

The Power of Expectations

in District and Charter Schools

By Seth Gershenson



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Foreword by
Amber M. Northern and David Griffith

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Foreword

By Amber M. Northern and David Griffith

Among the most pernicious consequences of the Covid-19 pandemic was a general lowering of expectations for students. Many districts simply stopped tracking attendance during the shift to remote learning.¹ Others softened their grading policies²—or eliminated letter grades altogether.³ Some teachers moved away from assigning “homework” on the grounds that students were already home and probably spending too much time on screens.⁴

Perhaps it’s unfair to second-guess those pandemic-induced changes (though not nearly as unfair as the generation-hobbling decision to shutter so many schools for so long, despite ample evidence that it was possible to reopen safely). But if we’re serious about getting our students back on track, we must be even more serious about getting our expectations for them back on track. Muttering the phrase “high expectations for all students” just doesn’t cut it.

With the most acute phase of the Covid crisis seemingly behind us, public conversation has turned to the millions of students who are still struggling academically and emotionally—and to how our schools ought to respond. Though bits of progress can be seen here and there,⁵ pandemic-related learning loss remains a disaster that has disproportionately affected poor and historically marginalized students.⁶ According to the latest NAEP results, students nationwide have lost the equivalent of twenty years of progress in math and reading.⁷ And those are just the academic costs: Nine out of ten schools report that the pandemic has also impeded students’ socioemotional development.⁸

How education leaders respond to this moment will determine in large part whether students recover or continue their precipitous slide. For example, some states have already chosen to rescind their “third-grade reading guarantees” and pass nonreaders along to fourth grade.⁹ And in some places, no-grading policies are still in effect.¹⁰ Even some postsecondary institutions are now proposing to help students “adapt to college” by forgoing grades in the freshmen year.¹¹ “It’s not the kids’ fault that they’re behind,” the thinking goes, “so we need to adjust our expectations.”

Wrong, wrong, wrong.

Numerous scholars have identified a culture of high expectations as an important correlate of impactful teaching and better outcomes. For example, one recent study found that high expectations boosted fourth through eighth graders’ test scores,¹² and a recent Fordham study detected lasting benefits for students whose teachers were tougher graders.¹³ Rosenthal and Jacobson’s famous study of “Pygmalion in the classroom,” which found that randomly selected students did better when their teachers were told they were talented, has now been cited more than ten thousand times (though efforts to replicate it have yielded mixed results).¹⁴

Although many schools say they want their students to reach for the stars, high expectations are an especially prominent feature of successful charter schools,¹⁵ especially those of the “no-excuses” variety.¹⁶ Still, because these schools and networks are also known for things like longer school days, intensive tutoring, strict codes of conduct, and any number of other features,¹⁷ it’s not clear how much of their success is attributable to higher expectations *per se*.

Accordingly, this new study seeks to understand better the role that high expectations should play in our nation's academic recovery and gain a deeper understanding of whether and how they operate in the traditional public, charter, and private school sectors. To conduct it, we reached out to Professor Seth Gershenson of American University, who is well known for his previous work on teacher expectations. Using federal data from two nationally representative surveys, Dr. Gershenson explored the links between high school teachers' expectations of their students (in particular, their expectations regarding college completion), students' perceptions of their teachers' expectations, and students' long-term outcomes (including but not limited to college completion).

Here's what he found:

- 1. In general, teachers in charter and private high schools are more likely to believe that their students will complete four-year college degrees.***
- 2. In hindsight, teachers in charter and private schools were also more likely to overestimate students' actual degree attainment.***
- 3. In general, students in charter and private schools are more likely to believe that their teachers think "all students can be successful."***
- 4. Regardless of sector, teacher expectations have a positive effect on long-run outcomes such as college completion, teen childbearing, and receipt of public assistance.***

In our view, these findings have at least three implications for policy and practice.

- 1. All students need teachers who expect great things of them and behave accordingly.***

Like previous research, this study suggests that low expectations can be harmful, both because of what they imply about the level of instruction that students are likely to receive and because some students may internalize them. And of course, this concern is particularly acute when it comes to students of color, many of whom are still victims of "the soft bigotry of low expectations," with predictable results.¹⁸

Ultimately, teachers bear primary responsibility for the standards they set. But a common curriculum that embeds high expectations can help, and because it can be hard to know what "high expectations" look like in a vacuum, some schools may need to provide professional development on the subject, in addition to being open with staff when it comes to things like grading standards and homework loads. The more clearly teachers can see what their exemplary peers consider "high expectations," the more likely they are to raise their own game.

2. More families should have the option of enrolling their children in charter and private schools where high expectations are a core principle.

As this study underscores, most successful charter schools take high expectations seriously. And of course, when choosing a school, most parents consider whether a place will see their child's potential. The benefits of such an environment are real, so giving more parents more high-quality choices should not be controversial.

Imagine, for a moment, that the teachers of a child you cared for didn't believe in their gut that he or she was "college material" or were otherwise skeptical of his or her potential.

Wouldn't you be looking for an alternative? Shouldn't it be your right to demand one?

3. Above all, schools shouldn't use students' continuing challenges as justification for lowering expectations in the wake of the pandemic.

As policymakers and other stakeholders come to grips with the staggering educational and social costs of protracted school closures, the importance of setting and maintaining high expectations for students has never been clearer. Thankfully, all schools have now reopened their doors, which means that an educational recovery is at least theoretically possible. Yet every day, it seems, there are fresh reports of inane "no-homework" policies,¹⁹ student-initiated "mental-health days,"²⁰ or other misguided attempts to address young people's lingering anger and despair.

Yes, many students are behind or suffering because of circumstances beyond their control. But no, the solution isn't to expect any less of them.

How could it be?

Introduction

Although we don't know as much as we'd like about what makes for an effective teacher, evidence is coalescing around the importance of high standards and high expectations, which seem to boost an array of student outcomes, including test scores, college completion, and everything in between.²¹ We also know that parent and student expectations matter. For example, girls' higher expectations for educational attainment are a primary reason the gender gap in school performance has reversed in recent decades.²²

Yet, despite the fact that many charters are founded on the mantra of accountability, rigorous standards, and high expectations, surprisingly little is known about how expectations—including but not limited to those of teachers—operate in the charter school context. Much the same can be said about private schools, which often have a specific focus on college prep.

Understanding whether there are sectoral differences in the level and impact of teachers' expectations for students could provide new insight into the mechanisms through which charter schools boost student achievement. Ultimately, it could improve how we recruit and develop educators for all sectors.

To look into these differences, we analyze nationally representative survey data from the 2002 Educational Longitudinal Study (ELS) and the 2009 High School Longitudinal Study (HSLs), which track the cohorts who were in the tenth grade in 2002 and 2009, respectively. Because they capture several postgraduation years, they tell us a great deal about students' postsecondary schooling and early work histories.²³

Background

Students at every level frequently articulate their preference for, and the importance of, teachers who believe in them.²⁴ Similarly, parents and educators have long sensed that high expectations on the part of teachers are critical to children's success. However, the modern debate over whether and how such expectations affect child development has its origins in the classic psychology experiment conducted by Rosenthal and Jacobson, in which teachers were told that some (randomly selected) students were unusually talented.²⁵ Famously, these students went on to display larger test-score gains, a result sometimes dubbed the Pygmalion Effect. Yet successive attempts to replicate this provocative finding yielded mixed results.²⁶ And of course, experimentally manipulated beliefs about students are not necessarily the same as “real” expectations. Consequently, some researchers have used quasi-experimental methods alongside high-quality survey and administrative data, with the goal of teasing out the impacts of teachers’ real-world expectations and biases.

Such analyses are challenging, as a host of other factors could influence both teachers’ expectations and children’s outcomes, and only in the past decade has credible evidence emerged on the importance of expectations.²⁷ For example, one recent study used administrative data from North Carolina to document the arguably causal effects on students’ academic achievement (measured by end-of-year standardized tests) of having a high-expectations teacher in grades 3–8.²⁸ Similarly, the study that laid the groundwork for the present study used a nationally representative survey of U.S. tenth graders in which two teachers of each student were asked how much education they expected the student to complete; the authors found that all teachers were overly optimistic, on average, and that optimistic teachers significantly increased the chances that their students would ultimately complete a college degree.²⁹

Meanwhile, a culture of high expectations is a common feature of many successful charter schools,³⁰ especially those that have taken what has been called a “no-excuses” approach to high achievement (e.g., KIPP).³¹ These lofty expectations generally start with the school leadership and teachers but are expected to trickle down to students and parents as well. However, because these schools are also known for qualities such as increased instructional time, consequential behavioral policies, and an explicit focus on boosting student achievement,³² it’s hard to determine the extent to which these inputs and practices—as opposed to high expectations *per se*—are responsible for their success. Ditto for private schools, which typically have greater resources and a better-off student body, making it difficult to distinguish a culture of high (optimistic) expectations from accurate expectations based on the many advantages enjoyed by private school students, just as it’s hard to distinguish the impact of those expectations from other home and school inputs.

In short, despite the apparent connection between high teacher expectations and mission-driven charter and private schooling, much remains to be examined.

Data and Methods

Data for this study come from two sources: the ELS and the HSLS.³³ In addition to being nationally representative, these surveys are longitudinal, meaning they track participants from their early years in high school through college and into the labor force. Specifically, the ELS conducted follow-ups four and ten years after the initial survey, when respondents were about twenty and twenty-six years of age, respectively. Moreover, both surveys contain rich information about individual students, teachers, and schools.

Importantly, every student in the ELS was assessed by at least two teachers, each of whom was asked, “How far in school do you expect this student to get?” In contrast, the closest thing to measuring teachers’ expectations in the HSLS is a question about students’ assessments of their teachers’ general expectations for students in the school. Specifically, ninth graders were asked to what extent they agreed with the statement, “Your math teacher thinks all students can be successful.” Finally, both datasets include straightforward measures of student and parent expectations for the student’s future educational attainment. To simplify the analysis, we generally collapse these responses into binary indicators for “expects at least a four-year college degree.” For the exact wording of each survey question, see Appendix A.

Defining High Expectations

A culture of high expectations is much more than narrow beliefs about whether a student will pass a specific test or complete a specific degree. Indeed, there are other routes to a stable and fulfilling life and other dimensions on which teachers might hold and espouse optimistic beliefs about their students’ chances for success in school and in life. Still, most of our analysis defines “high expectations” in terms of beliefs about eventual educational attainment—specifically, the completion of four-year degrees—because they are a well-defined, readily available, and generally agreed-upon measure of success. Our definition would have been different had teachers been asked to choose between expecting a bachelor’s degree or expecting an apprenticeship in a trade that leads to stable employment and comfortable wages.

Hence, a teacher’s belief that a student can complete a four-year degree is best understood as a proxy for trusting more generally in that student’s potential to grow, learn, overcome obstacles, and experience success. What’s more, we would find similar results and patterns if instead we focused on “expects a high school diploma”—and it’s hard to argue that failing to complete high school is optimal for anyone in the modern economy. Receipt of a college degree is also correlated with many other positive traits (e.g., effort, persistence, and self-control).³⁴

This study seeks answers to the following questions:

- 1. To what extent do teachers' expectations for their students—and students' perceptions thereof—differ by school sector?**
- 2. How accurate are teachers' expectations?**
- 3. To what extent are any sectoral differences in expectations due to differences in student or school characteristics?**
- 4. To what extent does the impact of teachers' expectations on students' long-term outcomes differ by school sector?**

To answer the first two research questions, we compare average teacher expectations across sectors and compare expectations to actual student outcomes, respectively. To answer question three, we control for observable school and student characteristics. The school level characteristics we adjust for include school size (enrollment), locale, and the percentage of students eligible for free or reduced-price lunch. The student-level characteristics we adjust for include race and sex, mother's educational attainment, family income, language spoken at home, and standardized math score at the end of ninth grade.

To answer the final research question, we exploit the fact that two teachers assessed each student in the ELS. This allows us to control for one teacher's expectations when gauging the impact of another's, thus accounting for any unobservable student characteristics insofar as both teachers observe them. In a nutshell, we are comparing students with similar academic backgrounds, sociodemographic characteristics, and expected educational outcomes according to *one* teacher—who differ only in what a *second* teacher expects of them.

For more on the model, see Appendix B. For more on the causality premise, see Appendix C.³⁵ For more on data not presented, see Appendix D.

A Word about Confounding Factors

It may seem odd when comparing average expectations across school sectors to adjust for variables like prior academic achievement, considering that those sorts of things *should* influence teachers' expectations. But that's exactly why the adjustment is informative: so we can understand whether the higher expectations observed in private and charter schools merely reflect the students in those schools being better prepared, teachers in different types of schools forming different expectations for otherwise similar students, or some combination of the two. Though we stop short of making causal claims about the effect of school sector on teachers' expectations, it is still useful to think of these observed student and school characteristics as potential *confounding factors*, meaning they that might jointly influence both teachers' expectations and the type of school in which they're teaching.

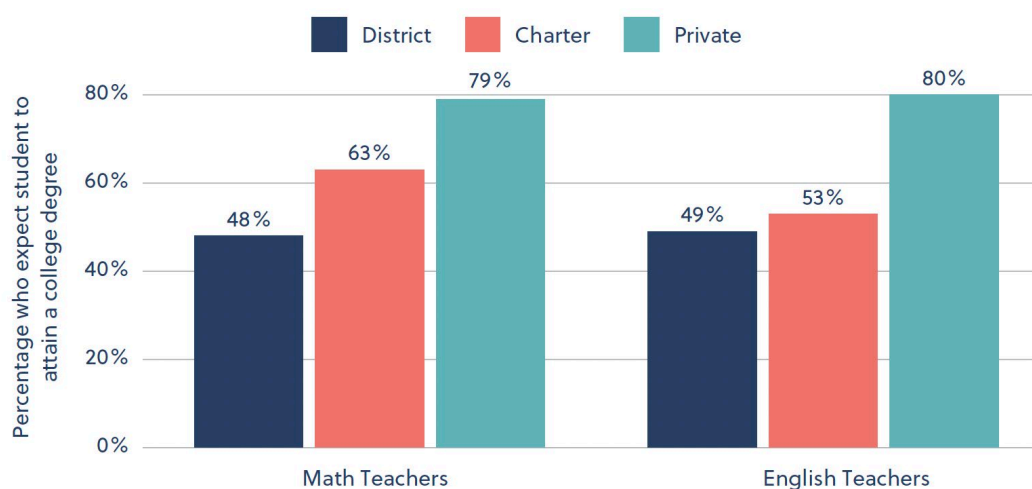
If students from better-off households are more likely to enroll in private schools, for instance, then they are likely to have objectively better odds of completing a college degree than their peers in public schools, even if the private school itself doesn't confer an additional advantage. In this sense, controlling for prior test scores is no different than controlling for family income, as we want to see whether expectations vary across sectors for students who are otherwise similar. Of course, we can only adjust for the factors that are observed in the dataset, and there may be many other dimensions on which students differ, things that teachers observe but that we cannot "see." Usually, though, the observed and unobserved confounding factors would push in the same direction. Because we tend to find that the sectoral gaps in expectations remain—and, in some cases, become larger—after making these adjustments, we feel comfortable interpreting them as real differences across school type in how teachers form expectations and not merely the result of different types of students enrolling in different types of schools.

Findings

Finding 1: Teachers in charter and private high schools are more likely than their district counterparts to expect their students to complete four-year college degrees.

Collectively, teachers in traditional (district-operated) public high schools expected slightly fewer than half of their students to complete four-year college degrees (Figure 1). In contrast, private school teachers expected about 80 percent of their students to complete such degrees. In charter schools, math teachers were roughly halfway between these extremes, while English language arts (English) teachers held expectations that were closer to their district counterparts. Again, these are raw averages that do not adjust for student or school characteristics (which we'll do next).

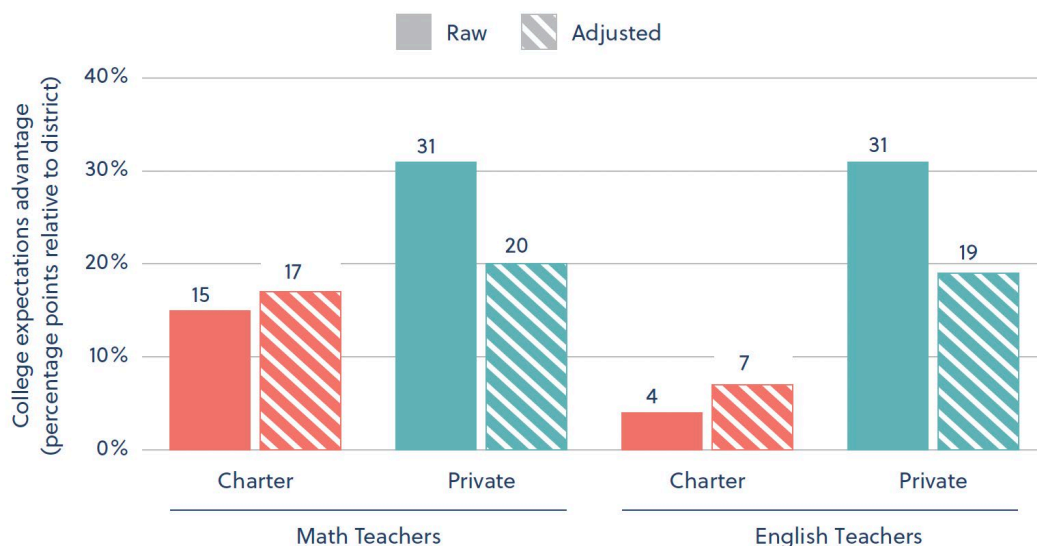
Figure 1. Teachers in charter and private high schools are more likely than their district counterparts to expect their students to complete four-year college degrees.



Note: This figure shows the percentage of ELS students whose math and English teachers expected them to earn a four-year college degree (or more).

Importantly, the charter and private school advantages in teacher expectations are not due to observable differences in student or school characteristics (Figure 2). In fact, the gap between charter school and traditional public school teachers' expectations *increases* after making those regression adjustments, suggesting that the charter advantage is (if anything) understated due to unobserved selection.³⁶ The private school advantage, on the other hand, shrinks by about one-third after making these adjustments, in large part due to the household-income disparity present in the raw comparisons, though it still remains large and statistically significant.

Figure 2. Even after adjusting for student and school characteristics, charter and private school teachers have higher expectations than teachers in traditional public schools.



Note: Bars represent the difference between charter or private school and traditional public school teachers' expectations before (raw) and after adjusting for student and school characteristics. The underlying regression estimates for this exercise are reported in Appendix Table D2.

It's interesting that, while the private school advantage is similar across subjects, the charter advantage is notably larger among math teachers. Mechanically this is because charter English teachers' expectations are lower than charter math teachers' expectations; in traditional public schools, math and English teachers' expectations are quite similar (Figure 1). Why might this be? One possible explanation for this is that in charter schools that foster a general culture of high expectations, it may be easier for math teachers to buy into the idea that all students can succeed because most math learning takes place in schools and/or because math achievement is measured more objectively than is English achievement. Finding 2 provides some evidence of this.

Finding 2: Teachers in charter and private schools are more likely to overestimate students' actual degree attainment.

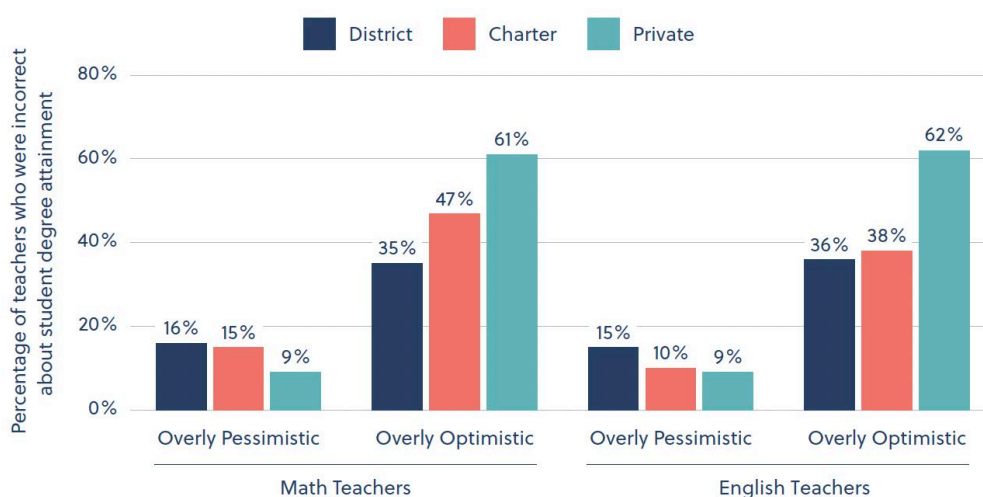
Previous research suggests that on average, teachers are overly optimistic in the sense that they expect more students to complete a four-year college degree than actually do.³⁷ Given the sectoral gaps in high expectations identified in Finding 1, a natural follow-up question is whether those gaps mimic sectoral gaps in college-graduation rates. We examine this question by checking to see what percentage of teachers' stated expectations (when students are in the tenth grade) turn out to be *incorrect* eight years later.

First, however, let's look at accuracy rates. Overall, both math and English teachers in the ELS are correct about 71 percent of the time, meaning they accurately predict whether students will or will not complete a four-year degree. These accuracy rates are fairly similar across sectors, particularly in traditional public schools and private schools. However, charter school math teachers are something of an outlier, with a 62 percent accuracy rate. Of course, the way in which a teacher is wrong matters, as being wrong about a student who eventually completes college implies pessimism, which is potentially harmful, whereas being overly optimistic is mostly harmless.

Decomposing the inaccuracy of teachers' expectations separately by sector and by students' eventual attainment reveals a few interesting patterns. Figure 3 shows that traditional public school teachers tended to be more pessimistic than their charter and private school peers. This led them to be both more accurate in identifying students who would fail to graduate college but also less accurate in identifying students who did go on to earn a college degree. Math and English teachers in traditional public schools were inaccurate for about 15 percent of eventual college graduates and for about 35 percent of those who did not graduate college. These figures are in stark contrast to private school teachers, who were more likely to err on the side of optimism and thus were inaccurate about the prospects of less than 10 percent of college graduates but more than 60 percent of students who didn't graduate college. Private school teachers, one might say, had unrealistic expectations about how many of their students would eventually graduate college. That, of course, may be related to the "everyone from here goes to college" signal sent by many private schools.

Charter school teachers' inaccuracy tends to be somewhere in between traditional public school and private school teachers. The most notable difference between charter school and traditional public school teachers' inaccuracy rates is in math teachers' predictions: charter school math teachers were twelve percentage points (33 percent) more likely than their traditional public school counterparts to inaccurately predict that their students would graduate from college. In other words, they were overly optimistic.

Figure 3. Traditional public school teachers tend to be more pessimistic than their charter and private school peers when it comes to students' actual degree attainment.



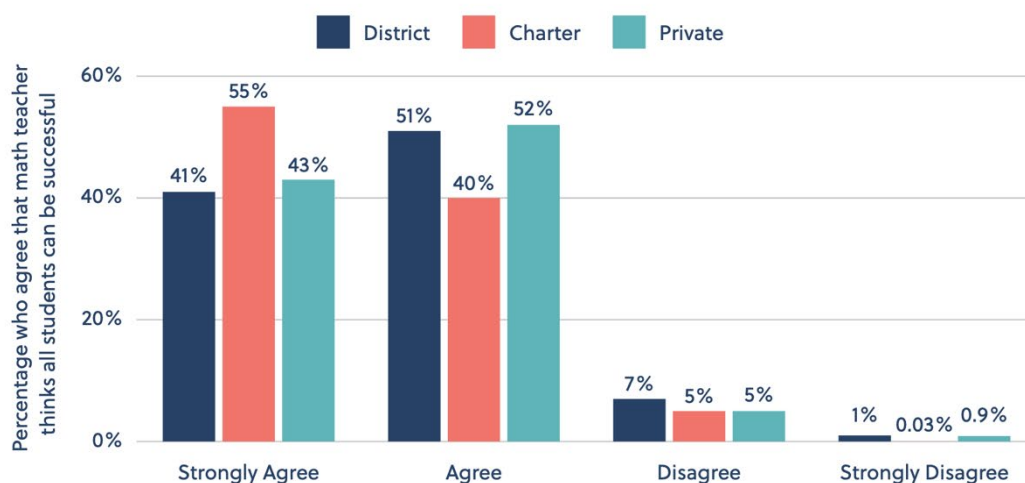
Note: This figure shows the percentage of teachers who were incorrect about the actual eventual attainment of college graduates (defined as overly pessimistic) and nongraduates (defined as overly optimistic) separately by subject and sector.

Finding 3: Students in charter and private schools are more likely than their district counterparts to believe that their teachers think “all students can be successful.”

Like teachers' actual expectations, students' *perceptions* of teachers' expectations seem to differ by sector (though they are generally not statistically significant at traditional confidence levels). For example, charter students were fourteen percentage points likelier than their traditional public school counterparts to “strongly agree” with the statement that their math teacher “thinks all students can be

successful” (Figure 4). Moreover, like sectoral differences in teacher expectations, sectoral differences in students’ perceptions of teacher beliefs are not driven by observable differences between students and schools (see Appendix D, Table D3).

Figure 4. Students in charter and private schools are more likely than their district counterparts to believe that their teachers think “all students can be successful.”



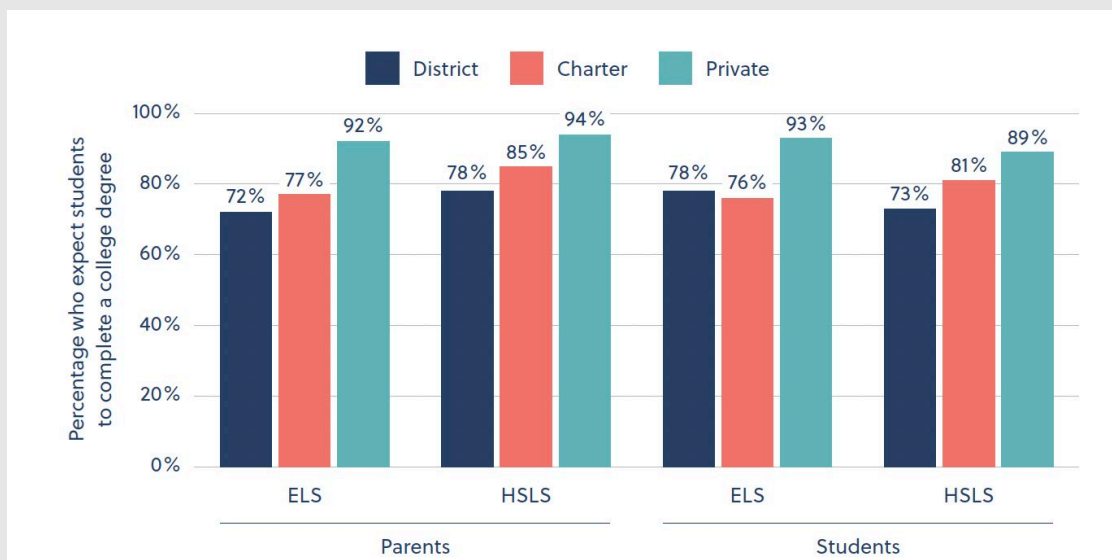
Note: This figure shows the percentage of ninth graders who strongly agreed or agreed with the statement, “My math teacher thinks all students can be successful,” separately by school sector.

Intuitively, if students aren’t convinced that their teachers believe in *all* students’ ability to succeed, then at least some students may feel that their teacher doesn’t believe in them personally.

How do parent and student expectations differ by sector?

Although this study focuses on sectoral differences in teacher expectations, parent and student expectations also differ by sector (Figure 5). For example, more than nine out of ten private school parents expect their children to complete a four-year college degree, as do a similar percentage of private school students. Like the sectoral patterns observed in teacher expectations, charter school parents’ expectations are lower than those of private school parents but 7 to 9 percent higher than the expectations of their district counterparts. This is true for students’ expectations in the HSLs survey, as well. In fact, the only case in which charter expectations were *not* notably higher than in traditional public schools was among students in the ELS survey, where average expectations were about the same in the two public sectors.

Figure 5. In general, students and parents in charter and private schools have higher college-completion expectations than their counterparts in traditional public schools.



Note: This figure shows the percentage of ELS and HSLs students (and parents) who expected that they (or their child) would earn a four-year college degree (or more) separately by school sector.

Like the differences in teachers' expectations, these sectoral differences generally remain even after adjusting for student and school characteristics (Tables D4 and D5 in Appendix D). What accounts for these differences is less clear. For example, changing parent and/or student expectations is one of several plausible channels through which teacher expectations could affect students' long-run outcomes.³⁸ However, parent and student expectations could be shaped by the same school culture and leadership attributes that shape teacher expectations—as well as by unobserved differences in motivation and preferences for educational attainment.

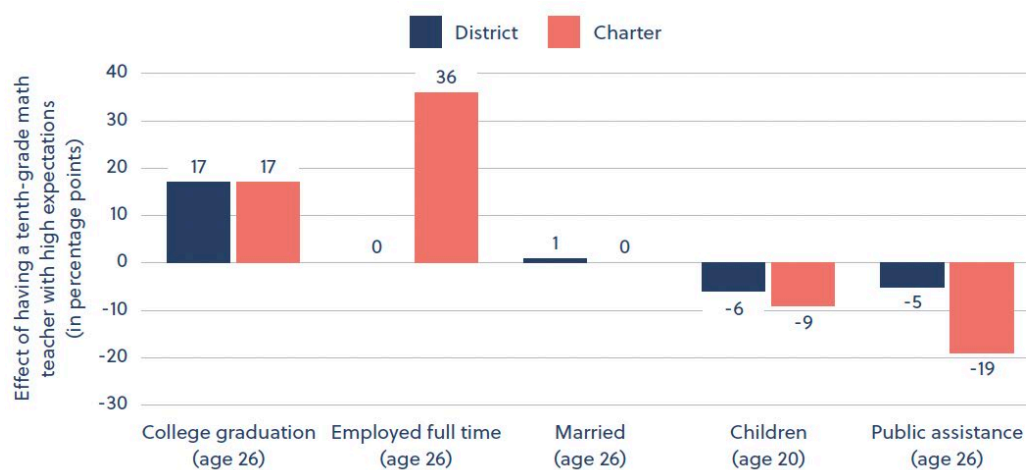
Finding 4: Regardless of sector, teacher expectations have a positive effect on long-run outcomes, such as college completion, teen childbearing, and receipt of public assistance.

Regardless of sector, high school teachers' expectations that students will earn college degrees have a positive effect on at least three of the five long-run outcomes that we consider (Figure 6). For example, regardless of whether the teacher and student are in a traditional public school or a charter school, having a math teacher who fully expects a student to obtain a college degree (relative to one who thinks the student has no chance) boosts that student's odds of college completion by about seventeen percentage points. Similarly, high teacher expectations for their students' education reduce the chances that students will have children before the age of twenty by about three to six percentage points and reduce their probability of receiving public assistance at age twenty-six by approximately five percentage points. However, we don't see similar impacts on the likelihood of marriage or employment (by age twenty-six).

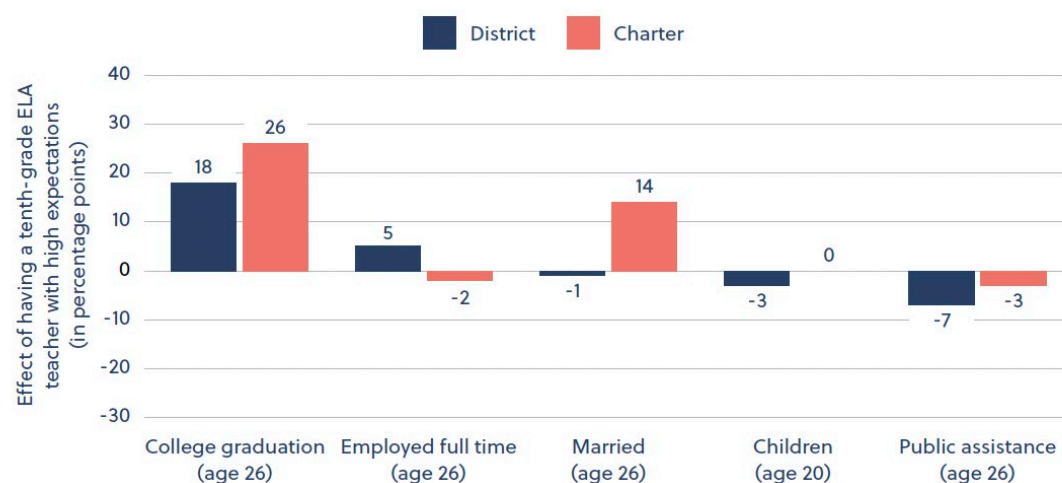
For some outcomes (like employment), there is suggestive evidence that the effect of high teacher expectations may be bigger in charter schools (though due to small sample sizes, these differences aren't statistically significant). In other words, the evidence suggests that the effects of high expectations are *at least as big* in charter schools as they are in traditional public schools.

Figure 6. Regardless of sector, high teacher expectations have a positive effect on at least three long-term outcomes of interest.

A. Effects of math teachers' expectations



B. Effects of English teachers' expectations



Note: These figures show the estimated effect on five long-term outcomes of having a tenth-grade math or English teacher who fully expects students to obtain at least a four-year college degree. The actual regression estimates are reported in Tables D6 and D7 of Appendix D.

Although some of these estimates may seem implausibly large, their magnitude is at least partly a consequence of the binary nature of the independent variable. Because of this feature of the data, what the estimates in Figure 6 capture is the effect of replacing a teacher who has *zero* faith in their student's ability to complete a college degree with one who is *certain* that the student will do so. But of course, this scenario is unrealistic, so it makes more sense to imagine the effects of a more marginal change. For example, what would happen if a student's teacher changed their confidence in the student's ability to complete a college degree by twenty-five percentage points (e.g., from 50 percent to 75 percent confident)?

Roughly speaking, the estimates in Figure 6 imply that such a twenty-five-percentage-point increase in a teacher's confidence increases the probability that a student will actually complete a four-year college degree by about 4.2 percentage points. Given that about 45 percent of the sample completed a college degree, this represents an increase of nearly 10 percent.³⁹

Takeaways

Teacher expectations are higher in charter schools than in traditional public schools, even after accounting for sectoral differences in student and school characteristics. They're highest in private schools, which is unsurprising given the "college-prep" aura of many private high schools, as well as their selected student body, plus the material advantages common to many of their pupils. What's more, teacher expectations matter just as much, if not more, in charter schools as they do in traditional public schools. In other words, the data suggest that charter schools have an unambiguous "expectations advantage" over traditional public schools.

These results have at least three implications for policy and practice.

First, policymakers should continue to give charter schools flexibility to keep doing what they're doing with respect to hiring and developing teachers who believe that all students can succeed. For example, prior research suggests that charter schools have more Black teachers than traditional public schools—in part due to relaxed certification requirements—and that the effects of "race match" are particularly large in charter schools.⁴⁰ This presumably leads to higher average expectations in charter schools that enroll nontrivial shares of non-White students, since White teachers tend to have lower expectations for students of color than for White students, all else being equal.⁴¹ Similarly, many alternative certification programs, such as Teach For America, explicitly focus on and succeed in producing teachers who truly possess high expectations for all students.⁴²

Second, education researchers and leaders of traditional public schools should try to learn from charter schools' success on this front. After all, it may be that teachers', parents', and students' expectations for the future are all driven by aspects of school culture that are theoretically transferrable (e.g., unusually strong school leadership or "college talk").

Finally, concrete actions should be taken to ensure that as many teachers as possible do, in fact, have and espouse high expectations for their students. One way to approach this is in the hiring process (i.e., by treating high expectations as a teacher characteristic for which to select). For example, schools might try to hire from training programs known to emphasize high expectations for all or address the question during the interview process. However, schools and districts should also consider how they might boost the expectations of their existing teacher force—for example, by incorporating student surveys that include an "expectations" dimension into their teacher-evaluation systems, by adopting light-touch professional-development interventions that increase teachers' empathy and expectations for students, or by making them aware of this research.

Limitations

The analysis that is the basis for this study has several limitations.

First, although charter school teachers' comparatively high expectations aren't attributable to observable student or school characteristics, they could be attributable to unobservable characteristics. Consequently, the results that are the basis for findings one through three are perhaps best characterized as descriptive.

Second, because students aren't randomly assigned to teachers with high expectations, the validity of the estimates in finding four depends on the degree to which controlling for one teacher's expectations accounts for otherwise unobservable characteristics of students and teachers (for evidence that suggests it may, see Appendix C).

Third, although the two surveys that are the basis for the study included more than 15,000 students between them, after constructing the analytic sample of students with usable data, only about 500 of these students were enrolled in a charter school. Consequently, the estimates for charters are considerably less precise than those for traditional public schools.

Finally, any analysis that relies on survey data has inherent limitations. For example, participants' responses could be subject to social-desirability bias. Also, while it is analytically necessary to collapse teachers' expectations regarding students' education into a binary indicator, interpreting the resulting estimates requires some assumptions about the distribution of teachers' expectations and their relationship to long-run outcomes (e.g., that this relationship is linear, at least for the thickest part of the distribution) and about how the underlying probability that teachers place on students completing college maps onto their stated expectations.

Appendix A: Survey Questions

Educational Longitudinal Study (ELS) of 2002

Student Expectations

This variable in the ELS comes from the base-year student survey in which students select one of seven options in response to the following prompt about themselves:

“As things stand now, how far in school do you think you will get?”

- Less than high school graduation
- High school graduation of GED only
- Attend or complete two-year college/school
- Attend college, four-year degree incomplete
- Graduate from college
- Obtain a master’s degree or equivalent
- Obtain a PhD, MD, or other advanced degree

We collapse the responses into a binary indicator for “four-year college degree or more,” which combines the final three responses.

Teacher Expectations

There are two teacher expectation variables in the ELS: for English and math teachers. These variables come from the base-year English and math teacher surveys, respectively. In both surveys, teachers are posed the following question about specific students of theirs who were included in the ELS:

“How far in school do you expect this student to get?”

Teachers choose from the same seven categories that students chose from above. Again, we collapse the responses into a binary indicator for “four-year college degree or more.”

Parent Expectations

The variable comes from the parent survey in the base year that reads as follows: “How far in school do you think that your ninth grader will go?”

Categorical responses include the same seven options as above, and we again collapse them into a single binary indicator for “four-year college degree or more.”

High School Longitudinal Study (HSLs) of 2009

Student Expectations

This variable comes from the student base-year survey and is in response to the following prompt about themselves:

“How far in school do you think that you will get?”

- Less than high school
- High school diploma or GED
- Start an associate’s degree
- Complete an associate’s degree
- Start a bachelor’s degree
- Complete a bachelor’s degree
- Start a master’s degree
- Complete a master’s degree
- Start PhD/MD/law/other professional degree
- Complete PhD/MD/law/other professional degree

Unlike the ELS, there are ten possible responses. However, we again collapse these responses into a binary indicator for “four-year college degree or more,” which combines the final five responses.

Math Teacher Expectations

Unlike the ELS, teachers in the HSLs are not asked about their expectations for individual students. The closest proxy for this type of expectation comes from the base-year student survey in which individual students answer the following question about their math teacher:

“How much do you agree with the following statements about [your math teacher in ninth grade]? ‘Your math teacher thinks every student can be successful.’” Students select one of four responses:

Strongly agree
 Agree
 Disagree
 Strongly disagree

Parent Expectations

This variable comes from the base-year parent survey in response to their child. The question reads, “How far in school do you think that your ninth grader will go?” It has the same ten response options as the student-expectation variable and is coded in the same way.

Appendix B: Technical Appendix

Following Papageorge, Gershenson, and Kang (2020), we estimate linear probability models of the form

$$y_i = \gamma_E T_{Ei} + \gamma_M T_{Mi} + X_i \beta + \varepsilon_i, \quad (A1)$$

where y is a binary student outcome such as degree attainment, i indexes students, T are indicators for teachers expecting a college degree or more, E and M indicate English and math teachers, respectively, and X is a vector of control variables that include student background characteristics, prior academic history, school fixed effects (school indicators), and observed teacher characteristics. Note that charter and private school indicators, and all school characteristics, whether observed or not, are subsumed by the school fixed effects in X . These fixed effects are what ensure that we are making within-school comparisons of students who were exposed to different levels of expectations. Controlling for teacher characteristics such as race, gender, and (particularly) experience is important to the extent that these teacher characteristics affect both student outcomes and teacher expectations. However, we find that results are quite robust to their inclusion, suggesting that we are identifying the effects of expectations and not a broader measure of “teacher effectiveness.”

We cluster standard errors by school because in the year expectations are measured teachers and students are nested in schools, though we also consider two-way clustering by each teacher, because this is closer to the level at which treatment varies and individual teachers often have multiple students in the dataset.⁴³ There is no practical difference when doing so.

Of course, estimating equation (A1) as written is akin to simply replicating the main results (Column 7 of Table D6) of Papageorge, Gershenson, and Kang (2020). The innovation in the current study is to formally test whether the effects of high expectations, captured by the γ in equation (A1), vary by school sector. We do this by augmenting equation (A1) to include interactions between T and a charter school indicator (omitting private schools from the sample), so that two additional interaction terms are added to the model. A formal Chow test of the joint significance of all the covariate-school-sector interactions fails to reject that the interactions are jointly zero, so we estimate the more parsimonious version that only interacts the T to save power. These interaction terms are the parameters of interest in the current study, as they tell us how the effect of expectations differs between traditional public schools and charter schools. Simple t tests of the interactions tell us whether the differences are statistically significant.

Appendix C: Diagnostics

The main identifying assumptions for OLS estimates of equation (A1) are that (1) there are no omitted variables in equation (A1) that affect teachers' expectations and (2) teacher disagreements about a particular student are conditionally random. Here, we discuss a few results that suggest that this is so, at least approximately, and thus that the OLS estimates have a causal interpretation. These ideas follow directly from, and are documented in, Papageorge, Gershenson, and Kang (2020).

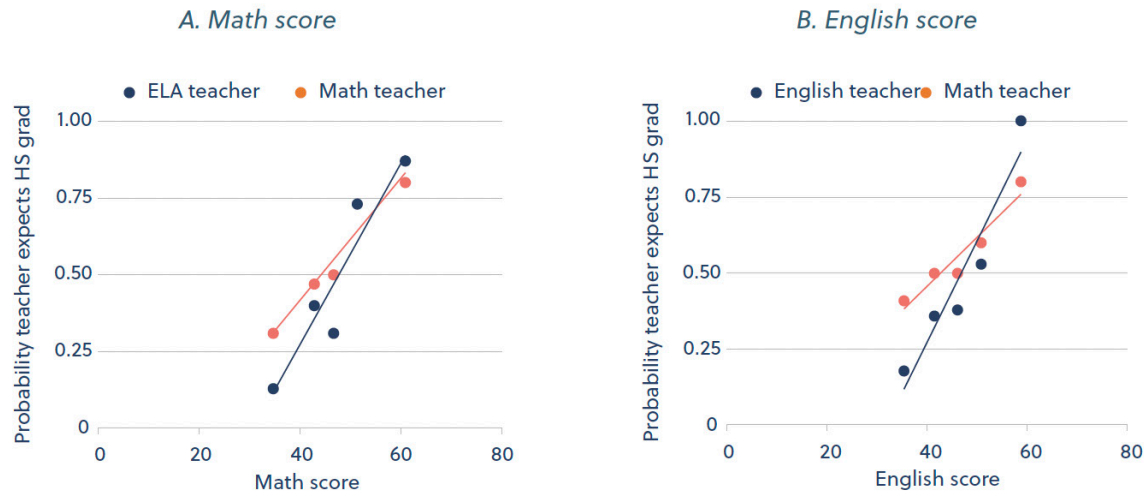
First, as seen in Appendix Table D6, adding additional controls to the model does not qualitatively change the estimates of γ . This suggests that the second teacher expectation is doing a good job of controlling for other student characteristics that might influence both student outcomes and teacher expectations. Similarly, adding teacher controls proved similarly inconsequential, suggesting that we are isolating the effects of expectations and not broader aspects of teacher quality. This was previously documented in Papageorge, Gershenson, and Kang (2020); moreover, they show a structural measurement error model cross validates the approach used here and yields remarkably similar estimates, while relying on different identifying assumptions.

Second, we address the threat that individual teachers are privy to relevant information about a student's educational prospects that the other teacher is not. For example, consider a student who is exceptionally strong in math but mediocre in English. A math teacher may recognize this skill when the English teacher does not. This would lead to variation in teacher expectations that is based upon differences in teacher observations of skills that might matter for college going. One way we show that this is not what's driving our results is by plotting the expectation gradients with respect to test scores for both teachers (English and math). We do this for charter schools only, as Papageorge, Gershenson, and Kang (2020) already demonstrated that this is true in the full ELS sample. See Figure D1 in Appendix D, which shows that the gradients are nearly identical for both English and math tests, even though these tests were not administered by teachers and the teachers did not see the students' scores. This indicates that teachers are not reacting to subject-specific talent, which only they might see. A regression-based version of this test yields the same result (Papageorge, Gershenson, and Kang 2020).

Similarly, we may worry that one teacher observes a relevant personal shock, which matters for ultimate attainment, that the other does not. For example, one teacher may learn that a student has a learning disability and revise her expectations accordingly. If this information is not known by the other teacher, then it is not controlled for by the other teacher's expectation, which means it is an omitted variable correlated with expectations. To probe the validity of this threat, Papageorge, Gershenson, and Kang (2020) attempt to predict teacher disagreements using data from the ELS on student shocks and behaviors that are potentially only known by one teacher: whether the student is being bullied, has been in a fight, participated in the science fair, finds classes interesting, or participated in a "test-prep" course for college applications, as well as whether the student's parent thinks the student might have an undiagnosed learning disability. Once again, we find that these variables have no predictive power of teacher disagreements, reinforcing the claim that such disagreements are conditionally random.

Appendix D: Additional Tables & Figures

Figure D1. Plotting charter school math and English teacher expectations by subject-specific standardized test scores



Note: The expectation is a binary indicator for whether the teacher expects the student to complete a four-year college degree. These figures are using observations of charter school teachers only.

Table D1. Student-Level Sample Summary Statistics

Variable	ELS		HSLS	
	Mean	Std. Dev.	Mean	Std. Dev.
White	0.59		0.58	
Black	0.13		0.08	
Hispanic	0.13		0.16	
Asian	0.1		0.08	
Female	0.51		0.5	
Mother is high school grad	0.52		0.4	
Mother is 4-yr college grad	0.24		0.39	
Income: \$0 - \$15,000	0.1		0.09	
Income: \$15,001 - \$35,000	0.24		0.19	
Income: \$35,001 - \$75,000	0.42		0.34	
Income: \$75,001 or more	0.24		0.37	
Home language not English	0.16		0.16	
Math Score	50.86	10.08	52.3	10.03
Public	0.99		0.97	
Charter	0.01		0.03	
Urban	0.22		0.23	
Observations	5,500		9,920	

Table D2. Regression-Adjusted Sectoral Gaps in ELS Teacher Expectations

Expects College	Math Teachers			English Teachers		
	1	2	3	4	5	6
Private	0.31***	0.16***	0.20***	0.31***	0.15***	0.19***
	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
Charter	0.15***	0.19***	0.17***	0.04	0.09***	0.07**
	(0.05)	(0.03)	(0.02)	(0.06)	(0.03)	(0.03)
Black		0.07***	0.05***		0.05***	0.04**
		(0.02)	(0.02)		(0.02)	(0.02)
Hispanic		0.02	0.01		0.01	-0.01
		(0.02)	(0.02)		(0.02)	(0.02)
Female		0.12***	0.12***		0.14***	0.14***
		(0.01)	(0.01)		(0.01)	(0.01)
Student controls		x	x		x	x
School controls			x			x
Observations	9640	9640	9640	9230	9230	9230
R-squared	0.03	0.32	0.33	0.03	0.28	0.29

Note: The outcome is a binary indicator equal to one if the teacher expects the student to complete a four-year degree or more. The bold-faced entries are the charter-traditional and private-traditional ELS gaps reported in Figure 2. School-level controls are school size (enrollment) and the percentage of students eligible for free or reduced-price lunch. Student-level controls are mother's educational attainment, family income, language spoken at home, and standardized math score from ninth grade. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table D3. Regression-Adjusted Sectoral Gaps in HSLS Student Perceptions

	Student Perceptions of Teachers' Beliefs: Strongly Agree		
	1	2	3
Private	0.02	0.02	0.03
	(0.02)	(0.02)	(0.03)
Charter	0.14	0.13	0.13
	(0.09)	(0.08)	(0.09)
Black		0.06*	0.05*
		(0.03)	(0.03)
Hispanic		-0.04	-0.04*
		(0.02)	(0.02)
Female		-0.00	-0.00
		(0.01)	(0.01)
Student X		x	x
School X			x
Observations	12870	12870	12870
R-squared	0.00	0.01	0.01

Note: This table reports findings from linear regressions where the dependent variable is a binary variable indicating whether students strongly agree with the statement that their math teacher thinks all students can be successful. This is restricted to students with no missingness in terms of control variables. Student controls include sex, race, family income, home language, and math score; school-level controls include school size (enrollment) and percent of students in school who qualify for free or reduced-price lunch. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table D4. Regression-Adjusted Sectoral Gaps in ELS Parent and Student Expectations

Expects College	Parents			Students		
	1	2	3	4	5	6
Private	0.20***	0.10***	0.13***	0.15***	0.06***	0.08***
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
Charter	0.06*	0.07***	0.06***	-0.02	0.01	-0.00
	(0.03)	(0.02)	(0.02)	(0.03)	(0.02)	(0.01)
Black		0.19***	0.18***		0.10***	0.10***
		(0.02)	(0.02)		(0.02)	(0.02)
Hispanic		0.10***	0.09***		0.04**	0.03*
		(0.02)	(0.02)		(0.02)	(0.02)
Female		0.12***	0.12***		0.11***	0.11***
		(0.01)	(0.01)		(0.01)	(0.01)
Student X		x	x		x	x
School X			x			x
Observations	9700	9700	9700	10890	10890	10890
R-squared	0.01	0.11	0.11	0.01	0.17	0.17

Note: The outcome is a binary indicator equal to one if the person in question expects the student to complete a four-year degree or more. School-level controls are school size (enrollment) and the percentage of students eligible for free or reduced-price lunch. Student-level controls are mother's education attainment, family income, language spoken at home, and standardized math score from ninth grade. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table D5. Regression-Adjusted Sectoral Gaps in HSLs Parent and Student Expectations

Variables	Parents			Students		
	(1)	(2)	(3)	(4)	(5)	(6)
Private	0.16***	0.05***	0.03	0.15***	0.03***	0.05**
	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)
Charter	0.07	0.03	0.05	0.07	0.06*	0.08**
	(0.05)	(0.03)	(0.03)	(0.06)	(0.04)	(0.04)
Black		0.11***	0.12***		0.08***	0.07***
		(0.02)	(0.02)		(0.02)	(0.02)
Hispanic		-0.02	-0.02		-0.03	-0.03
		(0.03)	(0.03)		(0.02)	(0.02)
Female		0.10***	0.09***		0.06***	0.06***
		(0.01)	(0.01)		(0.01)	(0.01)
Student X		x	x		x	x
School X			x			x
Observations	12,180	12,180	12,180	11,330	11,330	11,330
R-squared	0.01	0.18	0.19	0.01	0.16	0.16

Note: The outcome is a binary indicator equal to one if the person in question expects the student to complete a four-year degree or more. This is restricted to students with no missingness in terms of control variables. Student controls include sex, race, family income, home language, and math score; school-level controls include school size (enrollment) and percentage of students in school who qualify for free or reduced-price lunch. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Table D6. Estimated Effects of Teacher Expectations on College Completion

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ELA Teacher	0.29*** (0.02)	0.18*** (0.02)	0.28*** (0.02)	0.18*** (0.02)	0.18*** (0.02)	0.18*** (0.02)	0.18*** (0.02)
Math Teacher	0.28*** (0.02)	0.16*** (0.02)	0.27*** (0.02)	0.16*** (0.02)	0.17*** (0.02)	0.17*** (0.02)	0.17*** (0.02)
ELA Teacher * Charter					0.08 (0.17)	0.08 (0.20)	0.08 (0.16)
Math Teacher * Charter					0.00 (0.22)	0.00 (0.25)	0.00 (0.20)
Student Controls		x		x	x	x	x
Teacher Controls			x	x	x	x	x
Interactions					x	x	x
School Fixed Effects	x	x	x	x	x	x	x
Joint Significance					0.00	0.01	0.00
Observations	4,500	4,500	4,500	4,500	4,500	4,500	4,500

Note: Columns 1–5 report robust standard errors clustered by school ID, Column 6 reports robust standard errors (no clustering), and Column 7 reports standard errors using two-way clustering by math and English teacher IDs. Column 5 is the preferred specification used to construct Figure 6. *** $p < 0.01$.

Table D7. Effects of Teacher Expectations on Other Long-Run Outcomes

Outcome	College Grad	Currently Married	Children (age 26)	Children (age 20)	Public Assistance	Employed Full Time	Employed Full Time or Part Time
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ELA Teacher	0.18*** (0.02)	-0.01 (0.02)	-0.07*** (0.02)	-0.03*** (0.01)	-0.07*** (0.02)	0.05** (0.02)	0.03 (0.02)
Math Teacher	0.17*** (0.02)	0.01 (0.03)	-0.08*** (0.02)	-0.06*** (0.02)	-0.05** (0.02)	-0.00 (0.02)	-0.00 (0.02)
ELA T x Charter	0.08 (0.17)	0.15 (0.25)	-0.22 (0.25)	0.03 (0.11)	0.04 (0.25)	-0.07 (0.33)	-0.3 (0.28)
Math T x Charter	0 (0.22)	-0.01 (0.15)	-0.09 (0.22)	-0.03 (0.12)	-0.14 (0.14)	0.36 (0.24)	0.33 (0.25)
Observations	4,500	4,500	4,100		4,100	4,500	4,500
R-squared	0.46	0.18	0.31		0.28	0.19	0.16

Note: Unless otherwise stated, outcomes are observed at age twenty-six. All models include all controls and school fixed effects. Student and teacher controls include race, sex, student home language, student family income, teacher major, teacher years of experience, mother education, and interactions between these variables and charter dummy. * Standard errors are clustered by school. There are sample-size changes across the columns due to missing responses for long-term outcomes. *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$.

Endnotes

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- ²⁹ Still, the degree to which White teachers are overly optimistic is significantly larger for White students than for Black students. See Papageorge, Gershenson, and Kang, "Teacher Expectations Matter."
- ³⁰ Julia Chabrier, Sarah Cohodes, and Philip Oreopoulos, "What Can We Learn from Charter School Lotteries?" *Journal of Economic Perspectives* 30, no. 3 (2016): 57–84, doi:10.1257/jep.30.3.57; and Roland G. Fryer, Jr., "Injecting Charter School Best Practices into Traditional Public Schools: Evidence from Field Experiments," *The Quarterly Journal of Economics* 129, no. 3 (2014): 1355–407, doi:10.1093/qje/qju011.
- ³¹ Joshua D. Angrist et al., "Inputs and impacts in charter schools: KIPP Lynn," *American Economic Review* 100, no. 2 (2010): 239–43, doi:10.1257/aer.100.2.239; Sarah Cohodes, *Charter Schools and the Achievement Gap* (Princeton, NJ: The Future of Children, 2018), https://futureofchildren.princeton.edu/sites/futureofchildren/files/resource-links/charter_schools_compiled.pdf; and Philip M. Gleason et al., "Do KIPP Schools Boost Student Achievement?" *Education Finance and Policy* 9, no. 1 (2014): 36–58, doi:10.1162/EDFP_a_00119.
- ³² Philip M. Gleason, "What's the secret ingredient? Searching for policies and practices that make charter schools successful," *Journal of School Choice* 11, no. 4 (2017): 559–84, doi:10.1080/15582159.2017.1395620.
- ³³ Table D1 in Appendix D summarizes the characteristics of students in both datasets.
- ³⁴ In addition, if one subscribes to the notion that not everyone needs to attend college, even the tenth grade—when teachers in this study are asked about students' future prospects—may be too soon for a teacher to know each student's optimal path, providing yet another reason to encourage having high expectations for all. Plus, there's scant evidence that unfounded optimism is harmful.

³⁵ This is the same identification strategy used—and cross validated by a structural measurement error model—by Papageorge, Gershenson, and Kang (2020).

³⁶ Specifically, we measure sectoral gaps using the estimated coefficients on charter and private school indicators from regressions that control (or don't control) for a host of student and school covariates, including school size (enrollment), the percentage of students eligible for free or reduced-price lunch, mother's educational attainment, family income, language spoken at home, and standardized math score from ninth grade. This argument is similar in spirit to bounding approaches to selection on unobservables—e.g., the following: Joseph G. Altonji, Todd E. Elder, and Christopher R. Taber, "Selection on Observed and Unobserved Variables: Assessing the Effectiveness of Catholic Schools," *Journal of Political Economy* 113, no. 1 (2005): 151–84, doi:10.1086/426036.

³⁷ Papageorge, Gershenson, and Kang, "Teacher Expectations Matter."

³⁸ Ibid.

³⁹ The figure of 45 percent is likely higher than in reality due to attrition and missing data in the sample.

⁴⁰ Seth Gershenson, *Student-Teacher Race Match in Charter and Traditional Public Schools* (Washington, D.C.: Thomas B. Fordham Institute, 2019), <https://fordhaminstitute.org/national/research/student-teacher-race-match-charter-and-traditional-public-schools>.

⁴¹ Seth Gershenson, Stephen B. Holt, and Nicholas W. Papageorge, "Who believes in me? The effect of student-teacher demographic match on teacher expectations," *Economics of Education Review* 52 (2016): 209–24, doi:10.1016/j.econedurev.2016.03.002.

⁴² Will Dobbie and Roland G. Fryer, Jr., "The Impact of Voluntary Youth Service on Future Outcomes: Evidence from Teach For America," *The B.E. Journal of Economic Analysis & Policy* 15, no. 3 (2015): 1031–65, doi:10.1515/bejeap-2014-0187.

⁴³ A. Colin Cameron, Jonah B. Gelbach, and Douglas L. Miller, "Robust Inference With Multiway Clustering," *Journal of Business & Economic Statistics* 29, no. 2 (2011): 238–49, <https://www.jstor.org/stable/25800796>.