

**SELF-DISCIPLINE AND  
CATHOLIC EDUCATION:  
Evidence from Two National Cohorts**

By Michael Gottfried and Jacob Kirksey

*Foreword & Executive Summary by Amber M. Northern and Michael J. Petrilli*

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# FOREWORD & EXECUTIVE SUMMARY

*By Amber M. Northern and Michael J. Petrilli*

In today's overheated education debates, no topic is more flammable than whether suspensions are a viable way to handle student misbehavior—and what to make of the differential suspension rates for minority and non-minority students. But regardless of where you stand on those questions, one thing seems certain: *Self-discipline* is far better than the externally imposed kind.



Where does self-discipline come from? Certainly it comes in part from home, family, church and the other institutions of civil society. But schools can make a difference too, and over the years Catholic schools—the largest provider of private education in the United States—have been particularly committed to the development of sound character, including the acquisition of self-discipline.

How well has that worked? Given the widespread interest in, and the importance of, improving student behavior and reducing the need for harsh forms of external discipline, it would benefit all sectors of the education community to know whether children in Catholic schools actually exhibit more self-discipline than their peers—and if so, what other public and private schools might have to learn from them about how these positive behaviors can be fostered.

To that end, this study asks two questions:

1. Are children in Catholic elementary schools more self-disciplined than similar students in other schools, as measured by their likelihood of arguing and fighting and ability to control their temper, among other things?
2. Is the relationship between Catholic school attendance and self-discipline stronger for certain types of students?

To lead the study, we recruited Michael Gottfried, Associate Professor at the University of California-Santa Barbara (UCSB). Dr. Gottfried has conducted several studies of young children's socio-emotional development, social-behavioral skills, and overall school readiness. Jacob Kirksey, a doctoral student at UCSB, helped to analyze the data and co-wrote the report. To our knowledge, theirs is the first study to explore the potential effects of Catholic schooling on self-discipline.

Gottfried and Kirksey analyzed two waves of nationally representative data on elementary school students that were collected as part of the Early Childhood Longitudinal Study-Kindergarten (ECLS-K). The first, ECLS-K: 1999, contains data on a nationally representative cohort of children who entered kindergarten in 1998-99. (Our study includes data from kindergarten, first, third, and fifth grades.) The second, ECLS-K: 2011, contains data on children who entered kindergarten in the 2010-11 school year. (Our study includes data from kindergarten through second grade.)

Each of these cohorts comprises 15,000 to 17,000 kindergarteners who attended public schools and 1,000 to 2,000 who attended non-public schools, of whom close to half (41 percent to 49 percent) attended Catholic schools. For both cohorts, teachers rated the frequency with which children engaged in certain behaviors (thus making possible the authors' analysis).

To account for the many readily observable differences between Catholic school students and their peers in other private or public schools, Gottfried and Kirksey compared children who attended Catholic schools to a subset of students who attended other schools but who closely resembled the Catholic school students in other respects. However, because families who send their children to Catholic schools make a conscious choice to do so, they likely differ from other families in unobservable ways. So, in addition to comparing children who attend Catholic schools to children who attend public schools, the authors also compared them to children in other private schools, both religious and secular. Because these families also chose to opt out of the public school system, we consider them the most plausible comparison group.

The analysis revealed three key findings.

**First, students in Catholic schools are less likely to act out or be disruptive than those in other private or public schools.**

Children in Catholic school exhibited fewer “externalizing behaviors”—that is, they demonstrated more self-discipline—than matched peers in other private schools. According to their teachers, Catholic school children argued, fought, got angry, acted impulsively, and disturbed ongoing activities less frequently. In the first cohort, the size of this difference increased over time, from -0.06 standard deviations in kindergarten, to -0.27 and -0.29 standard deviations in first and third grades, to -0.34 standard deviations in fifth grade. A similar pattern emerges when comparing children who attend Catholic school to those in public schools, though the differences are generally smaller and do not increase over time.

The second cohort reveals a similar pattern, with children in Catholic schools exhibiting fewer externalizing behaviors than those in other private or public schools. However, the difference between Catholic schools and other private schools disappeared between kindergarten and second grade.

**Second, students in Catholic schools exhibit more self-control than those in other private schools or public schools.**

Teachers at every grade level reported that students in the first cohort (1998–99) who attended Catholic schools exhibited greater self-control than those in other private schools. Specifically, they were more likely to control their temper, respect others’ property, accept their fellow students’ ideas, and handle peer pressure. Like the difference in “externalizing behavior,” this difference is smallest in kindergarten (0.10 standard deviations), though in this case there is no clear trend between kindergarten and fifth grade.

In a similar vein, Catholic school students who entered kindergarten in 2010–11 exhibited more self-control than students in other private schools. Moreover, for this cohort, the difference between these groups grows steadily over time, from 0.15 standard deviations in kindergarten to 0.26 standard deviations in second grade.

**Third, regardless of demographics, students in Catholic schools exhibit more self-discipline than students in other private schools.**

Prior research suggests that Catholic schools do a particularly good job of boosting the achievement of low-income and minority students. Consequently, we tested for differences in the relationship between Catholic school attendance and externalizing behaviors and/or self-control based on individual characteristics, including race, gender, socioeconomic status, and family immigrant status, as well as initial behavior (as rated by kindergarten teachers).

Interestingly, there were no systematic differences between any of these groups. Students in Catholic schools, regardless of their personal characteristics or backgrounds, exhibit more self-discipline than students in other private or public schools. Thus, there is at least some evidence that attending Catholic school may benefit all sorts of children, at least when it comes to reducing the frequency of externalizing behaviors and fostering greater self-control.

Note that these findings are not causal. Despite the authors' efforts to construct a plausible control group, there may be unobservable differences between Catholic and other private school students, so their estimates of the "effect" of Catholic school attendance may be biased. Still, the findings suggest three key takeaways.

**1. Schools that value and focus on self-discipline will likely do a better job of fostering it in children.**

Since Catholic school doctrine emphasizes the development of self-discipline, it seems likely that Catholic schools devote more time and attention to fostering it. And their apparent success in doing so suggests that schools that focus on self-discipline are capable of inculcating, developing, and strengthening it over time—in the same way that other schools might focus on athletic skills to win track meets or football games. If other schools took self-discipline as seriously as Catholic schools do, they would likely have to spend less time, energy, and political capital on penalizing students for negative behaviors.

**2. Assuming that these results reflect a "Catholic Schools Effect," other schools might consider both explicit and implicit methods to replicate it.**

In general, we know little about how schools (including Catholic ones) can foster self-discipline. But it seems likely that both direct *and* indirect methods play some role in Catholic schools' success—and that at least some of these methods are transferrable to other contexts. For example, an *explicit* focus on self-discipline might be reflected in a school's curricula, whether formal or informal. Similarly, a school's discipline policy could enumerate any number of approaches whereby teachers and students could forestall bad behavior. Alternatively, higher levels of self-discipline may be fostered *implicitly*—for example, through educators' daily interactions with students in the classroom or via well-chosen and well-managed extracurricular activities with mentors or other adults who model self-discipline.

With a bit of effort, more non-Catholic schools could adopt such practices and be intentional about their implementation. Indeed, some "no excuses" charter schools are already doing so.

**3. Don't underestimate the power of religion to positively influence a child's behavior. But in the absence of it, schools can adopt courses or programs that might foster self-discipline.**

The most obvious feature that Catholic schools and similar faith-based schools have in common is their focus on religion—including such specifically Judeo-Christian values as humility, obedience, kindness, tolerance, self-sacrifice, and perseverance. It is difficult to pin down how or why these values may influence a child's behavior when encountered in this context. Perhaps students are more likely to internalize such values when they know they are loved not only by their teachers but by their Creator, or when they perceive that misbehavior may have eternal consequences. Maybe it's something else entirely. Regardless, one thing is certain: Religion can mold hearts and minds in ways that suspensions, restorative justice, and Positive Behavioral Intervention and Supports (PBIS) can't begin to match.

That doesn't mean that such secular approaches—and schools—don't have their place. Of course they do. And so do character education, ethics classes, and civics, all of which can contribute to the development of self-discipline. School leaders should choose the options that best suit their kids and culture.



That said, our results suggest that Catholic schools in particular are doing something meaningful in the realm of self-discipline. So it's deeply unfair that the politics of education continue to prevent many parents from accessing them, and it's a tragedy for the nation that many of these valuable educational institutions continue to close.

To the extent that school choice programs can widen access to great schools—Catholic or otherwise—that boost academic performance *and* self-discipline, they deserve our eternal support.

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# INTRODUCTION

Catholic schools are enjoying renewed attention, thanks to the current administration's affinity for school choice—and private-school choice programs in particular. As the largest provider of private education in the United States, Catholic schools would likely benefit from the creation of new (or augmentation of existing) voucher or tax credit scholarship programs, as they have from past expansions.<sup>1</sup> So now is a good time to revisit the ever-important question: Do children benefit from a Catholic education?

Traditionally, Catholic schools have espoused the development of the whole student, with a particular emphasis on character formation.<sup>2</sup> Yet to date, most research has focused on gauging their academic benefits (see *What Do We Know about Catholic School Effects on Academic Outcomes?*). Overall, this literature suggests that students in Catholic schools achieve at higher levels than those in other private or public schools. However, little is known about these students' noncognitive skills—especially in elementary school.<sup>3</sup>

To help fill this gap, the present study investigates the degree to which attending a Catholic school is associated with the noncognitive development of elementary school children. More specifically, it focuses on the relationship between attending Catholic school and the acquisition of self-discipline—a key tenet of Catholic education. This relationship is of particular interest given the increasingly heated debate over school discipline in public schools, which is in part a product of some students' lack of self-discipline. Clearly, an approach that fosters self-discipline is preferable to one that relies on externally imposed discipline. So if Catholic schools have succeeded in developing such an approach, we ought to pay more attention to what they are doing and how they are doing it.

To that end, this study asks two questions:

1. Are children in Catholic elementary schools more self-disciplined than similar students in other schools, as measured by their likelihood of arguing and fighting and ability to control their temper, among other things?
2. Is the relationship between Catholic school attendance and self-discipline stronger for certain types of students?

## What Do We Know about Catholic School Effects on Academic Outcomes?

Research on the academic effects of Catholic schools is encouraging but mixed. On the one hand, studies have found that students in Catholic high schools achieve at higher levels in math, reading, writing, and social studies than students in other private and public schools.<sup>4</sup> Similarly, studies show that students in Catholic schools have higher test scores on college entrance exams,<sup>5</sup> greater participation in advanced math and science courses,<sup>6</sup> and higher high school graduation<sup>7</sup> as well as college enrollment rates.<sup>8</sup> Yet many of these studies suffer from methodological shortcomings such as selection bias, sampling error, faulty model specification, and/or inappropriate control groups.<sup>9</sup>

Further, some of the most rigorous studies of Catholic education have found negative effects. For example, Figlio and Stone (1997) found that attending a Catholic school (as opposed to a public or non-religious private school) has a negative effect on math and science achievement.<sup>10</sup> Similarly, Kim and Placier (2004) found that Catholic school students exhibit less progress in reading between eighth and tenth grades than students in other private schools.<sup>11</sup> Yet despite the lack of consensus regarding the impact of Catholic education on students in general, most studies of urban Catholic schools (including the Figlio and Stone study) suggest they are more effective than nearby public schools at boosting achievement, high school graduation, and college enrollment rates of black and Hispanic students.<sup>12</sup>



To address these questions, we analyzed two waves of nationally representative data that were collected by the National Center for Educational Statistics (NCES), starting in 1998–99 and 2010–11. To our knowledge, this study is the first to explore the potential effects of Catholic schooling on self-discipline.

## Catholic Schools in the United States

The first Catholic school in the United States was established in 1782. And for the next century and a half, the Catholic school system experienced almost uninterrupted growth. Total Catholic enrollment peaked in the 1960s, when 13,292 Catholic schools enrolled approximately 5.6 million students—or about 89 percent of total private enrollment.<sup>13</sup> However, in recent decades, Catholic schools have experienced declining enrollment and a rapid loss of market share. In the past decade, for example, approximately 14 percent of U.S. Catholic schools have closed, and total Catholic school enrollment has declined by almost half a million students. Yet Catholic schools still account for 36 percent of private enrollment, making them by far the largest provider of non-public education in the United States.<sup>14</sup> As of 2014, 6,525 Catholic schools served nearly 2 million students, of whom approximately 84 percent were Catholic and roughly one-quarter were non-white—a higher percentage than in other private schools.<sup>15,16</sup>

Historically, Catholic schools have sought to differentiate themselves from other types of schools by giving equal priority to a child’s academic and non-academic development—or “educating the whole child.” In contrast, public schools have tended to differentiate themselves based on academic offerings such as language immersion or magnet programs. Although there is no national or international code of conduct for Catholic schools, most of the dioceses that govern them integrate traditional “Gospel values” such as piety, character, and self-discipline (see *The Mission of Catholic Schools*). In addition to these virtues, Catholic schools are also known for teaching service-oriented values such as civic duty, volunteerism, and compassion for those in need.<sup>17</sup>

## Catholic Schools and Noncognitive Skills

The term noncognitive skills has been criticized as “boring and uninspired,” connoting a “diffuse and jumbled set of concepts.” Yet despite the fact that “few aspects of human behavior are devoid of cognition,” it remains popular in education circles.<sup>18</sup> At the broadest level, noncognitive skills may be thought of as “sets of behaviors, skills, attitudes, and strategies that are crucial to academic performance” but that “may not be reflected in [students’] scores on cognitive tests.”<sup>19</sup> For example, noncognitive skillsets typically include traits such as persistence, self-discipline, focus, confidence, teamwork, organization, seeking help, and staying on task (see *Which Skills Are Considered “Noncognitive”?*).

Despite this somewhat fuzzy definition, noncognitive skills have been linked to a host of positive outcomes including higher academic achievement,<sup>20</sup> greater educational attainment, lower odds of being on welfare, and lower arrest rates.<sup>21</sup> Conversely, poor noncognitive development has been linked to emotional maladjustment and long-term health problems.<sup>22</sup>

## The Mission of Catholic Schools

Catholic schools operate independently (in accordance with the policies of their local diocese and/or school board), and there is no singular guiding doctrine that governs the entire system. Yet there is much consistency in their mission and purpose, especially when it comes to the importance of self-discipline, as demonstrated by the following examples:

*Christ the King Catholic School's goal is to lead children to self-discipline. We believe that a student can be taught self-discipline skills as a part of the total school curriculum. Discipline should not be viewed as punishment.<sup>23</sup>*

**“Discipline with Purpose,”** Christ the King Catholic School (Mesa, AZ)

*The Catholic School advantage is reflected in the philosophy that permeates the total education program and the lives of the faculty and students. This philosophy challenges students to improve the world by sharing Gospel values and living Christ's message of salvation. They grow to understand the roots of their faith and their responsibilities as Christians. Students explore their faith through classes and activities in Scripture, Sacraments, Church, and morality. Catholic Schools stress the value of self-discipline and commitment.<sup>25</sup>*

**“The Catholic School Advantage,”**  
Archdiocese of Newark (Newark, NJ)

*In 2012 Chilton Area Catholic School adopted the “Discipline With Purpose” program. This program helps children learn to become self-directed adults. It helps teach responsibility and respect in language children can understand. It also encourages educators to rethink their role as disciplinarians to teachers of self-discipline.<sup>24</sup>*

**“Discipline,”** Chilton Area Catholic School (Chilton, WI)

*Parents choosing Catholic school for their children frequently cite our commitment to structure and discipline as a major reason for their investment in Catholic education. Our students are to conduct themselves at all times according to Christian principles and exhibit the values of their family, the Church, and our school community. Good classroom order and a tight school structure help to insure the safety of all children, facilitate the learning for all students, and promote self-control and self-respect in the individual child.<sup>26</sup>*

**“After-School Program Parent Student Guide,”**  
St. Mark the Evangelist School (New York, NY)

As these examples demonstrate, Catholic schools generally project a consistent message about the purpose of education: Students attend school to learn piety, self-discipline, and the formation of good character, as well as academics.

Notably, several studies have found that Catholic schools are associated with positive non-academic outcomes for adolescents (though it's not clear whether these differences are fully attributable to the benefits of a Catholic education).<sup>27</sup> For example, students who attend Catholic schools are more likely to vote than their public school counterparts.<sup>28</sup> Similarly, teenagers who attend Catholic schools have a substantially lower risk of engaging in sexual activity, using hard drugs, and being arrested than those who attend public schools.<sup>29</sup> Catholic primary schools also tend to have lower suspension rates and higher attendance than public schools.<sup>30</sup> Yet despite the fact that Catholic education targets noncognitive skills, and self-discipline in particular, no study has examined whether students in Catholic schools are more likely to exhibit self-discipline than other students.

## Which Skills Are Considered "Noncognitive"?

The Collaborative for Academic, Social, and Emotional Learning (CASEL) groups noncognitive skills into five core competencies. These include:

- 1. SELF-AWARENESS**, or the ability to accurately recognize one's own emotions, thoughts, and values and how they influence behavior;
- 2. SELF-MANAGEMENT**, or the ability to successfully regulate one's emotions, thoughts, and behaviors in different situations—effectively managing stress, controlling impulses, and motivating oneself;
- 3. SOCIAL AWARENESS**, or the ability to take the perspective of and empathize with others, including those from diverse backgrounds and cultures;
- 4. RELATIONSHIP SKILLS**, or the ability to establish and maintain healthy and rewarding relationships with diverse individuals and groups; and
- 5. RESPONSIBLE DECISION MAKING**, or the ability to make constructive choices about personal behavior and social interactions based on ethical standards, safety concerns, and social norms.



## DATA & METHODS

The data for this report were collected by the National Center for Education Statistics (NCES) as part of the Early Childhood Longitudinal Study–Kindergarten (ECLS–K). Data for ECLS–K were collected in two waves: The first, ECLS–Kindergarten Class of 1998–99 (ECLS–K: 1999), contains data on a nationally representative cohort of children who entered kindergarten in 1998–99 and follows them through eighth grade. The second, the Early Childhood Longitudinal Study–Kindergarten Class of 2010–11 (ECLS–K: 2011), contains data on children who entered kindergarten in the 2010–11 school year and follows them through fifth grade.

Both waves of data include information from direct assessments of children’s academic abilities, as well as interviews with and surveys of parents, teachers, and school administrators. For the first cohort (ECLS–K: 1999), data were collected in the fall and spring semesters of the students’ kindergarten year, as well as the spring term of first, third, fifth, and eighth grades. However, data related to self-discipline in particular were only collected through fifth grade. Similarly, data for the second cohort (ECLS–K: 2011) were collected in the fall and spring of kindergarten, as well as the spring term of first, second, third, fourth, and fifth grades. However, when the present analysis was undertaken, data from the second cohort were only available through second grade (see Table 1).

**Table 1: Data Collection by ECLS–K Cohort**

	Kindergarten	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade
<b>Cohort 1</b>	1998–99	1999–00	No data collected	2001–02	No data collected	2003–04
<b>Cohort 2</b>	2010–11	2011–12	2012–13	Data not available at time of study	Data not available at time of study	Data not available at time of study

ECLS–K: 1999 includes 16,600 kindergarteners who attended public schools and 1,840 who attended non-public schools, of whom 49 percent attended Catholic schools. Similarly, ECLS–K: 2011 includes 15,600 kindergarteners who attended public schools and 1,090 who attended non-public schools, of whom 41 percent attended Catholic schools.<sup>31</sup>

## Measures

The two ECLS–K datasets include a number of common variables, allowing for comparisons between cohorts across a timespan of more than a decade. These variables include:

**TYPE OF SCHOOL** a child attended: Catholic, other religious, other private, or public. For this study, we combined “other religious” and “other private” schools into a single group that we label “other private.”

**SELF-DISCIPLINE** as measured by the frequency with which children engaged in certain behaviors, according to their teachers. In ECLS–K, these items are combined into five social-emotional scales that NCES refers to collectively as the Social Rating Scale (SRS).<sup>32</sup> Of these five scales, two are plausibly related to self-discipline. The first, “externalizing behaviors,” is based on five items: the frequency with which a child argued, fought, got angry, acted impulsively, and disturbed ongoing activities. The second, “self-control,” is based on four items: the extent to which the child was able to control his or her temper, respect others’ property, accept peers’ ideas, and handle peer pressure. Both of these scales are continuous, with higher scores indicating more frequent behavior.<sup>33</sup>

In addition to the survey items described above, ECLS–K also includes data on a host of variables that are useful as statistical controls. These include:

**INDIVIDUAL CHARACTERISTICS** such as gender, race, the age at which the child started kindergarten, and whether the child attended pre-kindergarten, as well as variables that may change over time such as special education status, English language learner status, and grade-retained status.

**PARENT AND HOUSEHOLD CHARACTERISTICS** such as whether parents are married, number of books at home, number of siblings, frequency of parental home learning activities,<sup>34</sup> access to learning materials at home,<sup>35</sup> mother and father's education, total household income, and whether the family lived in an urban, suburban, or rural neighborhood.

**CLASSROOM DEMOGRAPHICS** such as the percentage of children who are black, Hispanic, and Asian.

Table 2 summarizes these variables for each ECLS–K cohort (see *Appendix Table A-1* for a detailed list).

**Table 2: Descriptive Statistics for Private School Kindergarteners in ECLS–K**

	ECLS–K: 1999	ECLS–K: 2011
	Average	Average
<b>Self-discipline</b>		
Externalizing behaviors (out of 4)	1.65	1.64
Self-control (out of 4)	3.20	3.17
<b>Type of school</b>		
Catholic	49%	41%
<b>Individual characteristics</b>		
Male	49%	51%
Black	7%	11%
Hispanic	12%	12%
Asian	4%	10%
<b>Parent and household characteristics</b>		
Parents are married	82%	85%
Mother education: college or more	43%	66%
Father education: college or more	45%	53%
Urban neighborhood	53%	34%
U.S. region: west	20%	20%

**Table 2: Descriptive Statistics for Private School Kindergarteners in ECLS–K (cont'd)**

	ECLS–K: 1999	ECLS–K: 2011
	Average	Average
U.S. region: north	20%	20%
U.S. region: south	27%	28%
<b>Children in cohort</b>	1,840	1,090

## Methods

We used three empirical approaches to test whether students in Catholic schools exhibit higher levels of self-discipline. First, we ran a series of regressions with Catholic school attendance as our key independent variable (controlling for the variables described above) and our two self-discipline variables (either “externalizing behaviors” or “self-control”) as the dependent variables. Next, because there are no Catholic schools in some counties, we ran a similar model that included county fixed effects, thus controlling for any unobservable county-level characteristics that might bias our estimates. Finally, we ran a propensity-matched model that compared a subsample of children who attended Catholic schools to a matched sample of students who did not attend them, but who closely resembled Catholic school students in other respects (meaning they had a similar propensity to attend a Catholic school).

In our view, this last approach is the strongest of the three because it restricts the comparison group to the children who most resemble those in Catholic schools. (See *Appendix* for additional details.)

Because families who send their children to Catholic schools make a choice, they may differ from those who do not exercise school choice in unobservable ways (see *Limitations*). Consequently, in addition to comparing children who attend Catholic schools to children who attend public schools, we also compare them to children in other non-public alternatives (i.e., private schools, religious, or other). Because these families also chose to opt out of the public school system, we consider them the most plausible comparison group. (Note, however, that the results for public school children are broadly similar to the results for private school children.)

## Limitations

This study has several limitations: First, despite our efforts to construct a plausible control group, there may be unobservable differences between Catholic and other private school students, so our estimates of the effect of Catholic school attendance may be biased. Second, the ratings of students’ noncognitive skills on which this study is based were generated by teachers, whose judgments are necessarily subjective at some level.<sup>36</sup> Finally, because our measures of self-discipline are aggregated, we do not observe differences or changes for individual scale items. So we may be missing an important part of the story.



## FINDINGS

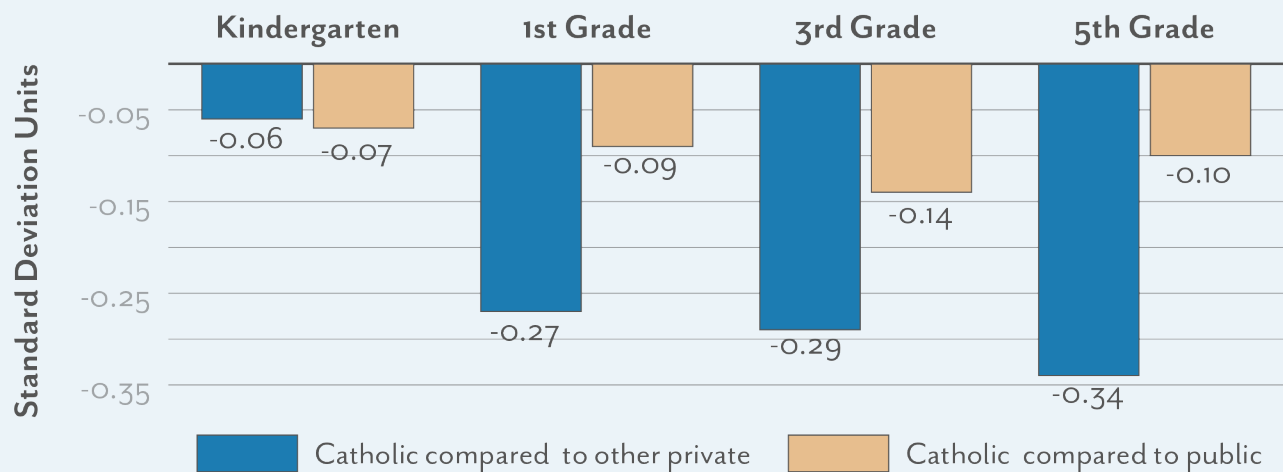
1. Students in Catholic schools are less likely to act out or be disruptive than those in other private or public schools.
2. Students in Catholic schools exhibit more self-control than those in other private schools or public schools.
3. Regardless of their demographics, students in Catholic schools exhibit more self-discipline than students in other private or public schools.

## 1

## Students in Catholic schools are less likely to act out or be disruptive than those in other private or public schools.

Figure 1 presents the externalizing behavior results for the first cohort of ECLS–K kindergartners, from 1998–99 onward, based on our propensity-matched model. (Lower values indicate fewer externalizing behaviors.) In every year that data were collected for this cohort, children in Catholic schools exhibited fewer externalizing behaviors—that is, more self-discipline—than matched peers in other private schools, according to their teachers. Moreover, the size of this difference increased over time, from  $-0.06$  standard deviations in kindergarten to  $-0.27$  and  $-0.29$  standards deviations in first and third grades, to  $-0.34$  standard deviations in fifth grade. A similar pattern also appears when comparing children who attended Catholic school to those who attended public schools (also Figure 1). However, the latter estimates are generally smaller in magnitude and do not increase over time in the same manner. (Full results for both the public and other private school comparisons can be found in *Appendix Table A-2*.)

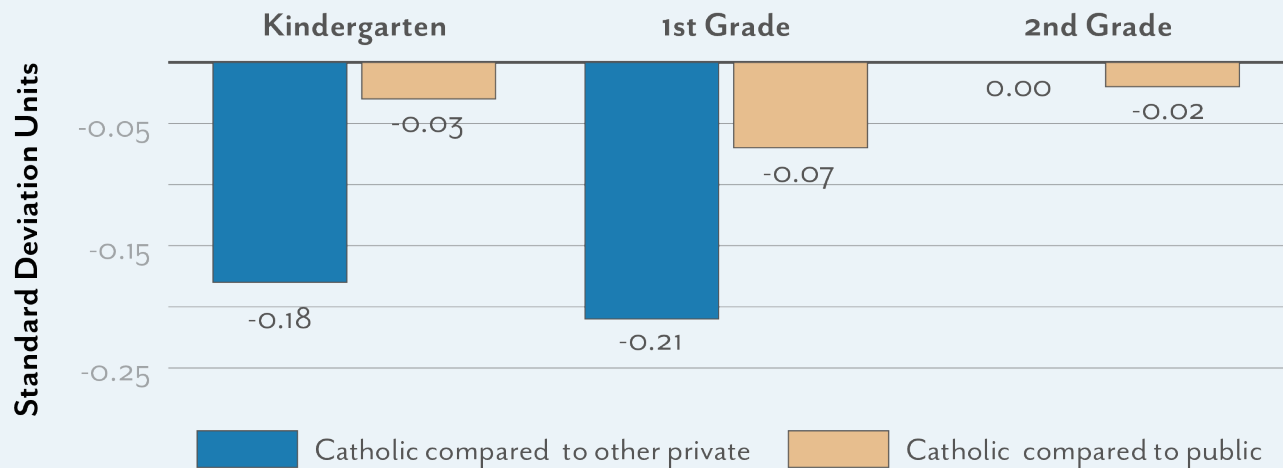
**Figure 1: Catholic School Students in ECLS–K: 1999 Exhibit Fewer Externalizing Behaviors than Students in Other Private or Public Schools.**



**How to read this figure:** Per the third pair of bar graphs, Catholic school students in third grade exhibit  $-0.29$  and  $-0.14$  standard deviations fewer externalizing behaviors than students in other private and public schools, respectively. Lower values indicate fewer externalizing behaviors in Catholic school students relative to their counterparts in other private and public schools, as measured by the frequency with which a child argued, fought, got angry, acted impulsively, and disturbed ongoing activities.

As shown in Figure 2, the estimates for the 2011 cohort exhibit a similar pattern, with children in Catholic schools exhibiting fewer externalizing behaviors than those in other private or public schools. However, for this cohort, the difference between children in Catholic schools and those in other private schools disappears between kindergarten and second grade.

**Figure 2: Catholic School Students in ECLS–K: 2011 Exhibit Fewer Externalizing Behaviors than Students in Other Private or Public Schools.**



*How to read this figure:* Per the second pair of bar graphs, Catholic school students in first grade exhibit -0.21 and -0.07 standard deviations fewer externalizing behaviors than students in other private and public schools, respectively. Lower values indicate fewer externalizing behaviors in Catholic school students relative to their counterparts in other private and public schools, as measured by the frequency with which a child argued, fought, got angry, acted impulsively, and disturbed ongoing activities.

## 2

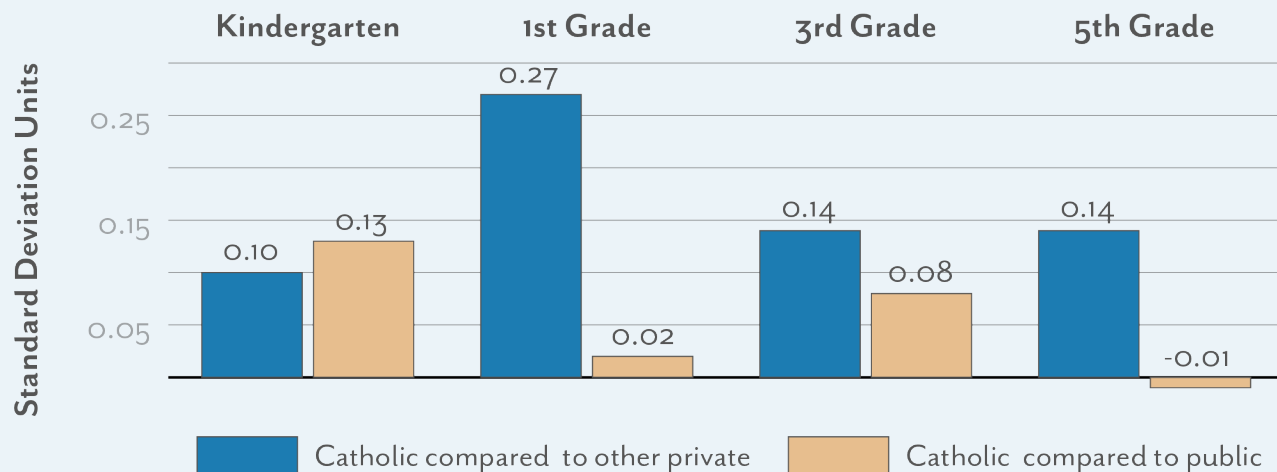
### Students in Catholic schools exhibit more self-control than those in other private schools or public schools.

As shown in Figure 3, teachers at every grade level reported that children in the 1998–99 cohort who attended Catholic schools exhibited greater self-control than those in other private schools. Specifically, they were more likely to control their temper, respect others' property, accept their peers' ideas, and handle peer pressure. Like the difference in “externalizing behaviors,” this difference is smallest in kindergarten (0.10 standard deviations), though in this case there is no clear trend between kindergarten and fifth grade. And the gap between public school and Catholic school students disappears between kindergarten and fifth grade.

In a similar vein, Catholic school students who entered kindergarten in the 2010–11 cohort exhibit more self-control than students in other private schools (see Figure 4). Moreover, for this cohort, the difference between these groups grows steadily over time, from 0.15 standard deviations in kindergarten to 0.26 standard deviations in second grade.

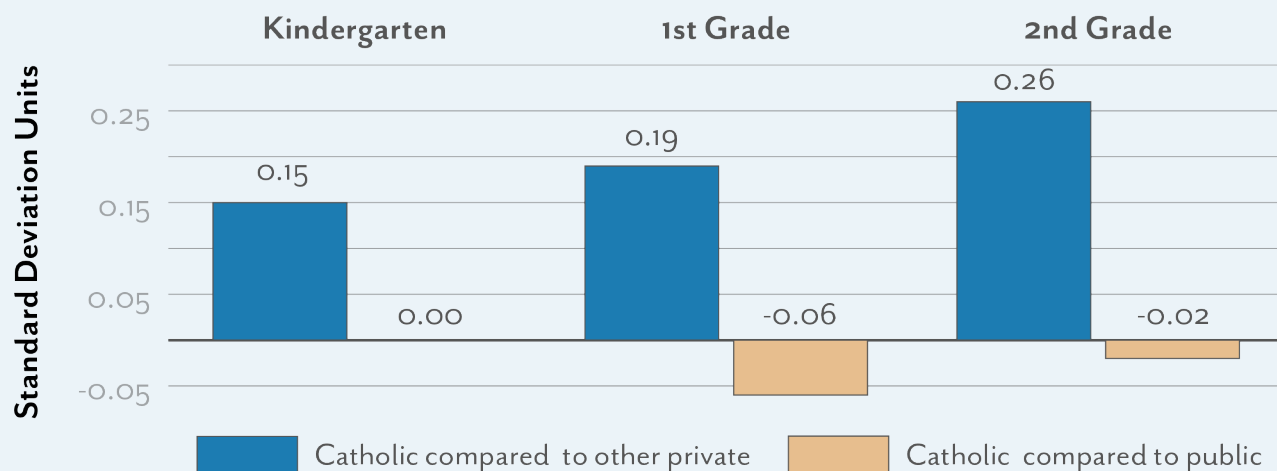


**Figure 3: Catholic School Students in ECLS–K: 1999 Exhibit More Self-control than Students in Other Private or Public Schools.**



*How to read this figure:* Per the third pair of bar graphs, Catholic school students in third grade exhibit 0.14 and 0.08 standard deviations more self-control than students in other private and public schools, respectively. Higher values indicate more instances of self-control in Catholic school students relative to their counterparts in other private and public schools, as measured by the frequency with which children controlled their temper, respected others' property, accepted peers' ideas, and handled peer pressure.

**Figure 4: Catholic School Students in ECLS–K: 2011 Exhibit More Self-control than Students in Other Private Schools.**



*How to read this figure:* Per the third pair of bar graphs, Catholic school students in second grade exhibit 0.26 standard deviations more self-control than students in other private schools, respectively. Higher values indicate more instances of self-control in Catholic school students relative to their counterparts in other private and public schools, as measured by the frequency with which children controlled their temper, respected others' property, accepted peers' ideas, and handled peer pressure.



### 3 Regardless of their demographics, students in Catholic schools exhibit more self-discipline than students in other private or public schools.

Prior research suggests that Catholic schools are likely to boost the achievement of low-income and minority students.<sup>37</sup> Consequently, we tested for differences in the relationship between Catholic school attendance and externalizing behaviors and/or self-control based on individual characteristics, including race, gender, socioeconomic status, and (parent-reported) family immigrant status, as well as initial behavior (as rated by kindergarten teachers at the beginning of the school year).

Interestingly, there were no systematic differences between any of these groups. (See *Appendix Table A-3* for these results.) Students in Catholic schools, regardless of their personal characteristics or backgrounds, exhibit more self-discipline than students in other private or public schools. Thus, there is at least some evidence that attending Catholic school may benefit all sorts of children, at least when it comes to reducing the frequency of externalizing behaviors and fostering greater self-control. (See *Catholic Schooling and Other Noncognitive Measures* for other results.)

#### Catholic Schooling and Other Noncognitive Measures

In addition to externalizing behaviors and self-control, the ECLS-K surveys ask teachers to report how often a child engages in other socio-emotional behaviors that are not related to self-discipline. These items are the basis for three additional scales: The five-item interpersonal skills scale measures whether a child is able to get along with others, form and maintain friendships, help other children, show sensitivity to the feelings of others, and express feelings, ideas, and opinions in positive ways. The six-item approaches to learning scale measures whether the child is able to keep his or her belongings organized, show eagerness to learn new things, adapt to change, persist in completing tasks,

pay attention, and follow classroom rules. Finally, the four-item internalizing behaviors scale measures the extent that the child exhibits anxiety, loneliness, low self-esteem, and sadness.

Strikingly, our study showed no statistically significant links between attending Catholic school and a child's score on any of these other scales. In our view, these null findings lend further credibility to our primary findings, since there is no obvious connection between Catholic pedagogy and these other behaviors, unlike the behaviors associated with self-discipline.

## DISCUSSION

Our results show that students in Catholic schools have higher reported levels of self-discipline across two measures (externalizing behaviors and self-control), as well as across two cohorts and multiple grades. Furthermore, for each of those measures, data from at least one cohort suggest that the gap between Catholic students and other private school students grew over time.

On balance, these findings suggest that Catholic schools may have an advantage over other schools when it comes to fostering self-discipline—an interpretation rendered more plausible by the fact that Catholic school doctrine explicitly supports the development of these skills. However, we cannot say for certain if children who enroll in Catholic schools have higher levels of self-discipline, or if the reported differences in behavior are attributable to what goes on inside the school (see *Limitations* on page 17).

Insofar as these results reflect a “Catholic Schools Effect,” it’s worth considering what might explain it. In general, we know very little about how educators can foster noncognitive skills such as self-discipline. However, most potential explanations fall into one of two categories: First, improved self-discipline could be driven by an explicit focus on self-discipline-related themes at the school or classroom level. As noted in *The Mission of Catholic Schools* (page 12), a cursory review of school mission statements suggests that Catholic schools prioritize self-discipline. So it’s not too great a leap to suggest that this focus may be reflected in their curricula or discipline policies, whether formal or informal. In general, schools tend to excel at the things they value. Moreover, because Catholic schools are unabashedly religious, they expect their students to conduct themselves according to Christian principles and to recognize that doing otherwise has both immediate and potentially eternal consequences.

Second, higher levels of self-discipline may be fostered implicitly. For example, research suggests that Catholic school personnel demonstrate an “ethic of caring” that fosters stronger community values in schools,<sup>38</sup> and it seems highly plausible that they are also models of self-discipline. Thus, even if they do not preach self-discipline (literally or figuratively) teachers and other staff may be imparting its value in their interactions with students.

Because we can only speculate about these potential mechanisms, the lessons that our findings hold for non-Catholic schools are not as clear as they might be. Certainly, other schools might choose to focus on self-discipline or other noncognitive skills more explicitly and intensely by incorporating them into their curriculum, extracurricular activities, or discipline policies.<sup>39</sup> But the clearest implication of our results is that Catholic schools offer an important alternative for families who may be dissatisfied with their local public schools—particularly if they are interested in cultivating a sense of self-discipline and restraint.

# APPENDIX

The most straightforward way to compare children who did and did not attend Catholic school is to run a baseline regression model using Ordinary Least Squares (OLS):

$$Y_{it} = \theta CS_{it} + X_{it}\beta + \varepsilon_{it}$$

where  $Y$  represents one of the self-discipline measures for child  $i$  in the spring of year  $t$ .  $Y$  is a standardized measure, such that the effect of attending Catholic school can be interpreted as an effect size. The key measure in this study is  $CS_{it}$ , which is a binary indicator for having attended Catholic school in year  $t$ .  $X_{it}$  is a vector of child, classroom, and family variables.  $\varepsilon_{it}$  is the error term, which is cluster-adjusted for the fact that children are nested within the same schools.<sup>40</sup> Despite the unusually rich set of control variables in the baseline model, however, there may still have been other (unobserved) factors that influence the choice to attend Catholic school, such as the availability of Catholic schools as an option. To account for this, in some specifications, we include county fixed effects to control for variation in school options at the county level.

## Propensity Matching

A common alternative to OLS and fixed effects models is “propensity matching.”<sup>41</sup> In a propensity-matching model, the analysis occurs in two stages: In the first stage, the probability of receiving the treatment (i.e., the “propensity score”) is estimated based on observable characteristics (i.e., the control variables described previously). Thus, each child is assigned a score that reflects their odds of attending a Catholic school based on everything else that is known about them. In the second stage, propensity scores are used to match children who attended Catholic schools to those children who did not attend Catholic school but had a similar propensity to do so. More specifically, we used a form of “stratification matching” that divides children with similar characteristics and propensities to attend Catholic school into strata, and then makes comparisons between Catholic and non-Catholic students within these strata.<sup>42</sup>

Note that results for the other empirical models are available upon request.



Table A-1: Descriptive Statistics

	ECLS-K: 1999		ECLS-K: 2011	
	Average	Standard Deviation	Average	Standard Deviation
<b>Self-discipline</b>				
Externalizing behaviors	1.65	0.60	1.64	0.63
Self-control	3.20	0.61	3.17	0.62
<b>Type of school</b>				
Catholic	0.49	0.50	0.41	0.49
<b>Individual characteristics</b>				
Male	0.49	0.50	0.51	0.50
Black	0.07	0.26	0.11	0.31
Hispanic	0.12	0.32	0.12	0.32
Asian	0.04	0.20	0.10	0.30
Other race	0.04	0.21	0.07	0.26
Special education	0.13	0.34	0.16	0.37
English language learner	0.12	0.32	0.11	0.31
Retained	0.05	0.22	0.91	0.28
Age in kindergarten (months)	5.32	0.48	65.73	5.19
Attended pre-kindergarten	0.84	0.37	0.96	0.21
<b>Classroom demographics</b>				
Percentage of classmates: Black	7.63	16.94	9.41	22.42
Percentage of classmates: Hispanic	4.00	9.89	7.61	14.77
Percentage of classmates: Asian	8.08	19.38	6.73	13.29

Table A-1: Descriptive Statistics (cont'd)

	ECLS-K: 1999		ECLS-K: 2011	
	Average	Standard Deviation	Average	Standard Deviation
<b>Parent and household characteristics</b>				
Parents are married	0.82	0.38	0.85	0.36
Number of books	95.94	60.06	119.30	186.40
Number of siblings	1.29	1.03	1.26	1.00
Home learning activities	2.81	0.44	3.21	0.55
Home cognitive stimulation	1.78	1.54	2.74	1.16
Mother education: some college	0.54	0.50	0.24	0.43
Mother education: college or more	0.43	0.49	0.66	0.48
Father education: some college	0.42	0.49	0.22	0.42
Father education: college or more	0.45	0.50	0.53	0.50
Total income	\$84,176	\$86,464	\$139,217	\$89,130
Urban neighborhood	0.53	0.50	0.34	0.47
Suburban neighborhood	0.30	0.46	0.45	0.50
U.S. region: west	0.20	0.40	0.20	0.40
U.S. region: north	0.20	0.40	0.20	0.40
U.S. region: south	0.27	0.44	0.28	0.45
<b>Observations</b>	<b>1,840</b>		<b>1,090</b>	

**Table A-2: Standardized Estimates of the Effect of Catholic School Attendance on Self-discipline**

Cohort	Grade Level	Private	Public	Cohort	Grade Level	Private	Public
<b>Externalizing behaviors</b>				<b>Self-control</b>			
ECLS-K: 1999	Kindergarten	-0.06	-0.07	ECLS-K: 1999	Kindergarten	0.10	0.13
		(0.02)	(0.03)			(0.05)	(0.04)
	1st Grade	-0.27	-0.09		1st Grade	0.27	0.02
		(0.04)	(0.02)			(0.05)	(0.04)
	3rd Grade	-0.29	-0.14		3rd Grade	0.14	0.08
		(0.04)	(0.03)			(0.03)	(0.02)
	5th Grade	-0.34	-0.10		5th Grade	0.14	-0.01
	(0.19)	(0.03)		(0.05)	(0.02)		
ECLS-K: 2011	Kindergarten	-0.18	-0.03	ECLS-K: 2011	Kindergarten	0.15	0.00
		(0.08)	(0.03)			(0.03)	(0.03)
	1st Grade	-0.21	-0.07		1st Grade	0.19	-0.06
		(0.01)	(0.03)			(0.09)	(0.04)
	2nd Grade	0.00	-0.02		2nd Grade	0.26	-0.02
	(0.06)	(0.04)		(0.03)	(0.02)		

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.10$

Robust standard errors in parentheses.

Each cell represents the effect size on Catholic school students from a unique regression.

Each regression includes control variables for: gender, race, special education, English language learner, retained, age in kindergarten, pre-kindergarten attendance, classroom racial composition, whether parents were married, number of books at home, number of siblings, a scale measuring frequency of parental home learning activities, a scale measuring access to learning materials at home, mother and father education, and total income.

**Table A-3: Estimates of the Differential Effects of Catholic School Attendance on Self-discipline for Demographic Subgroups**

Cohort	Grade Level	Males	Low Income	High Externalizing	Effect Size
<b>Externalizing behaviors</b>					
ECLS-K: 1999	Kindergarten	-0.02 (0.06)	0.01 (0.04)	-0.03 (0.07)	-0.04 (0.11)
	1st Grade	-0.03 (0.06)	-0.04 (0.05)	0.21* (0.10)	0.33 (0.16)
	3rd Grade	-0.05 (0.08)	-0.10+ (0.05)	0.35*** (0.08)	0.36 (0.16)
	5th Grade	-0.07 (0.10)	-0.06 (0.07)	-0.08 (0.10)	-0.14 (0.18)
	Kindergarten	-0.10 (0.13)	0.07 (0.13)	0.17 (0.17)	0.26 (0.27)
	1st Grade	-0.08 (0.08)	0.00 (0.07)	0.40*** (0.11)	0.65 (0.17)
	2nd Grade	-0.09 (0.09)	0.05 (0.08)	-0.06 (0.11)	0.09 (0.17)

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.10$

Robust standard errors in parentheses.

Each cell represents the effect size on Catholic school students from a unique regression.

Each regression includes control variables for: gender, race, special education, English language learner, retained, age in kindergarten, pre-kindergarten attendance, classroom racial composition, whether parents were married, number of books at home, number of siblings, a scale measuring frequency of parental home learning activities, a scale measuring access to learning materials at home, mother and father education, and total income.



**Table A-3: Estimates of the Differential Effects of Catholic School Attendance on Self-discipline for Demographic Subgroups (cont'd)**

Cohort	Grade Level	Males	Low Income	High Self-control	Effect Size
<b>Self-control</b>					
ECLS-K: 1999	Kindergarten	-0.03	-0.03	0.01	0.02
		(0.06)	(0.05)	(0.05)	(0.08)
	1st Grade	-0.03	0.09+	0.10	0.17
		(0.07)	(0.05)	(0.07)	(0.11)
	3rd Grade	0.09	0.18**	0.03	0.05
		(0.08)	(0.06)	(0.06)	(0.10)
	5th Grade	0.13	0.02	-0.15*	-0.24
	(0.10)	(0.08)	(0.07)	(0.11)	
ECLS-K: 2011	Kindergarten	-0.02	0.00	-0.04	-0.07
		(0.12)	(0.10)	(0.06)	(0.09)
	1st Grade	0.00	0.09	0.35***	0.56
		(0.08)	(0.08)	(0.08)	(0.13)
	2nd Grade	0.08	-0.09	-0.06	-0.09
	(0.09)	(0.08)	(0.08)	(0.13)	

\*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$ , + $p < 0.10$

Robust standard errors in parentheses.

Each cell represents the effect size on Catholic school students from a unique regression.

Each regression includes control variables for: gender, race, special education, English language learner, retained, age in kindergarten, pre-kindergarten attendance, classroom racial composition, whether parents were married, number of books at home, number of siblings, a scale measuring frequency of parental home learning activities, a scale measuring access to learning materials at home, mother and father education, and total income.

# ENDNOTES

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