore, when she takes such action, her children's teachers may be more receptive if they know that she is pursuing education herself (status). Finally, her educational experiences might offer lessons in how to multitask, create family synergies (e.g., mother and child doing homework together), and convince her that she has power over her children's futures just as she has taken control of her own (opportunity).

Importantly, this conceptual model recognizes that such links among maternal education, learning-focused parenting, and child outcomes could also result from factors that select women into different educational and parenting trajectories, including some that are relatively easy to observe and measure (e.g., migration histories, family situations, personal attributes) and others that are more difficult to capture with conventional methods (e.g., local policies and programs, genetic traits) (Gennetian, Morris, & Magnuson, 2008). Furthermore, changes in education could co-occur with, or result from, other changes in mothers' lives—marital transitions, changed financial and work circumstances, new

language skills—that shape the time, resources, and capacities that mothers have available to pursue their own education and manage their children’s education (McLanahan, 2004). Thus, learning-focused parenting must be studied within a constellation of other forces in Mexican immigrant mothers’ lives.

Finally, this conceptual model was designed for mothers of children in the *primary* grades of elementary school. A growing consensus in economics, neuroscience, and psychology holds that early childhood is a foundational period for the development of skills that carry youth into adulthood (Knudsen, Heckman, Cameron, & Shonkoff, 2006). Moreover, parental management strategies are most common and effective when children are young, schools are smaller, and school and curricular effects have had less time to take hold (Eccles & Harold, 1993). In support of this idea, Magnuson (2007) reported that increases in maternal education mattered most to children aged 6 to 8. Given the critical nature of this period in educational disparities related to Mexican immigration (Crosnoe, 2006), the focus on mothers of young children is likely to be especially important when studying the Mexican immigrant population.

The Current Study

The first step in testing the value of the full conceptual model proposed by Kalil and Crosnoe (2009) is to confirm the validity of its basic central path—do increases in maternal education translate into increases in Mexican immigrant mothers’ learning-focused behaviors? To do so, this study used naturally occurring changes in the educational attainment of Mexican-born mothers with children in the primary grades to predict changes in their interactions with school personnel and cognitive stimulation of children at home, controlling for related marital, income, language, and employment transitions and addressing various selection processes.

Method

Data and Sample

We rely on data from the ECLS-K, a nationally representative study of American kindergarteners by the National Center for Education Statistics (NCES). The sample was created through the selection of sampling units across the nation, over 1000 schools within these units, and then 22,782 students within these schools. All students were enrolled in kindergarten at the first wave of data collection in the fall of 1998. Subsequent waves occurred in the spring of 1999, the fall of 1999 (25% subsample), and the spring of 2000, 2002, and 2004. ECLS-K administered evaluative and diagnostic tests to the children and interviewed parents, teachers, and school administrators (see <http://nces.ed.gov/ecls/> for more on ECLS-K). The analytical sample for this study consisted of all 816 children with mothers born in Mexico in the original ECLS-K sample. Given our focus on primary grades, we used data through 2002 (third grade).

Measures

Maternal learning-focused parenting behavior—Three ECLS-K scales were replicated for kindergarten and third grade (Crosnoe, 2006; Magnuson, Meyers, Ruhm, &

Waldfogel, 2004). First, school-based involvement was the sum of mothers' spring-kindergarten reports about whether they had participated (1 = *yes*) in PTA functions, parent-teacher conferences, school fundraising, school volunteering, open house, or other school events in that school year ($\alpha = .72$ in kindergarten, $.74$ in third grade). Second, *home learning* was the mean of seven fall-kindergarten reports about the frequency of engagement (1 = *never* to 4 = *everyday*) in home learning activities, including building games, nature lessons, and singing ($\alpha = .71, .67$). Third, a single fall-kindergarten item measured the frequency (1 = *never* to 4 = *everyday*) of home reading activities. For all three, change scores were created by subtracting the kindergarten value from the third grade value.

Maternal education—At the fall-kindergarten data collection, mothers reported whether they had completed 8th grade or less; completed 9th–12th grade without or with a diploma or GED; gone to college without or with a bachelor's degree; or gone to graduate school without or with receiving a master's degree, professional degree, or doctorate. Responses were converted to years of educational attainment: 8, 10 (*high school experience without diploma*), 12 (*high school diploma*), 14 (*some college without degree*), 16 (*bachelor's degree*), 17 (*some graduate school without degree*), 18 (*master's degree*), 20 (*professional degree or doctorate*). Comparing these reports to the corresponding third grade reports resulted in a continuous measure of increase in years of education during that period and a binary variable for whether the mother had earned a new degree (e.g., went from an 8 or 10 to a 12). Women also reported whether they were currently enrolled in a formal school or in a job training program in both the spring of first grade and the third grade data collections. These reports were used to create separate binary measures for school enrollment and job training enrollment (1 = *enrolled during 2000 and/or 2002*).

Co-occurring life transitions—First, mothers placed their families in preset income ranges during the fall-kindergarten and third grade data collections (\$5000, \$5,001–\$10,000, \$10,001–\$15,000, \$15,001–\$20,000, \$20,001–\$25,000, \$25,001–\$30,000, \$30,000–\$35,000, \$35,001–\$40,000, \$40,001–\$50,000, \$50,001–\$75,000, \$75,001–\$100,000, \$100,001–\$200,000, \$200,001 or more). Categorical strategies are often used to reduce nonresponse on surveys, which is important given that individuals in low-income or immigrant populations may be unwilling or unable to estimate their incomes (Roosa, Deng, Nair, & Burrell, 2005). The baseline reports measured income. Change in income was estimated by subtracting the kindergarten value from the third grade value. Unfortunately, the categorical nature of the income data did not allow for adjustments for inflation over time. It also meant that income data could not be combined with household size data in an income-to-needs measure. Instead, income measures were examined while controlling for household size and 1998–2002 change in household size.

Second, mothers reported their work hours in the fall-kindergarten and third grade data collections. Following Lee and Burkham (2002), we converted these reports into dummy variables for full-time (26+ *hours of paid labor per week*), part-time (1–25 *hours*), and no employment. The two sets of reports were combined to create markers for all possible 1998–2002 employment status changes. Third, household rosters identified mothers' marital statuses in fall of kindergarten and third grade. A set of dummy variables representing all

possible marital status changes between the two periods was created. Fourth, mothers could opt to be interviewed in Spanish. Comparing the interview statuses of mothers in fall of kindergarten and third grade proxied stability and change in basic English proficiency. The number of dummy variables necessary to completely catalog all family, work, and language changes was large relative to the sample size. For the sake of parsimony, we reduced this set of factors to three binary markers—mother experienced an increase in work hours between kindergarten and third grade data collections, mother experienced any kind of marital transition in this period, and mother switched from a Spanish to English interview in this period—after determining that the more parsimonious measurement strategy did not alter the pattern of results for focal variables.

Child and school controls—Child controls included preschool enrollment (16% of children were in preschool before kindergarten) and social skills (teacher ratings of social competence, ranging from 1–4 with a mean of 2.93). Also, achievement was measured by fall-kindergarten scores on a standardized math test, with a mean of 14.29 on an approximately 60 point scale—math was used because Spanish-speaking children were screened out of reading tests. A marker for child gender was included in preliminary models but did not affect results. School-level controls reported by administrators included sector (6% of children in private schools), Title 1 status (81% in schools receiving Title I funding), and minority representation (86% in schools in which a majority of the student body came from racial or ethnic minority groups).

Plan of Analyses

The baseline model regressed the outcomes—changes in learning-focused parenting between kindergarten and third grade—on the kindergarten parenting measures as well as the full set of maternal education variables. This model was estimated with linear regression in Mplus, which allowed the imputation of missing data with full information maximum likelihood and corrected the ECLS-K design effects (e.g., clustering of data within schools) with a robust standard error estimator. To address issues of selection bias, we took several steps.

First, propensity scores (Rosenbaum & Rubin, 1983) were created to represent the conditional probability of a mother receiving a treatment—in this case, any change in education status—given an assortment of pretreatment characteristics that potentially selected her into that treatment. In logistic regressions, a marker of changing educational or training status (1 or higher on any educational change measure vs. 0 on all) was regressed on four sets of predictors: (a) maternal demographic characteristics (e.g., age at first birth), (b) other maternal characteristics (e.g., work history), (c) partner characteristics (e.g., partner education), and (d) migration patterns (e.g., child citizen status). The appendix provides descriptions of these variables. Mothers' years of residence in the U.S. (an average of almost 12 years) and schooling in Mexico (an average of almost 8 years) were the biggest predictors of educational change. The propensity score—representing the predicted probabilities from these regressions—was entered into the baseline model as a covariate. Its impact on multivariate results did not depend on whether it was used as a model covariate or as a modeling weight (Hirano & Imbens, 2001).

Second, three additional sets of covariates were entered into the model. They were: (a) life course transitions co-occurring with changing maternal education that could also influence parenting (Muller, 1995), (b) child characteristics known to elicit different kinds of educational management behaviors from parents (Eccles & Harold, 1993), and (c) school characteristics that might affect the involvement of parents at school and home (Lareau, 1989).

Third, turning to the issue of unobserved confounds, we drew on the Impact Threshold for Confounding Variables (ITCV) (Frisco, Muller, & Frank, 2007). Rather than controlling for the impact of an unknown or unmeasured confound on a focal coefficient in a model, this robustness test quantifies how much that confound would have to be correlated with both predictor and outcome to wash out that coefficient (see Frank, 2000). The ITCV equation is: $r_{xy} - r_{xy}^{\#} / 1 - r_{xy}^{\#}$, where $r_{xy}^{\#} = t / \text{SQRT}[(n - q - 1) + t^2]$, t is the critical t -value (usually 1.96), n is the sample size, and q is the number of model parameters. When covariates are included in the model, the equation becomes: $\text{ITCV}_{\text{no covariates}} \times [\text{SQRT}(1 - R_{xg}^2)(1 - R_{yg}^2)]$, where g is the set of covariates, R_{xg}^2 and R_{yg}^2 are the R^2 values from regressions predicting, respectively, the focal independent variable and the outcome by the covariates. The ITCV gauges the minimum product of the correlation between predictor and confound and the correlation between outcome and confound ($r_{xc} \times r_{yc}$) needed to make the focal association between predictor and outcome just statistically significant. If the actual (if unknown) product of these two correlations exceeds this threshold, then including that confound in the regression (if it could be observed) would likely eliminate any causal inference based on focal coefficient in that regression.

Results

Trends among Mexican Immigrant Mothers

Table 1 presents information on the change that occurred in the lives of Mexican immigrant mothers as their children moved through the primary grades. We supplement the means and frequencies in this table with additional univariate statistics where appropriate.

The average years of educational attainment among Mexican immigrant mothers by 1998 (10.02) was low. Indeed, only about 1 in 10 had continued their education beyond high school. The increase in educational attainment by 2002 was also low, with the average increase less than 1 year. Just over 21% of the mothers, however, did experience at least a one year change on the educational attainment scale during this period, and 16% (76% of those adding at least a year of education) earned a new degree, usually a high school diploma. An additional 5–9% were currently enrolled in school or training programs at one of the major data collection points (spring–first grade, third grade). The majority of such enrollees had either a high school diploma (33%) or less (52%) at the kindergarten data collection. Only 12% of enrollees had increased their education by a full year, and only 9% of enrollees had earned a new degree (almost always a high school diploma). Thus, most women with a 1 on the school enrollment variable had a 0 on the increase in years of education variable and the earned new degree variable. They were typically less educated women going back to school but not yet registering “official” progress.

Turning to other demographic characteristics and life course transitions, the average mother in the sample had a 1998 family income between \$20,001 and \$25,000 and a household size of 5.29. As a point of reference, the federal poverty threshold for a family of 5 in 1998 was \$19,680. Again, the overall level of income change by 2002 was low (.16). Yet, income change did occur in the sample, with 72% of the sample demonstrating a change (up or down) of at least 1 category on the family income scale. Most of this change involved families moving between adjacent categories on the scale. Of the 34% of women registering a loss of income on the categorical scale, 60% moved down only one category. Of the 38% of women registering a gain of income, almost half moved up only one category. The degree of income change in this sample is in line with the level of income volatility in the American population at large (Dahl, DeLeire, & Schwabish, 2007).

A bare majority of mothers did not work for pay in 1998. Of the 22% who entered the work force or increased their work hours by 2002, half went from no paid work to full-time work status and a quarter went from part-time to full-time status. In 1998, 79% of Mexican immigrant mothers were married to their child's father. Few (7%) experienced a marital transition by 2002, and, in these cases, the transition was almost always a divorce. Additionally, 83% of mothers were interviewed in Spanish in 1998, with only a small portion switching to (or opting for) English four years later.

Finally, when children were kindergarteners, mothers participated in fewer than three school activities per year (spring-kindergarten in 1999) and engaged in home learning and reading activities weekly (fall-kindergarten in 1998). Over time, they increased their school-based engagement by more than a fourth of a standard deviation of their 1999 level (to more than three activities per year) and their home reading time by more than a third of a standard deviation of their 1998 level. Mothers' engagement in home learning activities declined but only by a small amount (8% of a standard deviation of their 1998 level).

Maternal Education and Learning-Focused Parenting Behavior

Next, the over-time change scores in mothers' behaviors were regressed on their starting scores and the 1998 markers of educational attainment. Of the three parenting dimensions, only 1999–2002 change in maternal involvement at school—net of 1999 starting level—was associated with changes in maternal education in any significant, robust way. Thus, we present only the results from models with that outcome.

As seen in Model 1 in Table 2, mothers' scores on the school involvement change variable increased as their baseline education levels increased. In other words, mothers who started out with higher levels of education increased their involvement in their children's school at a higher rate (about a tenth of an activity) than mothers with lower initial schooling levels. Moreover, mothers who increased their educational attainment between 1998 and 2002 also demonstrated greater increases in school involvement over time, with an effect size roughly equal to the baseline education coefficient (a standard deviation change on each scale was associated with a .10 of one activity increase in the outcome). Turning to Models 2 and 3, mothers who earned new degrees after 1998 did not alter their school involvement over time, but mothers who enrolled in school or training increased their involvement by nearly one full activity.

Although the significant maternal education coefficients in Table 2 are in the hypothesized direction, we do not wish to draw causal conclusions from these associations, given that mothers who pursue more education may be different from other mothers in ways that might also be reflected in their parenting. To account for a host of theoretically important confounds that could be observed in ECLS-K, Model 3 included a propensity score representing the probability of any education change (1 on any of the education change variables) as a covariate. This score itself predicted changes in school involvement, and its inclusion reduced, albeit only slightly, the previously significant maternal education coefficients.

To further explore the role of observable confounds, we added three sets of controls (Table 3). The first two tapped other kinds of life transitions that might have co-occurred with changes in maternal education. Beginning with income (Model 1), the coefficient for 1998 income narrowly missed conventional levels of statistical significance (e.g., $p < .05$) once baseline maternal education was taken into account. Income change between 1998 and 2002 did not predict school involvement change during the same period. Controlling for income, however, slightly attenuated the coefficients for baseline educational attainment, increase in years of education, and training enrollment, reducing the first two to nonsignificance. Importantly, results were similar when we used continuous raw measures of income, continuous per capita income measures, categorical measures of income, or poverty and poverty change measures.

Other life transitions were controlled in Model 2. Experiencing any marital transition between 1998–2002 did not predict changes in maternal school involvement. As a sensitivity test, we broke this marker into dummy variables for all possible marital transitions. None predicted the outcome. Increased labor force participation predicted an increase in school involvement on the order of about a third of an activity. Sensitivity tests revealed that this effect was driven by women going from no paid work to part-time work over the four year window. As for language status, transitioning from Spanish to English status did not predict changes in maternal school involvement. Importantly, controlling for these life transitions did not alter the coefficients for maternal school enrollment. Adding the work transition variable, however, did reduce the coefficient for job training enrollment by 10%, suggesting that some of the effect of job training was related to a concomitant increased participation in the paid labor force.

Finally, Model 3 included the child and school controls (Model 3). Only the coefficient for children's preschool attendance even approached, although it did not reach, conventional levels of statistical significance. The inclusion of this variable actually strengthened the coefficient for maternal school enrollment.

As a final sensitivity test, we calculated the ITCV for the two maternal education coefficients that significantly predicted change in maternal school involvement between 1999 and 2002 in the full model. The value for school enrollment was .03, which indicates that the correlation between school enrollment and the confound (r_{xc}) and the correlation between change in maternal school involvement and the confound (r_{yc}) would each have to exceed .17 for that confound to reduce the school enrollment coefficient in Model 3 to

nonsignificance. No ECLS-K variable employed in this study—with the exception of kindergarten school involvement—was correlated with the school involvement change score at .12 or higher. Moreover, only the other education markers were correlated with school enrollment with such a magnitude. This ITCV value does not rule out the possibility that the maternal school enrollment effect is endogenous, but it does promote confidence that this observed effect may be real. On the other hand, the low ITCV for job training, .001 ($r_{xc} \times r_{yc} = .03 \times .03$), does not instill confidence in causal inferences based on this coefficient.

Variation in the Observed Effects of Maternal School Enrollment

Of the maternal education effects tested, only mothers' current enrollment in school in 2000 and/or 2002 appeared to have a meaningful and robust association with changes in maternal school involvement. To further explore this association, we performed two more modeling steps.

First, to examine whether this focal association varied according to the baseline level of mothers' educational attainment in 1998, Model 3 from Table 3 was re-estimated with all interactions between baseline educational attainment and the educational change markers. The interaction between baseline education and school enrollment ($b = .06, p < .10$ for baseline education; $b = 2.09, p < .01$ for school enrollment; $b = -.13, p < .05$ for interaction) was the only significant interaction to emerge. To interpret this interaction, we calculated the predicted school involvement change score for enrollees with different 1998 educational levels, holding all other variables to their sample means. The magnitude of school involvement change diminished as baseline education rose. For example, the amount of change over time in involvement equaled three quarters of a school-based activity among mothers with some high school experience but no diploma but only a quarter of an activity in the much smaller group of children with mothers who began the study with some college experience.

Second, to examine whether the association between maternal school enrollment and changes in maternal school involvement was unique to (or at least more pronounced in) the Mexican immigrant population, we compared it to the same associations in ECLS-K subsamples of native-born White ($n = 7,725$), African American ($n = 1,778$), and Latino/a ($n = 1,760$) families. The effect size for school enrollment in the final model equaled about 40% of a standard deviation in the outcome in the Mexican immigrant sample. In contrast, it was smaller in the other groups: 9% of a standard deviation for the native-born White sample, 26% of a standard deviation in the native-born African American sample, and 21% of a standard deviation in the native-born Latino/a sample.

Discussion

The main finding of this study is that Mexican immigrant women who enrolled in school in the U.S., regardless of whether they earned degrees, increased their involvement at their children's schools. This pattern was robust to observable confounds, was not explained by changes in language, income, marital, or work status (albeit with weak measures of the first two statuses), appeared somewhat robust to unobservable confounds, and was stronger in this group of mothers than among other racial and ethnic groups of mothers in ECLS-K.

Recall that, of the small number of women who were enrolled in school at one or both major data collection points in the timeframe considered (i.e., when their children were in first and third grade), most had no meaningful increase in years of education or degree attainment by the end of the focal time period of this study. Instead, they were less educated women who had returned to school for some time without yet registering “official” progress. Also worth noting is that the association between mothers’ school enrollment and involvement at their children’s schools was strongest for women with the least education at baseline.

Why would school enrollment matter to mothers’ involvement in their children’s schools, more so than actually earning a degree? One could reasonably argue that mothers are not themselves going to elementary school and, therefore, are not transferring their experiences directly to those of their children. Moreover, the contexts of getting a GED and being a volunteer at an elementary school are fairly different. The findings imply that the process of enrolling in school, along with some exposure to the American school system (even if it is relatively brief) allows mothers to enter their children’s schools and interact with teachers more confidently. In contrast, the lack of similar impact of educational persistence (i.e., years of education) or degree attainment suggests an absence of a “dose response”.

Oreopolous and Salvanes (2009) summarized evidence of the nonpecuniary benefits of education, including improvements in patience, goal orientation, trust, social interaction, and civic participation. Any of these might represent the channels through which the associations we identified are operating. Our findings also echo themes outlined by LeVine, LeVine, and Schnell (2001), who proposed that schooling for disadvantaged women in settings such as Nepal and Venezuela leads to social change by imparting skills and fostering individual changes (e.g., aspirations, identities, and models of learning) that alter women’s social participation. Among other things, they argued, girls in these cultures who enroll in school learn an academic “register” that is the official language of state bureaucracies. For example, proficiency in this academic language is advantageous in communication with the health bureaucracy, which may lead to greater utilization of health services and concomitant improvements in reproductive and health outcomes. A similar argument can be made that the skills that less educated Mexican immigrant mothers acquire in the process of furthering their own education provide a pathway to more effective engagement with their children’s schools and, perhaps ultimately, their children’s academic success. Another possibility is that these skills are learned most intensively during the process of enrollment in school itself (i.e., through navigation of an educational bureaucracy), which imparts the tools necessary to confidently sign up for PTA functions, attend parent-teacher conferences, or execute tasks associated with school fundraising or school volunteering.

A preliminary conclusion, therefore, is that experience in the American educational system—and familiarity with how the system works—is a relevant force for Mexican immigrant mothers’ involvement at their children’s schools, more so than the credentials that come with attaining a degree. Mexican immigrant women who returned to school on their own may have become more involved in their children’s schools because they learned how to do so and came to see that they were expected to do so. Perhaps their student role gave them new value among, or came with new expectations from, school personnel, but this was not necessarily a function of having the status marker of a degree. Having established the basic

linkage between Mexican immigrant mothers' enrollments in school and their involvement at their children's schools, future research must identify the underlying mechanisms, including those highlighted in the Kalil and Crosnoe (2009) model (e.g., understanding, socialization, status, and opportunity).

Why would the benefits of maternal school enrollment apply only to involvement in children's schools and not to home-based dimensions of educational management? This difference may reflect the increasingly acknowledged pattern that observed differences between Mexican immigrant parents and their native-born (especially White) counterparts in educational management are rooted primarily in the kinds of management and involvement behaviors that American schools value. Mexican immigrant parents participate actively in their children's education outside of school but, because of a history of opposition from school personnel and discomfort at schools, are less visible in the kinds of activities that schools set up for parental participation (Crosnoe, 2006). Thus, the real value of educational investments in Mexican immigrant women might be that they help break down the walls that often separate them from their children's schools. Unfortunately, government investment in adult immigrants' education has diminished substantially in recent years (e.g., under welfare reform) (Fix & Passel, 2002).

In addition to the exploration of mechanisms noted above, future research needs to identify the child outcomes that flow from the link between maternal education and learning-focused parenting. In the process, other aspects of socioeconomic conditions (mothers' earnings, wealth) should be considered, and our inadequate measurement of family income (which is hard to measure on a survey in immigrant populations) and maternal language proficiency (only proxied here, probably insufficiently, by interview status) needs to be greatly improved given the potential confounding roles of both. Additional analytic steps (e.g., instrumental variables, experimental designs) must also be taken to tackle selection issues more completely than we have been able to do here. Building on this preliminary two-generation research in these ways is important because the first and second generations in the Mexican-origin population represent, in many ways, the future of the U.S.

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Appendix: Descriptions of Extra Variables for Propensity Scores

Variable	Description
<i>Maternal Demographic Status</i>	
Region of residence	NCES-provided sampling frame region markers (27% south, 2% northeast, 7% midwest, 64% west).
Location of residence	Following the lead of Lee and Burkham (2002), the original NCES-provided categories of urbanicity were collapsed into a set of three dummy

Variable	Description
	variables (4% small town/rural, 29% city fringe/large town, 67% central city).
Number of children	At various points, NCES completed household rosters, which provided information on who was living in the home with the target child. The fall kindergarten roster gave the number of other children (besides the target child) living with the mother ($M = 2.89$, $SD = 1.25$).
Maternal age	In 1998, mothers gave their ages ($M = 31.88$, $SD = 6.03$).
Age at first birth	In 1998, mothers reported how old they were when they had their first child ($M = 21.75$, $SD = 4.32$).
Non-marital birth	Mothers' 1998 reports of the date of the target child's birth and the length of any marriage to the child's father were compared to identify target children born outside of wedlock (24%).
<i>Maternal Characteristics</i>	
Employment status	As described in the methods section, maternal reports on paid labor were collapsed into markers of full-time (26+ hours of paid labor per week) and part-time (1–25 hours) employment (26% and 12% respectively).
Work history	In 1998, mothers reported whether (1 = yes, 0 = no) they had been employed for pay outside the home between the target child's birth and start of kindergarten (39%).
Public assistance status	In 1998, mothers reported whether they had received AFDC/TANF in the past year (10%).
General health	In 1999, mothers assessed their own physical health on a scale from 1 (poor) to 5 (excellent) ($M = 3.34$, $SD = 1.01$).
Depressive symptomatology	ECLS-K included a condensed version of the Center for Epidemiologic Studies-Depression (CES-D) scale. In 1999, parents reported how often, during the past week, that they experienced 11 depressive symptoms, such as lost appetite, trouble sleeping, and fearfulness. Responses (1 = never, 2 = some of the time, 3 = a moderate amount of time, 4 = most of the time) were averaged to create the final scale ($\alpha = .85$) ($M = 1.41$, $SD = .49$).
Language use at home	In 1998, mothers reported how often they spoke a non-English language at home with their children on a four point scale (1 = never, 2 = sometimes, 3 = often, 4 = very often) ($M = 3.51$, $SD = .88$).
<i>Maternal Marital/Partner Characteristics</i>	
Marital status	Based on the 1998 household roster, NCES provided a categorical measure for mother's living situations. From this measure, we created markers for whether mothers were married to or living with child's father (81%), not married or partnered (13%), or married to or living with someone other than child's father (5%).
Partner educational attainment	Binary marker designating that the mother was married/partnered to a man who had attended college (10%).
Partner employment status	Binary marker designating that the mother was married/partnered to a man who worked in paid labor force for more than 25 hours per week (64%).
<i>Family Migration Patterns</i>	
Mother's time in U.S.	In 2000, mothers reported how many years that they had been living in the U.S. ($M = 11.67$, $SD = 9.33$).
Mother's education outside U.S.	In 2000, mothers reported how many years of their schooling that they had completed outside the U.S. ($M = 7.92$, $SD = 3.69$).
Child born in U.S.	In 1999, mothers reported whether the target child had been born in the U.S. or in another country (12%).

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Table 1Mexican Immigrant Mothers' Life Circumstances and Learning-Focused Parenting Behaviors ($N = 816$)

Variables	<i>M</i>	<i>SD</i>	%
In 1998 (Fall of Kindergarten)			
Educational attainment ^a	10.02	2.45	
Family income ^b	5.21	2.61	
Household size	5.29	1.61	
In paid labor force			49.88
Married to child's father			78.55
Language status (interviewed in Spanish)			83.40
Between 1998 and 2002 (Fall-K through 3 rd Grade)			
Increase in years of education ^a	.69	1.56	
Earned new degree			16.30
Enrolled in educational system			9.19
Enrolled in job training			5.39
Change in family income ^b	.16	2.06	
Change in household size	.10	1.24	
Entered labor force/increased work hours			21.69
Experienced marital transition			6.75
Changed language status (to English)			4.41
In 1998/1999 (Fall/Spring of Kindergarten)			
School involvement (1999)	2.80	1.59	
Home learning activities (1998) ^c	2.39	.59	
Frequency of reading (1998) ^c	2.80	.85	
Between 1998/1999 and 2002 (Fall/Spring-K through 3 rd Grade)			
Change in school involvement (1999–2002)	.46	2.03	
Change in home learning activities (1998–2002)	-.04	.63	
Change in frequency of reading (1998–2002)	.37	1.17	

^aEducational measure in years of completed schooling.^bIncome measures has 13 categories, 1 (*less than \$5000*) to 13 (*greater than \$200,000*).^cHome learning/reading activities measured from 1 (*not at all in typical week*) to 4 (*everyday*).

Table 2

Results from Models Predicting Change in Maternal Involvement at School between Children's Kindergarten Year and Third Grade by Maternal Education ($N = 816$)

Variable	Model 1			Model 2			Model 3		
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>
Starting maternal involvement level (1999)	-.71***	.04	-.72***	.04	-.73***	.04			
Educational attainment									
Educational attainment (1998)	.09***	.03	.08**	.03	.06***	.03			
Increase in years of education (1998–2002)	.14***	.04	.14*	.06	.11*	.06			
Earned new degree (1998–2002)			.09	.25	.12	.25			
Enrolled in educational system (2000 (2002)			.74***	.20	.71***	.20			
Enrolled in job training (2000 (2002)			.72***	.20	.72***	.20			
Probability of continuing education (1998–2002)					.97*	.47			
R^2		.29		.31		.32			

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3
Results from Models Predicting Change in Maternal Involvement at School by All Factors ($N = 816$)

	Model 1		Model 2		Model 3	
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>
Starting maternal involvement level (1999)	-.73***	.04	-.73***	.04	-.74***	.04
Educational attainment						
Educational attainment (1998)	.05	.03	.05	.03	.04	.03
Increase in years of education (1998–2002)	.11	.06	.11	.06	.11	.06
Earned new degree (1998–2002)	.13	.24	.13	.24	.14	.25
Enrolled in educational system (2000 (2002)	.73***	.20	.74***	.20	.79***	.20
Enrolled in job training (2000 (2002)	.69***	.20	.62***	.20	.60***	.20
Probability of continuing education (1998–2002)	.94*	.47	.83*	.46	.82*	.47
Income, Household Size, and Other Transitions						
Family income (1998)	.03	.02	.03	.02	.02	.03
Change in family income (1998–2002)	.03	.05	.03	.04	.03	.04
Household size (1998)	-.04	.04	-.03	.04	-.02	.04
Change in household size (1998–2002)	-.05	.06	-.05	.06	-.05	.06
Marital transition (1998–2002)			-.23	.28	-.25	.27
Entered labor force/increased work (1998–2002)			.39**	.15	.39**	.15
Changed language status (to English)						
Child and School Control Measures			-.23	.28	-.19	.27
Child gender (female)					.02	.14
Child age					-.08	.18
Child math score (1998) ^a					.00	.01
Child social skills (1998)					-.09	.12
Child an English language learner (1998)					-.10	.12
Child attended pre-school before kindergarten					.27	.17
School sector (private)					.20	.29
School Title I status					.02	.20
School minority representation					-.27	.21

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	Model 1		Model 2		Model 3	
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>
<i>R</i> ²		.32		.32		.33

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