

Family Involvement in School and Low-Income Children's Literacy: Longitudinal Associations Between and Within Families

Eric Dearing
University of Wyoming

Holly Kreider
Harvard University

Sandra Simpkins
Arizona State University

Heather Weiss
Harvard University

Family Involvement in Children's Education

Study Background:

- Lower-income families, on average, appear less involved in their children's education than higher-income families.
- Children in less involved families display lower levels of achievement than their peers in more involved families...effect sizes range from small to moderate.
- One area of impact is children's literacy, an area of great practical importance given the academic, social, and economic consequences of literacy problems.

Family Involvement in Children's Education

Three empirical issues deserving clarification:

1. Is involvement associated with literacy *within* the context of low family income?
 - a. studies focused on low income samples may help disentangle the effects of socioeconomic status and involvement.
 - b. from a policy perspective, these are the target children and families.

Family Involvement in Children's Education

Three empirical issues deserving clarification:

2. Do *within-family* changes in involvement matter for low-income children? Can increased involvement promote the literacy skills of low-income children?
 - a. longitudinal within-family analyses can help clarify the empirical, practice, and policy implications of involvement.

Family Involvement in Children's Education

Three empirical issues deserving clarification:

3. Does involvement matter more for some low-income children than others?

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3. Does involvement matter more for some low-income children than others?
 - a. the potential moderating effect of added risk associated with **low parent education**.
 - Children with added risk may also experience added rewards

Study Sample

- Children and their families (N = 281) who participated in an impact evaluation of the Comprehensive Child Development Program (CCDP) and the School Transition Study (STS).¹
- The CCDP was a 21 site comprehensive intervention program for low-income families with child (e.g., preschool) and family (e.g., job training) services...dual goals of enhancing development and increasing economic self-sufficiency.
- The STS followed children and families from 3 of the 21 sites through fifth grade.
- STS sites were selected to ensure ethnic and geographical diversity (i.e., an urban, predominantly African-American site; an urban, predominantly Latino-American site; and a rural, predominantly European-American site)

¹ STS Steering Committee: Jacquelynne Eccles, Penny Hauser-Cram, Jennifer Greene, Walter Secada, Deborah Stipek, and Heather Weiss

Study Sample

| Demographic Characteristic | Mean (<i>SD</i>) | % |
|---------------------------------------|-----------------------|------|
| Child Gender = Boy | | 49.3 |
| Ethnicity = African American | | 35.7 |
| Ethnicity = Latino American | | 25.4 |
| Family Income (per capita) | \$1,953.96 (1,126.03) | |
| Low Birthweight | | 15.2 |
| Maternal Age at Childbirth = Teenager | | 25.8 |
| Maternal Education ^a | 4.15 (1.43) | |
| Maternal Hours of Employment | 15.92 (18.31) | |
| Maternal Partner Status = Partnered | | 55.0 |
| Primary Language = English | | 71.4 |
| Study Site = 1 | | 19.2 |
| Study Site = 2 | | 47.9 |

Assessment Schedule

| STS Measures | Assessment Time | | | |
|-------------------------------------|-----------------|---|-----|-----|
| | Birth | K | 3rd | 5th |
| <i>Family Demographics</i> | ✓ | ✓ | ✓ | ✓ |
| <i>Family Involvement in School</i> | | ✓ | ✓ | ✓ |
| <i>Child Literacy</i> | | ✓ | ✓ | ✓ |

Constructs and Measures

Construct

Measure

Family Involvement in School

Maternal report on eight items assessing involvement in the school environment (e.g., “In the past year, did you or someone else visit your child’s classroom?”; $\alpha = .65$ to $.73$; $r = .34$ to $.41$)

Child Literacy

Letter-word Recognition subscale from the Woodcock-Johnson Psycho-educational Battery – Revised (Woodcock & Johnson, 1989). At kindergarten, an adapted version of the scale (56 items) was administered; at 3rd and 5th grade the complete scale (57 items) was administered. At each time point, proportion correct was calculated.

Family Involvement in Children's Schools

Growth Model:

Average Literacy = Average School Involvement

Change in Literacy = Average School Involvement

Change in Literacy = Change in School Involvement

Family Involvement in Children's Schools

Growth Model:

Average Literacy = Education + Average School Involvement + Involvement x Education

Change in Literacy = Education + Average School Involvement + Involvement x Education

Change in Literacy = Change in School Involvement + Education x Change in School Involvement

Family Involvement in Children's Schools

Growth Model:

Average Literacy = Education + Average School Involvement + Involvement x Education

Change in Literacy = Education + Average School Involvement + Involvement x Education

Change in Literacy = Change in School Involvement + Education x Change in School Involvement

$$\begin{aligned} y_{it} = & [\beta_{00} + \beta_{01} Education_i + \beta_{02} \overline{Involvement}_i + \beta_{03} Education_i \times \overline{Involvement}_i + \beta_{10} (ChildAge_{it} - \overline{ChildAge}_i) \\ & + \beta_{11} Education_i \times (ChildAge_{it} - \overline{ChildAge}_i) + \beta_{12} \overline{Involvement}_i \times (ChildAge_{it} - \overline{ChildAge}_i) \\ & + \beta_{13} Education_i \times \overline{Involvement}_i \times (ChildAge_{it} - \overline{ChildAge}_i) + \beta_{20} (Involvement_{it} - \overline{Involvement}_i)] \\ & + [\zeta_{00} + \zeta_{10} ChildAge_{it}] + u_{it} \end{aligned}$$

Family Involvement in Children's Schools

Growth Model:

Average Literacy = Education + Average School Involvement + Involvement x Education

Change in Literacy = Education + Average School Involvement + Involvement x Education

Change in Literacy = Change in School Involvement + Education x Change in School Involvement

$$y_{it} = [\beta_{00} + \beta_{01} Education_i + \beta_{02} \overline{Involvement}_i + \beta_{03} Education_i \times \overline{Involvement}_i + \beta_{10} (ChildAge_{it} - \overline{ChildAge}_i) + \beta_{11} Education_i \times (ChildAge_{it} - \overline{ChildAge}_i) + \beta_{12} \overline{Involvement}_i \times (ChildAge_{it} - \overline{ChildAge}_i) + \beta_{13} Education_i \times \overline{Involvement}_i \times (ChildAge_{it} - \overline{ChildAge}_i) + \beta_{20} (Involvement_{it} - \overline{Involvement}_i)] + [\zeta_{00} + \zeta_{10} ChildAge_{it}] + u_{it}$$

Level-2 covariates: child gender, ethnicity, biological risk at birth, birth order, and birth weight; maternal age at child birth, partner status, employment status, primary language, and depression; family income, AFDC receipt status, and CCDP group; and study site.

Family Involvement in Children's Schools

- Average Family Involvement in School = 4.56 out of 8 activities; SD = 2.08
- Between kindergarten and fifth grade:
 - 45% of families displayed decreases in school involvement
 - 10% of families were stable with regard to school involvement
 - 45% of families displayed increases in school involvement
- Literacy:
 - Average Literacy Performance = 56% correct
 - Standard Deviation = 16% correct ($p < .001$)
 - Change in Literacy Performance (K to 5th Grade) = 7% per year
 - Standard Deviation for Change = 3% ($p < .001$)

Stability and Change in Family Involvement

| Model parameter | Literacy | |
|--|---------------------------|-------------------|
| | Coefficient (<i>SE</i>) | <i>t</i> |
| Average Literacy Performance (i.e., Level-1 Intercept) | | |
| Average Family Involvement in School | .09 (.06) | 1.66 ⁺ |
| Change in Literacy Performance (i.e., Child Grade) | | |
| Average Family Involvement in School | .01 (.02) | .72 |

⁺ $p < .10$

Stability and Change in Family Involvement

| Model parameter | Literacy | |
|--|---------------------------|-------------------|
| | Coefficient (<i>SE</i>) | <i>t</i> |
| Average Literacy Performance (i.e., Level-1 Intercept) | | |
| Average Family Involvement in School | .09 (.06) | 1.66 ⁺ |
| Change in Literacy Performance (i.e., Child Grade) | | |
| Average Family Involvement in School | .01 (.02) | .72 |
| Yearly Family Involvement in School | .07 (.03) | 2.27* |

* $p < .05$ + $p < .10$

Stability and Change in Family Involvement

Model parameter

Literacy Performance

Coefficient (*SE*)

t

Average Literacy Performance (i.e., Level-1 Intercept)

Average Family Involvement in School

Maternal Education

Family Involvement x Maternal Education

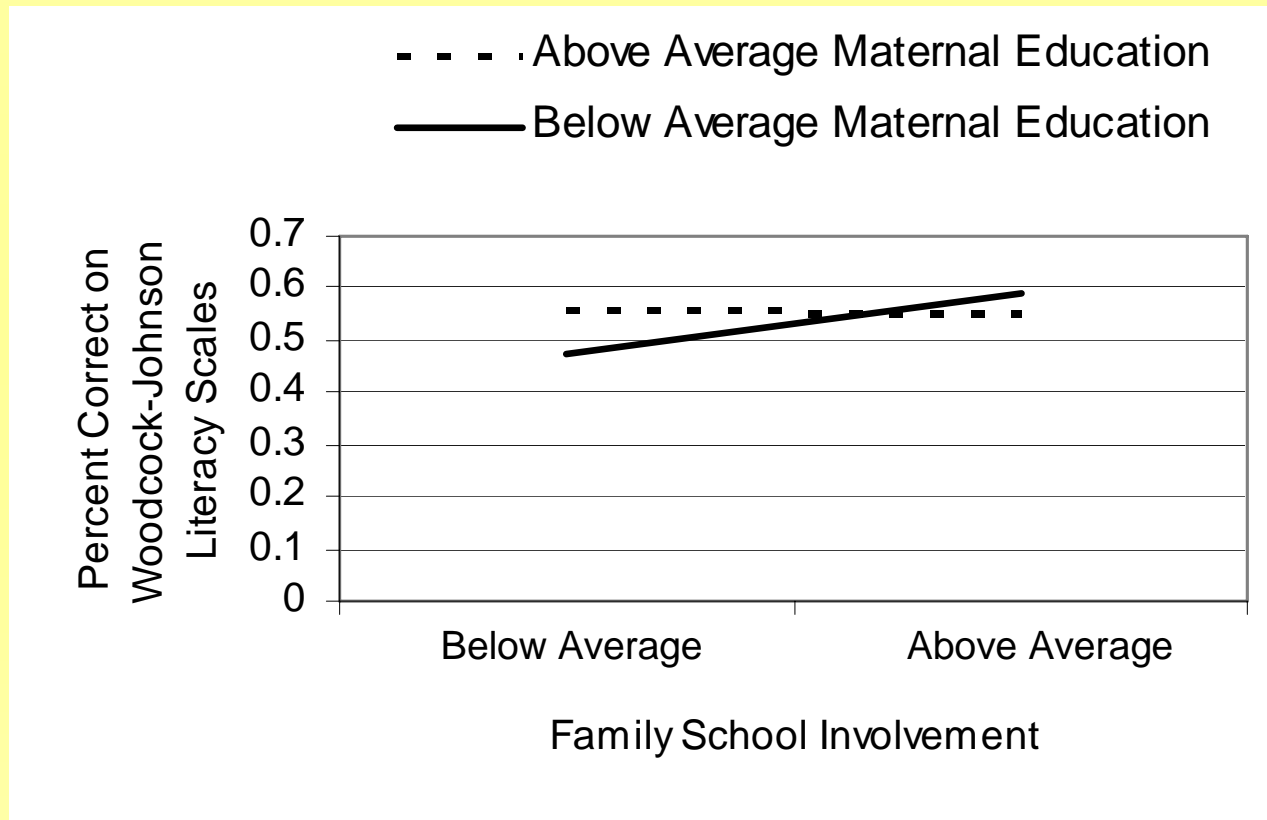
*** $p < .001$, ** $p < .01$

Stability and Change in Family Involvement

| Model parameter | Literacy Performance | |
|--|---------------------------|----------|
| | Coefficient (<i>SE</i>) | <i>t</i> |
| Average Literacy Performance (i.e., Level-1 Intercept) | | |
| Average Family Involvement in School | .61 (.18) | 3.39*** |
| Maternal Education | .11 (.03) | 3.34*** |
| Family Involvement x Maternal Education | -.13 (.04) | -3.01** |

*** $p < .001$, ** $p < .01$

The Moderating Effect of Maternal Education



Conclusions and Implications

- Intervention efforts that do lead to within-family increases in involvement in the school appear likely to produce results of *practical* significance for children...especially when considering the role of literacy in our technology-based social and economic systems.
- Intervention efforts focused on family educational involvement may be most likely to promote literacy development among low-income children with the least educated parents.