

Does capital at home matter more than capital at school? Social capital effects on academic achievement

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Abstract

A relatively neglected problem is how individuals derive social capital from more than one context and the extent to which they benefit from the capital in each. We examine whether social capital created at home and at school has differing effects on child academic achievement. We hypothesize that children derive social capital from both their families and their schools and that capital from each context promotes achievement. Using data from the National Longitudinal Education Study and structural equation modeling, we show that capital from each context is helpful, with social capital in the family more influential than social capital at school. We discuss the implications of these findings for research on child achievement and for studies of inequality generally.

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1. Introduction

It is well known that there is variation across adolescents in tested levels of achievement (Farkas, 2003; Fischer et al., 1996; Parcel & Menaghan, 1994) and that differences in achievement are associated with variations in school success (Jencks et al., 1972; Sewell & Hauser, 1972). School success, in turn, is a critical predictor of occupational and earnings attainment (Farkas, 1996), an important component of life in meritocratic society, and consequential to the transmission of inequality across generations.

It is also well known that resources from multiple social contexts influence academic attainment among adolescents. After classic studies of occupational status attainment demonstrated the importance of family background and the intervening effects of education on adult attainment (Blau & Duncan, 1967), scholars developed increasingly sophisticated models of why and how education was so consequential (Breen & Jonsson, 2005; Shavit & Blossfeld, 1993). Others studied why various aspects of families, such as family structure (McLanahan & Sandefur, 1994) and family process (Conger, Conger, & Martin, 2010) were influential. Theorists such as Coleman (1988, 1990) pointed to social capital as an underlying construct influential in both families and schools that influenced attainment, as well as to the generality of the social capital concept in explaining other social outcomes. Despite these accomplishments, additional questions remain.

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Specifically, relatively little research explicitly addresses how family and school contexts affect the accumulation and use of social capital as it is transmitted to educational outcomes. For example, does social capital pay off regardless of where it is generated? Or is the benefit of social capital dependent on the context in which the investment is made? In addition, can social capital reflect resources in more than one context?

In this paper we address these issues with a study of family and school social capital effects on adolescent academic achievement. We hypothesize that children derive social capital from their families and from their schools and that capital from each context is influential in promoting academic achievement. We demonstrate that social capital at home and social capital at school are distinct constructs. We also show that capital from each context is helpful in promoting child academic achievement. Our empirical strategies differ from previous work in allowing us to evaluate the extent to which specific measures of capital actually reflect more than one context simultaneously, as well as the overall effectiveness of capital from each context.

We first review literature on social capital that identifies which aspects of families and schools may be important to study. We then review literature pointing to limitations in prior studies of social capital effects on academic achievement, followed by details of our empirical strategy and findings. We conclude by discussing how our strategies can inform questions in the study of inequality more generally by identifying how resources in other contexts, such as neighborhoods and workplaces, also differentially affect stratification outcomes.

2. Background

2.1. *Social capital as a concept and a construct*

By social capital we refer to resources that inhere in the relationships among actors and that facilitate a range of social outcomes (Coleman, 1990). Social capital is contained in relationships among individuals as well as among corporate actors; it reflects the presence of objective ties, as well as subjective relationships contingent upon trust, reciprocity, or other positive emotions (Paxton, 1999). In describing social capital, Coleman (1988) focuses specifically on the information, obligations, and norms that are transmitted through social ties, resources that help children acquire knowledge from adults. Social capital can be used in the production of individual-level goods, such as when a worker recommends a friend for a job (Kirschenman & Neckerman,

1991). Social capital can also be used in the production of group-level goods, as when immigrant groups use within-group ties to promote entire communities (Portes, 1998). We focus on individual-level creation of and returns to social capital, with investments from the family and the school serving as key contexts from which children may draw social resources.

Social capital theory implies purposeful investment on the part of the actors. Considering children's academic development, Coleman (1988) argued that the mere presence of parental stores of knowledge is insufficient to ensure transmission of that knowledge to children. Instead, parents must make specific choices to invest in their children's development and engage in interactions with a specific child to create the bonds along which information can pass. Families who invest expect to see higher levels of academic achievement in their children; they undertake these investments with the expectation that strong academic achievement during childhood will translate into higher levels of education and occupational attainment in later years, thus promoting upward mobility in our stratification system. For this reason, family social capital investment has intergenerational consequences.

The creation of social capital is not limited to the family. Social capital associated with schools refers to investments between students and schools that can facilitate educational outcomes. These bonds can reflect community ties, but typically refer to the relationships that parents and children form with school teachers and personnel. For example, arguments regarding the superiority of Catholic schools are based on the notion that the religious ties that link many attendees, their families, and their teachers promote common norms useful in supporting academic achievement (Coleman, 1988, 1990; Morgan, Sorensen, & Todd, 2009). In addition, attending Catholic schools may promote the formation of social capital through social closure; parents are more likely to have relationships with other parents whose children also attend the school. Adults in non-family settings, such as coaches and church leaders, also incur costs of investing in children as they transmit knowledge and norms that support academic achievement.

In addition, Putnam (2000) distinguished between bonding and bridging social capital. Bonding capital includes the intra-family connections we have described above, connections that we argue facilitate academic achievement for children and adolescents. In addition, there is considerable evidence that children benefit from the social connections that parents have with others such as neighbors, school personnel, and work colleagues (Crosnoe, 2004; Dufur, Parcel, & McKune,

2008; Johnson, Crosnoe, & Elder, 2001; Parcel & Dufur, 2001a, 2001b). These connections illustrate bridging social capital; the stronger these connections are, the greater the resources to which children have access. Because parents and schools share the responsibility of educating children, both bonding and bridging social capital may be important in promoting academic achievement.

The United States is not the only locale in which scholars have studied these issues, often in the context of analysis of cultural capital as well as social capital.¹ For example, using the 1992–1993 Netherlands Family Survey, De Graaf, De Graaf, and Kraaykamp (2000) demonstrated that parental reading behavior has a stronger effect than parental beaux arts participation on children's educational attainment, particularly when the parents themselves have low levels of education. Pensiero (2011) argued that it is child engagement in cognitively stimulating activities, rather than participation in organized activities, that predicts reading ability and locus of control. In addition, parental expectations, direct stimulation, parental interactions with the school and children's engagement in cognitively stimulating activities mediated more than half of the SES effect on these two dependent variables, even in the presence of strong controls. Notten and Kraaykamp (2010) studied over 8300 respondents from the Family Survey Dutch Population to investigate the role of parental reading and television viewing, as well as parental guidance on children's reading and television viewing, on child educational attainment. They find that parental reading paid off for children, while parental television viewing was disadvantageous. In addition, active parental investment in children's reading, such as giving children books for holiday gifts, reading to young children and discussing books with them, had a positive effect on children's educational attainment.

Studies of Asian samples take a somewhat different approach. Park, Byun, and Kim (2011) found that parents invested considerable resources in locating and monitoring private tutors for their children. Lee and Shouse

(2011) showed that such “shadow education” was tied to students' desires to attend prestigious higher educational institutions. Bassani (2006) studied the effects of social capital at home and at school on math achievement in Canada, Japan and the United States. She found that supportive family interaction had positive effects in all three societies, while the effects of social capital at school were stronger than those at home in Japan, but weaker than those at home in the United States. More generally, Ferguson's (2006) review of studies from several countries highlighted the consistency across these studies, with investment in social capital tied to positive measures of children's well-being.

Social capital theory, then, explains the mechanisms and processes by which bonds between children and other actors, such as their parents or their teachers, produce academic achievement. Adult investment in children is more than supervision; it creates the mechanisms via which children are socialized and educated. Family and school environments characterized by low levels of social capital will be insufficient to transmit necessary information and knowledge to children, leading to lower levels of achievement.

2.2. *Promoting academic achievement: families versus schools*

There are theoretical reasons to distinguish between the capital created in the family and that created at school. The ties created between parents and children are strong, the result of repeated and frequent interactions; because the parent–child bond is one of the most intimate relationships in early life, we would expect the social capital created in families to exert a heavy influence on child academic outcomes, even into adolescence.

The ways parents choose to invest in their connections with their children, then, can have powerful and long-lasting effects. Lareau (2011) argues that middle class and working class or poor children experience “unequal childhoods” as a function of differing socialization strategies at home. Middle class parents use concerted cultivation, creating a full schedule of activities for their children to encourage academic development through intense parent–child interaction and activities coordinated with schools. In contrast, working class and poor parents schedule far fewer activities and instead view child development as accomplishment of natural growth. They are less likely to actively play with their children, leaving offspring more time to spend in free play. They also talk with their children less (Hart & Risley, 1995).

Still, while parental influences remain strong throughout the teen years (Amato & Booth, 2000), relationships

¹ Some international research studied cultural and social capital together, often seeking to parse the effects of these respective forms of capital on academic outcomes of children and adolescents (Jager & Holm, 2007; Notten & Kraaykamp, 2010). Our focus differs, in that we seek to untangle the effects of social capital at home and at school. These lines of research are related, however, in that some studies used indicators of what they call cultural capital that others might identify as social capital (e.g., Yamamoto & Brinton, 2010). While addressing cultural capital effects on child cognition is not our purpose here, these related approaches both offer important insights into the reproduction of social inequality across generations.

with people outside the kin circle become increasingly important as children age. We expect that students who make additional investments in social capital at school by participating in activities that introduce closer relationships to peers, teachers, and other parents would see returns to that investment in the form of greater achievement. In addition, parents who become involved in their child's school or who get to know other parents are investing in a set of weak ties (Granovetter, 1983) or in bridging social capital (Putnam, 2000) that provide broader access to social resources promoting academic achievement than parents who rely only on the strong ties of close-knit kin and neighborhood circles. Lareau (2011) adds to this argument when she notes that working-class parents are less effective in dealing with schools than middle-class parents because they are not as assertive in their children's education in making requests of teachers and other school personnel. The discordance between the schools' expectations for parental involvement and the lower levels of this involvement among working class/poor families are a hindrance to child academic achievement.

However, debate continues as to the degree to which schools actually influence children's learning. Heckman (2008) argues that ability gaps across children develop early in their lives, and that the family environments of young children are major predictors of later success; he also argues that early interventions, including those within families, are more efficacious in promoting positive school outcomes, while later interventions such as improved pupil–teacher ratios have weaker economic returns. Similarly, Grubb (2009) argues that school factors vary in their effects on student learning, and favors policies that bolster both families and schools in order to promote student academic outcomes. Others argue that the ways families shape students' lives may not be something that even very good schools can overcome (cf. Hanushek, 1994; Morgan & Sorensen, 1999). Some of Coleman's evidence for the importance of social capital, such as the effects of attending Catholic schools or schools with low teacher–student ratios, diminish notably once background controls are introduced (Alexander & Pallas, 1985; Hallinan & Kubitschek, 1999). At the same time, other studies link school social and financial resources to greater achievement (cf. Elliott, 1998; Greenwald, Hedges, & Laine, 1996; Parcel & Dufur, 2001a). The lack of consensus on school effects underscores the need to more carefully consider the context from which students receive social capital when contemplating how to improve educational outcomes.

In addition, the debate about how to empirically handle the potential differences between family and school resources continues. For example, some scholars have argued that social capital as measured by the social ties between parents and children's friends and between parents and other adults should be considered an individual-level resource (Carbonaro, 1999; Hallinan & Kubitschek, 1999) while others view it as a school-level resource (Morgan & Sorensen, 1999). While proponents of both positions make compelling arguments, their divergent analytic choices lead to divergent findings, with *individual-level* social capital sometimes positively related to academic outcomes and *group-level* social capital potentially a negative predictor of academic outcomes. Parcel, Dufur, and Zito's (2010) review documents these arguments.

This lack of consensus provides little guidance for researchers trying to model the effects of capital on children's achievement. We take this debate as a point of departure. Our approach allows a more explicit test of whether social capital created at school can be distinguished from social capital created in families. Further, we can examine whether family or school social capital is stronger in its effects on academic achievement.

2.3. *Social capital effects on academic achievement*

Several studies deal obliquely with the notion that capital from more than one context may be influential in predicting academic outcomes. Teachman, Paasch, and Carver (1996) posit that social capital protects students against dropping out of school. Their analyses show strong protective effects of social capital, but they consider attendance at a Catholic school and living in a two-parent family as two indicators of the same idea—social capital—rather than investigating whether the site (in a school or at home) or type of investment (bonding between teachers and students or bonding between parent(s) and children) makes a difference. Similarly, McNeal (1999) explicitly looks at both parent–child discussion and PTA participation as social capital in direct contrast to human and financial capital, but does not investigate whether these indicators might be substantially different from each other because one is created at home and one is created at school. Pong (1998) demonstrates the influence of social capital on 10th-grade mathematics and reading achievement as a macro-level aggregation of the effects of individual students' family capital, but this analysis focuses on the need to control statistically for nested levels of data rather than distinguishing between contexts in which capital might be created. Family-based indicators, such as

percent of students from a single-parent family or percent of students who say their parents know their friends well, and potentially school-based indicators, such as principal-reported measures of parental involvement, are all modeled at the school level to try to capture systemic effects. In contrast, we view family-based indicators and school-based indicators as potentially reflecting separate constructs.

Other scholars speculate that social capital exists in more than one context but have not fully tested this supposition. Swanson and Schneider (1999) suggest that moving to a new school and moving to a new home have different consequences. Using NELS data and distinguishing among students who change only houses, only schools, or both houses and schools, they find that the type of mobility matters, with school changes exerting important effects. However, they frame these differences as mobility issues rather than focusing on the varying contexts in which social capital might be accrued. The effects of changing schools may be due to the loss of school social capital, while family social capital in their analyses remains largely intact. Furstenberg and Hughes (1995) attempt to examine social capital in two separate spheres, within and outside the family, by examining 252 children of young mothers. They include both measures of what they call “within-family” ties (such as parents and children sharing activities) and “family’s embeddedness in the community” (such as school quality). They find positive effects of social capital, but conclude in the end that more research is required to distinguish adequately among potential types of social capital and how those types affect different outcomes. In sum, these studies show that social capital may be tied to many positive child outcomes, but do not clearly estimate the relative strength of capital effects across contexts. We agree with Furstenberg (2005), who called upon researchers to more thoroughly study the embeddedness of actors in larger social systems in order to measure more accurately social capital and understand how actors use it. Our empirical strategies allow us to assess whether capital in one context is more important than capital in another in affecting child achievement, thus suggesting where interventions might be more effective.

Several analyses that have attempted to model children’s social capital guide the current investigation. Parcel and Dufur (2001a) argue that capital at home and at school may operate in parallel ways, demonstrating that both are helpful in promoting reading and mathematics achievement among 5–13-year-old children. They find that capital acquired in families sometimes interacts with capital acquired at school to produce desired

outcomes; for example, more positive school social environments help blunt the negative effects of very high maternal work hours. Similarly, Crosnoe (2004) uses data from the National Survey of Adolescent Health to argue that social capital may be housed in both the family and the school and that those institutions and the capital they create may be intertwined to facilitate academic achievement. His findings provide additional evidence for the idea that family and school capital work both independently and together to affect child outcomes. Finally, Hoffmann and Dufur (2008) find that high-quality schools partly compensate for poor parental attachment and low parental involvement in school in preventing juvenile delinquency, especially for low-achieving youths.

What these studies could not demonstrate, however, is the extent to which a given indicator of capital may actually reflect capital from more than one context. For example, when a parent participates in school organizations, does this reflect family capital? Or does it reflect the creation and strengthening of capital at school, given that the associations parents are building are derived from the school context? Or does it reflect both forms of capital, with the potential that such involvement could provide two pathways of influence to promote child achievement?

Another limitation of these analyses is that their models could not produce a summary measure of a complex concept like social capital. Previous work, particularly studies looking at the effects of family and school social capital on child well-being, has tended to use sets of single indicators to try to capture the effects of social capital. For example, Teachman et al.s’ (1996) excellent paper explicitly distinguishes among family and school capital, but uses sets of single indicators in a multivariate setting to test that rather than measuring social capital as a more global construct that might encompass a number of investment approaches (see Parcel & Dufur, 2001a, 2001b, and others for similar strengths and weaknesses). Such an approach may introduce measurement error and may not be sufficient to investigate the effects of the underlying concept of social capital (Paxton, 1999). In addition, using individual variables restricts the ability to distinguish clearly between capital at home and at school, limiting the ways the findings may be used to craft intervention programs. While previous research reveals that more family indicators than school indicators were predictive of cognitive development (Parcel & Dufur, 2001a), the findings do not allow us to conclude definitively that family social capital is more important than school social capital in creating positive academic outcomes. Through use of structural equation modeling,

we address the issue of measurement error and are able to include more—and more accurate—information about the form and function of children’s social capital (Paxton, 1999). Our approach to testing whether social capital is created and used in different contexts also allows a comparison of the strength of capital effects at home and at school. This approach has proved useful in the study of child behavior problems (Dufur et al., 2008); these strategies may also illuminate analyses of child achievement.

2.4. Hypotheses

Our first hypothesis is that social capital is created in both the family and at school. We expect that actors will create important ties and exchange information with both family members and school personnel, but that social capital at school and social capital at home are distinct constructs. Nonetheless, social capital created in disparate contexts may still be interrelated. Thus, our second hypothesis is that there are inter-relationships across measures of each form of capital that reflect both family and school influence on capital creation. Such inter-relationships would indicate that social capital created in multiple contexts is closely connected and would work together in some circumstances to promote achievement. Third, we hypothesize that social capital in the family and at school will each have positive effects on child academic achievement. Fourth, given that several investigations of child outcomes have found a greater number of family than school predictors significant, we believe that the overall effect of family social capital will be stronger than that of overall school social capital in predicting child academic achievement.

3. Data

We use data from the second follow-up wave of the National Education Longitudinal Study (NELS), conducted by the National Center for Educational Statistics. The NELS is a nationally representative study that gathered data from students, parents, teachers, and school administrators. The first wave of the study was conducted in 1988, drawing random samples of approximately 25 eighth-grade students from each of 1000 randomly selected schools. We employ data from the 12th grade surveys, yielding a sample of 10,585 students. The NELS has extensive data on schools and schooling for a large, nationally representative sample over time, and includes many indicators of social capital. The NELS is an especially useful data set for this inquiry as it provides potential indicators of social capital from multiple types of actors. Using the NELS, we can incorporate

information in student, parent, and teacher behaviors, an especially important point in examining bonding and bridging social capital created across different actors and in different settings (Coleman, 1988, 1990; Putnam, 2000). In contrast, other data sets that include data on both family and school contexts, such as the NLSY Child–Mother data set, contain data from fewer informants, thus limiting the richness of the measures. In addition, the data attached to the NLSY Child–Mother data set lack measures of child or parental attachment to the school that are available in the NELS data. Given that our central focus is on theory testing, the age of the data set need not be a major consideration; we address this issue further in Section 7.

4. Methods

4.1. Overall analytic strategy

To assess the structure of social capital, we first perform confirmatory factor analyses using structural equation models in AMOS. Confirmatory factor analysis is the most suitable method to use in this study because it allows us to determine (1) the extent to which each individual indicator does or does not reflect social capital at home or social capital at school; (2) the frequency and extent to which individual indicators reflect capital in *both* contexts, the family and the school. In addition, this strategy allows us to use the best fitting models to estimate capital effects on academic achievement within a structural equation format. We also test for correlated errors between similar items to provide unbiased models. After determining the structure of latent constructs tapping family social capital and school social capital, we investigate the extent to which each of these influences youth academic achievement. We describe the models in greater detail below. We then add demographic controls to determine whether the effects of social capital remain strong when additional factors that have been shown to influence academic outcomes are considered. Finally, we subject these models to additional analyses that demonstrate the robustness of the findings.

4.2. Measures

4.2.1. Dependent measure

Table 1 describes the variables used in the analyses. Our dependent variable, academic achievement, is a composite standardized test score variable of knowledge in math, reading comprehension, and science. Students completed the test during their senior year of high school.

Table 1
Measures and variables.

Variable	Description
Dependent variable	
Composite test scores	Examines math, reading, science, and history knowledge. Scale = 0–100
Capital indicators	
Family social capital	
Parental trust in child	Student report; 0 = only rarely to 6 = all the time
Discuss issues with parents	Three items measuring how often students report discussing (1) school programs, (2) school activities, and (3) school classes with parents (0 = only rarely to 6 = all the time)
Parent checks student's homework	Parental report; 0 = only rarely to 6 = all the time
Parents attend school meetings	Parental report on total number of times; range from 0 to 5 and above
Parents attend school events	Parental report on total number of times; range from 0 to 5 and above
School social capital	
Student participation in extracurricular activities	Student report; four-item scale that includes athletics, academic clubs, and other school extracurricular activities ($\alpha = .74$)
School contacts parent	Parental report; 0 = never to 5 = five or more times
High teacher morale	Teacher report; 0 = low to 5 = high. Higher scores = higher morale
Low conflict between teachers and administrators	Teacher report; 0 = frequent conflict to 5 = no conflict (reverse coded to reflect capital accumulation)
Teachers respond to individual needs	Parental report; 0 = never to 5 = often
School environment	14-Item scale containing items asking students about the degree to which various school problems, such as delinquency, violence, and absenteeism, are a problem in their schools ($\alpha = .88$). Coded so that higher scores = more positive environment
Controls	
Individual-level controls	
Child sex	1 = male; 0 = female
Child race	1 = white; 0 = nonwhite
Family socioeconomic status	Composite of parental education and income, reported by NELS
Maternal marital status	1 = married; 0 = not married
Family size	Parental report of number of children in sibship
School-level controls (Section 5.3)	
Percent free or reduced-price lunch	Administrator report of the percent of students in the school receiving free or reduced-price lunch
Percent low-income students	Administrator report of the percent of students in the school who qualify as low-income
Teacher education	Aggregation of teacher reports of level of education received, recoded to years of post-secondary education prior to aggregation
Highest teacher salary	Administrator report of the highest salary paid to any full-time teacher at the school. Responses range in dollars from 0 to 24,999; 25,000 to 29,999; 30,000 to 34,999; 35,000 to 39,999; 40,000 to 44,999; 45,000 to 49,999; and 50,000+
Teacher experience at school	Aggregation of teacher reports of how of how many years they have taught in their current school

4.2.2. Independent measures: social capital

In this paper, we focus on *individual-level* capital that individual students may accrue through their contact with key actors in their families and schools. While we agree that a global or *collective* form of social capital that students could draw on could be created in an organization like a school, a thorough investigation of the

form and function of that collective good is beyond the scope of this paper. Instead, we utilize variables that indicate potential capital provided either by the adolescent or an adult attached to that specific adolescent. We investigated multiple specifications of social capital using more than 65 potential measures of family social capital and more than 45 measures of school social capital derived

from previous theoretical and empirical work. We used four criteria to select indicators for our models. First, the indicators had to reflect at least one aspect of either bonding or bridging social capital as outlined in previous theoretical treatments. Second, they had to exhibit acceptable factor loadings on the respective constructs of either family or school social capital. Third, their loadings had to be statistically significant. Finally, inclusion of the indicator had to improve the overall statistical fit of the model.

The indicators included in the models reported in Section 5.2 generally meet these four criteria. While we find the exclusion of some variables surprising (for example, family attendance at cultural events), such variables simply were not a good fit to models specifying social capital.² In addition, while data sets examining youth outcomes often include a myriad of school characteristics, a school characteristic does not necessarily indicate school *social capital*. School characteristics such as average standardized achievement scores are likely outcomes of interest that social capital might predict, but they would not directly reflect the social ties, norm transmission, or interconnectedness that would be characteristic of social capital. In the case of two variables (noted below), the indicators meet three of the four criteria; all others meet all four criteria we establish above.

We measure family social capital with seven indicators. Previous theory-building in social capital has argued that trust between individuals and institutions is a key indicator of social capital (e.g. Paxton, 1999). We include a variable asking parents how much they trust their children; higher scores indicate greater trust. Coleman (1988, 1990) argued that adult stores of human capital would have little effect on children's development without the availability of social capital to transmit that knowledge to the children. We are able to tap parent-child interconnectedness, allowing the flow of information from adult to child, in these data. We include variables on how often students say they discuss (1) school programs, (2) school activities, and (3) school classes with their parents; higher scores indicate more discussion. We also use a variable tapping

how often the parent checks homework, allowing them to transmit information about specific academic subjects to children; higher scores indicate more contact. Parental contact with other adults or institutions creates the kinds of closed networks Coleman argues are particularly valuable in encouraging child development. Two items, parental attendance at parent-teacher meetings and parental attendance at school events, tap parental reports of interaction with schools. Although we use some ordinal variables, all such variables have five or more response categories, and none are notably skewed; they are therefore appropriate for use in structural equation modeling.

We model school social capital in the NELS with six items. Looking to tap the networks that connect students, parents, and teachers to each other, building the social capital that will allow adults to transmit information and norms to youth, we measure student participation in extracurricular activities with a four-item scale that includes athletics, academic clubs, and other school extracurricular activities ($\alpha = .74$). To indicate the closed networks Coleman describes, we also include a measure of how often parents say the school contacts the students' parents; although it is possible that schools contact parents in response to poor performance or inappropriate behavior, this variable is positively correlated with our measure of academic performance and so we use it as an indicator of positive contact. Higher scores indicate more contact.

We also examine the connections among other actors at school that could create a store of social capital individual students could access (Paxton, 1999; Putnam, 2000). We note again that although the following variables might indicate a more general store of social capital at school that connects students, teachers, and administrators together, these variables are reported by individual students and teachers and therefore differ for each respondent, representing the individual's perception of the available social capital. Reports of morale among school employees and conflict between school employees, reported by one of the target student's teachers, provide an additional indicator of social capital; high morale and low conflict are linked to greater ties among adults in the school, providing greater overall school social capital into which students can tap. We reverse-code the original conflict measure so that higher scores on both variables would indicate greater social capital. An indicator of student-teacher contact asks parents whether they feel teachers meet the needs of individual students. Higher scores indicate greater contact. We also utilize a 14-item scale containing variables asking students about their school environment. Better

² Previous examinations of the effects of social capital on adolescent outcomes using the NELS data have used multiple combinations of similar measures (cf. Carbonaro, 1999; Hallinan & Kubitschek, 1999; Morgan & Sorensen, 1999; Teachman et al., 1996). Our contribution is not in identifying additional variables that could be used to measure social capital; rather, we use previously studied indicators to examine the ways that capital may be created and used in different contexts and to examine whether the modeling of said indicators in different contexts is important in determining the effects of social capital.

school environments reflect more general adoption on the part of students of pro-social norms taught by adults in the school. In addition, we argue that higher scores on these scales indicate schools where adults and students work to create a positive environment and may be more likely to remain on school grounds and build social ties, an approach commonly used in the study of social capital in neighborhoods (Putnam, 2000; Sampson, Morenoff, & Earls, 1999). These include items concerning the degree to which various issues are a problem in the school: (1) school-related behaviors (such as absenteeism), (2) delinquent behaviors (such as violence), (3) and social issues (such as racism) ($\alpha = .88$). We reverse-code many of the included items so that higher scores indicate more positive school environments.

4.2.3. Controls

After the initial model predicting academic achievement, we estimate a second model that includes basic demographic controls to ensure the effects of the social capital constructs are not spurious. These controls are for child sex and race (Parcel & Dufur, 2001a); family size (Downey, 1995; Parcel & Dufur, 2001a); family socioeconomic status (Duncan & Brooks-Gunn, 1997); and maternal marital status (Kim, 2011; McLanahan & Sandefur, 1994).

4.3. Missing data

Initial analyses indicated that missing data on some of the school variables was of non-trivial proportions, with as much as 15% missing on one school administrator variable. Because many commonly used methods of dealing with missing data produce substantial distortion in variables' distributions and unrealistic variances, we use two strategies to deal with missing variables. First, we use the maximum likelihood estimation option in AMOS, as maximum likelihood estimation improves the accuracy and the power of analyses relative to methods such as mean substitution or listwise deletion (Enders, 2010; Schafer & Graham, 2002). Second, to exert more control over the utilized equations, we follow Little and Rubin (1987) in using interpolation and imputation to deal with cases that have missing data. If a variable is missing data on fewer than 10% of cases, we use linear interpolation to replace missing values. If a variable was missing data on more than 10% of cases, we interpolate scores on that variable through regression imputation, creating a regression equation to predict the variable that has missing data; we could then use the coefficients generated by that equation to create unique new values for each case based on other characteristics of that case.

Findings for both strategies are very similar; we report the latter here.

4.4. Models

An issue of interest in creating the measurement models for social capital in the family and at school was how to deal with interaction between parents and their children's schools. Is such interaction family social capital, school social capital, or something else? We model several possibilities (Fig. 1): (A) children's social capital is most appropriately modeled as one factor, regardless of where the capital is created or used. If this model best fits the data, our findings will provide support for the approaches most often taken in previous research that does not distinguish the site in which capital is created. That is, if this model fits best, we can conclude that it does not matter where capital is created. (B) Children's social capital is created and used in two distinct contexts, families and schools. (C) Children's social capital is most appropriately modeled in multiple contexts, with one latent construct tapping family social capital, one latent construct comprising school social capital, and a third latent construct reflecting social capital created jointly between families and schools. Indicators that tap substantial parent–school interaction, such as student participation in extracurricular activities or parental participation in PTA meetings, might reflect this joint capital. D) Child social capital is created and used in two distinct contexts, families and schools, but some parent–school interaction variables “cross-load” onto both latent variables, indicating both separate contexts for capital and that capital is created and used jointly across two institutions. We test all four of these models and report the best-fitting solutions in Section 5.1.

We then use the social capital latent variables identified in the confirmatory factor analyses to predict academic achievement. We are able to consider family and school social capital as single effects rather than examining individual coefficients associated with multiple variables, allowing us to use standardized coefficients to compare the actual strength of capital created in the family to that created at school.

Although our models include some categorical variables, most have enough response categories to assume unbiased estimates; in addition, estimates we derived using polychoric correlations did not differ significantly (Joreskog & Sorbom, 1993). We therefore report the findings from the non-polychoric analyses here as this allows us to use typical standardized coefficients to indicate size of effect, and most models used in similar literature employ the non-polychoric models, allowing

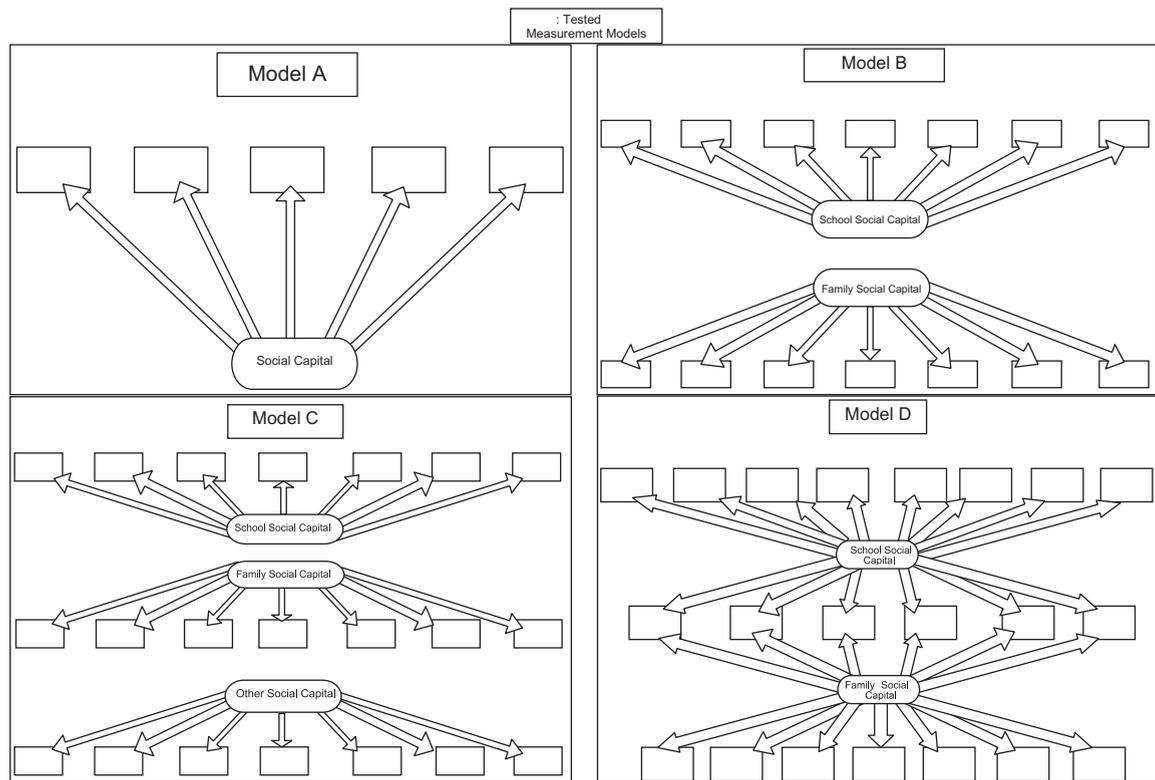


Fig. 1. Tested measurement models.

for comparison across findings. We report standardized coefficients, allowing us to compare the size of effects across variables.

5. Findings

5.1. Measurement models

Table 2 reports fit statistics for each of our four potential models. We use multiple fit indices to more fully evaluate the model (Browne & Cudeck, 1993; Tanaka, 1993). We report the comparative fit index (CFI), which measures the fit of the models as compared to the null model; a CFI approaching one indicates a good fit. The Akaike Information Criterion (AIC), by contrast, can make comparisons across nonnested models. Smaller AICs indicate a better fit. Similarly, the Bayesian Information Criterion (BIC) (Raftery, 1996) is an approximation to the log of a Bayes factor for the experimental model compared to the saturated model, favors parsimonious models and is recommended with large sample sizes, as we have here. Again, lower values on the BIC indicate superior fit. Because the AIC and BIC may be sensitive to large sample sizes, we also include the Browne–Cudeck Criterion (BCC), which

imposes greater penalties for a lack of parsimony than does the AIC. Lower values on the BCC indicate superior fit. We also report the root mean-squared error of approximation (RMSEA) to compare observed and predicted covariance matrices and to take into account model complexity; for models such as ours, an RMSEA below .05 indicates a good fit. We also report chi-square statistics to test across models to determine whether a model fits better than others.

Our findings indicate children’s social capital is best represented as two separate latent factors, one reflecting social capital created in the family and one reflecting social capital created at school. Although this finding would be consistent with either Model B or D, the best fitting model is Model D, or the model in which indicators could “cross-load” onto both latent social capital constructs. In this case, one indicator—student participation in extracurricular activities—cross-loads onto both family social capital and school social capital. As Table 2 indicates, this cross-loading model is a better fit to the data, with a lower RMSEA (.045), a CFI closer to one (.877), and lower values on AIC, BCC, and BIC scores than competing models. Although we note that each of the models has a significant chi-square, potentially indicating poor fit, because the chi-square is a comparison of

Table 2

Comparison of social capital measurement models' fit statistics for Model A (one latent variable), Model B (two latent variables; family social capital and school social capital), Model C (three latent variables; family social capital, school social capital, and joint family–school capital), and Model D (two latent variables—family social capital and school social capital—with shared indicators)—NELS.

Model	χ^2	CFI	RMSEA	AIC	BCC	BIC
Model A	7329.666*** (df = 75)	.476	.072	7417.67	7417.78	7609.82
Model B	5483.571*** (df = 129)	.847	.050	2281.99	2282.11	2474.14
Model C	2419.817*** (df = 76)	.583	.116	2380.00	2380.32	2690.63
Model D	1783.16*** (df = 74)	.877	.045	1873.16	1873.28	2072.65

$N = 10,585$.

* $p < .05$ two-tailed tests.

** $p < .01$ two-tailed tests.

*** $p < .001$ two-tailed tests.

a model to a “perfect fit,” even a slight deviation from a perfect fit can induce a significant score, especially in the presence of a large sample size (cf. Paxton, 1999). Likelihood ratio tests between Model B and Model D, in which Model B is nested, indicate that Model D fits the data significantly better than does Model B ($F = 410.83^{***}$; $df = 1$). Thus, the model that best fits the data suggests two separate forms of social capital, one in the family and another at school, with variables able to indicate capital in both settings, providing affirmative evidence for Hypotheses 1 and 2.

In examining family social capital (see Fig. 2), the standardized coefficients are all significant and in the expected direction: more discussion with offspring, attendance at school events, and supervision of homework can be interpreted as reflecting greater social capital in the family. Parental trust that the student will do what is expected has a small but significant effect; models without this indicator are not as good a fit to the data. Error terms are significantly correlated between parental attendance at school meetings and at school events, a finding we would expect given that the questions are structured in an almost identical fashion and any error associated with how the first item is answered is likely to be similar to the error associated with answering the second. These findings provide support for our arguments that these indicators are all good measures of family social capital.

Similarly, standardized coefficients are all significant and in the expected direction when looking at school social capital: more parental contact with the school; better school environments; and better relations among parents, teachers, and administrators all can be interpreted to reflect greater social capital at school. Although the effect of school contacting parent is small as indicated by the standardized coefficients, the effect is significant, and the model better fits the data with that indicator included. Thus, this measure meets three of our four

criteria. One correlation between error terms is significant: the errors terms associated with participation in school activities and school contacting the parent are significantly correlated, possibly because participation in an extracurricular activity requires substantial coordination between parents and school personnel. These results provide support that all of these measures reflect school social capital.

The indicator of participation in extracurricular events loads onto both the family social capital measure and the school social capital measure when both forms of capital are included simultaneously. Although the factor loading for extracurricular participation on school social capital is small, it is significant, the model fit is superior when it is included, and the connection is theoretically supported. In other words, when modeled together, family social capital and school social capital as measured in the NELS share an indicator, notably one that might require active involvement of both parents and schools in order for successful student participation. These findings provide some support for the idea that although the measurement of youths' social capital must take into account multiple contexts, indicators of social capital may be shared across contexts.

5.2. Explanatory models predicting academic achievement

We now estimate the effects of these respective forms of capital on student academic achievement by using these constructs within path analytic models. The findings in Fig. 3 show that both family social capital and school social capital are positive, significant predictors of test scores. As predicted, the standardized effect of family social capital (.371) is stronger than the effect of school social capital (.106). This difference provides evidence in favor of the hypothesis that capital in the family is more influential for children's achievement than is

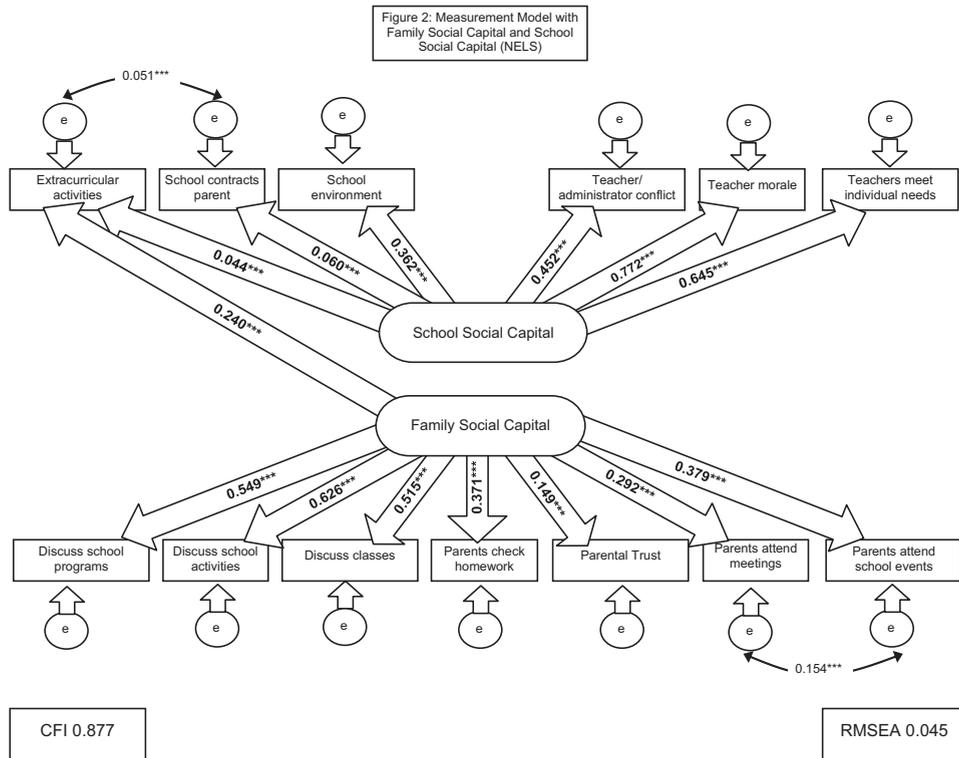


Fig. 2. Measurement model with family social capital and school social capital (NELS).

capital at school; however, school capital is still a significant positive factor in promoting academic achievement even in the presence of family social capital. The remaining epistemic correlations are similar across the measurement and explanatory models. Goodness of fit statistics indicate that this model is a moderately good fit to the data ($CFI = .850$; $RMSEA = .049$); we note, however, that our goal in this paper is testing whether contextualized measures of social capital can be used to explain outcomes such as academic achievement rather than explaining all variance in that outcome.

We test models that introduce basic demographic controls (race, family socioeconomic status, child sex, family size, and maternal marital status) (Fig. 4). In these models, the effects of family social capital and school social capital diminish, in the case of school social capital by more than half, but remain positive, significant predictors of test scores, net of controls. These findings provide evidence that modeling social capital as reflecting separate, distinct constructs can be useful in explaining academic achievement. They also suggest that controlling for these background characteristics, while important for understanding both academic achievement and how social capital affects it, does not interfere with our major conclusion. Specifically, family

social capital is a more important predictor of child academic achievement than is school social capital, net of background controls.

5.3. Additional analyses

We also ran several robustness checks to strengthen our confidence in the findings showing that youth social capital should be measured in multiple contexts and that social capital at home is more important than social capital at school in predicting academic achievement. First, we consider the possibility that demographic statuses such as family SES or race might affect the creation of family social capital. While previous work has shown that the effects of family and school social capital persist net of family and school human and financial capital, it is unclear to what extent other resources may have indirect effects that operate through social capital (cf. Parcel & Dufur, 2001a). For example, if modeling an indirect effect of family socioeconomic status through family social capital renders the direct effect of family social capital on test scores nonsignificant, then our conclusions should stress the indirect effect of family socioeconomic status on test scores working through family social capital. In this case, significant indirect

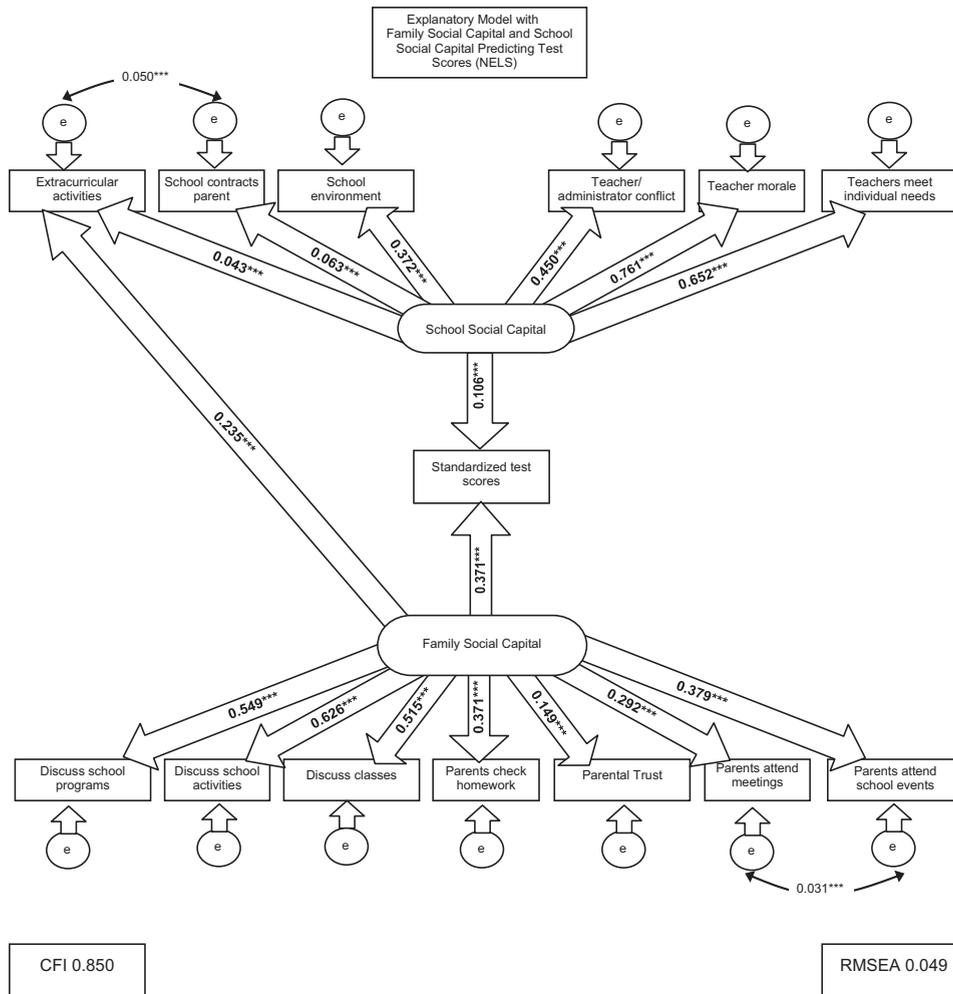


Fig. 3. Explanatory model with family social capital and school social capital predicting test scores (NELS).

effects might reveal that the relationship between family social capital and the dependent variable is largely a mechanism through which basic status characteristics influence academic outcomes, or even that the effect of family social capital is spurious.

To test this possibility, we model indirect effects through family social capital of race, family SES, child sex, maternal marital status, and family size. Each of these variables could potentially affect the creation of family social capital. For example, better educated parents might have greater awareness of the importance of helping their offspring with homework, one of our indicators of family social capital, and therefore might be more willing or able to build capital in that way. Greater income might be a proxy for more flexible work hours, allowing parents to interact with the school more freely. Unfortunately, model identification issues made it impossible to test all of these

indirect effects simultaneously, so each effect was tested individually.

Table 3 shows the results of these analyses. The first column lists the tested effects. The second column, Model 1, shows the effect of family social capital and demographic controls on test scores without the inclusion of indirect effects (in other words, our original model). Each subsequent pair of columns represents the effects of a different test of indirect effects; the first column in each pair displays the coefficients from a model including one indirect effect of a demographic control, while the second shows the change in coefficients compared to the models without the indirect effect. For example, the third column, Model 2, shows coefficients from the model where we test the indirect effects of race on test scores through family social capital. The fourth column shows the difference in the coefficients between Model 1 and Model 2, and so forth. The first row of

Table 3

Tests of indirect effects of individual background control variables on composite test scores through family social capital; standardized coefficients.

Effect of control variable	Model 1	Model 2		Model 3		Model 4		Model 5		Model 6	
	Model with no indirect effects	White → family social capital	Change from M1 to M2 with indirect effect	SES → family social capital	Change from M1 to M3 with indirect effect	Male → family social capital	Change from M1 to M4 with indirect effect	Mother married → family social capital	Change from M1 to M5 with indirect effect	Family size → family social capital	Change from M1 to M6 with indirect effect
Control → family social capital	NA	.167***	NA	.395***	NA	-.112***	NA	.226***	NA	-.198***	NA
Family social capital → test scores	.209***	.206***	-.003	.216***	.007	.206***	-.003	.208***	-.001	.207***	-.002
White → test scores	.102***	.089***	-.013	.099***	-.003	.102***	.000	.115***	.013	.101***	-.001
SES → test scores	.407***	.403***	-.004	.361***	-.046	.405***	-.002	.382***	-.035	.391***	-.016
Male → test scores	-.081***	-.082***	.001	-.087***	.006	-.085***	.004	-.087***	.006	-.083	.002
Mother married → test scores	.255***	.240***	-.015	.250***	-.005	.256***	.001	.266***	.011	.249***	-.006
Family size → test scores	.312***	.311***	-.001	.319***	.007	.309***	-.003	.318***	.006	.304***	-.008

N = 10,585.

*p < .05.

**p < .01.

***p < .001.

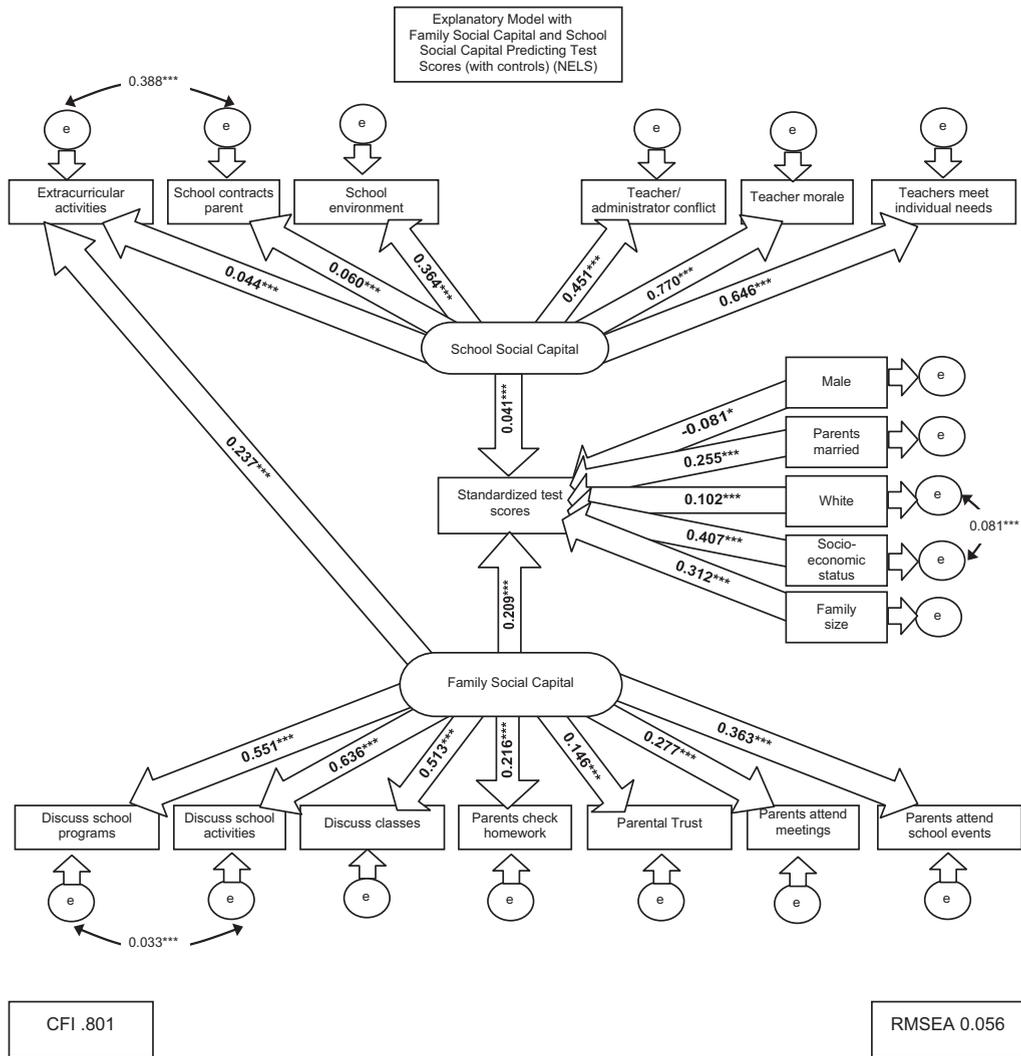


Fig. 4. Explanatory model with family social capital and school social capital predicting test scores (with controls) (NELS).

coefficients shows that all five demographic variables we report here exercise statistically significant direct effects on achievement, as expected and as noted previously in Fig. 4. The second row shows that the effect of family capital on test scores remains strong in the presence of modeled indirect effects, with only very small changes once these indirect effects are taken into account. Family social capital, then, exerts significant effects on academic achievement even in the presence any indirect effects of child race and sex, family SES or size, and maternal marital status. Subsequent rows display coefficients and changes in them across models for the demographic controls themselves; changes across models are minimal. Thus, inclusion of these indirect effects creates very little change in the strength of the effect of family social capital on test scores when any of the indirect effects

are included. The direct effects of the other controls on test scores change only slightly in each model. Statistically, then, inclusion of indirect effects does influence the direct effect of family social capital on test scores; practically, however, these changes are negligible, suggesting that even after controlling for the ways family background influences family social capital, that form of capital still has a positive association with academic achievement.

We conducted a second robustness check concerning school characteristics to strengthen confidence in our findings. Recall that our focus has been on school social capital measured at the *individual* level. However, it remains a possibility that *school-level* factors may influence academic achievement. For example, the percentage of students receiving free or reduced-price lunch

and teacher qualifications/expectations have sometimes been found to influence test scores (Clotfelter, Ladd, & Vigdor, 2007; Roscigno & Crowley, 2001). It is possible that the effect of school social capital will no longer be significant net of such contextual variables. Thus, we test the possibility that the effect of *individual-level* school social capital is spurious by including *school-level* contextual measures in the model.

Because school context variables were measured at the school, rather than the individual, level, these tests require multilevel structural equation models, with the dependent variable, family social capital and school social capital as measured by individuals' responses, and individual-level controls (race, sex, etc.) at Level 1 and school characteristics at Level 2. We measure school context with five variables: percent of students receiving free or reduced-price lunch, percent of students from low-income families, percent of teachers at the school with master's degree or above, teacher pay (highest salary), and teacher experience at current school (see Table 1 for measurement details on school-level variables).³ We note, as above, that model identification issues make it impossible to include all of these variables in the model simultaneously. In addition, inclusion of school-level variables excludes a large number of cases from the sample; taken together, these limitations mean that the following findings should be interpreted with caution. We use the TWOLEVEL analysis protocol and maximum likelihood estimation in MPlus to test these models.

Results of these analyses are displayed in Table 4. The first column lists the effects being tested. The second column, Model 1, shows the effect of family and school social capital on test scores without the inclusion of school-level controls (in other words, our original model). Each subsequent pair of columns represents the effects of a different school-level social capital measure on achievement; the first column in each pair displays the coefficients, while the second shows the change in coefficients compared to the models without the school-level variable. For example, the third column, Model 2, shows coefficients from the model where we include the percent of students in the school who receive free- or reduced-price lunch. The fourth column

³ We ran the same tests using lowest teacher salary and teacher experience in any secondary school setting and found similar results, so we do not report them here for the sake of parsimony. We also tested urban school setting, type of school (public or private), and school size as measured by student/teacher ratio, but as none of these exerted a significant effect on composite test scores and their effects on family and school social capital were negligible, we do not report them here.

Table 4
Tests of school-level control variables on composite test scores; standardized coefficients.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Single-level model (no school-level controls)	% students on free or reduced-price lunch	% low income students	Teacher education	Teacher salary (highest)	Teacher experience at school
School-level control → test scores	NA	.044*	.038*	.063**	.067***	.081***
Family social capital → test scores	.203***	.208***	.207***	.208***	.212***	.205***
School social capital → test scores	.041***	.043***	.045***	.046***	.049***	.047***
		Change from M1 to M2 with school effect	Change from M1 to M3 with school effect	Change from M1 to M4 with school effect	Change from M1 to M5 with school effect	Change from M1 to M6 with school effect
		NA	NA	NA	NA	NA
		.005	.004	.005	.009	.002
		.002	.004	.005	.008	.006

N = 5675.
* p < .05.
** p < .01.
*** p < .001.

shows the difference in the coefficients between Model 1 and Model 2, and so forth. Row 1 shows that all six school-level capital variables we report here exercise statistically significant effects on achievement, as mentioned above. Rows 2 and 3 show that the effects of individual-level family social capital and individual-level school social capital change only very slightly as each of the school-level controls is introduced to the model. Changes in the effects of both family social capital and school social capital are also much smaller than when individual-level controls were introduced, as previous research would suggest (see Figs. 3 and 4). Both forms of capital, then, exert significant effects on academic achievement even in the presence of school-level characteristics. Taken together, the robustness checks summarized in Tables 3 and 4 increase our confidence that family and school social capital are built in different ways in different contexts, that both forms of capital are associated with higher academic achievement, and that family social capital exerts stronger effects on student achievement than does school social capital.

6. Discussion

Our goal in this paper is to investigate whether considering the context in which social capital is created and used refines our understanding of how investment in social resources affects child academic achievement. Because test scores are associated with later school success, inferences regarding where resources are most influential are important to those concerned with how inequality is transmitted across generations. We argue that social capital is not a monolith, but rather that investments in different social sites may potentially lead to different returns. Our analytic strategies help us move beyond prior research in several ways.

Consistent with our first hypothesis, we demonstrate that children's social capital is site-specific. In doing so, we improve upon prior studies that were unable to attend to the context from which social capital indicators are derived. There is less support for our second hypothesis regarding social capital created jointly across contexts. Only one item, participation in extracurricular activities, acts as an indicator of social capital in both contexts. While this may suggest that children's social capital is created and used in two very distinct contexts, we note that this particular variable is indicative of shared effort between families and schools. Participation in extracurricular activities requires clear and considerable investments by *school personnel*, including time spent coaching, supervising, or otherwise training students. Similarly, these activities require considerable

investments on the part of *parents*, who often have to arrange transportation, help raise funds, and chaperone events, bringing the parents into greater contact with their own children, their children's peers, and other parents and teachers. It is possible that activities or situations requiring heavy investment from two parties are best considered as being created across multiple contexts.

Consistent with our third hypothesis, we also demonstrate that capital from two distinct contexts, families and schools, positively affects academic achievement. Our confirmatory factor analysis reveals the extent to which variables reflect the underlying concept of social capital, better enabling scholars to tie the specifics of social capital theory to everyday social interactions both at home and at school. As Coleman (1988) predicted, investment in the social ties that pass along information and create obligations and shared norms helps transmit human capital to the next generation.

In addition, this analytic strategy allows investigators to assess the relative strength of social capital in various contexts, an approach that has value for scholars and policymakers alike. Consistent with our fourth hypothesis, we found that family social capital exerts stronger effects on academic achievement than does school social capital, a finding that clarifies ideas about sites of social investment and may aid practitioners in crafting intervention policies that focus resources where they will have the greatest benefit. These findings highlight the importance of the social capital children experience in the home as critical to promoting child development. In addition, we note that a comparable analysis of child behavior problems also demonstrated that families exerted stronger effects than schools; hence, the evidence appears to be accumulating across these two dependent variables that the location in which social capital is created matters in terms of promoting positive child development (Dufur et al., 2008).

7. Limitations, future research, and implications for the study of inequality

A limitation to our analysis is that we have not studied the role of financial capital at home versus financial capital in schools, nor have we studied the relative effects of human capital at home compared to human capital at school in their effects on child achievement. Although these analyses were beyond the scope of this project, we have controlled for aspects of parental human and financial capital in our models, thus reducing the risk of specification error. In addition, our models also provide a framework for studying the effects of these other forms of capital in future investigations. Such studies would

provide additional information as to whether our conclusions regarding the relative strength of social capital at home and at school would be replicated for these other forms of capital. If we were to find, for example, that parental financial capital (e.g., parental earnings) were more important than financial capital at school (e.g., per pupil expenditures), and that parental human capital (e.g., parental education) were more important than schools' human capital (e.g., teacher qualifications), these findings would provide additional evidence regarding the relative importance of families and schools in reproducing inequality. Most likely, however, the story is much more complex (see Grubb, 2009). Finally, in our additional analyses, we were unable to *simultaneously* control for the measures of indirect and school-level effects included in Tables 3 and 4. It is possible that some of those specific findings could change if such analyses could be conducted.

Nonetheless, our theoretical model can be extended to contexts beyond families and schools to more collective stores of social capital. An obvious connection is to the excellent work by criminologists looking at the capital available in neighborhoods (cf. Sampson et al., 1999). Although the data we use here do not allow for a detailed examination of neighborhood social capital, it is possible that youth may collect stores of social capital in families, schools, and neighborhoods, as well as other settings such as churches or sports teams. Schools, for example, might be a site where collective stores of social capital are available for children to draw upon even if they or their own teachers or parents do not help to create that capital. While beyond the scope of this paper, future research could examine the way social capital is created and used collectively at the school level (such as through principal reports of global school capital) and whether such capital exerts a positive influence on academic achievement beyond the connections individual students make at their schools.

We also speculate that families influence academic achievement for both younger children and adolescents, but that other institutions such as schools exercise more influence as children mature. In our study all children were with a year or two of the same age, thus precluding our ability to investigate whether social capital at school would matter more for older as compared with younger children, a worthy topic for future research. In addition, peer groups likely become more important as children mature (Amato & Booth, 2000), another topic worthy of investigation. Again, the models we have estimated are flexible enough to use in testing such hypotheses. Studying children across age groups also brings up the possibility that stores of capital may fluctuate over time,

both in terms of how much capital individuals may access and in where individuals might create their capital. While the investigation of how capital might shift across time is beyond the scope of this paper, the baseline we provide here—that youth capital is created in multiple contexts—provides a stepping stone for examining those shifts in the future.

Our findings also have implications for scholars who are particularly concerned with the role of schools in reproducing inequality. Schools in the United States have traditionally been asked to do many things, from integrating immigrants into society to ameliorating inequality (Cheadle, 2008; Cuban, 2010). Current debates about school accountability dramatize the tendency for many to argue that if student achievement is lacking, the solution is to “fix” schools, despite decades of evidence from social science suggesting that family influences are very consequential (Coleman et al., 1966; Cuban, 2010; Parcel et al., 2010). In addition, because of the primacy and privacy of family life, many may be reluctant to advocate for strategies that would encourage the creation of greater social capital in the family, preferring instead to encourage investment in capital at school. Our findings in conjunction with previous research (Dufur et al., 2008) suggest that efforts to increase social capital at school, such as initiatives to reduce class size or attempts to create parent–school programs and ties, would probably have a beneficial effects on students. However, we also find that family social capital has a stronger influence on child achievement than does school social capital, even after controlling for socioeconomic status and other demographic characteristics. It remains possible that the relative roles of the family and schools have changed over the years since the NELS data were produced. This is a possibility that future research should investigate.

Nonetheless, looking at these implications highlights the importance of acknowledging how social capital may be constructed in different spheres and the consequences of investment in each of those spheres. Thus, although investment in school social capital may be beneficial, our results suggest that investment in family social capital would reap greater returns. For example, social policies and interventions focusing on increasing academic outcomes could be tailored to allow greater investment in both family and school social capital. One possibility is expansion of supportive workplace policies, such as flextime, that would allow parents to attend school meetings and participate in extracurricular activities with their children without adversely affecting their jobs. Policies such as job-sharing, or encouraging part-time work, that allow parents more time to discuss school with their children or do homework together might build family

social capital and, therefore, have a greater effect on child academic achievement than policies focusing on school social capital. However, most families need full-time work for one or two adults, thus rendering these strategies less practical than flextime in many cases. Communicating to parents how efficacious family social capital can be in promoting positive child outcomes may also be worthwhile (Tough, 2009).

Finally, our findings suggest the need to study the effects of social capital in other contexts, particularly when studying inequality among adults. For example, scholars studying labor markets note that weak ties, or those other than with family, can help explain who gets good jobs (Granovetter, 1983; Kirschenman & Neckerman, 1991). Studies of immigrant experiences show how social capital in the destination community helps new immigrants become successful more quickly than those lacking ties and associations (Portes, 1998; Raijman & Tienda, 1999). In both of these examples, the context in which social capital is located and used appears to be a critical component in gaining desired outcomes. However, to date studies have not systematically demonstrated which contexts are most important in affecting which aspects of inequality, and under which conditions. Our study develops one model of how such investigations might proceed. We look forward to the development of a broad body of evidence regarding the relative importance of several contexts in the reproduction of social inequality.

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