

BEYOND ACADEMICS: EXAMINING THE IMPACT OF GIFTED  
PROGRAMS ON STUDENTS' VALUATION OF EDUCATION

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McKenzie M. Maxson, B.S.

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# BEYOND ACADEMICS: EXAMINING THE IMPACT OF GIFTED PROGRAMS ON STUDENTS' VALUATION OF EDUCATION

McKenzie Maxson

Thesis Advisor: Donna Ruane Morrison, Ph.D.

## ABSTRACT

Gifted and talented programs, which provide students identified as gifted with differentiated instruction, are a widespread and decades-old solution for providing children of varying academic needs with an appropriately challenging curriculum. Though they are common throughout the United States—49 states provide gifted services for students, and there are an estimated 3.3 million gifted students in schools throughout the country—in recent years, experts and policymakers have begun to question if gifted programs are truly beneficial to students.<sup>1</sup> While research on the impact of gifted programs on students' academic outcomes has been conducted for many years, yielding mostly positive results for gifted instruction, gifted programs are facing increased pushback due to the potentially harmful effects of “tracking” students by ability group, as well as their underrepresentation of minority students. Academic tracking, some critics argue, is detrimental to students in lower ability groups, and of particular concern when those students left behind are more likely to be racial minorities. When considering whether gifted programs serve students well, however, more than just academic outcomes must be considered. Less is known about the psychological and emotional impact of these programs on

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<sup>1</sup> Rinn, Anne N.; Mun, Rachel U.; and Hodges, Jaret. 2020. “2018-2019 State of the States in Gifted Education. National Associate for Gifted Children.” <https://www.nagc.org/2018-2019-state-states-gifted-education>; United States Department of Education Office for Civil Rights (OCR). 2017-2018 State and National Estimations. 2018. <https://ocrdata.ed.gov/estimations/2017-2018>.

students, but it is critical that we understand these potential effects to make decisions about whether placing some students in gifted programs, as young as elementary school, is an advisable practice. This study utilizes data from the ECLS-K database, a longitudinal study conducted by the U.S. Department of Education's National Center for Education Statistics of a nationally representative sample of children, to examine the potential relationship between being placed in a gifted program in elementary school and how much a student values their grades in middle school, adding to the relatively small amount of research available on the psychological impact of gifted programs. The results indicate that elementary school gifted programs have a small, positive impact on gifted-eligible students, slightly increasing the likelihood that they report their grades are very important to them in middle school. Other factors, however, including how highly a student's parents and friends value grades, seem to have a much larger impact on students' own valuation of education. While these results are favorable for offering gifted instruction in elementary school and provide some evidence that such programs have a positive impact on students' attitudes toward their education, more research on the topic is needed.

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## INTRODUCTION

Nearly seventy years ago, the United States Supreme Court made what would become a landmark decision. *Brown v. Board of Education of Topeka*, the result of a local public school district refusing to enroll a young Black girl at the school closest to her home and instead requiring her to travel to a segregated elementary school for Black children.<sup>2</sup> When the case finally reached the highest court, it ruled in her favor, changing the future of education, ruling that “separate educational facilities are, by their nature, inherently unequal.”<sup>3</sup> This ruling theoretically ended legal segregation in America and established the precedent that lives with us today. In reality, however, it began more subtle methods of segregating some students from others, many of which remain in our education system. It began the practice, mostly by white Southerners, of creating private schools, or “segregation academies,” that operated differently from public schools and allowed separate and unequal education to legally continue, and Black children who attempted to attend integrated schools faced threats and violence.<sup>4</sup> While the racism that followed the *Brown v. Board* ruling is reprehensible, at the heart of this fight is a tension that still exists today: do all children deserve equal access to education, no matter what? Or is some manner of separation warranted based on certain characteristics? While we as a country have rightly decided that race should not determine what type of education a child receives, we now have different methods of separation in place in many of our nation’s schools.

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<sup>2</sup> “Brown v. Board of Education of Topeka, 347 U.S. 483 (1954).” Justia, U.S. Supreme Court. Available from: <https://supreme.justia.com/cases/federal/us/347/483/>; “Brown v. Board of Education (1954).” Legal Information Institute, Cornell Law School. [https://www.law.cornell.edu/wex/brown\\_v\\_board\\_of\\_education\\_\(1954\)](https://www.law.cornell.edu/wex/brown_v_board_of_education_(1954)).

<sup>3</sup> “Brown v. Board of Education (1954).” Legal Information Institute, Cornell Law School.

<sup>4</sup> Ladson-Billings, Gloria. 2004. Landing on the Wrong Note: The Price We Paid for Brown. *Educational Researcher* 33 (7). <https://www.jstor.org/stable/3700092>.

There are a variety of methods for separating children within today’s public education system—children attend schools in their school districts, the funding of which is largely tied to property values in the area, tying economic, and often racial, segregation to educational access.<sup>5</sup> Specialized private and magnet schools in areas like the creative and performing arts exist for children with artistic talent. But the type of school separation that is the focus of this study is gifted education, often known as “gifted and talented” programs, which exist in both public and private schools across the country. Gifted education programs, in theory, are a service for children—children who are identified as “gifted” are separated for some or all of their educational instruction so they can learn more advanced content that meets them at their current ability level. But gifted education also includes a complicated moral dilemma: is it just to designate some children as gifted, as early as elementary school, and others as non-gifted? And do the potential benefits of placement in a gifted program outweigh the possible costs, particularly to children labeled as non-gifted, and those who are most often underrepresented in gifted programs?

Gifted programs are a divisive issue among education advocates and researchers, not just because of the moral dilemma, but because determining which children are truly “gifted” and which are not is inherently complex. Is the binary of gifted and non-gifted static, and what traits mark giftedness? How can giftedness be determined without falling into entrenched judgments that result in discrimination? While gifted programs may help some students excel, they may also have no impact at all, or worse, harm those students who are not selected. It is difficult to

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<sup>5</sup> “Preprimary, Elementary, and Secondary Education: Public School Revenue Sources.” 2021. National Center for Education Statistics. <https://nces.ed.gov/programs/coe/indicator/cma>.



determine if such programs' potential benefits outweigh their costs, and what impact they have on the students who participate in them.

The purpose of this analysis is to examine the impact of gifted programs, not academically, but on how much students value their grades and education, and to determine whether such programs benefit students, particularly those from underrepresented groups. Specifically, I will examine whether being placed in a gifted program in elementary school affects how much a student values their grades in middle school, using the Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), from the National Center for Educational Statistics and sponsored by the U.S. Department of Education.<sup>6</sup> The ECLS-K examines readiness for school, child development, and student experiences in school using a longitudinal study, which followed the same group of children from kindergarten through eighth grade.<sup>7</sup> This data includes several different surveys that are combined, including surveys of children, parents, teachers, administrators, as well as selected school records, but all surveys focus on the child as the unit of observation, which is particularly useful for my research. With my analysis, I hope to add to the growing, but still relatively small, base of literature and research on gifted programs impact on students outside of academics, particularly on the potential impact on student attitudes toward school and among students from underrepresented groups. This research will help inform policymakers' decisions about future gifted programming, particularly at the federal level, where little policy exists on the subject.

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<sup>6</sup> National Center for Education Statistics. Early Childhood Longitudinal Studies (ECLS) Program. <https://nces.ed.gov/ecls/kindergarten.asp>.

<sup>7</sup> National Center for Education Statistics. Early Childhood Longitudinal Studies (ECLS) Program.

## PRIOR STUDIES: LITERATURE AND POLICY REVIEW

While citizens of the United States are guaranteed many rights, the right to an equal education is not one of them.<sup>8</sup> The landmark *Brown v. Board* case, as previously discussed, is often seen as proof that our country will not tolerate unequal education for different groups of people, but inequitable access to education existed long before *Brown*, and has continued after. Many factors impact the quality of an education that students receive—the neighborhood in which they live, how much funding their school receives, the curriculum that is taught, how they interact with their teachers, and the students they share the classroom with all play a role in shaping children’s educational experiences, and their futures. Gifted and talented education programs are one of those factors that set some students apart from others, often as early as elementary school. And though gifted programs were created to ensure that advanced students received the support they needed to thrive, their actual impact is much less clear. Is gifted education a modern manifestation of “separate but equal,” pulling some students out for advanced classes while leaving others behind? Or does its potential positive impact on students make this separation worth it?

### History and Policy Context

To examine the impact of gifted programs on today’s students, it’s important to understand the beginnings of gifted education in the United States. In the early 1900s, “opportunity classes” began to appear in urban schools across the country, including in cities such as New York, San Diego, St. Louis, Cleveland, and Chicago, growing throughout the first

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<sup>8</sup> Zirkel, 2005.

half of the twentieth century.<sup>9</sup> The advent of gifted programs in urban schools is particularly relevant to some of the issues that gifted programs face today, as cities were home to many children living in poverty, as well as those of many different racial and ethnic backgrounds.<sup>10</sup> Over the remainder of the twentieth century, gifted programs spread across the country, becoming a common feature of all schooling for children, from elementary school up through high school.

Though gifted programs remain common today, the legal basis of gifted education in the United States is simple: policy at the federal level is entirely absent. “The federal Constitution does not directly provide a right to an education, much less a gifted education,” one researcher, Zirkel, wrote.<sup>11</sup> The Elementary and Secondary Education Act of 1965, one of the farthest reaching federal education legislation passed to date, set out to provide “full education opportunity for all,” but even then, gifted students were not part of the equation.<sup>12</sup> The ESEA does provide funding for differentiated groups of students, but those include only special funding for students living in poverty (Title I funding) and funding for special education—funding for advanced programming or higher-achieving students was not included.<sup>13</sup> The only existing federal funding option for gifted programs specifically is the Jacob K. Javits Gifted and Talented Children and Youth Act of 1988, which is a little-used federal grant that may provide funding to

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<sup>9</sup> VanTassel-Baska, Joyce. 2010. “The History of Urban Gifted Education.” *Gifted Child Today* 33 (4).

<sup>10</sup> VanTassel-Baska, 2010.

<sup>11</sup> Zirkel, 2005.

<sup>12</sup> United States Department of Education. Every Student Succeeds Act (ESA). <https://www.ed.gov/essa>.

<sup>13</sup> Brave, Kathryn L. 2020. Income, race, and achievement over time: Comparing the growth of academically advanced. *Proquest*.

identify gifted students and meet their special education needs, if utilized by states.<sup>14</sup> Two types of grants exist under the program, one focused on underrepresented students in gifted programs, but it is not clear how often these grant programs are accessed, and they are competitive, rather than open funding to all states.<sup>15</sup>

Due to the dearth of federal policy or funding, decisions related to gifted education are left up to the states, and state law is the most common source of any policy relating to gifted education specifically.<sup>16</sup> Today, gifted services are provided for students in 49 states and the District of Columbia (South Dakota is the only state with no gifted policies at the state level).<sup>17</sup> Unlike special education programs, for example, which serve students with special needs, the lack of federal mandate for offering gifted education programs leaves considerable leeway in definitions of giftedness, identification of gifted students, program structure, and curriculum.<sup>18</sup> As a result of nearly all policies related to gifted programs being determined at the state and local level, students in different districts and states may have very different experiences with gifted education. For example, though almost all states require that gifted programs are offered, state-level standards and guidelines for gifted programs are much less common—in a fifty-state survey of state departments of education by the National Association for Gifted Children, only half of respondents reported having state program standards or guidelines for gifted education

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<sup>14</sup> “Jacob K. Javits Gifted and Talented Students Education Program.” Office of Elementary and Secondary Education. <https://www2.ed.gov/programs/javits/index.html>.

<sup>15</sup> “Jacob K. Javits Gifted and Talented Students Education Program.” Office of Elementary and Secondary Education. <https://www2.ed.gov/programs/javits/index.html>.

<sup>16</sup> Zirkel, 2005.

<sup>17</sup> Rinn et al, 2020.

<sup>18</sup> Ford, Donna Y.; Grantham, Tarek C.; and Whiting, Gilman W. 2008. “Culturally and Linguistically Diverse Students in Gifted Education: Recruitment and Retention Issues.” *Exceptional Children* 74 (3).

programs.<sup>19</sup> As I'll discuss below, the lack of uniform federal policy related to gifted education, and the many different ways that gifted education is handled across states and school districts, makes it not only difficult to study gifted education across the country in a uniform manner, but also nearly impossible to determine its true impacts on students.

### **Defining Giftedness and Identifying Gifted Students**

The term “gifted and talented” is defined in the Elementary and Secondary Education Act of 1965 as “students, children, or youth who give evidence of high achievement capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services or activities not ordinarily provided by the school in order to fully develop those capabilities.”<sup>20</sup> This definition is very broad, encompassing traits that range from intellectual ability to creativity and leadership capacity, which are extremely difficult to measure and may develop within children at different times. In addition, while it exists at the federal level, states and school districts are not required to use this definition when determining which students qualify for their own gifted and talented programs, if they offer them at all. In the National Association for Gifted Children’s survey, not all states (44) reported state definitions of giftedness, and the most frequent aspects of giftedness mentioned were advanced intellectual ability, creative thinking, and specific academic abilities.<sup>21</sup> The 30 state departments of education with data on the topic reported that gifted students ranged from two to 19 percent of student populations in their states, an extremely wide range that speaks to the many different ways gifted

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<sup>19</sup> Rinn et al, 2020.

<sup>20</sup> U.S. Congress. *Elementary and Secondary Education Act of 1965*, enacted December 10, 2015. <https://www2.ed.gov/about/offices/list/oii/nonpublic/eseareauth.pdf>.

<sup>21</sup> Rinn et al, 2020.

students are defined and identified.<sup>22</sup> At the national level, by contrast, an estimated six percent of public school students attend gifted programs, according to the U.S. Department of Education’s Office of Civil Rights’ estimations.<sup>23</sup>

In addition, while the federal definition has been used by some states as the basis of their own definitions of gifted, among academics and researchers, there also does not appear to be any clear, universally accepted definition of what it means to be gifted. There are two key questions at the heart of most discussions about giftedness: whether it is an inherent trait that some have, and some do not, or a quality that can be nurtured and developed over time, and if giftedness should be constrained to intellectual abilities or expanded to a broader definition. More traditional definitions of giftedness, which arose from the norms associated with the white middle-class, were primarily focused on IQ scores and high scores on achievement tests, but in more recent years, these definitions have been challenged.<sup>24</sup> Not only are IQ and test scores based on certain cultural norms, critics argue, but psychologists have also found that high IQ scores don’t necessarily correspond with individuals’ leadership skills or academic success.<sup>25</sup> In 2011, a group of researchers proposed a new, more comprehensive definition of giftedness, which includes traits such as willingness to take strategic risks, ability to handle criticism, ability

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<sup>22</sup> Rinn et al, 2020.

<sup>23</sup> National Association for Gifted Children. Gifted education in the U.S. <https://www.nagc.org/resources-publications/resources/gifted-education-us>.

<sup>24</sup> Ford, Donna Y., and King, Robert A. 2014. “No Blacks Allowed: Segregation of Gifted Education in the Context of Brown v. Board of Education.” *The Journal of Negro Education* 83 (3).

<sup>25</sup> Dreilinger, Danielle. October 14, 2020. “Why decades of trying to end racial segregation in gifted education haven’t worked.” *The Hechinger Report*. <https://hechingerreport.org/gifted-educations-race-problem/>.

to cope with challenges, as well as competitiveness, task commitment, and motivation.<sup>26</sup> The National Association of Gifted Children also found that as of 2009, some state definitions of giftedness included not just intellectual and academic achievement, but also creativity, talent in creative and performing arts, and leadership, but in few states—only ten out of fifty—definitions included cultural diversity in their definitions.<sup>27</sup> While ideas of what it means to be gifted have expanded in recent years, identifying those traits in children has proven difficult.

Once giftedness has been defined, the next challenge for schools, districts, and educators is identifying gifted students for instruction. Taking a broader definition of giftedness—one that includes creativity, leadership, and other traits, while considering that giftedness may develop over time in children at different speeds—makes identifying gifted children even more difficult. And gifted identification practices can be particularly controversial, as being placed in gifted programming can have a long-term tracking effect on children. Some states leave these decisions of how to identify gifted students entirely up to schools and districts, while others mandate that gifted screenings must include multiple measures of assessment, rather than a single test. Test scores are often used as a primary tool for identifying gifted students; as recently as 2008, scores from achievement or intelligence tests were used at most schools across the country to determine gifted placement.<sup>28</sup> But some researchers have noted that test scores are not necessarily a good measure of students' intelligence, especially for racial minority students and lower-income students.<sup>29</sup> It is also important to consider the role that certain gifted identification processes, like

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<sup>26</sup> Subotnik, Rena; Olszewski-Kubilius, Paula; and Worrell, Frank C. 2011. "Rethinking Giftedness and Gifted Education: A Proposed Direction Forward Based on Psychological Science." *Psychological Science in Public Interest*, Sage Publications.

<sup>27</sup> Ford and King, 2014.

<sup>28</sup> Ford et al, 2008.

<sup>29</sup> Escamilla, Kathy; Linan-Thompson, Sylvia; Robinson, Nancy M.; Secada, Walter; and Subotnik, Rena. 2016.

test scores, may play in representation in gifted programs, as Black or African American and Hispanic or Latino students are underrepresented in gifted programs nationally, as are English learner students (see table below).<sup>30</sup>

**Table 1: Public School Student Enrollment in Gifted Programs by Race and Ethnicity and Other Student Characteristics, 2017-18 Academic Year**

	Gifted enrollment		Overall enrollment	
	Number	Proportion	Number	Proportion
American Indian/Alaska Native	24,760	0.07	502,469	0.01
Asian	329,947	0.10	2,626,108	0.05
Hispanic or Latino (of any race)	610,225	0.18	13,862,334	0.27
Black or African American	273,280	0.08	7,969,501	0.15
White	1,994,410	0.58	24,096,313	0.47
Native Hawaiian or other Pacific Islander	7,163	0.02	193,424	0.04
Two or more races	139,755	0.04	1,944,875	0.04
English language learners	80,132	0.02	5,296,940	0.10

SOURCE: United States Office of Civil Rights Data Collection, 2017-18 State and National Estimations

In addition, most states do not mandate the use of a universal screening process for children, which means that which students are tested for gifted, and which are left behind, is left largely up to teachers.<sup>31</sup> This is especially problematic as ingrained bias and discrimination from

<sup>30</sup> United States Department of Education Office for Civil Rights (OCR). 2017-2018 State and National Estimations. 2018. <https://ocrdata.ed.gov/estimations/2017-2018>.

<sup>31</sup> Rinn et al, 2020.



teachers could impact gifted placement. Researchers including Ford and Grantham, who have studied minority students and gifted programs, have identified educator attitudes toward minority students, including “deficit thinking” about diverse students, as additional factors that lead to underrepresentation.<sup>32</sup> Universal screening programs, some experts argue, are critical to ensuring diversity and equity in gifted programs, yet only nine states require use of a universal screening process for referral or identification of gifted students.<sup>33</sup> Data on the use of multiple assessments for gifted placement is even more difficult to come by. Awareness of the various ways that students are identified as gifted, as well as the problems with these methods, is critical to understanding who gifted programs may serve, and who they may leave behind.

### **Methods of Delivery of Gifted Curriculum**

The literature also discusses the different methods of delivery for gifted programs, as well as much debate about which methods are most beneficial for gifted students and lower-ability students not selected for gifted programs. It is particularly important to consider delivery methods, as studies have found varied impacts of gifted programs on students, depending on how programs are structured. The research identifies many examples of gifted delivery methods, but the methods discussed in Delcourt, Cornell, and Goldberg’s research seem to be the most commonly used: 1) separate schools that only gifted students can attend (such as science or math academies); 2) separated gifted classes, in which gifted students attend a regular school but spend the majority to all of their time in classes with only other gifted students; 3) pull-out gifted programs, in which students receive some amount of separate instruction with only gifted

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<sup>32</sup> Ford, Donna Y., and Grantham, Tarek C. 2003. “Providing Access for Culturally Diverse Gifted Students: From Deficit to Dynamic Thinking.” *Theory into Practice* 42 (3).

<sup>33</sup> Rinn et al, 2020.

students, but are mostly taught in mixed classrooms; and 4) within-classroom gifted programs, in which teachers provide varying levels of instruction to meet the needs of all students in the class.<sup>34</sup> Pull-out programs are one of the most popular methods of delivery, as they do not rely on a single teacher to teach both gifted and non-gifted students simultaneously, but also do not require the resources of entirely separate gifted classes or gifted schools. Within-classroom gifted instruction seems to be one of the more controversial models. Delcourt, Cornell, and Goldberg, for example, found that significantly higher levels of achievement were associated with attending pull-out classes, separate classes, or gifted schools, but students in within-class gifted programs with a common curriculum did not see these positive results.<sup>35</sup> Other researchers, however, cite within-class models as the most equitable and progressive option. In a meta-analysis of 15 studies related to tracking students, conducted between 1972 and 2006, Rui found that lower-ability students benefited from “detracking” (which implies reintroducing students of different ability levels back into the same classroom), while students with average or high ability levels were not impacted positively or negatively.<sup>36</sup> In addition, in a review of within-class and between-class ability grouping, Slavin found no evidence that separating children into separate classrooms was beneficial for students, while ability-grouped classes seemed to have negative impacts on lower-ability students.<sup>37</sup> While more research is likely needed, detracking students and allowing gifted and non-gifted students to remain in the same

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<sup>34</sup> Delcourt, Marcia A. B.; Cornell, Dewey G.; and Goldberg, Marc D. 2007. “Cognitive and Affirmative Learning Outcomes of Gifted Elementary School Students.” *The Gifted Child Quarterly* 51 (4).

<sup>35</sup> Delcourt et al, 2007.

<sup>36</sup> Rui, Ning. 2009. "Four decades of research on the effects of detracking reform: Where do we stand?—A systematic review of the evidence." *Journal of Evidence-Based Medicine*.

<sup>37</sup> Slavin, Robert E. 1987. "Ability grouping and student achievement in elementary schools: A best-evidence synthesis." *Review of Educational Research* 57 (3).

classroom for instruction (such as within-classroom gifted programs) could protect lower-ability students from potential negative impacts. While there is clearly mixed evidence on the effectiveness of within-classroom gifted programs, depending on how curriculum is delivered, further research is certainly warranted as this method, if implemented well, could be the most equitable and best avoid potentially negative consequences of academic tracking.

### **Social and Emotional Impacts of Gifted Programs on Students**

While there is still much debate among researchers about the precise impact of gifted programs on students' academic achievement, depending largely on the method of delivery, as discussed above, there is a consensus that participating in a gifted program often has positive impacts on gifted students, though their potential negative impact on lower-ability students requires more research (Gamoran and Mare; Slavin; Kulik and Kulik, and others). As to focus of this paper—whether gifted programs have an impact on students' attitudes toward school, valuation of education, or other social or psychological outcomes—there are no definitive conclusions in the research, and little quantitative research available on these topics.

Of the research that is available, some researchers found that gifted programs (depending on delivery model), had positive impacts on various social and emotional outcomes for gifted students. In Delcourt, Cornell, and Goldberg's 2007 study, which followed elementary school children from 14 school districts in ten states over two years, the researchers found that some gifted programs had a positive impact on students' self-perception and motivation.<sup>38</sup> Because of the large size of this study, the authors were able to compare students across different types of gifted programs (special school, separate class, pull-out, and within class), as well as gifted

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<sup>38</sup> Delcourt et al, 2007.

students from districts with no gifted programs and nongifted peers, which is rare in the literature, as it is mostly comprised of smaller studies.<sup>39</sup> Their results found that gifted students in pull-out programs and within-class programs had higher perceptions of their scholastic abilities than gifted students in homogeneously grouped gifted programs (separate class and separate school), implying that students based their perception of their own abilities on comparison to peers.<sup>40</sup> In addition, when studying intrinsic and extrinsic motivation, they found that children who received within-class gifted instruction or attended gifted schools, two very different gifted program models, reported higher belief in their own judgment.<sup>41</sup> In addition, who scored lowest in preferences for challenging tasks were those who attended gifted schools or participated in a separate class model.<sup>42</sup> While these results are complex, and mixed, they provide interesting insights into the effects that certain types of gifted programs can have on students' motivation and self-perception.<sup>43</sup> Interestingly, the researchers also found that gifted programming did not seem to result in harmful effects on nongifted students.<sup>44</sup>

Similarly, in Kulik and Kulik's meta-analysis of findings from 52 studies on ability grouping in secondary schools, the authors found that students developed attitudes that were more positive about their courses when they attended grouped classes (classes grouped depending on students' ability levels), compared to students in ungrouped classes.<sup>45</sup> They also examined attitudes toward school and material. Most studies in the meta-analysis found that

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<sup>39</sup> Delcourt et al, 2007.

<sup>40</sup> Delcourt et al, 2007.

<sup>41</sup> Delcourt et al, 2007.

<sup>42</sup> Delcourt et al, 2007.

<sup>43</sup> Delcourt et al, 2007.

<sup>44</sup> Delcourt et al, 2007.

<sup>45</sup> Kulik, Chen-Lin C. and Kulik, James A. 1982. "Effects of Ability Grouping on Secondary School Students: A Meta-Analysis of Evaluation Findings." *American Educational Research Journal*, 1982, Volume 19, No. 3.

students in grouped classes had more favorable attitudes about school (8 out of 11 studies), while results on student self-concept were not conclusive (some studies found higher self-concept in grouped classes, while others found it higher in ungrouped classes).<sup>46</sup> Relatedly, Shields' large study of a school district in Canada, which compared homogenous gifted and talented fifth through eighth grade classes with heterogeneous classes (mixed-ability level), examined attitudes toward career interests and perception of teachers and schools.<sup>47</sup> Shields found that in fifth grade, students reported higher expectations from their teachers when they were placed in homogeneously-grouped classes (classes only with students of their ability level).<sup>48</sup> Those same students, in eighth grade, reported greater development of career interests and reported that their teachers had higher reinforcement of their self-concept and provided more feedback.<sup>49</sup> These results, though interesting, contrast with Delcourt, Cornell, and Goldberg's findings that heterogeneous gifted programs (pull-out and within class) tend to lead to higher self-perceptions, due to potential comparison to peers.<sup>50</sup> While these studies provide evidence of interesting, and varied, potential positive impacts of gifted programs on students' attitudes toward themselves and school, they are not conclusive.

On the other hand, several other studies found either negative outcomes associated with gifted programs, or no evidence that programs had an impact. For example, in Redding and Grissom's analysis of data from the Early Childhood Longitudinal Study, which included over 18,000 students, they found no association between gifted placement and student absences,

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<sup>46</sup> Kulik and Kulik, 1982.

<sup>47</sup> Shields, Carolyn M. 2002. "A comparison study of student attitudes and perceptions in homogenous classrooms." *Roeper Review* 24 (3).

<sup>48</sup> Shields, 2002.

<sup>49</sup> Shields, 2002.

<sup>50</sup> Delcourt et al, 2007.

engagement with school, or student mobility.<sup>51</sup> Several other smaller studies showed similar results. Preckel, Gotz, and Frenzel's 2010 study of 186 high-schoolers at an Austrian high school found that students in homogenous classes reported a decrease in self-concept (particularly related to math, the focus of this study), in the first year of that class.<sup>52</sup> Adams-Byers, Whitsell, and Moon, who studied 44 gifted students in grades five through 11 found that while students viewed homogeneous classes as positive in respect to academics, results were mixed in terms of social needs.<sup>53</sup> Some participants valued social diversity in heterogeneous classes, but others seemed to prefer mixed-ability level classes specifically because they found the work to be easier and allowed the classes allowed high-ability students to attain a higher class ranking with less work.<sup>54</sup> This finding is reminiscent of the big-fish-little-pond effect, which has been studied in respect to gifted students, but is the subject of disagreement among researchers. Though quantitative data on this phenomenon is difficult to find, or perhaps nonexistent, several papers (Marsh, 2008, and Dai and Rinn, 2008) argue that the big-fish-little-pond effect has relevant implications for academic achievement among gifted students, though they disagree about its prevalence among gifted students.<sup>55</sup>

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<sup>51</sup> Redding, Christopher and Grissom, Jason A. "Do Students in Gifted Programs Perform Better? Linking Gifted Program Participation to Achievement and Nonachievement Outcomes." Educational Evaluation and Policy Analysis. September 2021, Volume 43, No. 3.

<sup>52</sup> Preckel, Franzis; Gotz, Thomas; and Frenzel, Anne. 2010. "Ability grouping of gifted students: Effects on academic self-concept and boredom." The British Journal of Educational Psychology 80.

<sup>53</sup> Adams-Byers, Jan; Whitsell, Sara Squiller; and Moon, Sidney M. 2004. "Gifted students' perceptions of the academic and Social/Emotional effects of homogeneous and heterogeneous grouping". Gifted Child Quarterly.

<sup>54</sup> Adams-Byers et al, 2004.

<sup>55</sup> Marsh, Herbert W.; Seaton, Marjorie; Trautwein, Ulrich; Ludtke, Oliver; Hau, K. T.; J. O'Mara, Alison; and Craven, Rhonda G. 2008. "The big-fish-little-pond effect stands up to critical scrutiny: Implications for theory, methodology, and future research." 20.

Finally, some researchers, such as Rui (discussed above) suggest that instead of focusing on separating gifted students based on ability level, educators should consider detracking students purposefully, creating more heterogeneous classes for the benefit of all students.<sup>56</sup> In a 2009 meta-analysis, Rui found that the evidence related to tracking and students' social and emotional outcomes is mixed, with some studies finding that heterogeneous classes made students feel less secure, while others found that they had no impact, and still other studies reporting that students' in heterogeneous classes had a higher self-efficacy and more positive attitudes.<sup>57</sup> While more research is certainly needed, Rui concluded that detracking did have positive academic outcomes for students, especially low-ability students, and should be encouraged as an alternative to tracking.<sup>58</sup>

While gifted education has become a more popular field of study over the past several decades, resulting in more research on the topic, there are still very few quantitative studies on the social, emotional, and psychological impact of gifted programs available. To answer critical questions about how gifted programs may make students feel and behave—whether they help motivate students, increase their confidence, or encourage more focus on school and grades—more research is needed. This study, which examines whether being placed in a gifted program in elementary school impacts how much students value their grades in middle school, can help fill this gap in the research and contribute useful information to the field.

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<sup>56</sup> Rui, 2009.

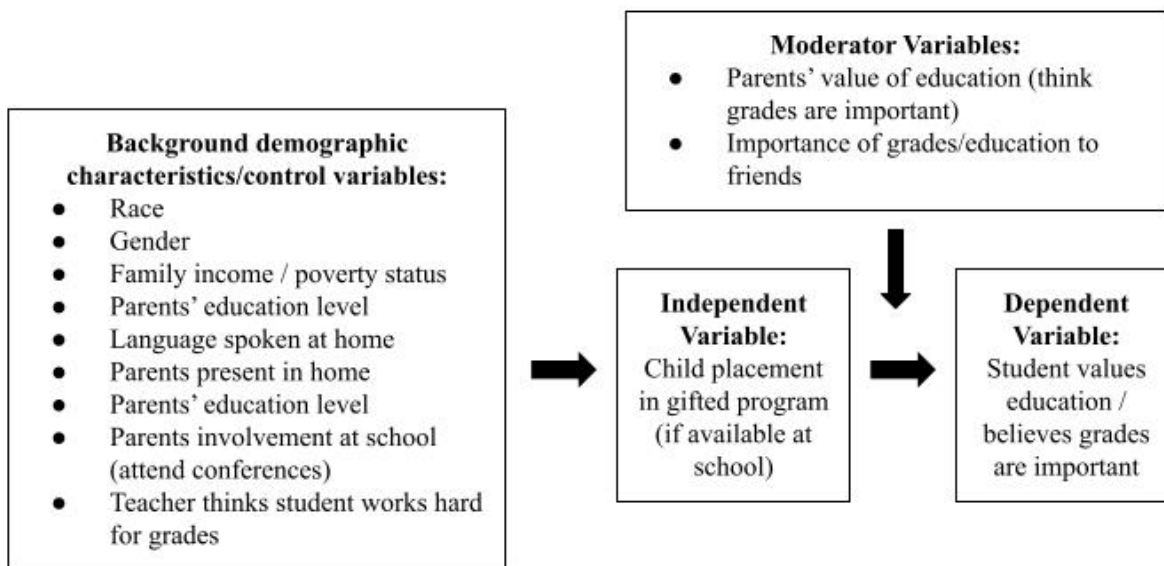
<sup>57</sup> Rui, 2009.

<sup>58</sup> Rui, 2009.

## CONCEPTUAL FRAMEWORK AND HYPOTHESIS

The study hypothesis is that being placed in a gifted program in elementary school has long-term positive impacts on how much a student values their grades and education. More specifically, students placed in a gifted and talented program in third grade (a variable which I approximate based on their second-grade test scores and the availability of a gifted program at their school) are expected to be more likely to report that their grades are very important to them when they are in seventh grade. The research question is whether being placed in a gifted program could instill certain traits in a student, such as confidence in themselves and an interest in doing well in school. In addition, I suspect that this effect may be even more pronounced for underrepresented students, as they are typically not given the support they need in regular classrooms. If placed in a gifted program, I hypothesize they may receive the support they need, resulting in an even higher relative impact than for others.

**Figure 1: Conceptual model for the impact of approximated placement in a gifted program in elementary school on a students' valuation of grades in middle school**





## DATA AND METHODOLOGY

### Data and Analysis Sample

The data source used throughout this analysis is the ECLS-K (Early Childhood Longitudinal Study, Kindergarten Class of 1998-99), which is sponsored by the U.S. Department of Education. The ECLS-K is a longitudinal study that examines children's early experiences in schools, academic readiness, and their development.<sup>59</sup> The data is made up of information from several different surveys, including student surveys, parent surveys, teacher questionnaires, and surveys of school administrators, which accounts for the wide variety of information and different variables present in the dataset. The data is collected beginning in kindergarten (in both the fall and spring of the 1998-99 academic year), the spring and fall of the students' first grade year (1999-2000), and the spring of their third grade (2002), fifth grade (2004), and eighth grade years (2007).<sup>60</sup> The data comes from a nationally representative sample of children—as well as their parents, teachers, and schools—across the United States, using the student as the unit of observation.<sup>61</sup> My analysis includes a sample of 7,508 total students, all of those for which data was available for my key variables. Additionally, as I am interested in the potential impact of gifted programs on certain subgroups of students, the data in my analysis is disaggregated by race as well as income level to determine whether being placed in a gifted program has differing effects on students of different groups of students.

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<sup>59</sup> National Center for Education Statistics. Early Childhood Longitudinal Studies (ECLS) Program. <https://nces.ed.gov/ecls/kindergarten.asp>.

<sup>60</sup> Early Childhood Longitudinal Studies (ECLS) Program.

<sup>61</sup> Early Childhood Longitudinal Studies (ECLS) Program.

## **Variable Specifications**

### **Dependent Variable**

Because my hypothesis is that gifted programs may have a positive impact on students psychologically, specifically as it relates to how they view school, my dependent variable measures how important grades are to a student in seventh grade, four years after being placed in a gifted program. This variable comes from the child assessment student questionnaire data from the seventh-grade year, meaning that students were asked directly how important grades were to them and answers were recorded accordingly. This variable is ordinal with four categories: not at all important, somewhat important, important, and very important.

### **Key Explanatory Variable**

The ECLS-K database does contain a variable that represents whether each student was placed in a gifted program, but that variable is suppressed due to confidentiality concerns for the students. To address my hypothesis and determine whether being placed in a gifted program has an impact on students, it was necessary to combine two variables to approximate whether a student was likely placed in a gifted program. I did so by using the following variables:

- Whether an elementary school has a gifted program in third grade
- Student IRT reading test score in second grade, the year prior to them being placed in gifted, using the top 10 percent of test-scorers as those who would likely be placed in gifted

The variable capturing student IRT reading test scores from second grade was chosen after careful consideration of the best way to approximate giftedness. IRT, or Item Response

Theory, can be used to compare across different types of assessments, as it uses a pattern of correct answers to establish estimates, and was used by the ECLS-K researchers to ensure that they could calculate scores for all children on the same scale to measure their ability levels.<sup>62</sup> Researchers also noted that IRT is effective as it can adjust for possibilities like a low-ability child guessing difficult items directly, and also because it makes longitudinal measurements of gains over time easier to determine.<sup>63</sup> In addition, another study that also used ECLS-K data and attempted to approximate gifted placement utilized IRT scores for the approximation, which gave me the idea for this approach.<sup>64</sup> While a more comprehensive method of determining giftedness, beyond a test score, would be preferable, it was not available in my dataset.

As a result, I determined that this was the most appropriate way to approximate giftedness, and created four distinct groups of students in my dataset based on this approximation: students who are likely gifted (top ten percent of IRT test scorers in second grade) and attend school with a gifted program in third grade, students who are likely gifted (top 10 percent of IRT test scorers in second grade) and do not attend a school with a gifted program, students who are likely not gifted (bottom 90 percent of IRT test scorers in second grade) and attend a school with a gifted program, and students who are likely not gifted (bottom 90 percent of IRT test scorers in second grade) and do not attend a school with a gifted program. For

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<sup>62</sup> “Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K: 2011), First-Grade and Second-Grade Psychometric Report.” 2018. National Center for Education Statistics, U.S. Department of Education. <https://nces.ed.gov/pubs2018/2018183.pdf>; “Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), Psychometric report for the Eighth Grade.” 2009. National Center for Education Statistics, U.S. Department of Education. <https://nces.ed.gov/pubs2009/2009002.pdf>.

<sup>63</sup> “Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K: 2011), First-Grade and Second-Grade Psychometric Report.” 2018.; “Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K), Psychometric report for the Eighth Grade.” 2009.

<sup>64</sup> Zayac, 2013.

simplicity, throughout this study, when I refer to gifted-eligible students, I am referring to those I have approximated as gifted, who scored in the top 10 percent of IRT tests, and when I refer to non-gifted-eligible students, I am referring to those who scored in the bottom 90 percent of IRT tests.

#### Other Moderator and Control Variables

Students' educational experiences and outcomes are complex: home and community factors, students' academic ability and social characteristics, and their baseline characteristics all have an impact on students' experiences in school. To control for these other factors, I included the following additional variables in my analysis:

#### Student baseline characteristics:

- Students' race/ethnicity: Baseline demographic variable that must be controlled for, as it's well-documented in the literature that students of certain races are underrepresented in gifted programs and may see different effects from being placed in a gifted program.
- Student sex: Baseline demographic variable that must be controlled for.
- Family income (measured in third grade): Family income may be related to gifted program placement as families that are low-income may be less available to help students with homework or to engage in school activities due to the necessity of working additional hours or other responsibilities.
- Family poverty status (measured in third grade): I included this variable for similar reasons to the inclusion of family income, but poverty specifically may be related to whether a student performed well academically and was placed in a gifted program.

- Parent's highest education level (measured in third grade): Parents' education level is included as it may be related to my model, as students with parents who achieved higher levels of education may be more motivated to care about their own education. Additionally, it is possible that parents who achieved higher levels of education did so because they themselves are academically gifted and may have passed that down to their children.
- Types of parents in the household (measured in second grade): The type of family makeup in a home, and especially how many parents or guardians are available in the home, may have an impact on whether students are placed in gifted programs as students with one parent at home, or who live with nonparents, may have guardians who are not as able to be engaged in academics. This variable is from the student's second grade year as it was not measured each year.
- Parent attendance at conferences (measured in second grade): Parent attendance at conferences is potentially related to how much a student values their grades, but the direction of the relationship is unclear. Parents could attend conferences because they are extremely engaged with their child's school, or because their child is not doing well and their attendance is requested. This variable is from the student's second grade year as it was not measured each year.

Moderator variables:

- Importance of grades to friends (measured in seventh grade): Students were also asked how much their friends cared about grades in seventh grade, and this variable is included because it is likely related to the dependent and independent variables as a

moderator variable, meaning it affects the relationship between them. Having friends who care about grades very much could impact the relationship between being placed in a gifted program and a students' own valuation of grades positively and with a large magnitude, if friends reinforce a students' own high valuation of grades. On the other hand, it could have a smaller effect on the relationship, or even a negative effect if a students' friends do not think grades are important, which could impact the students' own feelings about grades. As friend groups, particularly among middle schoolers, would likely be important to students, this was a critical variable to include.

- Importance of grades to parents (measured in seventh grade): Similarly to friends' valuation of grades, the importance of grades to a parent could also act as a moderator variable in my analysis. If a student's parents consider grades to be very important, this could have a large, positive effect on the relationship between being placed in a gifted program and a students' own valuation of grades, or the opposite if a parent considers grades unimportant.

## **Methodology**

The present study uses several different ordered probit regression models to compare the effects of being placed in a gifted program to how much students value grades across different subsets of students (gifted students at schools with gifted programs, nongifted students at schools with gifted programs, gifted students at schools without gifted programs, and nongifted students at schools without gifted programs). An ordered probit model is used to estimate the relationship between a dependent and independent variable when the dependent variable is categorical, and it expresses these results in estimated probabilities. Because I was interested both in the effect of a

gifted program on gifted students, and the comparison among them to nongifted students, including these four groups was necessary. As you can see in Tables 7 and 8, the study includes six different ordered probit models so that I would be able to compare among the four groups of students identified:

- Model 1 (Table 7) estimates the relationship between being placed in a gifted program and how much a student values grades, among all students who attended schools where a gifted program was offered.
- Model 4 (Table 8) is the same as Model 1, but among all students who attended schools where a gifted program was not offered, to serve as a comparison to Model 1.
- Model 2 (Table 7) is used to estimate the marginal effects of gifted placement on students' valuation of grades for gifted students, as it includes only the gifted students who attended schools with gifted programs in its model.
- Model 5 (Table 8) is used similarly to Model 2, but only for gifted students who did not attend schools with a gifted program.
- Model 3 (Table 7) is used to estimate the marginal effects of gifted placement on students' value of grades for nongifted students, as it includes only nongifted students who attended schools with gifted programs in its model.
- Model 6 (Table 8) is used similarly to Model 3, but only for nongifted students who did not attend schools with a gifted program.

In addition, as mentioned above, I estimated the marginal effects on specific groups of students (shown in Tables 9 and 10) to determine if the relationship between my gifted placement and value of grades was different among different groups of students.

## **Data and Study Limitations**

There are several limitations of the ECLS-K data in relation to the research question examined in this analysis. First, there are variables that would have been extremely useful for my analysis that are suppressed in the ECLS-K dataset due to confidentiality concerns, such as the variable that represents actual placement in gifted programs for each year of school, kindergarten through eighth grade. It would have been ideal to be able to access the variables with the actual information on gifted placement, rather than approximating placement. Several other control variables—including school ZIP code, county code, and state—are also suppressed, so I was unable to determine if there were geographic differences in the impact of gifted programs. In addition, it would have been ideal to have a different way to measure giftedness than just using an IRT test score, as the literature suggests that giftedness can be measured in a variety of ways, but additional measures of approximating giftedness were not available. Finally, it is difficult to measure the emotional or psychological impact of gifted programs on children, as we have seen from the literature, since there are very few quantitative analyses on the subject. It would have been ideal to include variables in addition to students' value of grades—such as their confidence level or how much they enjoy school—but these variables were not available within the ECLS-K database. As a result, the present study must approximate giftedness using test scores, and is also missing variables that would help better determine the psychological impact of a gifted program on students.



## RESULTS

### Descriptive Results

The descriptive findings included in this study revealed interesting insights into the background characteristics of the children in the sample. Table 3 shows that the proportion of students who are likely gifted-eligible is larger than what is observed in the literature. Sixteen percent of students in this sample would likely qualify for gifted programs based on test scores, compared to the estimation that about six percent of students are thought of as gifted.<sup>65</sup>

Additionally, it is important to note that across the variables for importance of grades (to the student, to their parents, and to their friends), the category of “not important” had significantly fewer responses than the other categories. It is relevant to note that in my sample, Hispanic students were overrepresented in the gifted-qualifying group (they made up 25 percent of gifted-qualifying students and only 14 percent of non-gifted students), which is contrary to my expectations, as Hispanic students are underrepresented in gifted programs nationally, as of 2018.<sup>66</sup> This data can be seen in Table 5, which shows descriptive statistics by student gifted qualification status. I would also expect white students to be overrepresented in gifted programs, but in my sample white students represent 51 percent of gifted-qualifying students compared to 65 percent of non-gifted students-qualifying, while they are overrepresented in gifted programs nationally.<sup>67</sup> The proportion of Black gifted-qualifying students (6 percent, compared to 10

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<sup>65</sup> United States Department of Education Office for Civil Rights (OCR). 2017-2018 State and National Estimations.

<sup>66</sup> United States Department of Education Office for Civil Rights (OCR). 2017-2018 State and National Estimations.

<sup>67</sup> United States Department of Education Office for Civil Rights (OCR). 2017-2018 State and National Estimations.

percent non-gifted) and Asian gifted-qualifying students (13 percent, compared to 4 percent of non-gifted students) is consistent with my expectations.

In addition, Table 4 shows descriptive statistics for the schools included in this sample. While the child was the unit of analysis in the present study, it is important to understand the variation among types of schools in terms of which offered gifted programs. The results in Table 4 demonstrate that most schools in the sample were public schools, and about two-thirds of those public schools offered gifted programs. Among private schools, both religious and non-religious, gifted programs were less common. Finally, it is important to note that many more schools had less than 50 percent low-income students offered gifted programs, compared to schools at which low-income students account for 50 percent or more of student enrollment. This is an important consideration, as schools with fewer low-income students may offer other benefits to students not considered in this analysis, such as more well-resourced peers and better funding for their schools. School funding relates directly to the wealth of a community, as on a national basis, about 81 percent of local public-school revenue comes from property taxes.<sup>68</sup>

## **Regression Results**

Using two ordered probit models, I estimated the association between a student attending a school with a gifted program in third grade, approximating a student's placement in a gifted program using the top ten percent of IRT test scorers, and how important a student considered grades to be in seventh grade. Tables 9 and 10 (column 1, all students) show the predicted probabilities calculated from an ordered probit regression when regressing how much a student values their grades in seventh grade on my key independent variable, whether a student was

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<sup>68</sup> "Preprimary, Elementary, and Secondary Education: Public School Revenue Sources," 2021.

placed in a gifted program at their school in third grade, controlling for observable covariates and background characteristics. I analyzed two possible outcomes: that students reported that grades were very important in seventh grade and that they reported that grades were not important in seventh grade, compared across schools with and without elementary gifted programs.

First, I conducted several different regression analyses on each sample (students who attended schools with gifted programs and students who attended schools without gifted programs). The regression results of an ordered probit model for the former sample, shown in Table 7, Model 1, indicate that the association between approximated gifted class placement in third grade (at schools who offer gifted courses) and importance of grades to students in seventh grade is positive and statistically significant at the five percent level. The model, however, does not seem to explain much of the variation of how important a student considers grades, as it has a Pseudo R-squared of 0.093 (see Table 7, Model 1). In addition, the results in Table 8, Model 4, show that there is a positive association between gifted-qualifying students (but those not placed in gifted classes, as they are not offered) and how important a student considers grades, but the results are not statistically significant, though the Pseudo R-squared for the model is similar (0.09). These results suggest that being placed in a gifted program in elementary school may have a positive and significant effect on how much a student values grades in middle school, which addresses my main research question.

In order to interpret the results specific to the potential impact of gifted programs on how important grades are to a student, we must refer to the marginal effects results, shown in Tables 9 and 10. The results in column 1 (titled “all students”) of Table 9 show that gifted students who attended a school with a gifted program available in third grade were about 5.5 percent more likely to report that grades were very important to them than they were to report that grades were

important or not important, holding all other variables in the model constant, which is consistent with my hypothesis. This result is statistically significant at the five percent level. The results in column 1 (labeled “all students”) of Table 10, by contrast, show that the impact of likely qualifying for a gifted program when a student attends a school without one on the importance of grades to the students is of a smaller magnitude, and is not statistically significant. These results are an indicator that among gifted students, being placed in a gifted program does have a small, positive impact on how important a student considers grades in middle school, though some of the variables controlled for in the model appear to be stronger predictors of how much a student values grades, which will be explained below. In addition, as noted above, it is unlikely that the variables included explain most of the variations between gifted placement and importance of grades due to the low Pseudo R-squared. This should be taken into consideration when interpreting further results.

#### Additional Multivariate Models

In addition to the impact of a gifted program on students, the present study aimed to determine whether being placed in a gifted program had a different effect on the importance of grades for students based on their background characteristics. To determine this, I conducted four more ordered probit regression analyses that examined the impact of other variables on the likelihood that a student would consider grades to be very important, among four key student groups determined by gifted placement and availability. In Table 7, Model 2 shows those regression results among gifted students at schools that offer gifted programs, and Model 3 shows those regression results among non-gifted students at schools with gifted programs. Similarly, in Table 8, Model 5 shows results for gifted students at schools without gifted

programs, and Model 6 shows results for non-gifted students at schools without gifted programs. It is important to note that the sample sizes were much smaller for gifted students in both models, as they make up a smaller proportion of all students, but the degrees of freedom for these models were small enough for them to be considered. Below, I will discuss the marginal effects by background characteristics on importance of grades among these four groups of students (gifted students at gifted schools, non-gifted students at gifted schools, gifted students at non-gifted schools, and non-gifted students at non-gifted schools).

### Marginal Effects by Race

One key portion of my research question, which was informed by disparities noted in literature, was whether being placed in a gifted program had different effects for children of different races, particularly as it related to a students' perception of the importance of their grades. My findings confirm that the association between gifted placement and importance of grades varies significantly depending on a student's race, and in some cases, did not align with my hypotheses and existing literature.

Table 9, columns 2 and 3, display the marginal effects of gifted placement (for both gifted and non-gifted students) by various characteristics including race. The most significant, and perhaps somewhat surprising, finding is among Black students, particularly those who are non-gifted-qualifying. At schools that offer gifted programs, non-gifted-qualifying Black students were about 18 percent more likely to report that grades were very important to them, as opposed to important or not important, holding all other variables in the model constant. This result is statistically significant at the one percent level. In comparison, there was no significant impact on gifted students at schools offering gifted programs, and no significant impact on any

Black students at schools not offering gifted programs, as you can see in Table 9, column 2, and Table 10, columns 2 and 3.

This result leads me to believe that there may be another characteristic associated with schools offering gifted programs, other than the program itself, that has a positive impact on Black students. In my sample, schools that offer gifted programs in third grade are also more often schools that serve fewer low-income students (see Table 4). It is possible that schools who serve more wealthy students have more school funding (as this comes, in large part, from tax revenue), and may be able to offer smaller class sizes, teachers with advanced degrees, or other factors potentially related to students' valuing their grades. It is possible that such factors have an impact on Black students in particular. This would be an interesting question for future research.

The other racial group of students of note are Asian students, who are typically overrepresented in gifted programs. In my sample 13 percent of gifted-qualifying students were Asian, while just 4 percent of non-gifted-qualifying students were Asian (see Table 5). My results shown in Table 9 and 10, indicate that being in a gifted program has a positive effect on Asian students. Gifted-qualifying Asian students, who were placed in gifted programs, were about 16 percent more likely to report that grades were important to them, as shown in column 2 of Table 9, holding all other variables in the model constant. This result is statistically significant at the ten percent level. Among other groups of Asian students (non-gifted-qualifying students at both types of schools and gifted-qualifying students at schools that did not offer gifted programs), there was no significant effect. These results suggest that gifted program placement does have an impact on how important Asian students consider their grades.

Surprisingly, there were no significant results for white or Hispanic students in my sample, as shown in Tables 9 and 10. This result does not confirm my hypothesis, as I

hypothesized that Hispanic students and Black students may see larger impacts from being placed in gifted programs. Additionally, Hispanic students were overrepresented in gifted programs in my sample, as described in my descriptive results. This does not align with existing literature and could be a result of my approximation for gifted placement not being reflective of the reality of gifted programs, differences in how Hispanic was defined in the ECLS-K surveys and other research, or other discrepancies.

### Marginal Effects by Sex

A child's sex (male or female) in relation to the potential relationship between gifted placement and importance of grades was not of particular interest in my research questions, but the results showed significant differences between sex that are worth noting. Interestingly, being female was associated with an increased probability of reporting that grades were very important to students of all groups, except for gifted-qualifying students placed in a gifted program (as shown in Table 9, column 2). For non-gifted students-qualifying at schools with gifted programs, however, being female was associated with a 12 percent increased likelihood that grades were very important to the student, holding all other variables in the model constant. This result is significant at the one percent level. Interestingly, a similar effect was seen for all female students at schools that did not offer gifted programs, all of which were also about 12 percent more likely to report that grades were very important to them, holding all other variables in the model constant. These results are statistically significant at the one percent level for non-gifted-qualifying students at schools without gifted programs and at the five percent level for gifted-qualifying students. My results imply that female students are, across the board, more likely to

report that grades are very important to them, and that there is not a significant marginal effect on female students who are also placed in gifted programs.

#### Marginal Effects by Importance of Grades to Parents

Of all variables included in my analyses, the importance of grades to parents (as reported by the student) had one of the largest and consistently significant impacts on students' valuation of grades, regardless of whether their school offered a gifted program and of their own gifted status (see Tables 7 and 8). Because the variable recording the importance of grades to parents was also categorical, I included two categories in my analyses: grades are not important to parents and grades are very important to parents. Gifted-qualifying students at schools with gifted programs were about 23 percent more likely to report that their grades were very important to them if grades were also very important to their parents, holding all other variables in the model constant. Results were similar for other groups: non-gifted-qualifying students at schools with gifted programs were 27 percent more likely, gifted-qualifying students at schools without gifted programs were 21 percent more likely, and non-gifted-qualifying students at schools without gifted programs were 26 percent more likely to do so, holding all other variables in the model constant. All results are statistically significant at the one percent level (as seen in Tables 9 and 10). This leads me to conclude that the importance of grades to parents was significant in predicting importance of grades to students, regardless of gifted status and placement.

It is interesting to note, however, that gifted-qualifying students in gifted programs were the only group of students that were not significantly less likely to report that grades were very important to them if grades were not important to their parents. Non-gifted-qualifying students at schools offering gifted programs were 15 percent less likely to report that grades were very



important to them if grades were not important to their parents, holding all else in the model constant. This result is statistically significant at the 10 percent level. And at schools without gifted programs, gifted-qualifying students were 23 percent less likely to report that grades were very important to them if they were not important to their parents, compared to non-gifted-qualifying students at schools without gifted programs, who were 27 percent less likely to do so (see Tables 9 and 10), both results holding all else in the model constant. Both results are statistically significant at the 1 percent level. I am not able to draw further conclusions from my analysis, but this result may indicate that being placed in a gifted program makes up for some of the lack of concern about grades from some parents. More research is needed to form a conclusion, but it would have interesting practical implications for gifted students who receive limited academic support and encouragement from home.

#### Marginal Effects by Importance of Grades to Friends

Similar to the impact of importance of grades to parents on the relationship between gifted placement and how much a student cares about grades, importance of grades to friends (reported by the student) had a large and significant impact, as shown in my results (see Tables 7 and 8). For all students included in my sample, if they reported that their friends considered grades to be very important, students were between 15 and 24 percent more likely to report that grades were also very important to them, holding all else in the model constant. All results were statistically significant at the one percent level. The smallest, though still significant, positive impact was on gifted-qualifying students at schools without gifted programs (15 percent more likely) while the largest impact was on non-gifted-qualifying students at schools with gifted programs (24 percent more likely), as shown in Tables 9 and 10.

Interestingly, students who reported that their friends did not consider grades important were significantly less likely to report that grades were important to them, and this negative effect had, in some cases, a much larger magnitude than the positive effect described above. This effect was largest for gifted-qualifying students at both schools: gifted-qualifying students in gifted programs were about 52 percent less likely to report that grades were very important to them if grades were not important to their friends, and gifted-qualifying students at schools without gifted programs were 51 percent less likely to do so (see Table 9, column 2, and Table 10, column 2). Non-gifted-qualifying students, on the other hand, saw about half of this negative effect. Non-gifted-qualifying students at schools with gifted programs were about 25 percent less likely to report that grades were very important to them if grades were not important to their friends, and non-gifted-qualifying students at schools without gifted programs were 24 percent less likely to do so. I am not able to determine from my research why the negative effect of importance of grades to friends is doubled among gifted students, as further research would be needed.

These results also have interesting practical implications. As I noted previously, there are many ways to structure gifted programs that result in greatly varying amounts of time spent with other gifted students versus non-gifted students. My research does not allow me to draw conclusions, but because friends' valuation of grades seems to have a very large impact on a student's own value of grades, the way that gifted programs are grouped may impact how much a student values their grades and education. This is particularly relevant as gifted-qualifying students seem to be even less likely to report that grades are very important, compared to non-gifted-qualifying students, if their friends do not consider grades to be important. The ECLS-K data did not differentiate between types of gifted programs, but this is an interesting topic for

further study that could help determine what groupings of students, who are particularly impacted by their friends' views on education, are most helpful for influencing how much a student values their own grades.

## CONCLUSION

The results from the empirical analyses estimated in this paper suggest that gifted programs could be a useful tool for increasing how much students' value their grades, and that their effects among students persist over time (from third grade gifted placement through seventh grade). Though the observed effect on gifted-qualifying students was relatively small (a 5.5 percent increase in likelihood of reporting that grades were very important), the result is statistically significant.

In addition, my research implies that attending schools with gifted programs has positive impacts for the value of grades to non-gifted-qualifying Black students, who were 18 percent more likely to report that grades were very important to them. This is a particularly interesting finding as Black students, and often other students of color, have typically worse educational outcomes overall (they are less likely to take advanced classes, graduate from high school, or attend college than white or Asian students).<sup>69</sup> Further research should examine what other characteristics are present at schools with gifted programs, such as increased funding, and the potential positive impacts on Black students of all ability levels.

Finally, my analyses suggest that two factors have the largest impact on how important students consider grades: how important grades are to their parents, and to their friends. The latter is practically relevant as it relates to how gifted programs are administered and the resulting groupings that occur. My analyses suggest that middle school students are influenced, both positively and negatively, by their friends. Thus, students placed in gifted classes the majority of the time, alongside other gifted students who care about their grades, may experience

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<sup>69</sup> "Status and Trends in the Education of Racial and Ethnic Groups 2018." 2018.

even greater benefits in terms of how much they consider grades important. I am unable to draw these conclusions from my research, but further research would be needed both to confirm this theory and to investigate the potential impacts of groupings on non-gifted-qualifying students.

Though the results are encouraging and suggest interesting questions for further research, some concerns remain. While I included as many relevant variables as possible from my data source, my models explain a relatively small amount of the variation in how much students care about grades, and further research that includes additional variables is needed to confirm my findings. Second, because of concerns about privacy, my data source blinded data about gifted placement. As a result, I approximated gifted placement, as discussed in my data and methods section, based on those with high test scores and availability of gifted programs at schools. Further research that uses actual gifted data would be preferable.

Despite these concerns, my findings provide sufficient evidence that gifted programs do have some impact on students' valuation of their grades, which could be a useful factor related to student success in education. Though I cannot draw those conclusions from my research, the importance of how much a student values their grades and their education in middle school should not be underestimated, as it could begin a trend that continued through high school and beyond. In addition to further research, as I mentioned, the United States Department of Education should consider if standardized, federal guidelines for gifted programs are in the best interest of students. Gifted programs, it seems, do impact how much students value grades and education, and therefore should be regulated at the federal level to ensure that all students have equal opportunity to participate. To ensure that gifted program placement is fair, federal guidelines for assessing giftedness should be put in place, ideally including definitions of giftedness outside of the narrow academic definition, as suggested by Ford and King, among

other researchers.<sup>70</sup> Additionally, the type of gifted program students participate in is important. While my research did not examine different types of gifted programs, as that information was not available from my data source, the existing literature explores the various positive and negative elements of four types of gifted programs: students in gifted schools, students in separate classes most of the time, students in pull-out programs (part-time), and in-classroom gifted programs. My findings, that how much students' friends value their grades is significantly related to how much a student values their own grades, suggests that the type of gifted program, and the amount of time a student spends with other gifted peers, is important. Further research should investigate differences between these models, building on Delcourt, Dewey, and Goldberg's work, including the impact of grouping on non-gifted students. Eventually, federal direction on the types of gifted programs and their impact on children should be provided.

While many questions remain, the present study presents sufficient evidence that gifted programs do have implications beyond academic achievement and have important impacts on the values and beliefs of students who participate in them. As such, both further research and action from the Department of Education to ensure equity in gifted programs, is recommended.

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<sup>70</sup> Ford et al, 2014.

## TABLES

**Table 2: Operational Definitions of Variables**

Concept & Operational Definition	Raw Variables	Transformation/ Recode	Analysis Variable	Description
<p><b>Independent variable:</b> In gifted program - third grade</p> <p>Approximation of whether a student would be in a gifted program in third grade</p> <p>(Range of test scores on IRT test + whether school has a gifted program)</p>	<p>C2R4RSCL — IRT reading score in second grade (take top 10%)</p> <p>S2GFT3RD — do children participate in gifted programs at this school in 3<sup>rd</sup> grade?</p>	<p>Create a new variable for top 10% of C2R4SCL, called TOPTENIRT: TOPTENIRT = 0 if students in bottom 90% of scores TOPTENIRT = 1 if students in top 10% of IRT scores</p> <p>create a new variable for S2GFT3RD called GFTPROG3RD: GFTPROG3RD = 1 (if S2GFT3RD = 1) GFTPROG3RD = 0 (if S2GFT3RD = 2)</p> <p>Create a new variable called GIFTED3RD to combine two gifted approximation variables:</p> <p>If S2GFT3RD = 1 (yes) and C2R4RSCL is in top 10% of scores, then GIFTED3RD = 1</p> <p>If S2GFT3RD = 2 (no) and C2R4RSCL is in bottom 90% of scores, then GIFTED3RD = 0</p> <p>(Similar transformation for NOGIFTED3RD variable)</p>	<p>GIFTED3RD</p> <p>NOGIFTED3RD</p>	<p>Variable coded 1 if I have approximated that a student would be placed in a gifted program at their school in third grade and coded 0 if the student would likely not be placed in gifted in third grade.</p> <p>Variable coded 1 if a student would have likely qualified for a gifted program, though there is not one offered at their school.</p>

<p><b>Dependent variable:</b> Importance of grades to student</p> <p>How much does the student consider grades to be important to them? (Child Assessment And Student Questionnaire Data)</p>	<p>C7GRDYOU — does student consider grades important to them? (7<sup>th</sup> grade). 1 = not important 2 = somewhat important 3 = important 4 = very important</p>	<p>Create a new variable called GRADEIMPT7 based on the raw variable C7GRDYOU: 1 = not important (C7GRDYOU = 1 or 2) 2 = important (C7GRDYOU = 3) 3 = very important (C7GRDYOU = 4)</p>	<p>GRADEIMPT7</p>	<p>Ordinal variable representing how important grades are to a student in seventh grade 1 = not important 2 = important 3 = very important</p>
<p><b>Moderator variable:</b> Importance of grades to parents</p> <p>How important are good grades to parent(s)? (Child Assessment And Student Questionnaire Data)</p>	<p>C7GRDPAR — how important do parents consider grades? (7<sup>th</sup> grade) 1 = not important 2 = somewhat important 3 = important 4 = very important</p>	<p>Create a new variable called IMPTPARENT7 based on the raw variable C7GRDPAR: 1 = not important (C7GRDPAR = 1 and 2) 2 = important (C7GRDPAR = 3) 3 = very important (C7GRDPAR = 4)</p>	<p>IMPTPARENT7</p>	<p>Ordinal variable representing how important the student believes grades are to their parent 1 = not important 2 = important 3 = very important</p>
<p><b>Moderator variable:</b> Importance of grades to friends</p> <p>Variable representing how important grades are to close friends in seventh grade</p>	<p>C7FRNGRD — Among your close friends, how important is it to them that they get good grades (seventh grade)? 1 = not important 2 = somewhat important 3 = very important 4 = not applicable, have no close friends</p>	<p>Create a new variable called IMPTFRND7 based on the raw variable C7FRNGRD: 1 = not important 2 = somewhat important 3 = very important</p>	<p>IMPTFRND7</p>	<p>Ordinal variable representing how important grades are to students' friends in seventh grade 1 = not important 2 = somewhat important 3 = very important</p>
<p><b>Control variable:</b> Gender</p>	<p>GENDER — what is child's gender? 1 = male 2 = female</p>	<p>Create a new variable called CHILDSEX based on the raw variable GENDER 0 = male</p>	<p>CHILDSEX</p>	<p>Binary variable representing whether or not a student is male or female (according</p>



Composite variable representing child's gender		1 = female		to student's assigned sex at birth)
<b>Control variable:</b> Race  Composite variable representing child's race	RACE — what is child's race? 1 = white, non-Hispanic 2 = Black or African American, non-Hispanic 3 = Hispanic, race specified 4 = Hispanic, race not specified 5 = Asian 6 = Native Hawaiian, other Pacific Islander 7 = American Indian or Alaska Native 8 = More than one race, non-Hispanic	Create a new variable called CHILDRACE based on the raw variable RACE 1 = white, non-Hispanic 2 = Black or African American, non-Hispanic 3 = Hispanic (if RACE = 3 or RACE = 4) 4 = Asian (if RACE = 5) 5 = other (if RACE = 6, 7, or 8)	CHILDRACE	Categorical variable representing child's race (with Hispanic race specified and race not specified combined)
<b>Type of school:</b> Baseline  Composite variable representing type of school attended in baseline year	CS_TYPE2 — type of school 1 = Catholic 2 = Other religious 3 = other private 4 = public/DOD/BIA	Create a new variable called SCHOOLTYPE2 based on raw variable CS_TYPE2 and coded: 1 = public/DOD/BIA (CS_TYPE2 = 4) 2 = religious (CS_TYPE2 = 1 or 2) 3 = other private (CS_TYPE2 = 3)	SCHOOLTYPE2	Categorical variable for type of school (my analysis will only focus on public schools)
<b>Control variable:</b> Family income (third grade)  Variable representing student's family income in third grade	W3INCCAT — ordinal variable for student's family income in third grade 1 = \$5,000 or less  2 = \$5,001 to \$10,000	Create a new variable called FAMINCOME3 based on the raw variable W3INCCAT that is coded as follows: 1 = 0 - \$50,000 (if W3INCCAT = 1, 2, 3, 4, 5, 6, 7, 8, or 9) (define as low-income)	FAMINCOME3	Ordinal variable representing family income in third grade  (Note: low-income is defined, in this case, as a family income less than twice the federal poverty threshold. Because I was unable

	<p>3 = \$10,001 to \$15,000</p> <p>4 = \$15,001 to \$20,000</p> <p>5 = \$20,001 to \$25,000</p> <p>6 = \$25,001 to \$30,000</p> <p>7 = \$30,001 to \$35,000</p> <p>8 = \$35,001 to \$40,000</p> <p>9 = \$40,001 to \$50,000</p> <p>10 = \$50,001 to \$75,000</p> <p>11 = \$75,001 to \$100,000</p> <p>12 = \$100,001 to \$200,000</p> <p>13 = \$200,001 or more</p>	<p>2 = \$50,000 - \$100,000 (if W3INCCAT = 10 or 11) (defined as moderate-income)</p> <p>3 = \$100,000 or more (if W3INCCAT = 12 or 13) (defined as high-income)</p>		<p>to determine how many people were in each household included in this dataset, I estimated any family making below \$50,000 per year as low-income.)</p>
<p><b>Control variable:</b> Family in poverty (third grade)</p> <p>Variable representing whether student's family is below the poverty level in third grade</p>	<p>W3POVRTY — is the family below the poverty level?</p> <p>1 = below poverty threshold</p> <p>2 = at or above poverty threshold</p>	<p>Create a new variable called POVERTY3 based on the raw variable W3POVERTY</p> <p>1 = below poverty threshold (W3POVERTY = 1)</p> <p>0 = at or above poverty threshold (W3POVERTY = 2)</p>	POVERTY3	<p>Binary variable representing whether is below poverty level when student is in third grade</p>
<p><b>Control variable:</b> Parents' highest level of education (third grade)</p> <p>Variable representing a child's parents' highest level of education when</p>	<p>W3PARED — what is parent's highest income level when child is in third grade?</p> <p>1 = 8th grade or below</p> <p>2 = 9th - 12th grade</p> <p>3 = high school diploma or equivalent</p>	<p>Create a new variable called PARENTEDU3 based on the raw variable W3PARED:</p> <p>1 = less than high school diploma or equivalent (W3PARED = 1 or 2)</p> <p>2 = high school diploma or equivalent (W3PARED = 3)</p>	PARENTEDU3	<p>Ordinal variable representing parents' education level when child is in third grade</p>

child is in third grade	4 = vocational or tech program 5 = some college 6 = bachelor's degree 7 = graduate/professional school - no degree 8 = master's degree 9 = doctorate or professional degree	3 = vocational or tech program (W3PARED = 4) 4 = some college (W3PARED = 5) 5 = bachelor's degree (W3PARED = 6 or 7) 6 = master's degree /doctorate (W3PARED = 8 or 9)		
<b>Control variable:</b> Types of parents in the household (second grade)  Variable representing the types of parents in the household (second grade)	P2HPARNT — what types of parents are in child's home in second grade? 1 = biological mother and biological father 2 = biological mother and other father 3 = other mother and biological father 4 = biological mother only 5 = biological father only 6 = two adoptive parents 7 = one adoptive parent plus step 8 = related guardians 9 = unrelated guardians	Create a new variable called PARENTTYPE2 based on raw variable P2HPARNT and coded: 1 = lives with both biological parents in the home 2 = biological mother only (P2HPARNT = 4) 3 = biological mother and other father (P2HPARNT = 2) 4 = other (P2HPARNT = 3, 5, 6, 7, 8, or 9)	PARENTTYPE2	Ordinal variable representing parents in home in second grade
<b>Control variable:</b> Parent attendance at conferences (second grade)  Variable representing	T2REGCON — During the school year, has the child's parents/guardians participated in regularly scheduled	Create a new variable called PARENTCONF2 based on raw variable T2REGCON and coded: 0 = no 1 = yes	PARENTCONF2	Binary variable representing whether parents attended conferences in second grade

whether parents attended school conferences in second grade	conferences at school? 1 = yes 2 = no 3 = not applicable/not offered			
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**Table 3: Descriptive Statistics for Student Background Characteristics**  
(N= 7,508)

Variables	Mean	Standard Deviation	Proportion
Student IRT reading test scores	47.76	13.92	—
Schools offering gifted programs	—	—	0.56
Approximation of gifted placement at schools with gifted programs	0.20	0.40	—
Gifted students			0.16
Nongifted students			0.84
Approximation of gifted students at schools without gifted programs	0.19	0.39	—
Gifted students			0.14
Nongifted students			0.86
Importance of grades to student	2.48	0.63	—
Not important			0.08
Important			0.37
Very important			0.56
Importance of grades to parents	2.82	0.42	—
Not important			0.01
Important			0.15
Very important			0.84
Importance of grades to friends	2.50	0.55	—
Not important			0.03
Somewhat important			0.45
Very important			0.52
Gender	0.50	0.50	—
Male			0.50
Female			0.50
Race	1.92	1.21	—
White			0.65
Black			0.09
Hispanic			0.15
Asian			0.05
Other			0.05
Family income (third grade)	1.78	0.70	—
Low-income			0.38
Moderate-income			0.47
High-income			0.16
Family below poverty level (third grade)	0.16	0.37	—

Below poverty line			0.16
At or above poverty line			0.84
Parents' education level (third grade)	3.97	1.51	—
HS or less			0.06
HS diploma			0.19
Vocational/tech			0.05
Some college			0.28
Bachelor's degree			0.25
Master's or doctorate			0.16
Parents present in household	1.43	0.83	—
Both biological parents			0.74
Biological mother only			0.15
Biological mother and other father			0.06
Other			0.05
Parents attend school conferences (baseline)	0.33	0.47	—
Yes			0.36

SOURCE: ECLS-K (Early Childhood Longitudinal Study, Kindergarten Class of 1998-99)

**Table 4: Descriptive Statistics for School Characteristics**  
 N = 5,678

	<b>Offers gifted program in third grade</b>		<b>Does not offer gifted program in third grade</b>	
	Number	Proportion	Number	Proportion
<b>Type of school</b>				
Public	4,120	0.93	2,019	0.58
Private, religious	269	0.70	1,330	0.38
Private, nonreligious	26	0.06	133	0.40
<b>Income level at school</b>				
50% or more of students are low-income	1,327	0.36	715	0.64
Less than 50% of students are low-income	2,388	0.64	1,248	0.36

**Table 5: Descriptive Statistics by Student Gifted Qualification and Availability of Gifted Classes**

<b>Does whether a child attends a gifted program vary by background characteristics? (Including only schools that offer gifted programs)</b>				
Background characteristics	Gifted students*		Non-gifted students	
	Number	Proportion	Number	Proportion
<b>Child's race</b>				
White	360	0.51	2,391	0.65
Black	41	0.06	388	0.10
Hispanic	181	0.25	538	0.14
Asian	93	0.13	153	0.04
Other	35	0.05	232	0.06
<b>Gender</b>				
Male	325	0.46	1,916	0.52
Female	385	0.54	1,789	0.48
<b>Family income (3rd grade)</b>				
Low	254	0.39	1,457	0.42
Middle	289	0.44	1,529	0.45
High	109	0.17	445	0.13
<b>Family in poverty (3rd grade)</b>				
Below poverty line	133	0.20	580	0.17
At or above poverty line	519	0.80	2,851	0.83
<b>Parents' highest level of education</b>				
Less than HS	85	0.13	232	0.07
HS diploma	90	0.14	729	0.21
Vocational/tech program	32	0.05	201	0.06
Some college	136	0.21	1,056	0.31
Bachelor's degree	176	0.27	778	0.23
Master's or PhD	133	0.20	435	0.13
<b>Types of parents in household</b>				
Both biological parents	556	0.84	2,567	0.72
Biological mother only	60	0.09	558	0.16
Biological mother and other father	23	0.03	234	0.07
	26	0.04	214	0.06
<b>Parents attend conferences</b>				
Yes	559	0.95	3,086	0.92
No	32	0.05	256	0.08

SOURCE: ECLS-K (Early Childhood Longitudinal Study, Kindergarten Class of 1998-99)



**Table 6: Descriptive Statistics by Students' Value of Grades**

<b>How does a child's value of education relate to key explanatory and control variables?</b>						
	Grades not important		Grades important		Grades very important	
	Number	Proportion	Number	Proportion	Number	Proportion
<b>Child's race</b>						
White	474	0.68	2,207	0.65	3,029	0.58
Black	36	0.05	261	0.08	653	0.13
Hispanic	122	0.18	568	0.17	914	0.18
Asian	20	0.03	160	0.05	332	0.06
Other	44	0.06	191	0.06	264	0.05
<b>Gender</b>						
Male	438	0.63	1,848	0.54	2,385	0.46
Female	258	0.37	1,544	0.46	2,811	0.54
<b>Family income</b>						
Low	278	0.43	1,215	0.39	1,895	0.39
Middle	290	0.45	1,446	0.46	2,161	0.45
High	81	0.12	454	0.15	777	0.16
<b>Family in poverty</b>						
Below poverty line	117	0.18	508	0.16	824	0.17
At or above poverty line	532	0.82	2,617	0.84	4,009	0.83
<b>Parents' highest level of education</b>						
Less than HS	46	0.07	217	0.07	362	0.07
HS diploma	148	0.23	604	0.19	882	0.18
Vocational/tech	44	0.07	171	0.05	243	0.05
Some college	186	0.29	931	0.30	1,285	0.27
Bachelor's degree	135	0.21	750	0.24	1,232	0.25
Master's or PhD	90	0.14	452	0.15	829	0.17
<b>Types of parents in household</b>						
Both bio parents	464	0.70	2,334	0.73	3,682	0.75
Bio mother only	99	0.15	500	0.16	728	0.15
Bio mother and other father	53	0.08	213	0.07	248	0.05
Other	48	0.07	171	0.05	254	0.05
<b>Parents attend conferences</b>						
Yes						

No	573	0.93	2,737	0.93	4,167	0.92
	45	0.07	222	0.08	358	0.08
Grades are important to parent						
Not important	46	0.07	53	0.02	35	0.01
Important	219	0.32	715	0.21	441	0.09
Very important	423	0.61	2,611	0.77	4,708	0.91
Grades are important to friends						
Not important	84	0.35	442	0.11	146	0.03
Important	81	0.34	1,868	0.45	1,387	0.29
Very important	72	0.30	1,801	0.44	3,240	0.68

SOURCE: ECLS-K (Early Childhood Longitudinal Study, Kindergarten Class of 1998-99)

**Table 7: Regression Results for Students Whose Schools Offer Gifted Programs**

	(1) All Students	(2) Gifted Students	(3) Non-Gifted Students
Gifted students (approximation)			
Gifted program available	0.141**	—	—
Gifted not available	—	—	—
Sex			
Female	0.260***	0.039	0.300***
Race			
White	0.068	0.253	0.058
Black	0.456***	0.408	0.473**
Hispanic	0.115	0.391	0.092
Asian	0.205	0.457	0.166
Family income			
Low	- 0.011	- 0.077	0.001
High	0.015	0.180	- 0.024
Family below poverty line	-0.001	- 0.152	- 0.006
Parents' highest education level			
High school	-0.076	- 0.045	- 0.083
Bachelor's degree	0.036	0.078	0.023
Master's or doctorate	0.104	- 0.236	0.174**
Parents in home			
Both biological	0.196***	0.323	0.179**
Bio mom only	0.080	0.140	0.069
Parents attend conferences	0.041	- 0.498	0.099
Importance of grades to parents			
Not important	- 0.257	0.240	- 0.374*
Very important	0.676***	0.582***	0.706***
Importance of grades to friends			
Not important	- 0.754***	- 1.536***	- 0.646***
Very important	0.594***	0.551***	0.606***
Pseudo R-squared	0.093	0.088	0.098
N	3,478	516	2,962

Significance levels: \* p<0.1, \*\*p<0.05, \*\*\* p<0.01

**Table 8: Regression Results for Students Whose Schools Do Not Offer Gifted Programs**

	(4) All Students	(5) Gifted Students	(6) Non-Gifted Students
Gifted students (approximation)			
Gifted available	—	—	—
Gifted not available	0.079	—	—
Sex			
Female	0.304***	0.340**	0.299***
Race			
White	- 0.128	- 0.533	- 0.091
Black	0.175	- 0.027	0.181
Hispanic	- 0.006	- 0.230	- 0.003
Asian	0.059	- 0.257	0.110
Family income			
Low	- 0.026	0.088	- 0.033
High	- .030	- 0.046	0.048
Family below poverty line	0.102	- 0.002	0.114
Parents' highest education level			
High school	0.023	- 0.258	0.050
Bachelor's degree	0.204***	0.239	0.204***
Master's or doctorate	0.248***	0.239	0.249***
Parents in home			
Both biological	0.166**	0.171	0.178**
Bio mom only	0.048	0.183	0.049
Parents attend conferences	- 0.076	0.151	- 0.122
Importance of grades to parents			
Not important	- 0.507***	- 0.398	- 0.533***
Very important	0.651	0.559***	0.672***
Importance of grades to friends			
Not important	- 0.740***	-1.516***	- 0.618***
Very important	0.526***	0.383***	0.544***
Pseudo R-squared	0.091	0.100	0.091
N	2,769	388	2,381

\* p<0.1, \*\*p<0.05, \*\*\* p<0.01

**Table 9: Marginal Effects of Gifted Placement and other Background Characteristics on Importance of Grades to a Student (Grades Very Important) at School with Gifted Program**

Variables	All Students (1)	Gifted Students (2)	Non-Gifted Students (3)
Being placed in gifted program (Gifted approx variable = 1)	0.552**	—	—
Female (=1)	0.102***	0.015	0.118***
White (=1)	0.027	0.096	0.023
Black (=1)	0.170***	0.141	0.178***
Hispanic (=1)	0.045	0.141	0.036
Asian (=1)	0.079*	0.159*	0.065
Family low-income (=1)	- 0.004	- 0.029	0.001
Family high-income (=1)	0.006	0.067	- 0.009
Family in poverty (=1)	- 0.001	- 0.058	- 0.002
Parent's have high school diploma (=1)	- 0.030	- 0.017	- 0.033
Parents have bachelor's degrees (=1)	0.014	0.029	0.009
Parent's have master's/PhDs (=1)	0.041	- 0.091	0.068**
Lives with both biological parents (=1)	0.078***	0.125	0.071**
Lives with biological mother only (=1)	0.031	0.051	0.027
Parent attends conferences (=1)	0.016	- 0.168*	0.039
Grades are not important to parents (=1)	- 0.102	0.086	- 0.148*
Grades are very important to parents (=1)	0.264***	0.227***	0.274***
Grades are not important to friends (=1)	- 0.289***	- 0.523***	- 0.249***
Grades are very important to	0.231***	0.205***	0.237***

friends (=1)

Significance levels: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

**Table 10: Marginal Effects of Being Gifted and other Background Characteristics on Importance of Grades to a Student (Grades Very Important) at School Without Gifted Program**

<b>Variables</b>	<b>All Students (1)</b>	<b>Gifted Students (Not in Gifted Programs) (2)</b>	<b>Non-Gifted Students (3)</b>
Being gifted, but not placed in a gifted program (Gifted approx variable = 1)	0.031	—	—
Female (=1)	0.119***	0.120**	0.118***
White (=1)	- 0.050	- 0.198	- 0.036
Black (=1)	0.068	- 0.102	0.070
Hispanic (=1)	- 0.002	- 0.089	- 0.001
Asian (=1)	0.023	- 0.101	0.043
Family low-income (=1)	- 0.010	0.033	- 0.013
Family high-income (=1)	0.012	- 0.017	0.019
Family in poverty (=1)	0.040	- 0.001	0.045
Parent's have high school diploma (=1)	0.009	- 0.101	0.020
Parents have bachelor's degrees (=1)	0.080***	0.089	0.080***
Parent's have master's/PhDs (=1)	0.096***	0.090	0.097***
Lives with both biological parents (=1)	0.066**	0.066	0.070**
Lives with biological mother only (=1)	0.019	0.068	0.019
Parent attends conferences (=1)	- 0.039	0.059	- 0.048
Grades are not important to parents (=1)	- 0.199***	- 0.157	- 0.209***
Grades are very important to parents (=1)	0.255***	0.212***	0.263***
Grades are not important to	- 0.283***	- 0.510***	- 0.240***

friends (=1)			
Grades are very important to friends (=1)	0.205***	0.146***	0.213***

Significance levels: \* p<0.1, \*\*p<.05, \*\*\* p<0.01



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