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Poverty, Race and the Contexts of Achievement: Examining Educational Experiences of Children in the American South

Maryah Stella Fram
Julie Miller-Cribbs
College of Social Work

Lee Van Horn
College of Arts and Sciences
Department of Psychology

University of South Carolina

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Poverty, race and the contexts of achievement: examining educational experiences of children in the American South

Maryah Stella Fram

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Lee Van Horn

University of South Carolina

Abstract: This paper reports findings of a study examining child-, classroom-, and school-level factors that effect academic achievement among public school children in the South. Using ECLS-K data, we compare and contrast the learning environments in high/low minority and high/low poverty schools. A sizeable minority of Southern children attend schools that are race and/or class segregated; on multiple dimensions these schools are less desirable than are schools attended by more privileged children, and children attending these schools have lower levels of academic achievement. Results from 3-level random intercepts models show that a range of child and family factors, as well as classrooms with less experienced teachers and with more low-level readers, and rural school location all contribute to lower reading gains during first grade. We find no "race effects" on achievement, net of other variables. Issues of "selection" are discussed, and implications for social work are explored.

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Race- and class-gaps in children's academic achievement are a troubling phenomena, and have historically been thought to be connected to school segregation, particularly in the South. Research has provided some support for this idea, with studies showing that, in general, children attending schools with predominantly low-income and/or minority peers (Bankston & Caldas, 1998; Entwisle & Alexander, 1992; Hoxby, 2000; Reardon, 2003) fare worse than would be expected, after accounting for a range of individual and family characteristics. But complexities of accounting for selection into schools, and inadequate attention to more proximal, classroom differences in children's educational experiences make it unclear how much impact race or class concentration, by itself, may have on student learning. Further, we are aware of no study that addresses such issue specifically within the South – an area where the intersection of race and class, and issues of segregation are particularly salient.

This paper reports findings of a study examining child-, classroom-, and school-level factors that effect academic achievement among public school children in the South. We first provide a brief overview of the literature on the importance of peer group composition and classroom processes to individual learning. We then describe our study, report key findings, and discuss next steps as well as the limitations and implications of our analyses.

Review of the Literature

Education is traditionally viewed as a leveler of opportunity. In a free and public education system, children of all backgrounds can theoretically achieve any adult status by seizing opportunities available to all and excelling based on their merit and effort (see Stanton-Salazar, 1997). In an unequal society with a highly residualized social welfare system, the possibility of mobility through education is particularly critical for children born into poor families, and children whose families are marginalized due to racial discrimination.

Problematically, a significant body of research suggests that American schooling does not adequately create equal opportunities (Braswell et al., 2001; Ferguson, 1998; Miller-Cribbs, Cronen, Davis, & Johnson, 2002). In fact, the school achievement gap between poor and non-poor children is troublingly high (Braswell et al., 2001), and due to the race/poverty overlap as well as historical and

ongoing manifestations of institutional racism, it is not surprising that the poverty gap co-exists with a race gap in student achievement (Braswell et al., 2001; Jencks & Phillips, 1998). The South is characterized by high levels of poverty (Rural Poverty Research Institute, 1999; Southern Institute for Children and Families, 2002), a large Black population (U.S. Census Bureau, 2001), and generally poor performance in most domains of educational quality (National Center for Educational Statistics, 2003a, 2003b; United Health Foundation, 2002). Thus, in the South, there is a heightened need to understand and respond to these gaps or order to improve the effectiveness of education as a pathway to opportunity (U.S. Census Bureau, 2001).

While some scholars have focused on cultural or attitudinal explanations for poor and minority children's under-achievement (Ogbu, 1986), the mainstream of research has acknowledged the need for more structural or contextual explanations (Duncan & Brooks-Gunn, 1997; MacLeod, 1995; Tienda, 1991; Wacquant & Wilson, 1989; Wilson, 1987). Decades ago, while "culture of poverty" theorists (i.e. Murray, 1984) argued the failure of public efforts to improve outcomes for minorities, Loury (1977) demonstrated that structural disadvantage, in the form of inherited material and social marginalization, constrains what minority youth can achieve through equal opportunity educational programs. More recently Wilson (1987) has shown how the social isolation of minority youth from mainstream institutions and structures of opportunity constrains achievement. Also, Stanton-Salazar and Dornbusch (1995) and Fernandez-Kelly (1994) each find that the lack of opportunities for mentorship, relationship, support or information from more privileged social ties forecloses many options for poor minority youth, leaving high rates of school failure and early childbearing as sadly predictable outcomes.

Recently, greater attention has been paid to understanding academic achievement in its more proximal school social context. Studies addressing "peer group effects" explore the idea that a child's social ties in school somehow influence that child's individual learning (Bankston & Caldas, 1998; Entwisle & Alexander, 1992; Hoxby, 2000; Johnson, 2000; Reardon, 2003). With consistent findings that higher proportions of minority or low-income children are correlated with lower levels of individual student achievement, "peer group effect" research has become a venue for debating and discussing the

relationship between school segregation and student achievement. But without more nuanced conceptualization and empirical examination of "peer group effects", this direction of research creates troubling ambiguities. "Peer group effects" may represent truly contextual effects of being educated (and socialized) in a race or class homogeneous setting. Alternatively, "peer group effects" could be a reflection of problematic school conditions and processes that are correlated with high minority or high poverty enrollment, perhaps due to funding inequities, or educational bias. Or finally, "peer group effects" could represent the accumulation of child and family risk factors at the school level due to selection processes. Of course, such "selection" processes may ultimately reflect contextual causes – to the degree that an individual's attributes, choices or behaviors are consequences of structural inequalities and processes of marginalization.

Among school conditions, classroom-level processes are deserving of particular attention. In a recent study of kindergarten and first grade classrooms, Stipek (2004) found that schools with higher proportions of minority and low-income children were rated by teachers as having more negative social climates. In addition, classrooms in such schools more strongly emphasized basic skills learning, and teachers used more didactic than constructivist approaches. Teachers' approaches varied as well by the ethnic composition of the classroom, and by the degree to which teachers perceived the families of the children in their classes to have challenges associated with poverty. Pianta, La Paro, Payne, Cox & Bradley (2002) report that predominantly low-income kindergarten classrooms offer diminished instructional climates, and climates that are less child-centered.

Also along these lines, a recent NCES (1999) study found that teachers in high poverty schools used more 'routine skills' such as basic methods, lecture, and worksheets. Finally, Knapp & Turnbull (1990) found that the percent of students in a class who read below grade level has a significant negative relationship to use of teacher-centered approaches. Taken together, such studies indicate that classroom-level phenomena differ in important ways depending on peer group composition. Rutter & Maughan (2002) argue that, in fact, school-level compositional effects on learning are quite small, ". . . likely due to the very high levels of variability in the mediating factors of classroom processes" (pp 451-475).

Today we are experiencing a trend toward school re-segregation (Frankenberg & Lee, 2002). The courts, in line with cultural explanations of race and class inequality, have attributed this re-segregation to personal preference rather than public inequity (Orfield, 1996). At the same time, pressures from the unfunded mandates of "No Child Left Behind" raise the stakes on educational achievement. There is, then, some urgency to unpacking what segregation means and does in our schools. As researchers in the South, we are particularly interested in what is happening in the unique local cultural contexts embedded in this area's highly race-based societal organization. Toward this end, the research presented here has three major aims: 1) to describe the educational environments that are typical to public school children in the South; 2) to examine differences in these educational environments associated with different school levels of race and class segregation; and 3) to examine the effects of child-, classroom- and school-level factors on individual children's achievement.

Method

The data for this study comes from the first two years of Early Childhood Longitudinal Study Kindergarten Cohort (ECLS-K) (National Center for Educational Statistics 2001a; National Center for Educational Statistics 2001b). The ECLS-K tracks the educational development of a nationally representative cohort of children, beginning with their kindergarten entry in fall of 1998. ECLS-K data was collected from multiple sources, including students, their parents, their teachers, and their school administrators. The present study includes measures at the child/family, classroom, and school levels.

Our study considers a subset of the ECLS-K cohort, limited first to students attending school in the South, as identified by the Census region used in the ECLS-K sampling frame. We further restrict our data for analysis to: students attending public schools; those who are white, black, or Hispanic; and those who neither change classrooms during kindergarten, nor change schools between kindergarten and first grade. These restrictions support our analytic focus on children in the South, while also allowing us to attend to the race distinctions most salient to issues of segregation and minority status in the South. Methodologically, the restrictions with respect to classroom and school stability were chosen to reduce cross-classification in the nested data.

Measures

Reading skills: Child assessments of reading skills were conducted in the fall and spring of the kindergarten year, and in the spring of the first grade year. Assessments were scored using Item Response Theory, and we use reading IRT-scale scores at these three time points, with end-of-first grade scores as our outcome measures in the multivariable analysis.

Child and family variables: We account for a set of child and family background and demographic factors that are commonly thought to effect child learning. Child's gender and race are taken from the parent interview data, and child's date of birth is used, along with the school start date to calculate child's age at kindergarten entry. Whether or not the child entered the study as a kindergarten repeater is controlled for in the multivariable models, as is full-day versus half-day kindergarten participation.

Mother's years of education is an ordered categorical variable, ranging from 1=8th grade or below, to 9 = doctorate or professional degree. Family socio-economic status is measured by quintile, and was computed at the household level. Single-parent households are distinguished from two-parent households based on parent interview data, and an indicator for teenage childbearing contrasts children whose mothers had a first child in their teen years, with those whose did not. Finally, dichotomous variables indicate whether parents chose their place of residence in order for their child to attend their particular school ("residential choice"), and whether parents are sending their child to a school they have chosen rather than to their regularly assigned school ("non-assigned school choice").

Classroom variables: Using the spring first-grade teacher data, we identify three domains of classroom environment. Classroom structure is indicated by percent of minority students in the classroom, the proportion of low-reading students in the classroom, and the adequacy of classroom materials. Adequacy of classroom materials is the average adequacy of eighteen classroom items (i.e. books, computer equipment, classroom space), with 2 = "never adequate" to 5 = "always adequate".

Classroom organization is indicated by: time spent in achievement groups, time spent in child-directed versus teacher-directed activities, and evaluation practices based on universal (rigid) versus

relative standards. Time in achievement groups combines teachers reports of time spent, on an average day, in reading achievement groups plus time spent in math achievement groups, ranging from 2 = 1-15 minutes to 4 = more than 60 minutes a day. For child directed time, we calculated the ratio of time spent in child directed activities to time spent in teacher directed whole-class activities, with a resulting range of .2 to 3.

Teacher characteristics were the final classroom domain, and consisted of teacher's ethnicity (white versus not white), teacher's years of employment within the current school, and teacher's type of certification (1-5, with higher numbers representing higher levels of credentialing).

School variables: This study includes three school-level measures. Rural schools are contrasted with non-rural schools. The proportion of minority students and the proportion of free-lunch eligible students are both taken from the administrator's survey at the end of the first grade year.

Data analyses

Our first analytic step was to resolve the issue of missing data. Using SAS 9.1, and making the assumption that the data are missing at random, conditional on the variables in the imputation model, we conducted multiple imputation analyses (Little & Rubin, 1987; Schafer, 1997) at each levels in turn.

The next step in our analysis was to describe the contexts of children's academic achievement -- in terms of both classroom and school characteristics. Two new dichotomous variables – "high poverty school", and "high minority school" – were created to distinguish schools with more than 50% free lunch eligible students or minority students from those with 50% or fewer of such students. Descriptive statistics for the full sample, and bivariate comparisons by high poverty and high minority school status are reported in Table 1, with significant differences in frequencies and means indicated.

Finally, using SAS MIXED PROC and MIANALYZE procedures, potential effects on reading gains associated with school-, classroom-, and child/family-level characteristics were estimated using a series of three-level random-intercept models, as described by Raudenbush and Bryk (2002). With end of 1st grade reading as the outcome, Model 1 is a baseline model, with the only covariates being Level 1 fixed effect controls for child's reading score at kindergarten entry, and child's reading score at

kindergarten exit. In Model 2, a set of child/family level predictors are entered as Level-1 fixed effects, and the change in Level-1 variance is calculated. Raudenbush & Bryk (2002) describe this calculation as an index of "variance explained" (p 74), and in this application the proportion of variance explained by the addition of the set of Level-1 predictors is

$$\frac{\text{Level 1 variance (baseline model)} - \text{Level 1 variance (Model 2)}}{\text{Level 1 variance (baseline model)}}$$

This calculation tells us by what percent the addition of the set of Level 1 predictors reduces the within-classroom variance – in other words, what percent of the child-level variance is explained by the addition of the set of predictors.

The possibility of endogeneity represents a challenge for modeling contextual effects. We attempt to minimize the problem in three ways. First, our longitudinal data allows us to include kindergarten-entry and end-of-kindergarten scores as control variables. In this way, we account for some of the unobserved family and child factors that impact school selection, and also may shape learning. Second, by including a set of child/family predictor variables, we account for some of the well-established mechanisms of family/child selection into different types of schools. And third, the ECLS-K contains items explicitly addressing selection – we include indicators of parents' selection of school by residential choice, and their selection of a non-assigned school as controls in Models 2 – 4.

Model 3 accounts for potential effects related to peer group composition by adding Level 3 (school level) variables indicating the school's percent minority students and percent free lunch students, while controlling for rural (versus non-rural) location. It should be noted that we anticipate a smaller magnitude in school-level effects than would be found in some other "peer group effect" research, since by controlling for end-of-kindergarten learning at Level 1, our Level 3 predictors reflect the variability in 1st grade classroom reading coefficients that is over and above any school-level effect on reading gains during kindergarten. In essence, we are estimating school-level impacts on changes in learning between kindergarten and first grade. In Model 4, we enter Level 2 (classroom level) predictors, examining the coefficients of these new variables, as well as any resultant changes in explained variability or in

coefficients of previously entered variables. Where "reading" is the outcome variable for child *i* in classroom *j* in school *k,* the final model (Mode 4) for our analysis, expressed based on Raudenbush and Bryk's (2002, pp 231-233) notation, is:

Level 1: Child

$$\mathbf{reading_{ijk} = \pi_{0jk} + \pi_{1jk}(kg1\ reading) + \pi_{2jk}\ (kg2\ reading) + \pi_{3\text{-}9jk}\ (child/famvariables) + e_{ijk}}$$

Level 2: Classroom

$$\mathbf{\pi_{0jk} = \beta_{00k} + \beta_{01\text{-}04k}\ (structure) + \beta_{05\text{-}07k}\ (organization) + \beta_{08\text{-}010k}\ (teacher) + r_{0jk}}$$

Level 3: School

$$\mathbf{\beta_{00k} = \gamma_{000} + \gamma_{001}\ (percent\ minority) + \gamma_{002}\ (percent\ poor) + \gamma_{003}\ (rural) + u_{00}}$$

Findings

Of the children in our sample, 1338 (38%) attend high minority schools. Students attending high versus low minority schools differed in several ways. Black students were 2.6 times more likely to attend a high-minority than a low-minority school. Children with single parents disproportionately attend high-minority schools, as do children whose mother became pregnant while a teenager. Children in high minority schools also had mothers with lower levels of education, and lived in households with lower socio-economic status.

Classrooms in high minority schools differ significantly from those in low minority schools on every dimension included in this study. High minority schools have disproportionately fewer white teachers, and have teachers with significantly fewer years at the school, and lower levels of certification than do low minority schools. In terms of organization, classrooms in high minority schools devote more time to achievement groups, more time to child directed activities, and are more likely to have rigid standards for evaluating students' progress.

Classroom structure differs between high and low minority schools as well. Classrooms in high minority schools are less adequate, and have higher proportions of students with low reading skills and low math skills. Not surprisingly, these classrooms also have higher proportions of minority students.

At the child/family level, all of the patterns of difference for high/low minority schools also held true for high/low poverty schools – though the magnitude of difference varied. Thirty-five percent of the sample attended a high-poverty school. Black students were 1.4 times as likely to attend high-poverty

schools as low-poverty schools, and Black students were 3.8 times as likely as white students to attend high-poverty schools. Table 1 summarizes all descriptive and bivariate results [insert Table 1]

Minority and class segregation and achievement. Table 2 shows the mean reading and math IRT scores for all three time points, contrasting high/low poverty school means and high/low minority school means. Children in both high minority and high poverty schools begin kindergarten with significantly lower reading and math skills, and the gap between their skills and those of children in low-minority and low-poverty schools grows slightly over the three time points of the study (see Figure 1). [insert Figure 1]

Multi-level models (see Tables 2 and 3). Model 1 provided a baseline analysis of the variance in each of the three levels, with the Level 1 predictors limited to the controls for kindergarten-entry and end-of-kindergarten reading. The intraclass correlation coefficients (ICC's) for this model are reported in Table 4, data column two. These statistics represent the proportion of variance in Y between children within classrooms (Level 1), between classrooms (Level 2), and between schools (Level 3). In this case, we find that 79% of the variability in first grade reading is between children, 11% is between classrooms, and 10% is between schools.

Model 2 includes a broader set of child/family covariates, aimed at more fully explaining variability at the child-level. Results indicated that children who had repeated kindergarten made less gain in reading skills, as did children in single-parent households and children of teen-age mothers. Girls made greater gains in reading skills than did boys. Interestingly, we find no significant differences in reading gains between black and white children, or between Hispanic and white children, net of the other variables in the equation. The addition of the set of Level 1 predictors resulted in about a 3% increase in the explained child level variance component. The Level 2 variance estimate increased by about 8%, while the Level 3 estimate decreased 17%.

Model 3 was intended to demonstrate the impacts of school peer group composition on student learning. Percent minority children and percent free lunch children were entered separately (analysis not shown), and separately each had a significant coefficient (-.03, SE = .01 for % free lunch; -.02, SE = .01

for % minority). When they are both in the model, and rural location is controlled for, both coefficients drop below the level of significance.

Model 4 adds a set of classroom level predictors of the Level 1 intercept. This addition results in a 10% increase in explained variability at the classroom level, and 3% increase at the school level. These differences are attributable to only a few variables. Classrooms where teachers have longer tenure in the school have higher average reading gains. The coefficient for time in child-directed activities approaches significance, and has a negative coefficient. And, classroom composition significantly effected average reading gains, with a 10 percent increase in the number of low skill readers associated with a .76 point decrease in average reading gains. With the addition of the classroom level predictors, the coefficient on rural school increased in magnitude, and becoming significant at the .05 level. [INSERT TABLES 2&3]

Discussion

At the descriptive level, our findings suggest that school peer group composition is a significant marker of a range of differences in children's educational experiences in public schools in the South. Forty percent of sample children attended a school that had more than 50% minority children enrolled, and nearly as many attended a school that had more than 50% free lunch eligible children. In part, this reflects the large minority population and the high levels of child poverty in the South. However, it also is evidence of substantial concentration of disadvantaged children within a subset of public schools.

The schools into which disadvantaged children are concentrated reflect an accumulation of child and family risk factors. In addition to race and income disadvantage, children in these schools come from households with lower socio-economic status, including lower levels of maternal education. The prevalences of growing up in a single-parent household, and of having a teen mother, also represent potential barriers to these children's educational achievement – to the degree that these conditions may reflect less parental time and know-how for supporting children's learning.

In addition to the risk factors that children bring with them to high-poverty/ high-minority schools, the classroom environments they encounter in their schools are different, and less desirable, than those offered to their peers in low-poverty/low-minority schools. For example, less experienced and less

educated teachers facilitate their learning process, and these teachers make different choices about classroom management. Children spend more time in achievement groups, and teachers in high poverty/high minority schools use more rigid standards for assessing students' learning. Finally, children in high-minority and high-poverty schools are in classes where higher proportions of their classmates have below grade-level reading skills.

Given these differences between children and classrooms in high versus low minority and poverty schools, it is not surprising that, on average, test scores were lower in the high minority/poverty schools than in the low minority/poverty schools. There is, as we would expect, a "gap" in achievement between these types of schools. From a policy/practice perspective, though, the issue is not so much whether a gap exists, but where, in the multiple layers of a child's environment, this gap is created and sustained.

At the multivariable level we find that most of the variability in children's first grade learning is attributable to child/family-level factors. Even when accounting for earlier learning experiences, and a range of family and child characteristics, nearly 80% of the variability in reading is attributable to between child differences. Also important, the addition of Level 1 predictors in Model 2 accounts for a significant increase in explained variability at Level 3. This suggests that a good deal of what appears to be between-school variability in achievement is actually attributable to child/family selection factors.

From a social work/social justice perspective it is important to ask what, fundamentally, this selection process might mean in people's lived experiences. Traditionally, things that are measured at the individual level are thought of as behavioral choices. For example, one significant Level 1 variable in Model 2, "teen Mother", is typically understood to represent a problematic personal choice. Some women "select" to be teen parents, others don't. But alternatively, "teen Mother" can be understood as an expression of some women's lived experiences of social and economic marginality. In the South, early childbearing is unusually common, and is associated with a range of structural factors such as lack of access to adequate health care and family planning services, restrictive abortion laws, sexist cultural and religious influences, and poor educational opportunities (Fram, Miller-Cribbs & Farber, 2005). If women who "select" into teenage motherhood also experience residential segregation in ways that "selects" their

children into poorly equipped schools, then broad structural disadvantage become statistically entangled with individual attributes. Reframing thinking about selection is, then, one important way for social workers to think more critically about context.

In addition to this more structural understanding of Level 1 family variables, some of the Level 1 variability may also reflect contextual differences more directly. Limited by the cross-classification of children during kindergarten and between kindergarten and first grade, this study's analyses reflect kindergarten learning as a Level 1 measure, rather than accounting for learning over time in the outcome. If different schools unequally promote learning, then school effects that took place during kindergarten are netted out of Level 3 variability with the inclusion of Level 1 kindergarten reading score covariates.

While between-child differences dominated the models, and despite the limitations described above, there were nonetheless significant school-level effects. The negative slopes on % minority and % free-lunch (when entered separately) indicate that, even net of kindergarten learning, schools with higher proportions of minority or poor children have, on average, lower gains in first grade reading. The coefficients in this study are, however, of smaller magnitude than those in previous research. For example, Reardon (2003) used the same data in a piecewise linear growth model, and found much larger school peer group composition effects on 1st grade reading. The difference, in this case, may stem in part from something unique about conditions and contexts of segregation in the South. Also, Reardon's analysis differed from ours in accounting for fewer child/family level factors, using aggregated child data for measures of school composition, and in making no use of the classroom level data.

This brings us to the discussion of classroom processes. The addition of the set of classroom predictor variables did increase the explained variability at the classroom level, and in the model overall. It did not, however, reduce the strength of the observed impacts of individual-level factors, or of rural school status. In fact, by reducing 'noise' at the classroom level, the negative effect of rural location was clarified and became significant. This suggests that child/family-, classroom, and school factors, while related, all have unique contributions to children's learning.

Among the classroom factors that had significant effects in Model 4, composition was found to play an important role. We find that having higher proportions of classmates who have below grade-level reading skills lowers the average gains in reading of the class. The rationale behind ability tracking is that all students benefit from instruction that is tailored to their particular skill level. Along these lines, Fertig (2003) found that schools with higher levels of heterogeneity of achievement have lower levels of individual performance. Fertig goes on to suggest, however, that "[ability] segregated classes might exacerbate the effect of educational and, therefore, income inequality because highly able students benefit from segregation whereas low ability students lose"(p 15). If this is so, then classroom-level segregation of low-skill children may be a potent threat to educational opportunity.

Perhaps the most striking finding across the models is the absence of race effects at all three levels. Net of family background factors, child race makes no significant difference in reading gains. This may be a result of the high levels of white poverty in the rural South, and perhaps of the greater prevalence teen-parenting among Southern versus non-Southern whites (Lopoo, 2005). The significance of single parent and teen parent variables at Level 1, and of the rural variable at Level 3 provide support for this hypothesis. If, in fact, it is the greater disadvantage of Southern whites that accounts for the lack of "race effects", then schools could attend more directly to poverty and family structure as risk factors impacting student learning. Politically though, a shift from the historical focus on race, to a focus that prioritizes class disadvantage, may not be easily accomplished -- particularly given a strong Southern conservatism that tends to eschew notions of "class" altogether.

In addition to the limitations already discussed, this study is limited in its ability to define "the South". The ECLS-K regional identifier for "South" is quite broad, including states with very different histories, demographics, and cultural and racial contexts. Findings of a lack of race effects, along with negative effects associated with family structural factors and with rural schools are provocative, particularly in light of common understandings of Southern culture. But future research should explore alternative definitions of the South, contrasting "Deep South" states to other southern states, and perhaps treating states with high Hispanic populations separately from those with high Black populations. Such

analyses will be particularly important for clarifying the nature and impact of race versus class in shaping student achievement. In addition, it will be interesting to consider the explicit comparison of the South to other regions of the country in similar modeling.

Conclusion

This study, in line with previous research, finds significant effects on reading achievement due to child-, classroom-, and school-level differences. A sizeable minority of southern children attend highly race and class segregated schools. These children fare more poorly than other southern children. The reasons for this may be quite complex, but statistically appear most directly linked to child and family level disadvantage that is accumulated within substandard public schools. Current educational policy places increased pressure on public school to produce good results, even among disadvantaged children. At the same time, the rolling back of social policies that support poor single-mother families, provide access to family planning and other basic services represent a threat not only to individual children's learning, but to the overall viability of segregated schools to meet demands for student achievement.

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Table 1. Child, classroom and school characteristics, full sample, and by high/low minority and poverty school

		FULL SAMPLE	MINORITY		POVERTY	
			LOW	*HIGH*	*LOW*	*HIGH*
Variable name		***Mean (SD)/ %***	***Mean (SD)/ %***	***Mean (SD)/ %***	***Mean (SD)/ %***	***Mean (SD)/ %***
Age		5.47(.34)	***5.48***	***5.45***	5.48	5.46
Ethnicity	*Black*	29.2%	***13.2%***	***55.2%***	***18.8%***	***48.3%***
	White	56.0%	***79.5%***	***17.9%***	***68.7%***	***32.6%***
	Hispanic	14.8%	***7.3%***	***26.9%***	***12.5%***	***19.1%***
Gender	*Male*	52.0%	***53.3%***	***50.2%***	52.5%	51.1%
	Female	48.0%	***46.7%***	***49.8%***	47.5%	48.9%
Kindergarten Repeater		3.9%	4.3%	3.4%	3.7%	4.4%
Kindergarten Full Time		85.7%	***89.6%***	***79.4%***	***90.7%***	***76.6%***
Mom education (range 1-9)		3.94(1.65)	***4.17***	***3.57***	***4.28***	***3.30***
Family SES (quintiles)		2.77(1.37)	***3.07***	***2.29***	***3.14***	***2.03***
Residential school choice		29.7%	***34.1%***	***21.2%***	***34.3%***	***21.2%***
Non-assigned school choice		10.6%	11.0%	10.0%	***12.0%***	***8.1%***
Single Parent		27.2%	***18.50%***	***39.87%***	***19.26%***	***40.69%***
Teen Mom		31.7%	***24.56%***	***43.70%***	***22.86%***	***48.66%***
Reading K entry		21.32(7.67)	***22.14***	***20.00***	***22.43***	***19.30***
Reading end of K		31.46(10.11)	***32.54***	***29.71***	***32.86***	***28.89***
Reading 1st		54.54(13.72)	***56.22***	***51.82***	***56.80***	***50.40***
N (for child level variables)		**3501**	**2163**	**1338**	**2263**	**1238**
% Minority		46.01(33.75)				
% Poor		41.25(27.09)				
Rural		22.36	***28.77%***	***13.00%***	21.43%	23.91%
N (for school level variables)		**246**	146	100	154	92
Years teacher taught at current school		7.82(7.17)	***8.58***	***6.56***	8.08	7.33
Teacher certificate (range 1-5)		3.95(.60)	***4.00***	***3.87***	***3.98***	***3.89***
Teacher is white		78.06%	***91.5%***	***55.7%***	***85.6%***	***63.7%***
Rigid evaluation practice		16.70%	***11.9%***	***16.7%***	***11.7%***	***17.5%***
Class in achievement groups		4.76(1.21)	***4.67***	***4.91***	***4.67***	***4.95***
Child directed classroom		.64(.26)		***.62***	***.66***	.64
Percent Minority in classroom		45.62(34.54)	***23.44***	***82.45***	***33.94***	***67.85***
Proportion Read below grade level		.24(.16)	***.22***	***.28***	***.21***	***.30***
Proportion Math below grade level		.17(.14)	***.15***	***.21***	***.15***	***.23***
Classroom adequacy		4.27(.42)	***4.31***	***4.22***	4.29	4.24
N (for classroom level variables)		**1208**	**754**	**454**	**792**	**416**

(bold italics indicate differences that are significant at .05)

Table 2: Parameter estimates for fixed effects

		Model 1			*Model 2*			*Model 3*			*Model 4*		
		B	**SE**	**sig.**	**B**	**SE**	**sig.**	**B**	**SE**	**sig.**	**B**	**SE**	**sig.**
	Variable Name												
Level 1	Reading K entry	.24	.03	***	.25	0.03	***	.25	.03	***	.24	0.03	***
	Reading end of K	.89	.02	***	.86	0.02	***	.86	.02	***	.84	0.02	***
	Residential choice				.79	.32	*	.70	.32	*	.63	.33	+
	Non-assigned choice				-.31	.46		-.31	.45		-.34	.46	
	Black				-.75	.41		-.31	.45		-0.29	.45	
	Hispanic				.29	.49		.60	.52		.59	.53	
	K'gart repeater				-3.66	.76	***	-3.68	.76	***	-3.43	.76	***
	Female				1.12	.28	***	1.14	.23	***	1.11	.28	***
	Single parent				-.89	.36	*	-.81	.36	*	-.80	.36	*
	Teen Mom				-.92	.35	**	-.81	.35	*	-.75	.35	*
	Age				-.58	.44		-.59	.44		-.67	.45	
Level 2	Years at school										.05	.03	*
	Certification										.27	.31	
	White										.38	.59	
	Evaluation practices										-.18	.53	
	Achievement groups										.01	.16	
	Child directed										-1.28	.76	+
	class % minority										-.01	.02	
	class prop low read										-7.60	1.41	***
	classroom adequacy										-.19	.75	
Level 3	% minority							-0.02[a]	0.01		-.01	.01	
	% free lunch							-0.02[a]	0.01	+	-.01	0.01	
	rural							-1.03	-.89	+	-1.23	.57	*

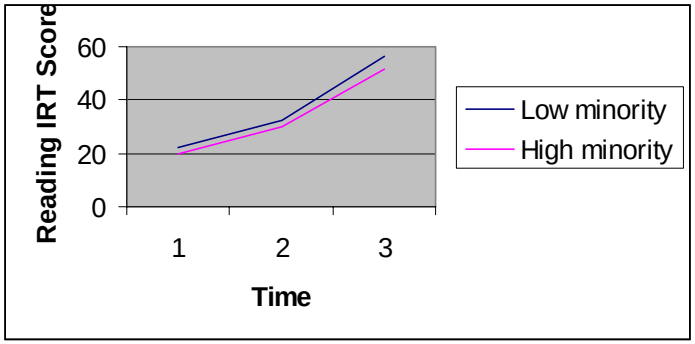
[a] Each coefficient is significant at alpha=.05 when entered separately. *<.05, **<.01, ***<.001, +<.1

Table 3. Variance estimates for each level, and variance explained by each model

	Model 1		**Model 2**		**Model 3**		**Model 4**	
	variance	*ICC*	*variance*	*% explained*	*variance*	*% explained*	*variance*	*% explained*
level								
child	59.88	0.79	58.34	2.57	58.18	0.28	57.80	0.65
classroom	8.58	0.11	9.24	-7.76	9.42	-1.90	8.47	10.13
school	7.50	0.10	6.24	16.82	5.77	7.47	5.60	2.94

Note: ICC = Intraclass Correlation Coefficient

Figure 1. School average reading score differences over time



Time 1 at kindergarten entry; time 2 at end of kindergarten, time 3 at end of first grade