Children's Educational Outcomes: Parental School and School Characteristics, Does Parent-Teacher Race Matching Make a Difference?

By

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Preliminary Abstract:

Based on prior literature we know that minority children overall have less academic success than their majority counterparts. A number of previous studies point to the importance of family characteristics when predicting children's educational outcomes. While others suggest that school characteristics are of greater importance for determining children's educational success. However, although the individual effects of families and schools on children's educational outcomes have been examined, less attention has been paid to the interaction of the two, in particular similarities in parents and teachers. Initial analysis using data from spring of first grade from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 (ECLS-K) indicate that having a race match between parents and teachers is a significant predictor of both parental school involvement and math scores. Future analysis will include multilevel growth curve models with in-depth measure of family-school interactions for predicting both parental school involvement and children's educational achievement.

Background:

The analysis of racial and ethic difference in children's academic outcomes has been thoroughly and repeatedly examined throughout the years. Early sociological studies determined the culprit was family characteristics. Children from single parent minority families were singled out as having the poorest academic outcomes as a result of the characteristics of their family of origin

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(Levine et al, 1972; Bousfield, 1932; Campbell, 1932). In the past decade we have witnessed a shift in the explanation and examination of racial and ethnic differences in children's academic outcomes (Brooks-Dunn et al, 1993; Brooks-Dunn et al, 1996; Duncan, 1994; Garner and Raudenbush, 1991). This shift included more focus on school and neighborhood characteristics rather than family characteristics. I would like to take a step back and connect the past and present literature by focusing on the simultaneous affect of both family and school characteristics on children's academic outcomes.

The current measures of parental school involvement utilized in most quantitative analyses of student achievement tend to account for basic participation in school-based activities including things such as attendance at PTA meetings and parent teacher conferences, as well as volunteering at school. But it seems likely that it is not solely the type of parental school involvement that directly influences children's own performance. Rather the underlying reasons and motivations lying behind parental participation in school activities may be predictive as well. For example, parents are less likely to make an attempt to be involved at their children's school if they feel unwanted and unwelcome by teachers and school staff (Dauber and Epstein, 1993; Overstreet et al, 2005). Lareau (1987; 2002) demonstrates this more effectively than most scholars in her focus on social class and its affect on parental school involvement. These qualitative studies raise a number of interesting questions that can be addressed and expanded primarily with a quantitative approach to compare larger, more geographically distributed groups. It is my expectation that there are not only differences across racial/ethnic groups but variation within these groups across social class as well. Laureau (1987; 2002) and others suggest that a capital framework is most useful in analyzing the relationship between family and school processes.

Parental Involvement

Variation in Parental School Involvement

Parental school involvement has been shown to be a significant predictor in children's future academic success (Grolnick and Slowiaczek, 1994; Hill and Taylor, 2004; Grolnick et al, 1997). Though there are several determinants of parental school involvement the most cited in the literature are race/ethnicity and socioeconomic status. Minority low income parents are the least likely to actively participate at their children's schools (Lareau, 1989; Scott-Jones, 1994; Eccles and Harold, 1996). In particular Black and immigrant parents may be more reluctant than

majority parents to be involved in their children's schooling due to years of discrimination. Among Blacks there still resonates a distrust of institutionalized systems which in the past denied Blacks basic civil liberties. This distrust, in some cases, breeds disenchantment with the educational future of their children (Scott-Jones, 1994; Winters, 1993; Lareau, 1989). In the case of immigrant parents there are a number of dynamics one must consider. Perhaps the most important of these is variation in English language proficiency. More recent immigrant parents may be unwilling to participate in school activities due to language barriers; they don't speak or understand English so they have no means of communication with teachers or school staff (Garcia Coll et al., 2002). I expect parental school involvement to be a mechanism though which children reap the benefits of within family capital. Minority parents may be more likely to increase their school involvement if they feel more akin to their children's teachers. For example, a Black mother may be more inclined to attend a parent teacher conference if her child's teacher is also Black.

Hypotheses for Predicting Parental School Involvement

Both family and school characteristics will influence levels of parental school involvement. Based on prior literature several associations are common knowledge. Children whose parents are either a racial/ethnic minority or language minority will have lower levels of parental school involvement than their English speaking, non-Hispanic white counterparts (Laureau, 1987; Desimone, 2001; Garcia Coll et al, 2002). We also know that children whose parents have lower levels of education as well as lower incomes will have lower levels of parental school involvement than their higher educated, higher SES counterparts (McNeal, 1999; Scott-Jones, 1994). The abovementioned literature on parental school involvement leads me to form several hypotheses about the effect of family and school characteristics on parental school involvement.

H1: Parental home involvement will be a significant predictor of parental school involvement. The direction of the effect will vary for minority and majority families.

H2: Parent's education and income will mediate the effect of race/ethnicity and language background on parental involvement. Once accounting for education and income the effect of race/ethnicity and language will be diminished.

H3: When parent and teachers race/ethnicity match there will be higher levels of parental school involvement than when there is no parent-teacher race match.

H4: Language minority parents whose children attend schools with bilingual teachers will have higher levels of parental school involvement than those whose children attend schools with no bilingual teachers.

H5: Parents whose kids attend schools where the schools are more receptive to parent's participation in school activities will have higher levels of parental school involvement than those whose children attend school that are not receptive to parents participation in school activities.

Parental Involvement and Children's Educational Achievement

The issue of parental school participation has been in the political and policy forefront for sometime. Two of the more famous discussions in my opinion on educational policy and parental school involvement are the 1965 Title I program of the Elementary and Secondary Education Act and Presidents Bush's 2001 No Child Left Behind Act. Both policies call for better focus on the connection between children's home and schools lives, using the parent as the conduit. This national notoriety has prompted numerous studies using various outcomes and predictors of children and adolescent well-being. There is a massive literature on the effects of parental school involvement on a number of childhood outcomes, in particular educational success and behavioral issues. The research overwhelmingly suggests that children who have parents who are involved in their schooling experience have higher academic achievement, in particular higher reading and math scores, have fewer behavioral problems and greater school retention throughout their schooling (Miedel and Reynolds, 1999; Senechal and LeFevre, 2002; Reynolds, 1992; Izzo et al., 1999). Net of parental school involvement and other mediating factors, research findings consistently point to a positive association between parental school involvement and educational and behavioral outcomes (Grolnick et al, 1997; McNeal, 1999; Reynolds and Gill, 1994; Bogenschneider, 1997; Teachman, Paasch and Carver, 1997). There are a number of inconsistent findings regarding the effect of parental school involvement by race/ethnicity. Some studies find that the effect of parental involvement varies by race (Milne et al., 1986) others find that the racial and ethnic makeup of the schools are more significant predictors (Brookover et al., 1979).

Parental home involvement has also been shown to be a significant predictor of children's academic achievement. Studies have shown that children who have a stimulating cognitive home environment score better on both math and reading (Bradley et al, 2001;

Desimone, 2001). Though the home and the school appear to be two separate areas they are intertwined and interact in the developmental process of children's lives, therefore we must take a more careful and closer look at the interaction between the two.

Hypotheses for Predicting Children's Educational Achievement

Both family and school characteristics will influence children's educational outcomes. Based on prior literature several associations are common knowledge. Research suggest that children whose parents are either a racial/ethnic minority or language minority will have lower levels of educational achievement than their English speaking, non-Hispanic white counterparts (Garcia Coll et al, 2002; McNeal, 1999). Research also suggests that children whose parents have lower levels of education as well as lower incomes will have lower levels educational achievements than their higher educated, higher SES counterparts (Reynolds, 1992; Senechal and LeFevre, 2002; Dominia, 2005). The abovementioned literature on children's educational outcomes leads me to form several hypotheses about the effect of family and school characteristics on children's educational outcomes.

H1: Parent's education and income will mediate the effect of race/ethnicity and language on children's level of educational achievement. Once accounting for education and income the effect of race/ethnicity and language will be diminished.

H2: Children whose parents have higher home involvement will have higher levels of educational achievement than those children whose parents have lower levels of parental home involvement.

H3: Children whose parents have higher school involvement will have higher levels of educational achievement than those children whose parents have lower levels of parental school involvement.

H4: Children who attend schools with higher amounts of financial capital will have higher levels of educational achievement than those who children attend schools with lower amounts of financial capital

H5: Children who attends school that are receptive to parent's participation in school activities will have higher levels of educational achievement than children who attend schools that are not receptive to parent's participation in school activities.

H6: Children who attend schools where there is a match between school and family characteristics will have higher achievement than their peers who attend unmatched schools.

Data and Planned Analyses:

The data for this study comes from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999 (ECLS-K). The ECLS-K is a nationally representative sample of children who entered kindergarten between 1998 and 1999. The data were collected by the National Center for Education Statistics (NCES), within the U.S. Department of Education's Institute of Education Sciences using a multistage probability sampling design. There are currently 6 waves of available data, fall and spring of kindergarten and 1st grade as well as spring of 3rd and 5th grade. The ECLS-K data was designed not only to examine children's schooling experience but to also tap into all faucets of children's environments which may contribute to lasting educational outcomes.

The preliminary analysis looks at a snap shot of parental school involvement as well as math IRT scores. All data from the preliminary analysis comes from spring of first grade, while future analysis will include time varying data from spring of kindergarten, first, third and fifth grade. There are two dependent variables and three primary independent variables for the preliminary analysis. The dependent variables are math IRT scores and parental school involvement. The math IRT scores are standardized test scores while parental school involvement is an index comprised of parental participation at various school events. Parents were asked whether or not they or some other adult in the home has attended an open house, parent-teacher conference, or PTA meeting at the child's school. They were also asked if they or some other adult in their home had volunteered or helped fundraise for the child's school. This variable ranges between 0-5. Parental school involvement is also one of the primary independent variables. Parent-teacher race match is a dummy variable that is coded 1 if there is a match between parent and teacher race and 0 if there is no match Parental home involvement is an index comprise of literacy activities that took place at the home. Parents were asked how often they or some other adult in the in the home tells the child stories, talk about nature or does science projects, practice numbers ands read to child. The responses range from 'not at all (1)' to 'everyday (4), the index has of 4-16.

Preliminary Results:

The preliminary analysis examines a snapshot of the data, tables 1 and 2 breakdown the means and percentage of the sample by both parent's race/ethnicity and parent-teacher race match. We see in both tables 1 and 2 that minority parents are less likely than their non-Hispanic white counterparts to be involved at school and have race matches. Table 2 shows that parents with a race match have children who score higher on the math IRT than those without a match these parents are also more likely to participate at school than those without a race match.

The regression results indicate that parent-teacher race math is predictive of both parental school involvement and children educational achievement. In table 3, model 1 parent-teacher race match is positive and significant, suggesting that having a race match increases parental school involvement. This effect of race match is wiped out once parental race/ethnicity is included in the models; however, there are no measures for racial/ethnic makeup of the school. Measures of the racial/ethnic makeup of the school may be vital in unmasking the effect of the race match net of parent's race/ethnicity. Parental home involvement is a positive significant predictor of parental school involvement.

The preliminary analysis predicting children's math IRT scores have similar results to the results predicting parental school involvement. In a binary analysis race match is significant. Children with minority parents less educated parents score lower on the Math IRT test, while male children and those whose primary home language is English score higher. I find that both parental home and school involvement are significant predictors of Math IRT scores. Parental home involvement has a negative effect while parental school involvement has a positive effect. This finding requires further analysis, however I suspect that different racial/ethnic groups maybe better at utilizing certain types of parental involvement and that race/ethnic specific models will show positive effects of parental home involvement for certain groups.

The final paper will analyze data from all spring waves of the ECLS-K. Multilevel growth curve models will be used to examine the growth in math IRT scores from kindergarten to fifth grade. Race specific models will also be analyzed to determine which forms of parental involvement work best for each group. Both family and school characteristic will be allowed to time-vary. A more in-depth exploration of school and family characteristics will also be conducted, in particular the analysis for parental school involvement will pay closer attention to

the detail of household composition. This is particularly important because those children who live in extended families may have more access to adults (i.e. grandparents) which may increase the likelihood of parental involvement both at home and at school, as the other adults in the home may be able to act as stand-ins for working parents.

References

Bogenschneider, Karen. 1997. “Parental Involvement in Adolescent Schooling: A Proximal Process with Transcontextual Validity.” *Journal of Marriage and Family* 59:718-734.

Bousfield, Maudelle B. 1932 “The Intelligence and School Achievement of Negro Children.” *Journal of Negro Education* 1:388-395.

Bradley, Robert H., Robert F. Corwyn, Margaret Burchinal, Harriette Pipes McAdoo, and Cynthia Garcia Coll. 2001. “The Home Environment of Children in the United States Part II: Relations with Behavioral Development through Age Thirteen.” *Child Development* 72(6): 1868-1886.

Brooks-Gunn, Jeanne, Greg J. Duncan, Pamela K. Klebanov and Naomi Sealand. 1993. "Do Neighborhoods Influence Child and Adolescent Development?" *American Journal of Sociology* 99(2):353-395.

Brooks-Gunn, Jeanne, Pamela K. Klebanov and Greg J. Duncan. 1996. "Ethnic Differences in Children’s Intelligence Test Scores: Role of Economic Deprivation, Home Environment, and Maternal Characteristics." *Child Development* 67(2):39-408.

Brookover, Wilbur, Charles Beady, Patricia Flood, John Schweitzer and Joe Wisenbaker. 1979. *School Social Systems and Student Achievement: Schools can make a difference.* New York, NY: Praeger.

Campbell, Marian W. 1932. “The Effect of the Broken Home upon the Child in School.” *Journal of Educational Sociology* 5(5): 274-281.

Dauber, Susan L. and Joyce L. Epstein. 1993. “Parents’ Attitudes and Practices of Involvement in Inner-City Elementary and Middle Schools.” Pp. 53-71 in *Families and Schools in a Pluralistic Society* edited by Nancy Feyl Chavkin. State University of New York Press.

Desimone, Laura. 2001. *Linking Parent Involvement with Student Achievement: Do Race and Income Matter?* American Institutes for Research, Washington, D.C.

Duncan, Greg J. 1994. “Families and Neighborhoods as Sources of Disadvantage in the Schooling Decisions of White and Black Adolescents.” *American Journal of Education* 103(1):20-53.

Eccles, Jacquelynne S. and Rena D. Harold. 1996. “Family Involvement in Children’s and Adolescents’ Schooling.” Pp. 3-34 in *Family-School Links: How Do they Affect Educational Outcomes?* edited by Alan Booth and Judith F. Dunn. Lawrence Erlbaum Associates, Publishers, Mahwah, New Jersey.

Garcia Coll, Cynthia, Daisuke Akiba, Natalia Palacios, Benjamin Bailey, Rebecca Silver, Lisa DiMartino and Cindy Chin. 2002. “Parental Involvement in Children’s Education: Lessons from Three Immigrant Groups.” *Parenting: Science and Practice* 2(3)303-324.

Garner, Catherine and Stephen W. Raudenbush. 1991. "Neighborhood Effects on Educational Attainment." *Sociology of Education* 64(4):251-262.

Grolnick, Wendy S., Corina, Benjet, Carolyn O. Kurowski and Nicholas Apostoleris. 1997. "Predictors of Parent Involvement in Children's Schooling." *Journal of Educational Psychology* 89(3):538-548.

Grolnick, Wendy S. and Maria L. Slowiaczek. 1994. "Parents' Involvement in Children's Schooling: A Multidimensional Conceptualization and Motivational Model." *Child Development* 65:237-252.

Hill, Nancy and Stacie Craft. 2003. "Parent-School Involvement and School performance: Mediated Pathways Among Socioeconomically Comparable African American and Euro-American Families." *Journal of Educational Psychology* 95(1):74-83.

Izzo, Charles V., Roger P. Weissberg, Wesley J. Kasprow and Micheal Fendrich. 1999. "A Longitudinal Assessment of Teachers Perceptions of Parent Involvement in Children's Education and School Performance." *American Journal of Community Psychology* 27(6):817-839.

Lareau, Annette. 1987. "Social Class Differences In Family- School Relationships: The Importance of Cultural Capital." *Sociology of Education* 60:73-85.

_____. 1989. *Home Advantage: Social Class and Parental Intervention in Elementary Education.* The Falmer Press.

_____. 2002. "Invisible Inequality: Social Class and Childbearing in Black Families and White Families." *American Sociological Review* 67:747-776.

Levine, Daniel U., Holly Lachowicz, Karen Oxman and Ahden Tangman. 1972. "The Home Environment of Students in a High Achieving Inner-City Parochial School and a Nearby Public School." *Sociology of Education* 45:435-445.

McNeal, Ralph. 1999. "Parental Involvement as Social Capital: Differential Effectiveness on Science Achievement, Truancy, and Dropping Out." *Social Forces* 78(1):117-144.

Miedel, Wendy T. and Arthur J. Reynolds. 1999. "Parental Involvement in Early Intervention for Disadvantaged Children: Does It Matter?" *Journal of School Psychology* 37(4):379-402.

Milne, Ann M., David E. Myers, Alvin S. Rosenthal and Alan Ginsburg. 1986. "Single Parents, Working Mothers, and the Educational Achievement Of School Children." *Sociology of Education* 59(3):125-139.

Overstreet, Stacy, Joel Devine, Katherine Bevans and Yael Efreom. 2005. "Predicting Parental Involvement in Children's Schooling Within An Economically Disadvantaged African American Sample." *Psychology in the Schools* 42(1):101-111.

Reynolds, Arthur J. 1992. Comparing Measures of Parental Involvement and Their Effects on Academic Achievement." *Early Childhood Research Quarterly* 7:441-462.

Reynolds, Arthur J. and Sukhdeep Gill. 1994. "The Role of Parental Perspectives in the School Adjustment of Inner-City Black Children." *Journal of Youth and Adolescence* 23(6):671-694.

Scott-Jones, Diane. 1994. "African American Families and School: Toward Mutually Supportative Relationships." Pp. 75-83 in *School, Family and Community Interaction* edited by Lewis C. Soloman Milken Family Foundation Westview Press.

Senechal, Monique and Jo-Ann LeFevre. 2002. "Parental Involvement in the Development of Children's Reading Skill: A Five-Year Longitudinal Study." *Child Development* 73(2):445-460.

Teachman, Jay D., Kathleen Paasch, and Karen Carver. 1997. "Social Capital and the Generation of Human Capital." *Social Forces* 75(4):1343-1359.

Winters, Wendy G. 1993. *African American Mothers and Urban Schools: The Power of Participation.* New York: Lexington Books.

Table 1: Means and Percentages for Analyzed Variables by Parent Race/Ethnicity

	White	Black	Hispanic	Asian	Other
Dependent Variables					
Parental School Involvement (0-5)	3.495	2.859	2.908	2.859	2.826
Math IRT Score (8-61)	46.118	39.224	40.296	45.264	39.695
Parental Characteristics					
Parent-Teacher Race Match	0.942	0.245	0.279	0.068	0.148
Educational expectations for child	3.892	4.011	4.238	4.478	3.633
Education					
Less than High School	0.038	0.137	0.302	0.084	0.109
High School Graduate	0.292	0.426	0.376	0.178	0.414
Some College	0.279	0.293	0.200	0.192	0.305
Bachelors Degree or higher	0.391	0.143	0.122	0.545	0.173
Employment					
Stay at home Parent	0.436	0.574	0.410	0.479	0.436
Looking for work	0.259	0.123	0.157	0.152	0.240
Works less than 35 hours per week	0.020	0.056	0.065	0.015	0.081
Works more than 35 hours per week	0.285	0.247	0.368	0.354	0.244
Family Characteristics					
Home Language is English	0.984	0.989	0.461	0.478	0.910
Total Household Income per $1,000	63.232	29.487	31.617	59.610	40.453
Family Structure					
Two Biological Parents	0.747	0.324	0.692	0.881	0.586
Step Parent Family	0.061	0.073	0.056	0.018	0.087
Single-mother	0.143	0.477	0.222	0.072	0.198
Single-father	0.021	0.018	0.012	0.027	0.054
Adoptive Family	0.015	0.019	0.001	0.001	0.025
No parental figures	0.013	0.089	0.018	0.002	0.049
Child Characteristics					
Male	0.516	0.477	0.522	0.533	0.554
Number of Siblings	1.412	1.622	1.692	1.638	2.088
Social Capital					
Parental Home Involvement	11.601	11.235	11.129	10.950	11.703
School Type					
Public	0.819	0.922	0.936	0.822	0.901
Private Religious	0.159	0.069	0.060	0.148	0.096
Private	0.022	0.009	0.004	0.030	0.003
Number of other parents talked to regularly	2.872	1.496	2.258	2.183	2.027
Number of bilingual teachers and aides	0.662	1.186	6.014	2.123	1.808
N	5,954	1,091	1,168	432	313

Source: Early Childhood Longitudinal Study-Kindergarten, Spring of First Grade.
The data has been weighted using the spring of first grade cross sectional child-parent-teacher weight.

Table 2: Means and Percentages for Independent Variables by Parent-Teacher Race Match

		No Race Match	Race match
Dependent Variables			
	Parental School Involvement (0-5)	2.965	3.408
	Math IRT Score (8-61)	41.249	45.174
Parental Characteristics			
	Race/Ethnicity		
	Non-Hispanic Whites	0.116	0.871
	Non-Hispanic Black	0.363	0.055
	Hispanic	0.363	0.065
	Asian	0.081	0.003
	Other	0.078	0.006
	Educational expectations for child	4.075	3.926
	Education		
	Less than High School	0.152	0.074
	High School Graduate	0.375	0.304
	Some College	0.269	0.266
	Bachelors Degree or higher	0.204	0.357
	Employment		
	Stay at home Parent	0.491	0.437
	Looking for work	0.160	0.246
	Works less than 35 hours per week	0.047	0.028
	Works more than 35 hours per week	0.301	0.290
Family Characteristics			
	Home Language is English	0.777	0.936
	Total Household Income per $1,000	38.551	58.670
	Family Structure		
	Step Parent Family	0.565	0.723
	Single-mother	0.063	0.061
	Single-father	0.300	0.163
	Adoptive Family	0.019	0.021
	No parental figures	0.009	0.015
	Two Biological Parents	0.045	0.017
Child Characteristics			
	Male	0.506	0.516
	Number of Siblings	1.624	1.463
Social Capital			
	Parental Home Involvement	11.318	11.519
	School Type		
	Public	0.909	0.832
	Private Religious	0.081	0.149
	Private	0.010	0.020
	Number of other parents talked to regularly	1.834	2.840
	Number of bilingual teachers and aides	2.580	1.244
	N	2,597	6,361

Source: Early Childhood Longitudinal Study-Kindergarten, Spring of First Grade.
The data has been weighted using the spring of first grade cross sectional child-parent-teacher weight.

Table 3: Multiple Regression Analysis Of Parental School Involvement

	Model 1	Model 2	Model 3	Model 4
Parental Characteristics				
Parent-Teacher Race Match	0.442 ***	-0.056	0.009	-0.035
Race/Ethnicity (vs. Non-Hispanic Whites)				
Non-Hispanic Black		0.104 ***	-0.235 **	-0.188 *
Hispanic		0.075 ***	-0.162	-0.142
Asian		0.114 ***	-0.641 ***	-0.567 ***
Other		0.168 ***	-0.335 *	-0.357 *
Educational expectations for child			0.140 ***	0.107 ***
Education (vs. Bachelors Degree or higher)				
Less than High School			-0.813 ***	-0.707 ***
High School Graduate			-0.506 ***	-0.412 ***
Some College			-0.181 ***	-0.123 **
Employment (vs. Works more than 35 hours per week)				
Stay at home Parent			-0.053	-0.012
Looking for work			0.176 ***	0.160 ***
Works less than 35 hours per week			0.142	0.166
Family Characteristics				
Home Language is English			0.202 **	0.167 *
Total Household Income per $1,000			0.002 ***	0.001 ***
Family Structure (vs. Two Biological Parents)				
Step Parent Family			-0.347 ***	-0.264 ***
Single-mother			-0.413 ***	-0.355 ***
Single-father			-0.602 ***	-0.577 ***
Adoptive Family			-0.098	-0.031
No parental figures			-0.178	-0.147
Child Characteristics				
Male			-0.076 *	-0.045
Number of Siblings			-0.071 ***	-0.059 ***
Social Capital				
Parental Home Involvement				0.052 ***
School Type (vs. Private)				
Public				0.218
Private Religious				0.434 ***
Number of other parents talked to regularly				0.081 ***
Number of bilingual teachers and aides				-0.004
Intercept	2.965 ***	3.547 ***	3.056 ***	2.102 ***
R^2	0.025	0.052	0.192	0.246

Source: Early Childhood Longitudinal Study-Kindergarten, Spring of First Grade N=8958.
p<.10, * p<.05, ** p<.01, *** p<.001.
All models have been weighted using the spring of first grade cross sectional child-parent-teacher weight.

Table 4: Multiple Regression Analysis Of Standardized Math IRT Scores

	Model 1	Model 2	Model 3	Model 4
Parental Characteristics				
Parent-Teacher Race Match	3.925 ***	-0.997	-0.559	-0.640
Race/Ethnicity (vs. Non-Hispanic Whites)				
Non-Hispanic Black		-7.589 ***	-5.728 ***	-5.668 ***
Hispanic		-6.484 ***	-3.662 ***	-3.704 ***
Asian		-1.725 *	-1.328	-1.127
Other		-7.214 ***	-5.108 ***	-4.920 ***
Educational expectations for child			1.030 ***	0.983 ***
Education (vs. Bachelors Degree or higher)				
Less than High School			-4.877 ***	-4.491 ***
High School Graduate			-4.186 ***	-3.879 ***
Some College			-2.126 ***	-2.014 ***
Employment (vs. Works more than 35 hours per week)				
Stay at home Parent			0.031	0.020
Looking for work			0.358	0.211
Works less than 35 hours per week			0.599	0.534
Family Characteristics				
Home Language is English			2.136 ***	2.116 **
Total Household Income per $1,000			0.008 ***	0.006 **
Family Structure (vs. Two Biological Parents)				
Step Parent Family			-0.932 *	-0.729 *
Single-mother			-0.353	-0.141
Single-father			-0.178	0.087
Adoptive Family			-4.379 ***	-4.259 ***
No parental figures			-1.090	-0.884
Child Characteristics				
Male			0.773 ***	0.805 ***
Number of Siblings			-0.236	-0.205
Social Capital				
Parental Home Involvement				-0.182 ***
Parental School Involvement				0.546 ***
School Type (vs. Private)				
Public				-0.657
Private Religious				-0.370
Number of other parents talked to regularly				0.041
Number of bilingual teachers and aides				0.016
Intercept	41.249 ***	47.057 ***	42.017 ***	42.876 ***
R^2	0.043	0.119	0.216	0.223

Source: Early Childhood Longitudinal Study-Kindergarten, Spring of First Grade N=8958.
p<.10, * p<.05, ** p<.01, *** p<.001.
All models have been weighted using the spring of first grade cross sectional child-parent-teacher weight.