Money over Merit?
Socioeconomic Gaps in Receipt of Gifted Services

Jason A. Grissom, *Vanderbilt University*
Christopher Redding, *University of Florida*
Joshua F. Bleiberg, *Vanderbilt University*

Forthcoming, *Harvard Educational Review*

We investigate receipt of gifted services by the socioeconomic status (SES) of elementary school students and their families. Using nationally representative longitudinal data, we show that gaps in the receipt of gifted services between the highest- and lowest-SES students are profound; a student in the top SES quintile is more than six times more likely to receive gifted services than a student in the bottom quintile. The SES gap is especially large for White and Asian students. Moreover, the gap remains substantial even after taking students' achievement levels and other background factors into account and using school fixed effects to account for school sorting. Even among students within the same school, we estimate that a high-SES student is about twice as likely to receive gifted services as an observationally similar low-SES student. We discuss several potential approaches schools and districts can use to ameliorate the apparent advantages students from high-SES families enjoy in processes surrounding receipt of gifted services.

KEYWORDS: gifted, socioeconomic status, elementary schools, poverty

***

Gifted programs provide enhancements and supports to academically gifted and talented students whose academic needs may not be met in typical general education settings. Research suggests that gifted services provide important benefits to academically advanced students, including improvements in motivation, self-efficacy, engagement with learning, nonacademic self-concept, and overall stress (C.L. Kulik & Kulik, 1982; J. Kulik & Kulik, 1984; Marsh, Chessor, Craven, & Roche, 1995; Rogers, 2007). Participation in gifted programs can also lead to higher academic performance (Bhatt, 2009; Card & Giuliano, 2014; Delcourt, Cornell, & Goldberg, 2007; Goldring, 1990; J. Kulik & Kulik, 1984; Rogers, 2007). Moreover, research suggests that the positive impacts of gifted programs can be even larger for low-income students and students of color than their traditionally more advantaged peers (Card & Giuliano, 2014).

These benefits—including potentially larger benefits for historically marginalized students—motivate the question of whether academically talented students from traditionally disadvantaged groups have equal access to gifted programs. Studies examining race and ethnicity using national data show that Black and Hispanic students are substantially underrepresented in gifted programs relative to White and Asian students (Grissom & Redding, 2016; Grissom, Rodriguez, & Kern, 2017; Donovan & Cross, 2002; U.S. Department of Education, 2016); Black students in particular remain underrepresented even when comparing students with similar measures of achievement and other background characteristics (Grissom & Redding, 2016). A relatively large literature has investigated the reasons for these gaps, including neighborhood segregation that affects the likelihood that students from different groups attend a school with a gifted program, differences in teacher expectations that influence referral across student subgroups, narrow evaluation procedures, and test biases that favor White students (e.g., Grissom & Redding, 2016; Card & Giuliano, 2015; Donovan & Cross, 2002; Ford, 1998; McBee, 2006).

Less attention has been paid, however, to gaps by income or related measures of socioeconomic status (SES), at least on a national scale. This inattention is perhaps in part because a primary source of data on the composition of gifted programs nationwide, the U.S. Department of Education's Civil Rights Data Collection, does not include information on gifted program enrollment by student family income measures. Studies using state or district data sets suggest that lower-income students indeed are less likely to receive gifted services. For example, Hamilton et al.'s (2018) analysis of data from three states finds that third, fourth, and fifth graders eligible for free or reduced lunch (FRL) were substantially less likely to receive gifted services than similarly achieving non-FRL students. McBee's (2006) study of data from Georgia

shows that FRL-eligible students were more than four times less likely to be nominated and to test as gifted than other students. In Card and Giuliano's (2015) study in an unnamed urban district, just 2% of FRL-eligible students participated in the districts' gifted program compared to 5.5% of more affluent students. Several other studies examining district or state samples support the finding that students eligible for FRL are less likely to receive gifted services (Peters & Gentry, 2010; Siegle, McCoach, Gubbins, Callahan, & Knupp, 2015; VanTassel-Baska, Feng, & Evans, 2007; Warne, Anderson, & Johnson, 2013). Research suggests a number of reasons for these differences, including lower scores for lower-income students on test-based measures of academic ability (Plucker & Makel, 2010; Plucker & Peters, 2017) and teacher biases against low-income students in the gifted referral process (Nicholson-Crotty et al., 2016; Ford, 1998; McBee, 2006).

A limitation of the use of FRL status to proxy SES is that it dichotomizes students into two groups: being from a family whose annual income falls below an arbitrary threshold (about $45,000 for a family of four, as of 2015),[1] or being from a family whose income is higher. This operationalization does not permit analysis of whether the observed greater likelihood of gifted identification among non-FRL students just reflects differences between the lowest-SES students and others, or whether advantages continue to accrue as family SES moves further and further above the FRL cutoff. For example, one possibility is that students from low- and middle-income families face similar likelihoods of gifted identification, but group-mean differences between FRL and non-FRL students are driven by big advantages for students from very high income families. Investigating differences in gifted service receipt over a broader distribution of SES is

[1] This income threshold is set at 185% of the federal poverty guideline. See Michelmore and Dynarski (2017) for a discussion of the subtleties of FRL eligibility and the challenges of using it to proxy student poverty.

important both for research on the drivers of income-related gaps and for the design of policies aimed at reducing them.

The goal of this study is to provide a national look at gaps in gifted services receipt by family SES and examine the student and school characteristics associated with those gaps. We argue that such gaps in service receipt can arise through multiple channels, with lower-income students facing potential disadvantages in access to schools with gifted and talented programs, in the gifted referral process, in evaluation procedures, and in retention in gifted programs after identification. Economic, social, and cultural capital provides a conceptual lens for understanding why such gaps may exist, as higher levels of family capital in higher-SES families provides advantages in access, identification, and retention.

We use nationally representative data on public elementary school students to answer two main research questions. First, to what extent does a student's socioeconomic status predict the likelihood that he or she will receive gifted services? Second, to what extent do achievement measures, measures of observable background factors (e.g., race/ethnicity), and the school a student attends explain any observed SES gaps? Importantly, the SES measures we employ move beyond dichotomous FRL/non-FRL categorizations of SES to look over a more complete range of relative family socioeconomic advantage.

We utilize data from the Early Childhood Longitudinal Study, Kindergarten cohort (ECLS-K). The original ECLS-K provides individual-level, longitudinal data on a nationally representative cohort of students who began kindergarten in 1998-99; we use these data for the main analysis. We supplement this analysis with a preliminary exploration of data from the more recent 2010-11 ECLS-K cohort, for which data through third grade presently have been released.

In both cases, we take advantage of rich background information, including student achievement scores, to investigate the connection between SES and gifted services receipt.

The next section provides a conceptual framework linking family SES and associated economic, social, and cultural capital to students' receipt of gifted services. We then turn to a description of the data and methods, followed by the main results. We conclude with a discussion of the implications of our findings for gifted identification policy and practice, as well as implications for future research.

Student Socioeconomic Status and Receipt of Gifted Services

Although there is no consensus on a precise definition of the concept, *gifted and talented* generally refers to students whose abilities or accomplishments are significantly greater than is typical for their age (McBee & Makel, 2019). States and districts vary in how giftedness is operationalized and identified, and in the services they provide to meet the needs of gifted students.[2] Most commonly, gifted programs are offered onsite at the child's school and involve some grouping with other gifted students, with about 40% of programs featuring "pull-out" classes in which students are removed from the regular classroom environment to engage in gifted-specific activities, though these activities vary widely given local control over gifted programming (Bhatt, 2011). Given this variation, it is unsurprising that research shows that specific programs' impacts on student academic outcomes also vary (e.g., Bui, Craig, & Imberman, 2014; Card & Giuliano, 2014), though studies of national patterns suggest positive average effects of gifted programs on student achievement (see Bhatt, 2011). Moreover, research documents positive influences of gifted program participation on such outcomes as student self-

[2] See McBee and Makel (2019) for a discussion and comparison of common definitions of giftedness employed in the field.

esteem, self-efficacy, and engagement with school (e.g., Hertzog, 2003; Marsh et al., 1995). Identification of a high-ability student as gifted opens an opportunity to realize these benefits.

In this section, we link socioeconomic gaps in receipt of gifted services to (1) access to gifted and talented programs, (2) the gifted referral process, (3) evaluation procedures, and (4) retention in gifted programs once a child has been identified for services. We apply insights from research on parental engagement and families' access to different forms of capital to explain the advantages of students from higher-SES families in processes that determine receipt of gifted services (e.g., Alameda-Lawson & Lawson, 2016; Barton, Drake, Perez, St. Louis, & George, 2004; Bourdieu, 1986; Coleman, 1988; Lareau, 1987, 2011; Lee & Bowen, 2006). We begin by briefly describing different sources of capital and how they relate to parental engagement with schooling, then turn to a discussion of different ways in which greater family capital can create advantages for students vis-à-vis receipt of gifted services.

Families of different levels of socioeconomic status have access to different levels of economic, social, and cultural capital. *Economic capital* refers to availability of financial resources. Financial resources can impact student educational experiences in numerous ways, permitting parents to choose neighborhoods that determine attendance at specific schools, facilitating tutoring or educational supplements for students, and granting access to a wide range of extracurricular experiences (Bourdieu, 1986). *Social capital* refers to the social networks, including families, friends, and community members, that enable groups to mobilize resources in a manner that benefits all participating individuals (Coleman, 1988). Families can leverage their relationships with other like-minded parents to marshal information, expert knowledge, and community leadership to achieve their goals (Horvat, Weininger, & Lareau, 2003). Middle- and upper-class parents tend to have higher levels of social capital, which provides them with useful

information about the functioning of schools and facilitate relationships with teachers and other school personnel (Lareau, 1987; Lareau & Horvat, 1999). *Cultural capital* refers to institutionalized beliefs (e.g., norms, understandings of customs, behaviors, credentials) that are broadly accepted and used to signal a high status (Lamont & Lareau, 1988). Families with high levels of cultural capital pursue a series of parenting approaches to support the development of their children's cognitive and social skills. For example, children from these homes participate in more activities organized by adults (e.g., sports, clubs, religious activities) and have greater engagement with cultural pastimes (e.g., art, writing, museums) (Lareau, 2002). These parents also equip their children with positive self-assessments and class-based strategies that can be activated in school to gain benefits over their peers (Heath, 1983). Teachers and other school personnel may then attribute this accumulated cultural capital to high pre-existing levels of intellectual capacity that were, in fact, strategically developed (Bourdieu, 1986). More recent work on parental engagement with schools emphasizes how the specific types of capital that parents bring to social interactions with school personnel or other parents are critical to understanding how various forms of capital are actually enacted (Barton et al., 2004).

Access to different levels of family capital can provide advantages to higher-SES students in receipt of gifted services. Next, we describe how these advantages manifest in access to gifted and talented programs, in the referral process, in evaluation for giftedness, and in retention in gifted programs.

Access to Schools with Gifted and Talented Programs

A fundamental way that higher economic resources may impact receipt of gifted services is by giving families choices over which schools children attend through choice over where they live (Hoxby, 2007). High-SES parents can choose schools with gifted programs. Indeed, prior

research finds that high-poverty schools are less likely to have gifted programs (Hamilton et al., 2018). More subtly, high-SES parents may choose schools in which their children have a higher chance of being admitted to gifted programs. To this point, recent research and media accounts describe how schools in New York City used gifted programs to attract White, middle-class families to remain in neighborhood schools (Roda, 2018; Taylor, 2017).

Referral for Gifted Evaluation

The path to receiving gifted services typically starts with a referral for evaluation—most often from the student's classroom teacher. Referral may be an informal recommendation based on the teacher's perception that the student might be gifted, or, in some districts, may require more formal documentation, such as use of checklists or rating scales aimed at identifying giftedness potential (Donovan & Cross, 2002; McClain & Pfeiffer, 2012). Teacher discretion is key to the gifted referral process, and numerous studies argue that factors that influence teachers' perceptions of giftedness, including their own biases regarding giftedness in students with different characteristics, affect which students are identified (e.g., Nicholson-Crotty, Grissom, & Nicholson-Crotty, 2011; Nicholson-Crotty et al., 2016; Ford, 1998). In a study of data from Georgia, McBee (2006) finds that teachers refer students eligible for free or reduced lunch for gifted evaluation only a third as often as other students.

Family SES can inform the referral process in multiple ways, including through indirect influence on teacher perceptions. Economic resources enable parents to choose extracurricular and supplemental educational activities for their children that strengthen their case for identification for gifted services (Reardon & Portilla, 2016). Activities that lead high-SES students to increase their general or cultural knowledge advantage students because teachers are more likely to construe such knowledge as signs of high intelligence or giftedness (Bourdieu,

1986; Callahan, Tomlinson, Moon, Tomchin, & Plucker, 1995). Similarly, skill in an extracurricular area signals prestige to a teacher that could be conflated with strong academic aptitude (Lareau, 2002).

Moreover, evidence shows that middle- and upper-class parents participate in school activities (e.g., volunteering, parent-teacher conferences) at higher rates than working-class families (Lareau & Horvat, 1999). An extensive body of qualitative research indicates that these experiences help to build parental social networks and improve their capacity to influence school processes, including the receipt of gifted services (Lareau & Horvat, 1999; McNeal, 1999; Mickelson, 2003). Lareau (1987) observed that high-SES parents have more frequent and substantive conversations about their children's academic progress and, in fact, are more likely to request that school personnel place their child in a gifted program. In addition, high-SES parents may also be better positioned to manage the referral process because they can leverage their social networks to access knowledge about school bureaucracies (Horvat et al., 2003; Lareau, 1987; Lareau & Horvat, 1999; McNeal, 1999), and may be more likely to challenge teacher decision-making and advocate for their child in the face of non-referral (Horvat et al., 2003; Lareau, 1987; Lareau & Horvat, 1999).

With less access to these dominant forms of capital, lower-income families often turn to alternative social and cultural resources (Alameda-Lawson and Lawson, 2016; Yosso, 2005). Yosso (2005) describes six forms of cultural wealth, at least three of which are relevant to the gifted referral process. *Aspirational capital* refers to parents' and other guardians' beliefs that their children have the potential to pursue high levels of academic attainment, regardless of present circumstances. To the extent that parents link future academic attainment with participation in a gifted program (Roda, 2018), aspirational capital may drive low-income

families to advocate for their children to be referred. To this point, Yosso develops *navigational capital* as a means by which families from nondominant racial and class backgrounds navigate school bureaucracies structured with middle class families in mind. Regardless of low-income parents' ability to activate navigational capital, administrators and teachers at schools serving high concentrations of students living in poverty may be less receptive to the engagement of parents (Barton et al., 2004; Diamond and Gomez, 2004). In addition, it is worth pointing out that the low rates of low-income students' referral for gifted services may also reflect to some extent *resistant capital* insofar as low-income families opt to not have their children referred for gifted evaluation given a preference for exposing their children to classroom and school diversity that may not be found in gifted programs in some school contexts (Roda, 2018; Yosso, 2005).

Finally, in some school districts, parents are able to directly nominate their children to be evaluated (Roda, 2018). High-SES families typically report higher confidence in the abilities of their children (Lareau, 2011), and research on referral sources shows that higher-income parents are much more likely than lower-SES families to refer their children for gifted evaluation (McBee, 2006).

Gifted Evaluation

Following referral, school personnel formally assess giftedness, typically using standardized giftedness assessments that evaluate intellectual or cognitive talent, though there may also be assessments of other criteria, such as creativity (the so-called "multiple criteria method"). Researchers have raised concerns that these assessments are biased against or unfair for low-SES students who, for example, are more likely to be English learners and therefore have lower language comprehension skills (Carman & Taylor, 2009; Carman, Walther, & Bartsch, 2018; Frasier et al., 1995; Joseph & Ford, 2006; McBee, 2006, 2010). Tests may also be unfair to

the extent to which success requires knowledge of mainstream U.S. culture or language, knowledge that children from non-dominant groups may be less likely to possess (Joseph & Ford, 2006). Studies of both the Naglieri Nonverbal Ability Test (NNAT) and the Cognitive Abilities Test (CogAT) 7, which are commonly used to asses giftedness in elementary schools, have found significant negative correlations between scores and FRL eligibility, even after controlling for a variety of student characteristics and other measures of academic achievement (Carman & Taylor, 2009; Carman et al., 2018). Scholars have raised concerns that many existing approaches are particularly ill-suited to identifying giftedness in low-income students of color (e.g., Goings & Ford, 2018), suggesting the need to look for potential interactions between socioeconomic status and race/ethnicity in examining which students are designated as gifted.

Family economic and cultural capital may also play a role in advantaging high-SES students at the evaluation stage, for at least two reasons. First, wealthy parents can hire private psychologists outside of the school system to test or retest their child for giftedness, which can be prohibitively expensive for low-income families (Card & Giuliano, 2015; Horvat et al., 2003; Mickelson, 2003). Second, enriching activities that affluent children disproportionately access, such as music lessons or art classes (Lareau, 2011), may help them develop aptitudes (or evidence of aptitudes) that are valued in the gifted evaluation process—perhaps especially so in school districts that rely on a multiple criteria approach that values such capacities as creativity, artistic talents, and leadership skills.

Retention in Gifted Programs

Although less often a subject of research, receipt of gifted services also requires students to stay in gifted programs once assigned. Thus, differential attrition rates between high- and low-SES students may contribute to lower rates of gifted participation among less advantaged

students. Students from low socioeconomic status families may find few peers in gifted programs with similar backgrounds (Ford, 1998; Olszewski-Kubilius & Clarenbach, 2012; Shumow, 1997). The resulting isolation could create a negative feedback loop in which low-SES students leave gifted programs, which in turn causes future students to make a similar decision or never enroll in the first place. Peers and teachers may perpetrate microaggressions against students from low-SES families in gifted programs (Stambaugh & Ford, 2015). Indeed, Davis and colleagues (2010) found that students above the FRL cutoff were more likely to remain in gifted programs than FRL-eligible students.

To summarize, families with higher socioeconomic status have access to numerous forms of capital that provide schooling advantages to their children, and existing research supports the hypothesis that these advantages translate into higher receipt of gifted services by giving high-SES students a "leg up" at the referral, evaluation, and retention stages. We now turn to testing that hypothesis.

Data, Measures, and Methods

Our analysis uses data from the Early Childhood Longitudinal Study, Kindergarten cohort (ECLS-K). The ECLS-K contains a nationally representative sample of 21,260 students who attended kindergarten in the fall of 1998 (Tourangeau, Nord, Lê, Sorongon, & Najarian, 2009). The National Center for Education Statistics (NCES) collected follow-up data on these students until the completion of eighth grade. We focus on the elementary school years for public school students, including observations from kindergarten and first, third, and fifth grades. These years include 50,950 student-by-year observations. The analytic sample is reduced to 29,080 observations (in our preferred model) by missing data, due primarily to sample attrition in later waves and incomplete standardized testing data.

Supplemental analyses were also conducted using the ECLS-K:2011, which followed a new cohort of kindergarten students beginning school in 2010-11. At the time of this study, these data were only available through third grade. As most students are assigned to gifted programs later in elementary school, we focus our analysis on the more complete data from the first ECLS-K, though we replicate the patterns from our main analysis using the ECLS-K:2011 to provide evidence on whether the patterns identified in earlier years are present for the more recent cohort.

Measuring Receipt of Gifted Services

The dependent variable is receipt of gifted services in a school year. In each wave, ECLS-K administered a survey to teachers with questions about each child, including whether or not he or she received gifted services. Teachers could respond that students received gifted services in either reading or mathematics. We coded a binary gifted services receipt variable that is equal to 1 if a student received gifted services in a given grade in either reading or math, and 0 otherwise.[3] Receipt of gifted services was observable for 16,110 students in Kindergarten, 13,540 students in first grade, 11,960 students in third grade, and 9,330 students in fifth grade.

Student Socioeconomic Status

The main independent variable is student socioeconomic status. ECLS-K includes a continuous SES measure comprised of five components: mother's education, father's education, mother's occupational prestige, father's occupational prestige, and household income. The education measures describe the highest education level achieved by each parent. The occupational prestige measures are scores assigned by matching the parent's reported occupation with the average prestige score for an occupation based on prestige ratings from respondents to

[3] The operationalization of the dependent variable is identical in the ECLS-K and the ECLS-K:2011 (Tourangeau et al., 2015).

the 1989 General Social Survey.[4] The household income variable aggregates all reported sources of income in the household. Due to non-response in the parent survey, missing data are a significant problem for each of these variables. In the base year of the survey, 28% of the household income data, 11% of the occupational prestige data, 2% of mother's education data, and 4% of father's education data suffer from item non-response. To address this non-response, NCES employed hot-deck imputation to impute missing values for each of the SES components. The components were then standardized and averaged (Tourangeau et al., 2009). In the ECLS-K:2011, the SES variable was created using the same procedure (Tourangeau et al., 2015).

In both survey rounds, NCES also created a categorical SES measure from the continuous measure. This variable takes on five values that approximate quintiles of the continuous SES distribution.[5] We focus our analysis on this SES quintile measure to allow for examination of nonlinearities in the gifted receipt–SES relationship.

Student and School Characteristics

ECLS-K includes detailed measures of students' academic performance, student characteristics, and school context. To operationalize student achievement, we use lagged criterion-referenced composite scale scores for the mathematics and reading tests, which were vertically equated for longitudinal analysis and standardized within each year (Pollack, Narajian, Rock, Atkins-Burnett, & Hausken, 2005).[6] Student characteristics include race and ethnicity, gender, number of siblings, parent's report of the child's health, English language learner (ELL) status, [7] and the child's age in months at entry to kindergarten. The child's health measure is on a

[4] ECLS-K respondents could choose one of 22 occupations.
[5] The ECLS SES quintile variables (*WKSESQ5, W1SESQ5, W3SESQ5, and W5SESQ5*) explained in Tourangeau et al. (2009) assume a normal distribution. Across all waves, there are somewhat fewer students in the lowest SES quintile than in the other quintiles due to skew in these variables.
[6] Including same-year achievement instead of lagged achievement produced similar results.
[7] Students were defined by ECLS-K as ELL based on scores on the Oral Language Development Scale.

five-point Likert scale, which we reverse-code so that higher values indicate greater health.

To account for the nonrandom distribution of students across schools, we control for several school characteristics, including locale type, region of the U.S., school enrollment, mean school test scores (math and reading), the proportion of students eligible for free/reduced price lunches, and the proportions of Black, Hispanic, and Asian students. We also include an indicator for whether or not a school has a gifted program, as captured by the school administrator survey.[8]

Methods

We begin with a descriptive analysis of the relationship between SES quintile and participation in gifted programs. This analysis includes reporting on differences in the rates of receiving gifted services for the five SES quintiles across different racial/ethnic groups and deciles of student test performance. We then construct a series of multivariate models that estimate the probability that a student receives gifted services in a given grade, with controls for student and school characteristics. Equation 1 describes the general form of these models:

$$\Pr(gifted)_{ijt} = \beta_0 + \beta_1 SES_{it} + \beta_2 C_{it} + \beta_3 S_{jt} + \gamma_t + \epsilon_{it} \qquad (1)$$

where SES_{it} is a vector of dummy variables for SES quintiles for student *i* in in school *j* in year *t*, *C* is a vector of child characteristics for student *i* in year *t*, and S_{it} is a vector of characteristics for school *j* in year *t*. A wave fixed effect γ_t is included to account for unobserved factors associated with receiving gifted services each year. We estimate linear probability models (LPM) with

[8] Teachers could report that a student received gifted services even in a school in which the school principal did not report a formal gifted program. Such a case might occur, for example, if teachers provide gifted students with enrichment or accelerated coursework within the general classroom environment.

standard errors clustered at the student level, given the panel design of the data.[9] We employ longitudinal survey weights in all analyses to recover population estimates.

In some models, we replace the vector of school characteristics (S_{jt}) with a school fixed effect, δ_j. This approach accounts for unobserved school-level factors and school selection by making comparisons among students of different SES within the same school. A school fixed effect adjusts for time-invariant school factors, such as school resources and (presumably) the school's gifted assignment processes and procedures, that may be correlated with both student SES and the likelihood of receipt of gifted services.[10]

Results

Differences in the Receipt of Gifted Services by Socioeconomic Status

Table 1 shows descriptive statistics for students in each grade and across years. The first row displays the percent of students receiving gifted services for the analytic sample. Approximately 2–3% of students participate in gifted programs in kindergarten and first grade. In third and fifth grade, this fraction increases to 10–12%. Overall, approximately 7% of elementary school students (K–5) receive gifted services in the typical year in this sample, which is similar to proportions described using other national data sets (e.g., Grissom, Rodriguez, & Kern, 2017).

[9] Under straightforward assumptions, linear probability models are sufficient for estimating marginal effects from binary choice models (Angrist & Pischke, 2008), and are preferred to logit or probit approaches in later models that include a large number of fixed effects.

[10] One concern about the estimation of school fixed effects models is that segregation of students by SES may mean that students from different groups may be found in the same school too infrequently to produce meaningful estimates. Fortunately, there is sufficient integration of students by SES in the ECLS-K cohort. As an illustration, the data show that the probability that a student from the lowest SES quintile has at least one student from the highest SES quintile in his or her school is 54%, and conversely 67% of students in the fifth quintile of SES attend a school with at least one student in the first quintile of SES.

Figure 1 plots the receipt of gifted services by SES quintile for the full sample.[11] It shows that, as SES increases, the proportion of students receiving gifted services increases substantially. Just 2% of students in the bottom SES quintile receive gifted services, yet in the top quintile, 13% of students do; that is, a student in the top 20% of SES is nearly 7 times more likely to receive gifted services than a student in the bottom 20%.[12]

Table 2 compares student and school characteristics across SES quintiles, with tests of significance between the lowest quintiles (Q1) and remaining quintiles (Q2–Q5). The first row examines the proportion of students who receive gifted services, replicating the results in Figure 1. Remaining rows show that low- and high-SES students and the schools they attend also differ on many other dimensions as well. As compared to higher-SES students, low-SES students have lower achievement scores and are more likely to identify as Black or Hispanic. For example, White students make up 81% of the top quintile but only 28% of the bottom quintile. In contrast, Black and Hispanic students each make up only 6% of the top quintile but 24% and 40% of the bottom quintile, respectively. In addition, low-SES students have lower health ratings and are much more likely to be English language learners.

Low-SES students are also more likely to live in urban settings and to attend schools with larger numbers of students who are Black, Hispanic, and eligible for the subsidized lunch program (a measure of poverty). They also attend schools with lower average math and reading achievement scores. Counter to our expectations, however, they are not less likely to attend a school with a gifted program.

[11] The percentage of students reported as receiving gifted services differs slightly in Figure 1 and the first row of Table 1. Table 1 uses only the analytic sample, i.e., the sample for which all covariates are available. Figure 1 uses all observations for which receipt of gifted services information is available.

[12] We also experimented with operationalizing the gifted services receipt variable as "ever receiving services in any grade." About 12% of students ever receive services in any elementary school grade. The monotonic increase across SES quintiles, however, is similar. In particular, only about 6% of students in the first quintile ever receive services, compared to 24% of students in the fifth quintile.

Given the unequal distribution of students from different racial and ethnic backgrounds across SES quintiles, we next describe the receipt of gifted services by SES quintile for different racial/ethnic groups. Figure 2 shows that, across racial/ethnic classifications, students in the top SES quintile have the most frequent gifted program participation.[13] This pattern is strongest among White and Asian students, with 13% of White students and nearly 20% of Asian students participating. The SES gradient is the least pronounced for Black students; only just over 5% of Black students in the highest-SES group are receiving gifted services, suggesting that the "return" to increased socioeconomic status descriptively is not as high for Black students. Interestingly, although Black students have the lowest service receipt probability in every SES quintile, their rates are very similar to White students' in quintiles 1 and 2, and do not become dissimilar until quintile 3. Across SES quintiles 3, 4, and 5, about twice as many White students as Black students receive gifted services.

Figure 3 displays gifted services participation by SES at different levels of student achievement in reading and math, grouped in deciles. As expected, higher-achieving students are more likely to be in gifted programs. Yet even among the top 10% of students, a pronounced SES gradient exists, with students in the two highest quintiles much more likely to receive services. Among students in the top decile of reading scores, for example, those in the top SES quintile are almost twice as likely to participate in a gifted program as students in the bottom quintile.

Figure 4 homes in on students at the very top of the achievement distribution, showing the probabilities of receiving gifted services just among the top 5% and top 1% of students in math and reading achievement. Although small cell sizes make this analysis merely suggestive,

[13] We also examined the distributions of gifted services receipt by SES for boys and girls. These distributions were statistically indistinguishable.

in both cases we find that even among the very highest achievers, gifted receipt is more common among high-SES students than low-SES students in both subjects. For example, among students in the top 1% of math scores, the probability that a student in the highest SES quintile will receive gifted services is about 13 percentage points greater than students in the first quintile. In reading, the difference is 7 percentage points (a larger difference is present for students in quintile 2). These numbers suggest that many high-achieving, low-SES students are overlooked by gifted programs.

It is possible that the mean differences in receipt of gifted services across student demographic characteristics reported to this point can be explained by other student characteristics or characteristics of the schools that students attend. Table 3 shows the main results from the linear probability models of receipt of gifted services each year, pooled across grades, conditioning on various student and school covariates. Column 1 includes only the SES quintiles (quintile 1 is the reference category), essentially replicating the finding in Table 2 (though with the inclusion of a grade fixed effect). As before, there is a sharp contrast in gifted services receipt between the highest- and lowest-SES students, with an estimated difference of 10 percentage points, on average. From quintile 1 to 4, the probability of gifted services increases almost monotonically, with a noticeable "jump" for quintile 5.

The second column adds controls for lagged standardized reading and math test scores to adjust for differences in achievement levels across the SES distribution. As expected, achievement is a strong predictor of gifted services. Adding achievement reduces the difference between the highest and lowest SES quintile to 3 percentage points ($p < 0.01$), though this difference remains substantively meaningful given the very low rate of gifted identification in the sample. With the inclusion of achievement, quintiles 1 through 4 now look very similar to

one another in receipt probability; the gap remains only between students in the top 20% of SES and other students. Column 3 adds other student-level characteristics, including race/ethnicity, parental rating of student health, and age at entry to kindergarten. Asian and "other race" students have higher predicted probabilities of gifted services receipt than White students; coefficients among White, Black, and Hispanic students are statistically indistinguishable. Adding these variables does not affect the giftedness–SES relationship.

The fourth column adjusts for school characteristics. Several of the school covariates are associated with receiving gifted services. In particular, students attending schools with a formal gifted program, in the South, and in urban areas are more likely to participate, as are students in smaller schools, conditional on other factors. Accounting for school characteristics, Black and Hispanic students are less likely to participate in gifted programs than White or Asian students. Also, accounting for school characteristics amplifies the difference in gifted services receipt between the top and bottom SES quintiles, with students in the top quintile seeing an advantage of five percentage points over the bottom group.

The final column of Table 3 replaces the school covariates with a school fixed effect. Model fit improves, suggesting that the school fixed effect further controls for unobserved school-level differences not captured by the school characteristics in column 4. The coefficient for SES quintile 5 is unchanged. The coefficient for quintile 4 increases slightly to 2 percentage points ($p < 0.05$). Figure 5 graphs the predicted probabilities. The continued advantage of high-SES students in this model suggests that the higher rate of gifted services participation for affluent students cannot be fully explained by the nonrandom sorting of students across schools. In other words, even when comparing students within the same schools, the probability that a

student in the highest SES quintile will receive gifted services is 5 percentage points greater than for students in the first quintile, holding other factors in the model constant.[14]

Given prior research on student race/ethnicity as a factor in gifted identification (e.g., Grissom & Redding, 2016; Ford, 1998), we also investigate how student race/ethnicity intersects with SES in predicting the probability of receipt of gifted services. For this analysis, we include an interaction term between each race/ethnicity category and each SES quintile in a model that corresponds to the one shown in column 4 of Table 3.[15] We illustrate the results in Figure 6.[16] The figure provides evidence of a substantively important interaction between race/ethnicity and SES; SES is a more important predictor of gifted services receipt for students from some racial/ethnic groups than for others. For example, Black and White students have similar predicted probabilities in SES quintiles 1 and 2, but the predicted probability of gifted services of White students becomes significantly higher than for Black students in quintiles 3, 4, and 5. Moreover, the gap grows as SES increases. Within the third SES quintile, the size of the predicted gap in the probability of receiving gifted services between White and Black students is about 3 percentage points; within the fifth SES quintile, this predicted gap in receiving gifted services is about 10 percentage points. Indeed, White, Hispanic, and Asian students see much higher probabilities in the fifth quintile than in the fourth quintile, whereas there is no evidence of a change for Black students.

Differences in Receipt of Gifted Services by Components of SES

[14] As an alternative, we also estimated cross-sectional models predicting the probability that a student ever received gifted services through fifth grade as a function of achievement scores and student and school characteristics as of kindergarten entry (or the first time a variable was collected) rather than year-by-year. Patterns were similar to those shown in Table 3. In a model with school fixed effects, students in the highest SES quintile were 7 percentage points more likely to receive gifted services at some point in elementary school than first-quintile students in the same school who were otherwise observationally similar. Results available upon request.

[15] Including school fixed effects produces similar results, though given the distribution of race/ethnicity and SES across schools, we could not estimate precise coefficients for all cells.

[16] Tabulated results are available upon request.

To this point, the analysis has focused on the relationship between the composite SES variable and gifted program participation. Table 4 shows results of models predicting the receipt of gifted services by the components of this socioeconomic status measure (i.e., family income, parental education, and parents' occupational prestige). The models allow us to examine whether there may be differential associations with gifted services for these different component measures. Column 1 describes the results from a model that includes just the components of SES and a grade fixed effect. Column 2 adds lagged test scores and other student characteristics. Column 3 includes school characteristics. Column 4 substitutes a school fixed effect for school covariates.

In column 1, income, parental education, and occupational prestige each are positively correlated gifted services receipt. For example, a student with at least one parent with a very high prestige occupation has an 8 percentage point increase in the probability of gifted services receipt compared to a student whose parents have very low occupational prestige, conditional on parental income and education. Patterns change somewhat in columns 2 and 3, with occupational prestige remaining the most consistent predictor. In column 4, which compares students within schools, only family income over $200,000 (0.04, $p < 0.05$) and very high occupational prestige (0.05, $p < 0.05$) are statistically significant (at conventional levels) predictors of gifted services.[17] Among observably similar students in the same school contexts, those with the highest-income parents and with parents from the most prestigious occupations enjoy the most apparent advantages in gifted program participation.

Replicating Main Analysis with the ECLS-K:2011

[17] We also estimated models with each component of SES entered separately. Patterns were similar.

Next, we replicate the main findings using the more recent cohort of the ECLS data to assess the degree to which high-SES students continue to be advantaged in their likelihood of receiving gifted services in recent years, at least for students in kindergarten through third grade. Figure 7 describes the probability of gifted services by SES quintile for the newer cohort. The patterns are qualitatively similar to those shown in Figure 1 for the older cohort. In both samples, approximately three times as many students in the highest-SES quintile receive gifted services than in the lowest quintile.

Table 5 replicates the main models (as in Table 3) with the ECLS-K:2011 sample. The patterns are similar to those for the older cohort. The association between SES and receipt of gifted services is somewhat attenuated in the more recent sample, with the highest-SES students enjoying only a 3 percentage point predicted advantage in the school fixed effects model (column 5), though again, available data culminate in third grade, prior to when many students begin receiving gifted services (Grissom & Redding, 2016). We conclude that there is little reason to question that the connection between SES and access to gifted services remains relevant in recent years. More complete ECLS-K:2011 data in the future will provide a clearer picture of whether the relationship between SES and gifted services receipt has changed in a meaningful way in the years since the first ECLS cohort.

Discussion and Conclusions

Recent calls have been made to better foster the academic development of high-ability, low-SES students (Cross & Dockery, 2014; Olszewski-Kubilius & Clarenbach, 2012; Plucker & Makel, 2010; Wyner, Bridgeland, & DiIulio Jr, 2007). Access to gifted programs among marginalized populations has received considerable attention in this discussion as these services are a primary strategy for elementary schools to support such students (Grissom & Redding,

2016). This study offers a national look at access to gifted services by student socioeconomic status that moves beyond binary indicators of student economic disadvantage (e.g., free/reduced lunch eligibility) to examine gifted program participation across the SES distribution.

Using data from two nationally representative cohorts of elementary school students from the 1990s and 2010s, we find large gaps in the receipt of gifted services between the highest- and lowest-SES students. A student in the top SES quintile is more than six times more likely to receive gifted services than a student in the bottom quartile. These differences appear mostly the result of the substantially higher services receipt among the students in the top 20% of the SES distribution relative to the other four quintiles. The SES gap is especially large for White and Asian students.

Although attenuated, these SES gaps persist even in comparisons of students with similar achievement levels, and, moreover, in comparisons of students with similar achievement and other background characteristics in the same schools. This latter result demonstrates that disparities in access to gifted services for low-SES students are not driven by differential sorting of students by SES across schools; within-school differences in access are large, a finding consistent with other recent evidence (Yaluma & Tyner, 2018). Accounting for these other factors, higher SES appears to benefit White and Asian students more than other students in gifted selection processes; except at the very lowest level of SES, Black students experience similar likelihoods of receiving gifted services across the SES distribution, a pattern that deserves further research attention. Finally, these SES gaps persist in the more recent ECLS cohort, though they are slightly smaller, a finding that may reflect a sample limited to kindergarten through third grade students or, perhaps, downwind benefits associated with the

slight narrowing of socioeconomic gaps in early childhood parental investment and school readiness (Bassok et al., 2016; Reardon & Portilla, 2016).

The size of the advantage to high-SES students of similar achievement levels over their low-SES peers in the same school is startling. As shown in Figure 5, students in the highest SES quintile are twice as likely to receive gifted services than observationally similar peers—again, for emphasis, *in the same school*—in the first, second, or even third quintile of SES. These differences are even larger than (conditional) Black-White gaps in gifted services documented in other research (Grissom & Redding, 2016). The systematic denial of gifted services to low-income students and students of color in the United States constitutes a civil rights problem that requires policy intervention (Gallagher, 1995).

What policy interventions will be most successful depends on the mechanisms that drive SES gaps in gifted services receipt. Our study shows that two potential explanations, differences in the schools attended by high- and low-SES students and differences in their academic achievement, are at best only one part of the story. We explored the ECLS-K data for opportunities to test other mechanisms suggested by theories of family capital but found that the data set lacked many key data elements necessary for these tests, such as whether parents had discussed gifted services with teachers or others in their social networks and whether families accessed outside psychologists for testing. The data also are missing any information related to gifted evaluation processes or what assessments are used. The data do contain some potentially useful measures, such as measures of how involved parents are in school activities in general and classroom teachers' assessments of student behavior and academic engagement, but we did not find evidence that these measures mediated the association between student SES and gifted

services receipt once achievement scores are accounted for (results available upon request).[18] Analysis of data sets with more specific information about parent and teacher engagement in gifted referral, schools' gifted evaluation processes, and other aspects of service receipt would provide additional insight into mechanisms.

Still, prior research identifies a number of potential targets for policy intervention. One is teacher referral. Teachers' roles in their students' lives uniquely position them to speak to a child's talents across a number of domains (Peters & Gentry, 2010). At the same time, research suggests that teachers refer low-SES students for gifted testing at lower rates than their more affluent peers (McBee, 2006). Training for teachers that emphasizes mindfulness of giftedness among non-dominant groups, be they low-SES or racially or ethnically diverse students, alongside strategies for identifying giftedness in such populations could be a strategy for combatting under-referral (Ford, Moore III, & Scott, 2011).

A different approach that holds promise for overcoming the inequitable allocation of gifted services by socioeconomic status is implementation of universal gifted screening procedures that reduce the role for parent involvement and teacher discretion in placement processes. Universal screening bypasses unsystematic referral processes by assessing all students, either to identify giftedness directly or to identify the potential for giftedness that is evaluated further in a second stage. Studies suggest that universal screening can increase identification rates of low-income students (Card & Giuliano, 2015; Rowe, 2017), though such screening incurs time and resource costs and is thus not in widespread use.

[18] We found that SES predicted parental school involvement and teacher subjective assessments, as well as some other variables, such as parental involvement in home activities, student extracurricular engagement, and the number of books in the home. Several of these variables (e.g., parental involvement at school, teacher assessments, number of books) were associated with gifted services receipt even after conditioning on other student and school characteristics. However, there was only very slight evidence of mediation of these variables in our exploratory analysis (Baron & Kenny, 1986), suggesting that other mechanisms that we cannot measure are driving our results.

Importantly, making referral more equitable through teacher training or screening will close SES gaps only insofar as those gaps arise at the referral stage. If tests used for gifted evaluation are biased against low-SES students, for example, moving to new assessments may be necessary to increase equity. To this point, some gifted advocates contend that the identification process can also be made more inclusive through use of a multiple criteria approach that incorporates numerous markers of giftedness beyond simplistic IQ or other testing (Bernal, 2001; Borland, 2004; Callahan et al., 1995; VanTassel-Baska, Johnson, & Avery, 2002). Such an approach may help close gaps, so long as they do not introduce criteria that high-SES families are better-positioned to prepare their children to satisfy. An additional concern is that multiple criteria identification procedures risk becoming more complicated to complete, leaving more affluent families better able to navigate the process. In other words, enumerated criteria and greater complexity may open new avenues for well-off families to exercise advantage, meaning that without safeguards in place, more inclusive criteria might in fact not equalize rates of gifted program participation across SES groups.

We conclude by noting that although existing literature identifies gifted referral and evaluation processes as the most likely sources of gifted-SES gaps among similarly able students, retention may also be an important contributor. Less systematic evidence exists about how students along the SES continuum identified as gifted may differentially engage with gifted programming as they move through schooling, and what factors might lead to such differential engagement. This topic is one that deserves additional research attention.

References

Alameda-Lawson, T., & Lawson, M. A. (2016). Ecologies of Collective Parent Engagement in Urban Education. *Urban Education*, 1–36.

Angrist, J. D., & Pischke, J.-S. (2008). *Mostly harmless econometrics: An empiricist's companion*. Princeton University Press.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173.

Barton, A. C., Drake, C., Perez, J. G., St. Louis, K., & George, M. (2004). Ecologies of Parental Engagement in Urban Education. *Educational Researcher*, *33*(4), 3–12.

Bernal, E. M. (2001). Three ways to achieve a more equitable representation of culturally and linguistically different students in GT programs. *Roeper Review*, *24*(2), 82–88.

Bhatt, R. (2009). *The impacts of gifted and talented education* (Andre Young School of Polic Studies Research Paper Series No. Working Paper 09-11).

Bhatt, R. (2011). A review of gifted and talented education in the United States. E*ducation Finance and Policy*, 6(4), 557-582.

Borland, J. (2004). Issues and Practices in the Identification and Education of Gifted Students From Under-represented Groups. *US Department of Education*. Retrieved from http://eric.ed.gov/?id=ED485164

Bourdieu, P. (1986). The forms of capital. *Handbook of theory and research for the sociology of education (pp. 241–258)*. New York: Greenwood.

Bui, S. A., Craig, S. G., & Imberman, S. A. (2014). Is gifted education a bright idea? Assessing the impact of gifted and talented programs on students. *American Economic Journal: Economic Policy*, *6*(3), 30-62.

Callahan, C. M., Tomlinson, C. A., Moon, T. R., Tomchin, E. M., & Plucker, J. A. (1995). Project START: Using a Multiple Intelligences Model in Identifying and Promoting Talent in High-Risk Students. Research Monograph 95136. Retrieved from http://eric.ed.gov/?id=ED427447

Card, D., & Giuliano, L. (2014). *Does gifted education work? For which students?* National Bureau of Economic Research. Retrieved from http://www.nber.org/papers/w20453

Card, D., & Giuliano, L. (2015). *Can universal screening increase the representation of low income and minority students in gifted education?* National Bureau of Economic Research. Retrieved from http://www.nber.org/papers/w21519.

Carman, C. A., & Taylor, D. K. (2009). Socioeconomic status effects on using the Naglieri Nonverbal Ability Test (NNAT) to identify the gifted/talented. *Gifted Child Quarterly, 54*(2), 75-84.

Carman, C. A., Walther, C. A., & Bartsch, R. A. (2018). Using the Cognitive Abilities Test (CogAT) 7 nonverbal battery to identify the gifted/talented: An investigation of demographic effects and norming plans. *Gifted Child Quarterly*, *62*(2), 193–209.

Coleman, J. S. (1988). Social Capital in the Creation of Human Capital. *American Journal of Sociology*, *94*, S95–S120.

Cross, J. R., & Dockery, D. D. (2014). Identification of low-income gifted learners: A review of recent research. Jack Kent Cooke. Retreived Feb, 17, 2016.

Davis, B., Engberg, J., Epple, D. N., Sieg, H., & Zimmer, R. (2010). *Evaluating the gifted program of an urban school district using a modified regression discontinuity design*. National Bureau of Economic Research. Retrieved from http://www.nber.org/papers/w16414

Delcourt, M. A., Cornell, D. G., & Goldberg, M. D. (2007). Cognitive and affective learning outcomes of gifted elementary school students. *Gifted Child Quarterly*, *51*(4), 359–381.

Diamond, J. B., & Gomez, K. (2004). African American Parents' Educational Orientations: The Importance of Social Class and Parents' Perceptions of Schools. *Education and Urban Society*, *36*(4), 383–427.

Donovan, M. S., & Cross, C. T. (Eds.). (2002). *Minority students in special and gifted education*. National Academies Press.

Ford, D. Y. (1998). The underrepresentation of minority students in gifted education: Problems and promises in recruitment and retention. *Journal of Special Education*, *32*(1), 4–14.

Ford, D. Y., Moore III, J. L., & Scott, M. T. (2011). Key theories and frameworks for improving the recruitment and retention of African American students in gifted education. *The Journal of Negro Education*, 239–253.

Frasier, M. M., Martin, D., Garcia, J. H., Finley, V., Frank, E., Krisel, S., & King, L. L. (1995). *A new window for looking at gifted children* (No. RM95222). Storrs: University of Connecticut: The National Research Center on the Gifted and Talented. Retrieved from https://nrcgt.uconn.edu/research-based_resources/frasmart/

Gallagher, J. J. (1995). Education of gifted students: A civil rights issue? *Phi Delta Kappan*, 76(5), 408.

Goings, R. B., & Ford, D. Y. (2018). Investigating the intersection of poverty and race in gifted education journals: A 15-year analysis. *Gifted Child Quarterly*, *62*(1), 25-36.

Goldring, E. B. (1990). Assessing the status of information on classroom organizational frameworks for gifted students. *Journal of Educational Research*, *83*(6), 313–327.

Grissom, J. A., & Redding, C. (2015). Discretion and disproportionality: Explaining the underrepresentation of high-achieving students of color in gifted programs. *AERA Open*, *2*(1), 1-25.

Grissom, J. A., Rodriguez, L. A., & Kern, E. C. (2017). Teacher and principal diversity and the representation of students of color in gifted programs: Evidence from national data. *Elementary School Journal*, *117*(3), 396-422.

Hamilton, R., McCoach, D. B., Tutwiler, M. S., Siegle, D., Gubbins, E. J., Callahan, C. M., … Mun, R. U. (2018). Disentangling the roles of institutional and individual poverty in the identification of gifted students. *Gifted Child Quarterly*, *62*(1), 6–24.

Heath, S. B. (1983). *Ways with words: Language, life and work in communities and classrooms*. Cambridge University Press.

Hertzog, N. B. (2003). Impact of gifted programs from the students' perspectives. *Gifted Child Quarterly*, *47*(2), 131-143.

Horvat, E. M., Weininger, E. B., & Lareau, A. (2003). From social ties to social capital: Class differences in the relations between schools and parent networks. *American Educational Research Journal*, *40*(2), 319–351.

Hoxby, C. M. (2007). Does competition among public schools benefit students and taxpayers? Reply. *American Economic Review*, *97*(5), 2038–2055.

Joseph, L. M., & Ford, D. Y. (2006). Nondiscriminatory assessment: Considerations for gifted education. *Gifted Child Quarterly*, *50*(1), 42–51.

Kulik, C.-L., & Kulik, J. (1982). Effects of ability grouping on secondary school students: A meta-analysis of evaluation findings. *American Educational Research Journal*, *19*(3), 415–428.

Kulik, J., & Kulik, C.-L. (1984). Effects of accelerated instruction on students. *Review of Educational Research*, *54*(3), 409–425.

Lamont, M., & Lareau, A. (1988). Cultural capital: Allusions, gaps and glissandos in recent theoretical developments. *Sociological Theory*, *6*(2), 153–168.

Lareau, A. (1987). Social class differences in family-school relationships: The importance of cultural capital. *Sociology of Education*, *60*(2), 73–85.

Lareau, A. (2002). Invisible inequality: Social class and childrearing in black families and white families. *American Sociological Review*, *67*(5), 747–776.

Lareau, A. (2011). *Unequal childhoods: Class, race, and family life*. University of California Press.

Lareau, A., & Horvat, E. M. (1999). Moments of social inclusion and exclusion race, class, and cultural capital in family-school relationships. *Sociology of Education, 72*(1), 37–53.

Lee, J.-S., & Bowen, N. K. (2006). Parent involvement, cultural capital, and the achievement gap among elementary school children. *American Educational Research Journal, 43*(2), 193–218.

Marsh, H. W., Chessor, D., Craven, R., & Roche, L. (1995). The effects of gifted and talented programs on academic self-concept: The big fish strikes again. *American Educational Research Journal, 32*(2), 285–319.

McBee, M. (2006). A descriptive analysis of referral sources for gifted identification screening by race and socioeconomic status. *Prufrock Journal, 17*(2), 103–111.

McBee, M. (2010). Examining the probability of identification for gifted programs for students in Georgia elementary schools: A multilevel path analysis study. *Gifted Child Quarterly, 54*(4), 283–297.

McBee, M. T., Peters, S. J., & Miller, E. M. (2016). The impact of the nomination stage on gifted program identification: A comprehensive psychometric analysis. *Gifted Child Quarterly, 60*(4), 258–278.

McClain, M.-C., & Pfeiffer, S. (2012). Identification of gifted students in the United States today: A look at state definitions, policies, and practices. *Journal of Applied School Psychology, 28*(1), 59–88.

McNeal, R. B. (1999). Parental involvement as social capital: Differential effectiveness on science achievement, truancy, and dropping out. *Social Forces, 78*(1), 117–144.

Michelmore, K., & Dynarski, S. (2017). The gap within the gap: Using longitudinal data to understand income differences in educational outcomes. *AERA Open*, 3(1), 1-18.

Mickelson, R. A. (2003). When are racial disparities in education the result of racial discrimination? A social science perspective. *Teachers College Record, 105*(6), 1052–1086.

Nicholson-Crotty, J., Grissom, J. A., & Nicholson-Crotty, S. (2011). Bureaucratic representation, distributional equity, and democratic values in the administration of public programs. *Journal of Politics, 73*(2), 582-596.

Nicholson-Crotty, S., Grissom, J. A., Nicholson-Crotty, J., & Redding, C. (2016). Disentangling the causal mechanisms of representative bureaucracy: Evidence from assignment of students to gifted programs. *Journal of Public Administration Research and Theory, 26*(4), 745-757.

Olszewski-Kubilius, P., & Clarenbach, J. (2012). Unlocking Emergent Talent: Supporting High Achievement of Low-Income, High Ability Students. *National Association for Gifted Children (NJ1)*. Retrieved from http://eric.ed.gov/?id=ED537321

Peters, S. J., & Gentry, M. (2010). Multigroup construct validity evidence of the HOPE Scale: Instrumentation to identify low-income elementary students for gifted programs. *Gifted Child Quarterly*, *54*(4), 298–313.

Plucker, J. A., & Makel, M. C. (2010). Assessment of creativity. *The Cambridge Handbook of Creativity*, 48–73.

Plucker, J. A., & Peters, S. J. (2017). Closing poverty-based excellence gaps: Conceptual, measurement, and educational issues. *Gifted Child Quarterly*, *62*(1), 56-67.

Pollack, J. M., Narajian, M., Rock, D. A., Atkins-Burnett, S., & Hausken, E. G. (2005). Early Childhood Longitudinal Study–Kindergarten Class of 1998–99 (ECLS-K), psychometric report for the fifth grade. Washington, DC: US Department of Education. National Center for Education Statistics.

Reardon, S. F., & Portilla, X. A. (2016). Recent trends in income, racial, and ethnic school readiness gaps at kindergarten entry. *AERA Open*, *2*(3), 1-18.

Roda, A. (2017). Parenting in the age of high-stakes testing: Gifted and talented admissions and the meaning of parenthood. *Teachers College Record*, *119*(8), n8.

Rogers, K. B. (2007). Lessons learned about educating the gifted and talented a synthesis of the research on educational practice. *Gifted Child Quarterly*, *51*(4), 382–396.

Rowe, C. (2017, December 7). The push to find more gifted kids: What Washington can learn from Miami's wins. *Seattle Times*. Retrieved from https://www.seattletimes.com/education-lab/the-push-to-find-more-gifted-kids-what-washington-can-learn-from-miamis-wins/

Shumow, L. (1997). Daily experiences and adjustment of gifted low-income urban children at home and school. *Roeper Review*, *20*(1), 35–38.

Siegle, D., McCoach, D. B., Gubbins, E. J., Callahan, C. M., & Knupp, T. (2015). Promising practices in gifted education for underserved populations. In *62nd Annual Convention of the National Association for Gifted Children, Phoenix, AZ*.

Stambaugh, T., & Ford, D. Y. (2015). Microaggressions, multiculturalism, and gifted individuals who are Black, Hispanic, or low income. *Journal of Counseling & Development*, *93*(2), 192–201.

Taylor, K. (2017, April 28). Family by family, how school segregation still happens. *New York Times*.

Tourangeau, K., Nord, C., Lê, T., Sorongon, A. G., Hagedorn, M. C., Daly, P., & Najarian, M. (2015). Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K: 2011). User's Manual for the ECLS-K: 2011 Kindergarten Data File and Electronic Codebook, Public Version. NCES 2015-074. National Center for Education Statistics.

Tourangeau, K., Nord, C., Lê, T., Sorongon, A. G., & Najarian, M. (2009). Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K): Combined User's Manual for the ECLS-K Eighth-Grade and K-8 Full Sample Data Files and Electronic Codebooks. NCES 2009-004. *National Center for Education Statistics*.

U.S. Department of Education. (2016). *2013-14 Gifted and Talented Enrollment Estimations*. U.S. Department of Education's Office for Civil Rights. Retrieved from https://ocrdata.ed.gov/StateNationalEstimations/Estimations_2013_14

VanTassel-Baska, J., Feng, A. X., & Evans, B. L. (2007). Patterns of identification and performance among gifted students identified through performance tasks: A three-year analysis. *Gifted Child Quarterly*, *51*(3), 218–231.

VanTassel-Baska, J., Johnson, D., & Avery, L. D. (2002). Using performance tasks in the identification of economically disadvantaged and minority gifted learners: Findings from Project STAR. *Gifted Child Quarterly*, *46*(2), 110–123.

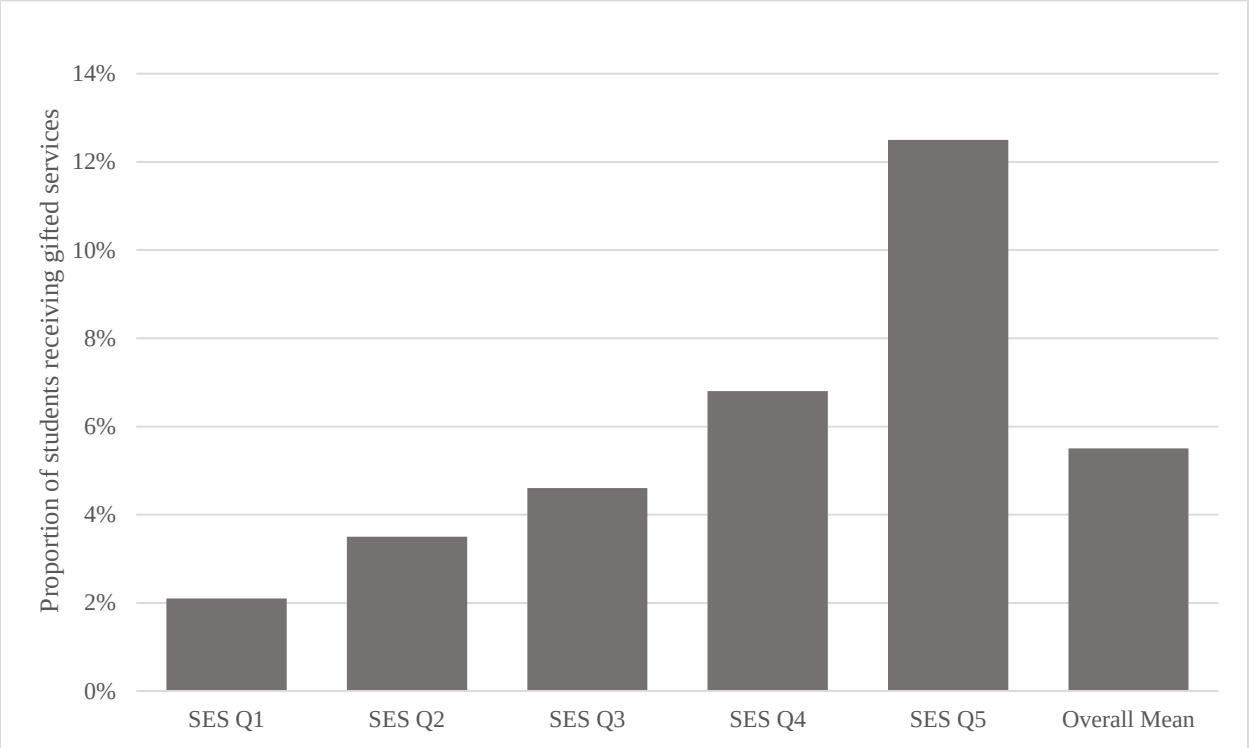
Warne, R. T., Anderson, B., & Johnson, A. O. (2013). The impact of race and ethnicity on the identification process for giftedness in Utah. *Journal for the Education of the Gifted*, *36*(4), 487–508.

Wyner, J. S., Bridgeland, J. M., & DiIulio Jr, J. J. (2007). Achievement trap: How America is failing millions of high-achieving students from lower-income families. Jack Kent Cooke Foundation. Retrieved from http://eric.ed.gov/?id=ED503359

Yaluma, C., & Tyner, A. (2018). *Is there a gifted gap? Gifted education in high-poverty schools*. Washington, D.C.: Fordham Institue.

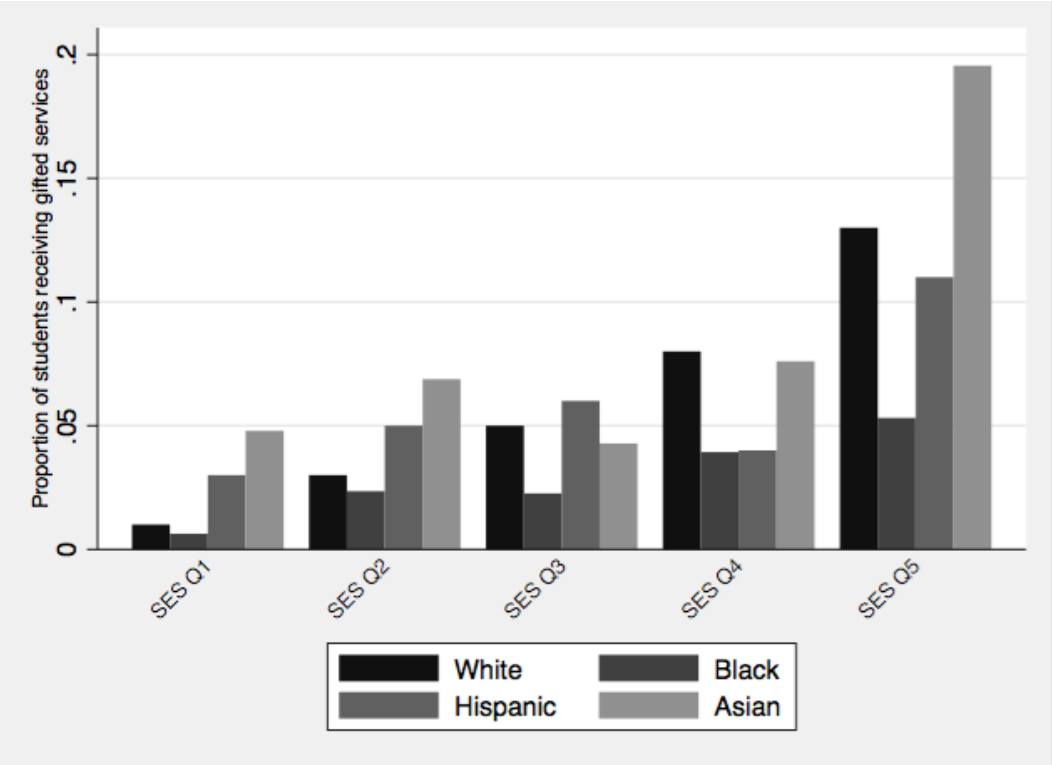
Yosso, T. J. (2005). Whose culture has capital? A critical race theory discussion of community cultural wealth. *Race Ethnicity and Education*, *8*(1), 69–91.

Figure 1: Students Receiving Gifted Services, by SES



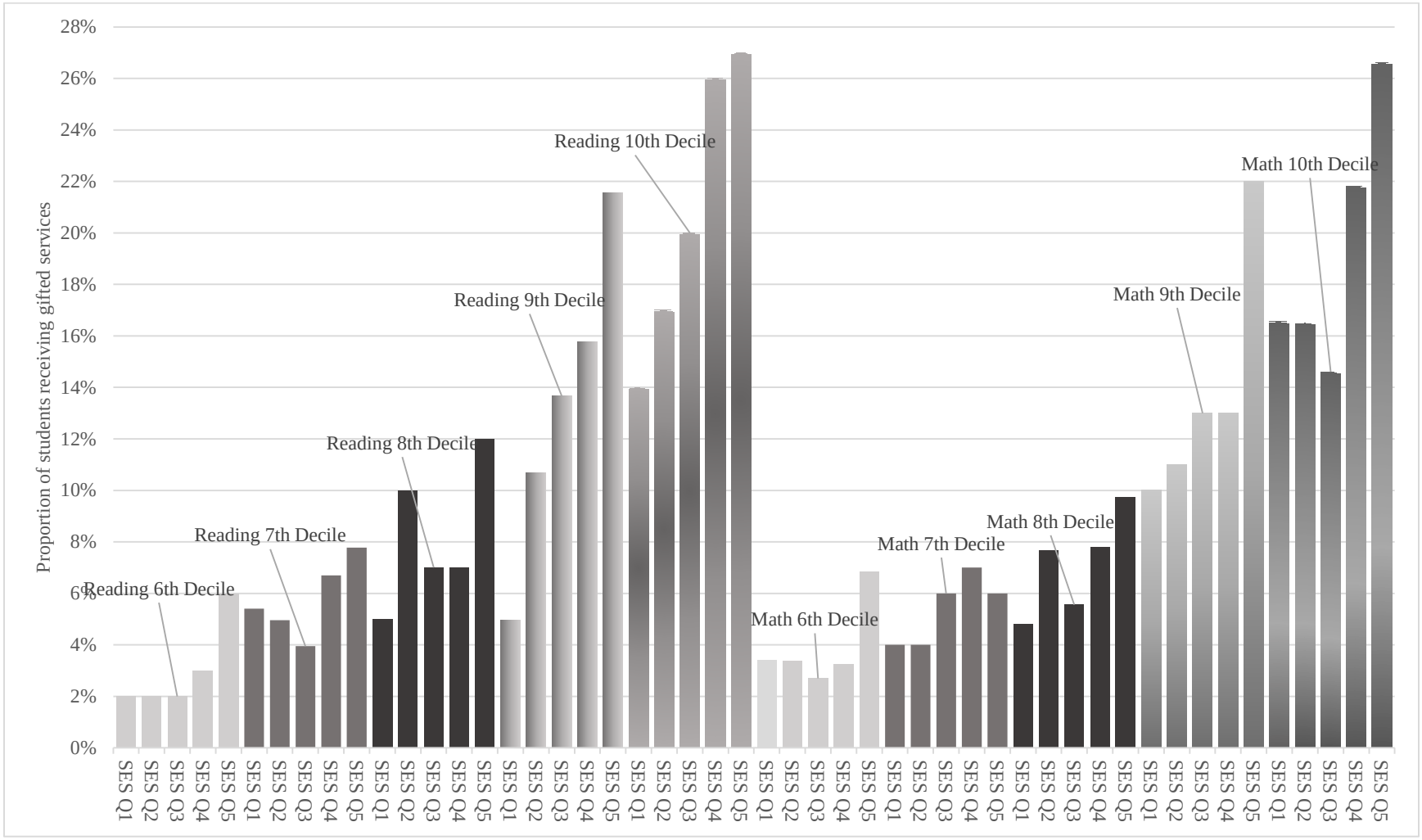
Notes. Sample is 31,840 student-by-year observations. SES=Socioeconomic Status; Q=Quintile.

Figure 2: Students Receiving Gifted Services by SES Quintiles and Race/Ethnicity



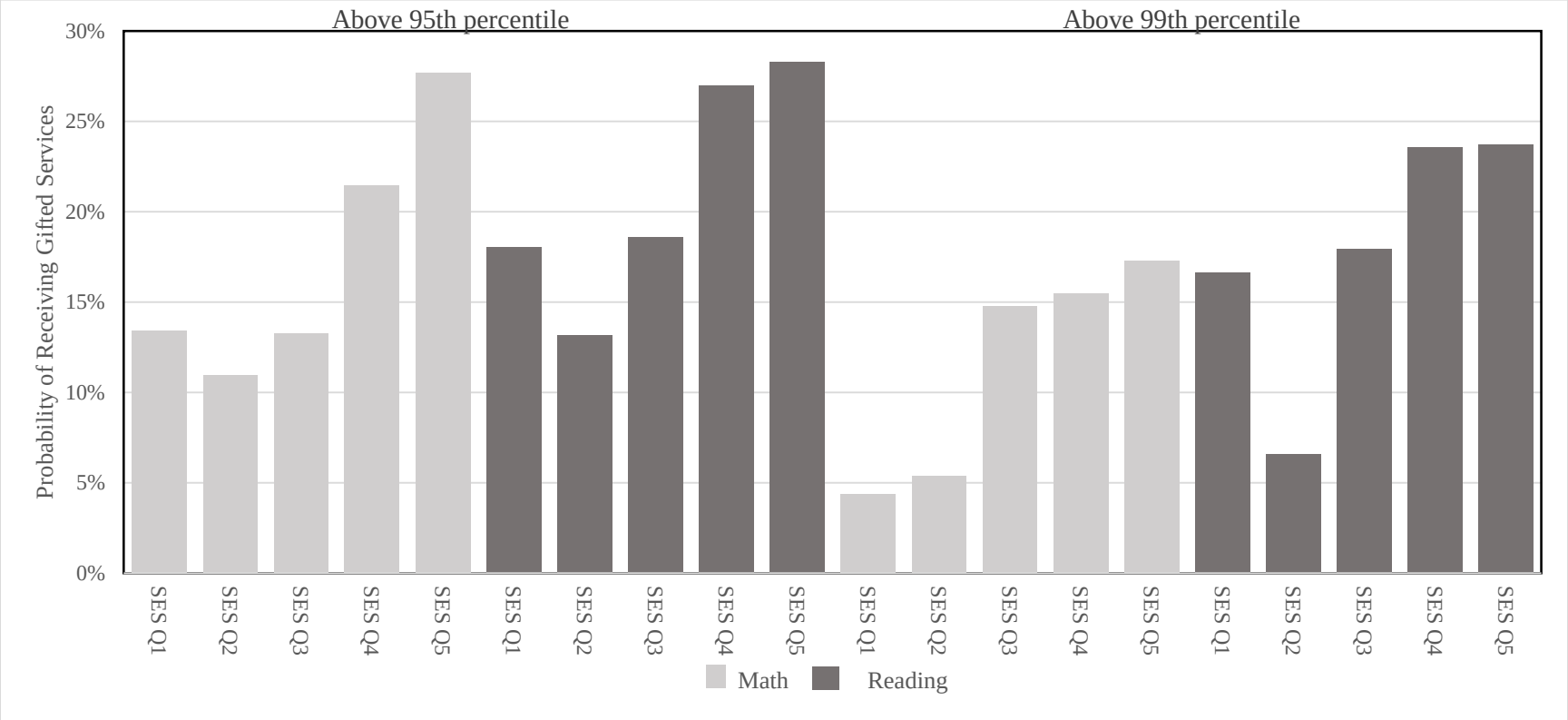
Note. SES=Socioeconomic Status; Q=Quintile.

Figure 3: Students Receiving Gifted Services by SES Quintiles and Test Score Deciles (Math and Reading)



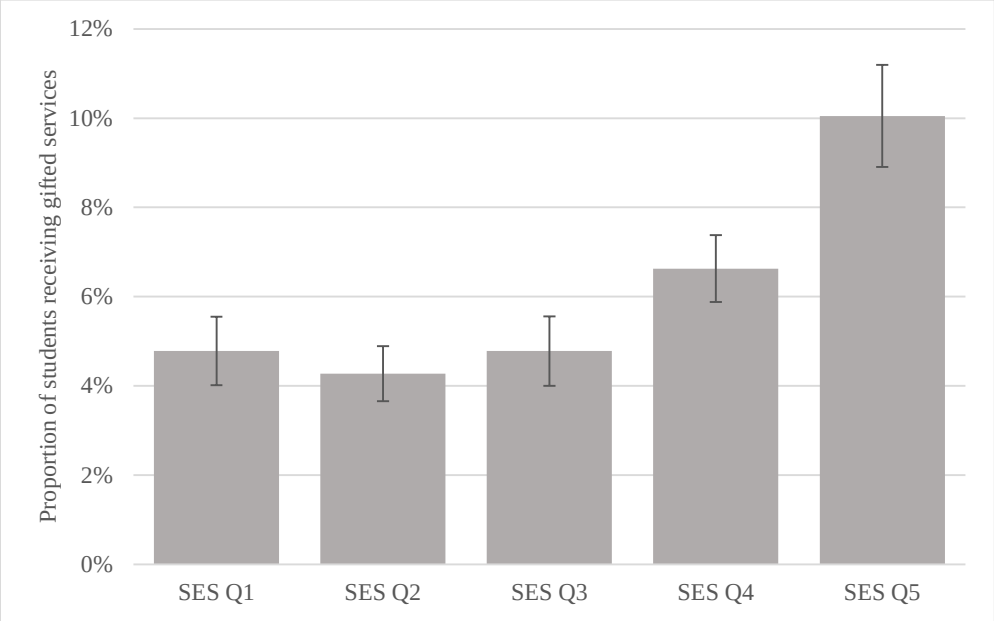
Note. Approximately 3,000 student-by-year observations are contained in each subject-by-decile. SES=Socioeconomic Status; Q=Quintile.

Figure 4: Receipt of Gifted Services by SES Quintiles for Students with High Test Scores, Mean Probabilities



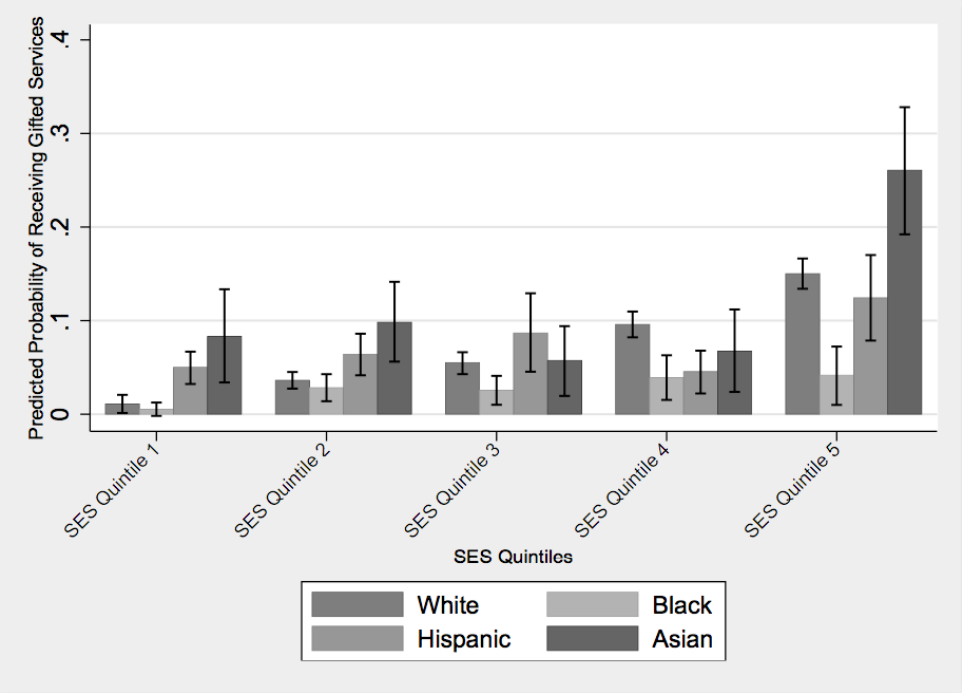
Note. Estimates are shown for students with test scores above the 95th percentile (left) and 99th percentile (right). Public schools with gifted programs only. SES=Socioeconomic Status; Q=Quintile.

Figure 5: Receipt of Gifted Services by SES Quintiles, Marginal Probabilities



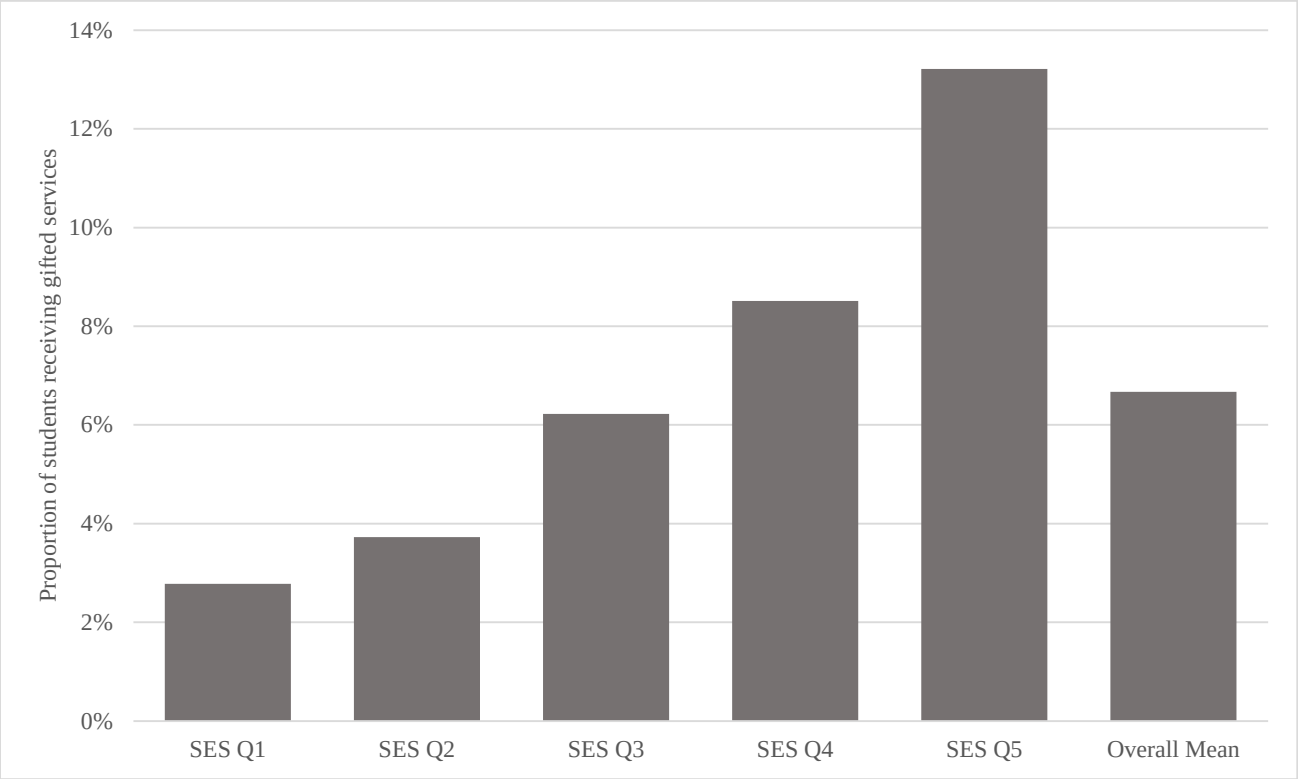
Note. Marginal predictions from the model estimated in Table 3 Column 5. SES=Socioeconomic Status; Q=Quintile.

Figure 6: Receipt of Gifted Services Varies by SES Quintile and Race/Ethnicity



Note. SES=Socioeconomic Status

Figure 7: Students Receiving Gifted Services by SES Quintiles in ECLS:2011



Notes. Based on approximately 25,830 student-by-year observations. SES=Socioeconomic Status; Q=Quintile.

Table 1. Mean Sample Characteristics by Grade Level

	Kindergarten	First grade	Third grade	Fifth grade	All years
Student receives gifted services	0.02	0.03	0.10	0.12	0.07
SES Quintiles					
SES Quintile 1	0.15	0.15	0.16	0.18	0.17
SES Quintile 2	0.23	0.21	0.22	0.21	0.22
SES Quintile 3	0.22	0.22	0.21	0.21	0.22
SES Quintile 4	0.20	0.21	0.21	0.20	0.20
SES Quintile 5	0.20	0.20	0.20	0.19	0.19
Student Characteristics					
Standardized math achievement	0.05	0.04	0.01	0.01	0.01
Standardized reading achievement	-0.02	-0.01	-0.02	0.01	-0.03
Female	0.49	0.50	0.49	0.51	0.49
White	0.68	0.67	0.65	0.59	0.63
Black	0.15	0.13	0.14	0.15	0.14
Hispanic	0.12	0.14	0.15	0.20	0.16
Asian	0.02	0.02	0.02	0.03	0.02
Number of siblings	1.44	1.50	1.50	1.55	1.50
Parent's rating of health	4.35	4.37	4.34	4.27	4.31
Age in months at start of kindergarten	66.29	66.18	66.16	66.08	66.14
English language learner	0.06	0.07	0.08	0.12	0.09
School Characteristics					
Urban	0.27	0.23	0.28	0.32	0.29
Suburban	0.45	0.45	0.44	0.44	0.44
Rural	0.29	0.31	0.28	0.24	0.27
Midwest	0.24	0.23	0.25	0.23	0.24
South	0.43	0.41	0.41	0.38	0.41
West	0.15	0.18	0.19	0.22	0.19
Northeast	0.17	0.17	0.15	0.17	0.16
School size (in 100s)	5.25	5.36	5.18	5.39	5.29
Fraction free/reduced lunch eligible	0.33	0.30	0.34	0.37	0.35
Fraction White students	0.71	0.68	0.65	0.61	0.65
Fraction Black students	0.15	0.15	0.15	0.03	0.13
Fraction Hispanic students	0.09	0.11	0.14	0.03	0.10
Fraction Asian students	0.03	0.04	0.04	0.04	0.03
School mean reading score	88.26	89.02	89.21	90.73	88.69
School mean math score	71.77	72.19	72.31	73.40	71.86
School offers gifted program	0.75	0.81	0.83	0.84	0.81
Observations	4890	5100	5190	5570	20750

Note. Estimates adjusted using grade level probability weights for each year. Sample includes only public schools. Standardized test scores are lagged by one wave. Sample size rounded in accordance with National Center for Education Statistics nondisclosure rules. SES=socioeconomic status.

Table 2. Comparing Student and School Characteristics by SES Quintile

Characteristic	SES Q1	SES Q2	SES Q3	SES Q4	SES Q5
Student receives gifted services	0.02	0.04***	0.05***	0.07***	0.13***
Student Characteristics					
Standardized math achievement	-0.7	-0.28***	-0.03***	0.22***	0.57***
Standardized reading achievement	-0.67	-0.28***	-0.06***	0.14***	0.51***
Female	0.48	0.47	0.48	0.49	0.49
White	0.28	0.53***	0.61***	0.71***	0.81***
Black	0.24	0.18***	0.15***	0.11***	0.06***
Hispanic	0.4	0.23***	0.16***	0.12***	0.06***
Asian	0.02	0.02	0.02**	0.03	0.04***
Number of siblings	1.85	1.52***	1.45***	1.38***	1.44***
Parent's rating of health	3.98	4.19***	4.35***	4.44***	4.54***
Age in months at start of kindergarten	66	65.94**	66.01***	66.04***	65.81
English language learner	0.33	0.14***	0.09***	0.07***	0.05***
School Characteristics					
Urban	0.44	0.35***	0.32***	0.29***	0.25***
Suburban	0.29	0.37***	0.42***	0.49***	0.59***
Rural	0.27	0.28***	0.26***	0.22	0.16***
Midwest	0.17	0.23***	0.25***	0.26***	0.26***
South	0.44	0.39***	0.36***	0.34***	0.31***
West	0.28	0.22***	0.21***	0.21***	0.19***
Northeast	0.11	0.16***	0.17***	0.19***	0.24***
School size (100s)	5.93	5.56***	5.55***	5.68***	5.93**
Fraction free/reduced lunch eligible	0.53	0.42**	0.34*	0.27***	0.19***
Fraction White students	0.42	0.58	0.64	0.7**	0.75*
Fraction Black students	0.18	0.14	0.12**	0.1***	0.07***
Fraction Hispanic students	0.19	0.12	0.1*	0.08***	0.06***
Fraction Asian students	0.03	0.03	0.03**	0.04*	0.04***
School mean reading score	81.78	84.7***	87.94***	92.02***	97.49***
School mean math score	64.83	68.23***	71.24***	74.83***	79.41***
School offers gifted program	0.77	0.79	0.77	0.77	0.78

Note. Estimates adjusted using grade level probability weights for each year. Statistical significance based on a *t* test comparing students in the first SES quintile to the other groups. Public schools with gifted programs only. Standardized test scores are lagged. School mean test scores are standardized IRT scale scores. Sample size rounded in accordance with National Center for Education Statistics nondisclosure rules. SES=socioeconomic status; K=Kindergarten.
*p < .05. **p < .01. ***p < .001.

Table 3. Predicting Receipt of Gifted Services Receipt by Student Socioeconomic Status

	(1)	(2)	(3)	(4)	(5)
SES Quintiles					
SES Quintile 2	0.01**	-0.01**	-0.01*	-0.01	-0.01
	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)
SES Quintile 3	0.02***	-0.01*	-0.01	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)
SES Quintile 4	0.04***	-0.00	-0.00	0.01	0.02**
	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)
SES Quintile 5	0.10***	0.03***	0.03***	0.05***	0.05***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Student Characteristics					
Standardized math achievement (lagged)		0.02***	0.03***	0.03***	0.03***
		(0.00)	(0.00)	(0.00)	(0.00)
Standardized reading achievement (lagged)		0.04***	0.04***	0.04***	0.04***
		(0.00)	(0.00)	(0.00)	(0.00)
Female			-0.00	-0.00	-0.00
			(0.00)	(0.00)	(0.00)
Black			-0.00	-0.03***	-0.03***
			(0.00)	(0.01)	(0.01)
Hispanic			-0.00	-0.03***	-0.03***
			(0.00)	(0.01)	(0.01)
Asian			0.03*	0.03*	0.03*
			(0.01)	(0.02)	(0.01)
Other race			0.02*	0.00	-0.01
			(0.01)	(0.01)	(0.01)
Parent's rating of health			0.00	0.00	0.00*
			(0.00)	(0.00)	(0.00)
Age in months at start of kindergarten			-0.00	-0.00***	-0.00
			(0.00)	(0.00)	(0.00)
English language learner			0.00	-0.00	0.01
			(0.01)	(0.01)	(0.01)
School Characteristics					
Urban				0.03***	
				(0.01)	
Rural				-0.00	
				(0.01)	
Midwest				0.01	

				(0.01)	
South				0.03***	
				(0.01)	
West				0.01	
				(0.01)	
School size (1000s)				-0.03**	
				(0.01)	
Fraction free/reduced lunch eligible				0.03**	
				(0.01)	
Fraction Black				0.01	
				(0.01)	
Fraction Hispanic				0.04*	
				(0.02)	
Fraction Asian				-0.02	
				(0.02)	
School mean reading score				0.00	
				(0.00)	
School mean math score				-0.00	
				(0.00)	
School offers gifted program				0.05***	
				(0.00)	
Constant	-0.01**	0.03***	0.06	0.12**	0.01
	(0.00)	(0.00)	(0.03)	(0.05)	(0.07)
Observations	31840	29660	29090	20900	29080
R-squared	0.05	0.10	0.11	0.13	0.22

Note. Coefficients reported as estimated probabilities. All models include grade indicators; column 5 includes a school fixed effect. Estimates adjusted using cohort probability weights. Sample includes only public schools. Standardized test scores are lagged. Reference category is White for race/ethnicity, suburban for locale type, and Northeast for region. Standard errors in parentheses are clustered at the child level. Sample size rounded in accordance with National Center for Education Statistics nondisclosure rules. SES=socioeconomic status; K=Kindergarten.

* p<0.05 ** p<0.01 *** p<0.001

Table 4. Predicting Receipt of Gifted Services with each Component of SES

	(1)	(2)	(3)	(4)
Income				
$15,001-$30,000	0.02**	-0.00	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)
$30,001-$50,000	0.02**	-0.01	-0.01	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)
$50,001-$200,000	0.04***	-0.01	0.01	0.02
	(0.01)	(0.01)	(0.01)	(0.01)
$200,000+	0.06*	0.00	0.05	0.04*
	(0.02)	(0.02)	(0.03)	(0.02)
Education				
High school diploma	-0.01	-0.02*	-0.02	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Vocational/technical degree	0.01	-0.01	-0.00	0.01
	(0.01)	(0.01)	(0.02)	(0.01)
Some college	0.00	-0.03**	-0.02	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Bachelors degree	0.02	-0.03*	-0.02	0.01
	(0.01)	(0.01)	(0.01)	(0.01)
Graduate degree	0.05***	-0.01	-0.00	0.02
	(0.01)	(0.01)	(0.02)	(0.01)
Occupational Prestige				
Low prestige	0.03*	0.02	0.02	-0.00
	(0.01)	(0.01)	(0.02)	(0.01)
Medium prestige	0.04***	0.03*	0.04*	0.01
	(0.01)	(0.01)	(0.02)	(0.01)
High prestige	0.06***	0.05***	0.06**	0.02
	(0.01)	(0.01)	(0.02)	(0.02)
Very high prestige	0.08**	0.06*	0.08**	0.05*
	(0.03)	(0.03)	(0.03)	(0.02)
Constant	-0.04***	0.06	0.13*	0.02
	(0.01)	(0.05)	(0.06)	(0.07)
Includes student achievement and other student characteristics		X	X	X
Includes school characteristics			X	
Includes school fixed effect				X
Observations	21750	19220	14200	19220
R-squared	0.05	0.12	0.14	0.23

Notes. Coefficients reported as estimated probabilities. All models include grade indicators. Estimates adjusted using cohort probability weights. Sample includes only public schools. Standard errors, in parentheses, are clustered at the child level. Reference category for income is less than $15,000, for education is no diploma, and for occupational prestige is very low prestige. * p<0.05 ** p<0.01 *** p<0.001.

Table 5. Predicting Receipt of Gifted Services, Independent Variable Socioeconomic Status Quintiles: ECLS 2011

	(1)	(2)	(3)	(4)
SES Quintiles				
SES Quintile 2	0.01*	-0.01**	-0.01	-0.01
	(0.00)	(0.00)	(0.01)	(0.00)
SES Quintile 3	0.03***	-0.01	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)
SES Quintile 4	0.04***	-0.00	0.01	0.02*
	(0.01)	(0.01)	(0.01)	(0.01)
SES Quintile 5	0.08***	0.01	0.03***	0.03***
	(0.01)	(0.01)	(0.01)	(0.01)
Constant	-0.00	-0.05	-0.05	-0.00
	(0.00)	(0.03)	(0.04)	(0.05)
Includes student achievement and other student characteristics		X	X	X
Includes school characteristics			X	
Includes school fixed effect				X
Observations	33880	23870	18300	23870
R-squared	0.04	0.08	0.10	0.21

Note. Coefficients reported as estimated probabilities. All models include a grade indicator. Estimates adjusted using cohort probability weights. Sample includes only public schools. Covariates are same as in Table 3. Standard errors in parentheses are clustered at the child level. Sample size rounded in accordance with National Center for Education Statistics nondisclosure rules. * $p<0.05$ ** $p<0.01$ *** $p<0.001$.