Indiana Charter School Performance During and After the COVID-19 Pandemic

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INTRODUCTION

It is well documented that students experienced learning loss during the COVID-19 pandemic (Fahle et al, 2023; Goldhaber et al., 2023; Relyea et al., 2022; Sass and Goldring, 2022). At the same time, enrollment patterns shifted substantially, including notable growth in the charter school sector (Dee, 2023; Jacobs & Veney, 2022). Despite this growth, little is known about the academic performance of students who attended charter schools during this period. Because charter schools have more autonomy than traditional public schools (TPSs), they may have been in a better position to pivot during the pandemic to serve students. On the flipside, charter schools may not have had the staff capacity to easily apply for federal support.

In this research brief, we examine math and English/language arts (ELA) achievement of students attending Indiana charter schools during and after the pandemic. This brief is the second in a series of a larger study examining charter school performance in Tennessee and Indiana—two states that have experienced significant growth in the charter sector in recent decades. In a previous research brief, we reported findings from an evaluation of Tennessee charter schools, which showed no difference in student performance between charter and TPSs during the pandemic, but a substantial advantage for students attending charter schools after the pandemic. Building on these findings, this research brief examines the performance of Indiana charter schools and compares their outcomes

KEY FINDINGS

1. **During the pandemic, Indiana charter students were on par with their traditional public school (TPS) peers in terms of math test score growth but outperformed TPS students in English/language arts (ELA). In the years following the pandemic, charter school students experienced stronger achievement growth than TPS students in both math and ELA.**

2. **The test score advantage for charter school students in the years following the pandemic is moderately large and is similar in magnitude to an evaluation of Tennessee charter schools conducted by our research team.**

3. **In examining student achievement effects by subpopulations, we found that Black and Hispanic students, lower-income students, and students who were average- or low-performing before the pandemic had higher achievement growth in charter schools relative to TPSs across most academic years, both during and after the pandemic. We did not find a similar advantage for White or the highest performing students.**

4. **In examining student absenteeism, we found no statistically significant difference in chronic absenteeism rates between charter and TPS students during or after the pandemic.**

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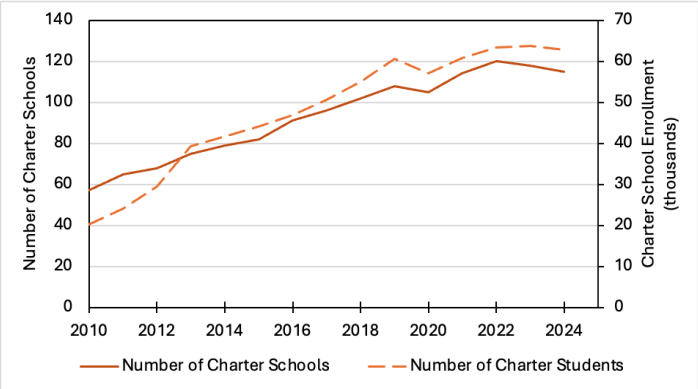
with those of Tennessee charter schools. We conclude by disaggregating the Indiana achievement impacts by student subgroups and examine rates of absenteeism and instructional modality as possible explanations for any differences in the main effects between charter and TPS sectors.

INDIANA CHARTER SCHOOLS

In 2001, Indiana's charter legislation was signed into law with the first charter school established in 2002. As of the 2023-24 school year, there were 115 charter schools serving 62,829 students in grades K-12 in the state of Indiana. Figure 1 shows the growth of charter schools and student enrollment over time.[1] As the figure suggests, there was steady growth in the number of charter schools and students just prior to the pandemic. However, in the 2018-19 school year, there was a small dip both in the number of charter schools and charter enrollment, which rebounded during the pandemic and has since been more variable.

Figure 1: Number of Charter Schools and Enrollment Trends Over Time



Source: Indiana Department of Education Longitudinal Data

Prior to the pandemic, various studies had evaluated Indiana charter school performance including a national study by CREDO, which disaggregated results by states and found no effects for Indiana's charter schools (Raymond et al., 2023). In an analysis examining Indianapolis' charter, magnet, and private schools, Berends and Waddington (2018) also found no effects for charter schools. More recent studies also found no effect on student achievement (Fitzpatrick et al., 2020) or high school graduation (Ferrare et al., 2025) among Indiana's brick-and-mortar charters, but both studies found large, negative effects associated with virtual charter schools. However, none of these studies examined the performance of charter schools during or after the pandemic. We build on this research by examining the performance of Indiana's charter schools both during and after the pandemic.

DATA

For the analysis, we used statewide, longitudinal student-level data provided by the Indiana Department of Education. The data spans from the 2017-18 school year through the 2023-24 school year and includes a unique student identifier with the school(s) students attended, the respective grades, math and ELA test scores (annually in grades 3-8), as well as student characteristics including gender, race/ethnicity, special education, English Language Learner (ELL), and free and reduced-price lunch status. The test scores are converted into standardized units within each subject, grade, and year, which allows us to have a common metric across years and grades.[2]

RESEARCH APPROACH

For our analysis, we estimate the performance of students attending charter schools relative to students attending TPSs for the four academic years of 2020-21, 2021-22, 2022-23, and 2023-24. For this study, we refer to the 2020-21 year as "during the pandemic" and the 2021-22 through 2023-24 academic years as "post-

1 This figure shows the growth in charter schools and students across all charters, including virtual schools. However, for reasons described in this brief, virtual schools were excluded from our analysis.

[2] Like other states, Indiana did not administer a statewide test in the 2019-20 academic year because of pandemic-related school closures in the spring of 2020.

pandemic." Only charter and public schools that were in operation for the duration of this time period, including the year prior to the pandemic (2018-19) were considered for inclusion in our analytical sample.[3] We also only included students who remained in the charter or the public sector for the duration of this timeframe in our analyses.

To account for differences in student populations attending charter schools relative to TPSs, we use regression models in combination with inverse probability weighting based on propensity score matching estimates of the likelihood of TPS students attending charter schools. In doing so, the analysis gives greater weight to students in the comparison group who most closely resemble charter school students based on student demographic characteristics and baseline test scores. In addition, we compare charter students to TPS students in the same county and same grade to improve the comparability within the analysis.

Important to this approach is a strong control for baseline performance. In our case, we include individual students' baseline test scores and their respective schools' average test scores in the baseline year. In estimating for the 2020-21 school year, we use 2018-19 math and English test scores as the baseline test scores. For the 2021-22 through 2023-24 school years, we use math and English test scores in the 2020-21 school year as the baseline test scores. Given these lags, we include different grades for the different years of analysis. We include students in grades 5-8 in the 2020-21 and 2022-23 analyses, students in grades 4-8 in the 2021-22 analysis, and grades 6-8 in 2023-24 analysis. More details of the data and analytic approach can be found in the technical appendix.

RESULTS

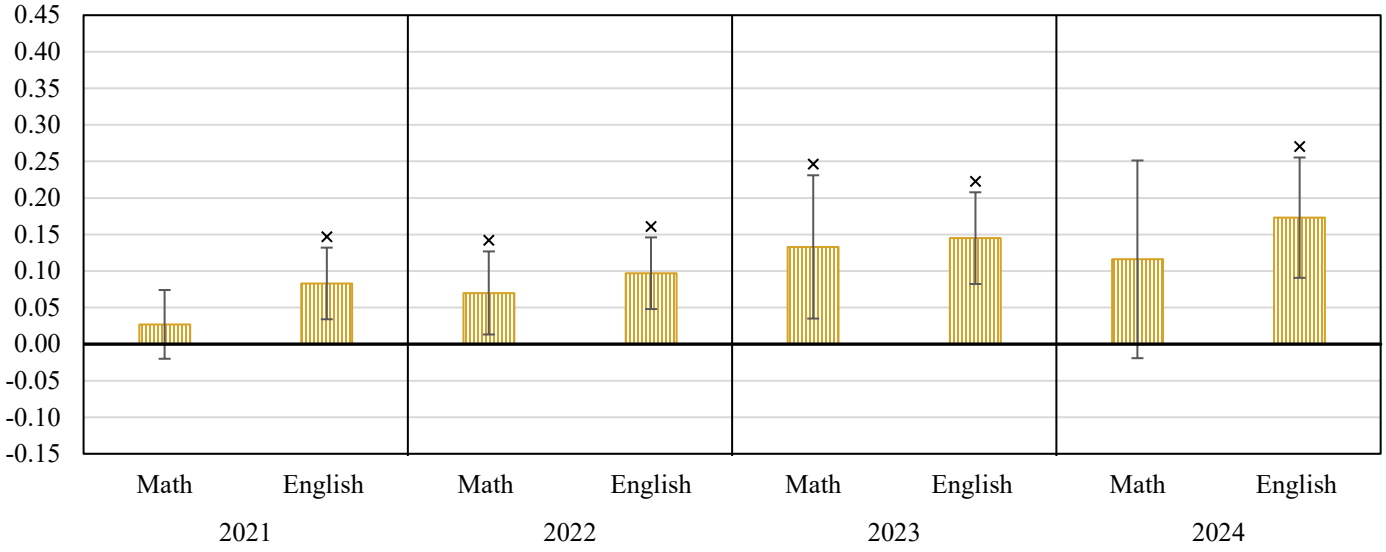
In Figure 2, we display the main results of the achievement analysis. The first set of bars shows the performance of students in charter schools relative to similar TPS students for the 2020-21 school year, which we define as during the pandemic. The second, third, and fourth set of bars shows the same comparisons for the 2021-22, 2022-23, and 2023-24 school years, which we define as post-pandemic.

The figure suggests that charter student achievement was mixed during the pandemic period of the 2020-21 school year, as charter students performed on par with similar TPS students in math while outperforming them in ELA with a modest effect size of 0.09 standard deviations. In the post-pandemic periods, charter school students outperformed TPS students in ELA across all years. In math, charter students also outperformed TPS students in all years except 2023-24, when the effect was not significant despite a similar effect size (about 0.12 standard deviations) to the previous post-pandemic year. The post-pandemic effect sizes are modest in size in 2021-22 school year but reach magnitudes that can be considered moderate to large in the 2022-23 and 2023-24 school years.

As a source of comparison, in Figure 3 we show the results of both Tennessee and Indiana for the common set of years available in the analyses of both states. Using the same research design for evaluating test scores in Tennessee, we found no effects during the COVID period but found positive effects of similar magnitudes across the post-pandemic periods, which suggests that students in charter schools experienced greater learning gains in math and ELA in post-pandemic periods across both states.

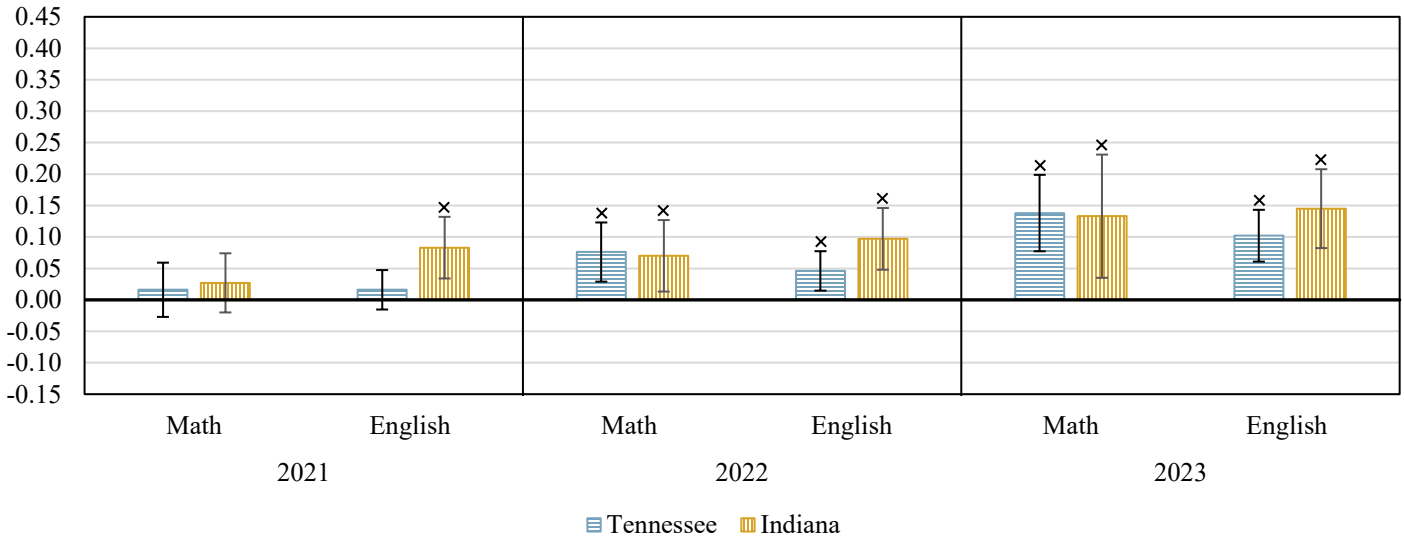
[3] We did not include virtual charters in our analysis. While virtual charter schools have historically enrolled about 15% of the charter school population in Indiana, several virtual schools either closed or opened during our analytical period. Only two remained in existence long enough to have sufficient longitudinal data for analysis, and both schools have the same address and principal, each of which covers different grade levels.

Figure 2: Student Achievement Performance of Charter School Students Relative to Traditional Public School Students During and Post-Pandemic



Notes:95% confidence intervals are displayed for each estimate. We indicate a statistically significant effect with an ×

Figure 3: Comparison of Results for Indiana and Tennessee Charter Schools



Notes: 95% confidence intervals are displayed for each estimate. We indicate a statistically significant effect with an ×. It should be noted that the Tennessee analysis includes charter high schools, while Indiana does not as there are no test score data for high school grades in Indiana.

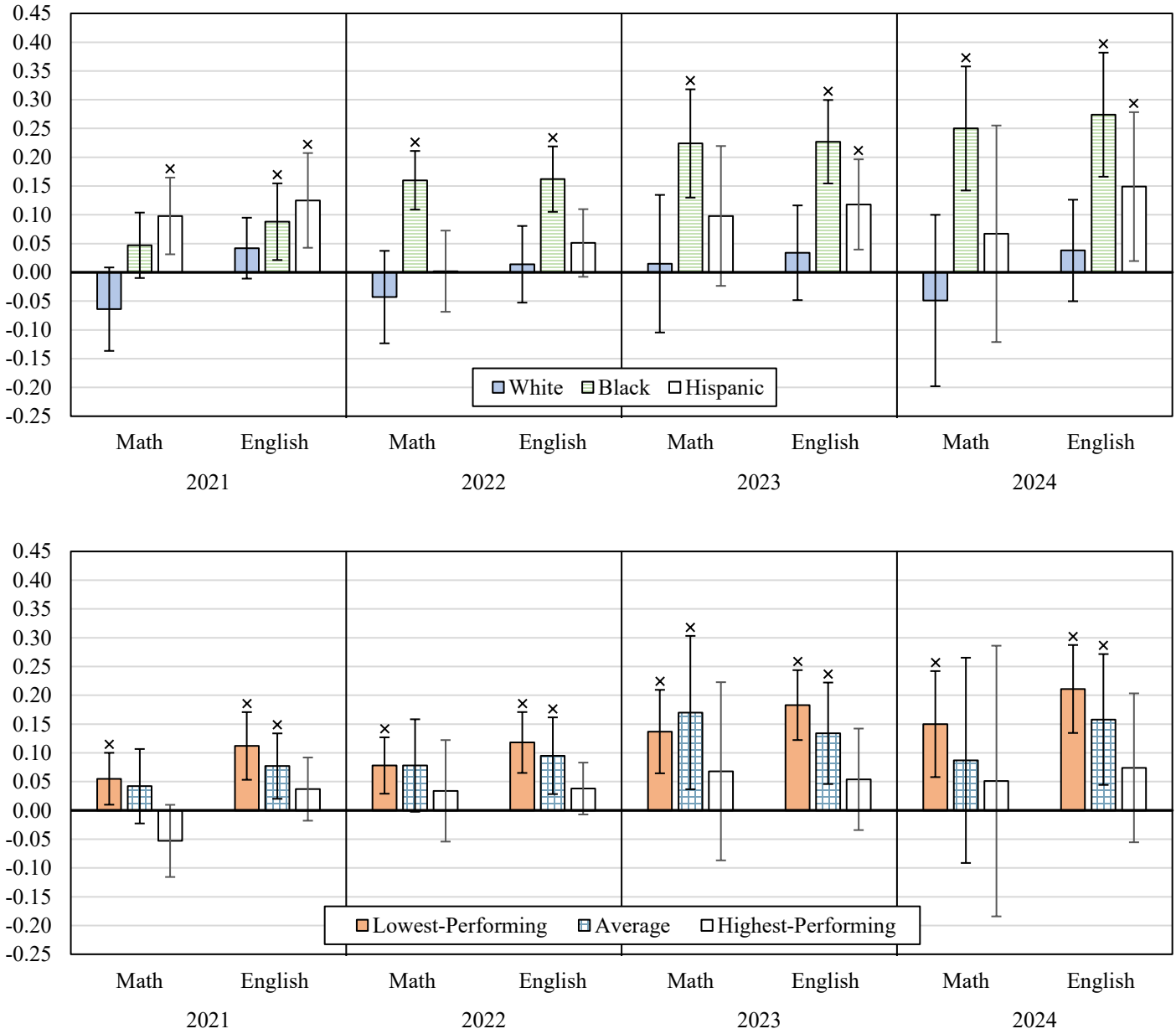
RESULTS BY SUBGROUPS

In addition to understanding the overall impact of charter schools during and after the pandemic, it is also important to examine the performance of student subgroups. To do this, we use the same research design above but compare test score outcomes of subpopulations of students in charter schools with TPS students with the same characteristics.[4] For these analyses, we ran separate regressions for math and

[4] More details of the analysis can be found in the technical appendix.

ELA for each individual characteristic. In Figure 4, we show the results by race/ethnicity and prior student achievement (measured at baseline). For baseline achievement, we group students into terciles of top, middle, and low achievement levels. In general, the results suggest that Black, Hispanic, the lowest- and average-performing students had higher achievement in charter schools relative to their TPS peers across most academic years, both during and after the pandemic, suggesting that the positive effects observed in the main analysis are largely driven by these students. White and the highest-performing charter students performed comparably to their TPS counterparts. Although not shown in the figure, we also find stronger achievement gains for economically disadvantaged students in charter schools relative to the same population in TPSs. The full results can be found in Appendix Table A2, which also highlights positive charter effects for ELL, special education, and both male and female students.

Figure 4: Performance of Charter Students by Subpopulations



Notes:95% confidence intervals are displayed for each estimate. We indicate a statistically significant effect with an ×

ABSENTEEISM

Since the COVID-19 pandemic, one of the most significant challenges schools have faced is increased absenteeism (Dee, 2024; Malkus, 2024; Fuller et al., 2024; Diliberti et al., 2025; Swiderski et al., 2025). According to the U.S. Department of Education, chronic absenteeism (commonly defined as missing 10% or more of school days within a year[5]) reached nearly 31% in the 2021-2022 school year dropping slightly to 28% in the 2022-23 school year.[6] Given these high rates, any difference in the level of absenteeism between charter and TPSs could be at least a partial explanation for the observed student achievement effects in charter schools. Therefore, we employed the same research design as the student achievement analysis to examine chronic absenteeism.

For the outcomes of the analysis, we created two "chronically absent" variables—one for unexcused absences and another for total days absent. The rationale for a focus on chronically absent students is that many districts and states have adopted policies to address chronically absent students. For both measures of absenteeism, we did not find a statistically significant difference between charter and TPSs, suggesting that absenteeism is unlikely to be a possible explanation for the difference in student achievement effects for charter schools.

INSTRUCTIONAL MODALITY

Another possible explanation for the charter school advantage is the choice of instructional modality. Charter schools had less in-person instructional time in the 2020-21 school year than TPSs.[7] However, controlling for in-person instructional time only slightly affects our results with a 4 percent difference in our estimates, on average. Therefore, like absenteeism, instructional modality does not appear to explain the positive charter school student achievement results.

CONCLUSIONS

In this research brief, we examined the performance and attendance of charter school students in Indiana overall as well as by student subgroups. While the performance of charter school students during the pandemic was mixed, charter school students outperformed TPS students in nearly all years and subjects in the post-pandemic periods and were similar to the results we found in Tennessee, as reported in a prior research brief. We also found strong performance across all periods for minority students and students with low baseline achievement levels, which suggests that the overall results are at least partially driven by the strong relative performance of historically underserved students attending charter schools. Despite the differences in student achievement, we observed no differences between charters and TPS on chronic absenteeism, which makes it an unlikely explanation for the strong performance of charter schools.

Given that students generally experienced learning loss during the pandemic, these results suggest that lessons can be learned from Indiana's charter sector on how to best approach ongoing recovery for all public schools. Our findings suggest that it is important to conduct additional research to explore the specific practices of charter schools, which we will present in a future research brief.

[5] We use this measure in our analyses, which is consistent with the literature and the U.S. Department of Education: https://www.ed.gov/teaching-and-administration/supporting-students/chronic-absenteeism#:~:text=Chronic%20absenteeism%20%E2%80%94%20defined%20as%20students,absenteeism%20from%20coast%20to%20coast

[6] https://www.ed.gov/teaching-and-administration/supporting-students/chronic-absenteeism

[7] For instance, based on data publicly available from the state of Indiana, during the 2020-21 school year, 18.6 percent of charter students attended 90 percent or more of their instructional time in-person compared to 35.4 percent for TPS students.

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TECHNICAL APPENDIX

For our analysis, we made a number of data restriction decisions to improve the comparability of charter students to TPS students. First, to ensure that results were not skewed by the performance of opening or closing schools, our sample only includes schools that were open for all academic years included in the analysis (2017-18[8] through 2022-23). At the student level, some students may have made enrollment decisions during and after the pandemic based on school performance or policies. To avoid confounding the performance of charter schools with effects of the pandemic (through student transfer decisions), we excluded all students who made non-structural changes between schools (i.e., switching schools when the switch is not required as a result of completing the highest grade in the school) or switched between the charter and TPS sector after the start of the pandemic. Students in magnet, virtual, alternative, and optional enrollment schools were also excluded.[9]

Amongst the students included in our sample, we calculated propensity scores for attending a charter school and applied inverse probability weighting to increase the comparability of TPS and charter students (Imbens & Woolridge, 2009; Willet & Murnane, 2010; McEachin et al., 2020). Specifically, we assigned weights to students based on their probability of attending a charter school as opposed to a TPS.

These probabilities were obtained through the estimation of the following logistic regression:

$$Charter_{it} = \beta_0 + \beta_1 math_{it\text{-}n} + \beta_2 English_{it\text{-}n} + \beta_3 absenteeism_{it\text{-}n} + \beta_4 X_i + \varepsilon_i \quad \text{(Equation 1)}$$

This model includes the treatment as the outcome (i.e., a student attending a charter school) and student characteristics that predict attending a charter school as covariates. The covariates include students' baseline standardized test scores in math and English as well as baseline measures of absenteeism. In estimating the results for the 2020-21 school year, we use 2018-19 outcome measures of test scores as well as absenteeism measures as the baseline. For the 2021-22 through 2023-24 school years, we use the 2020-21 school year as the baseline measures. Given these lags, we include different grades for the different years of analysis. We include students in grades 5-8 in the 2020-21 and 2022-23 analyses, students in grades 4-8 in the 2021-22 analysis, and grades 6-8 in 2023-24 analysis. In estimating for the 2020-21 school year, we use 2018-19 as the baseline for the outcome measures of test scores and absenteeism measures. For the 2021-22 through 202-24 school years, we use the 2020-21 school year as the baseline measures of the outcomes.

In addition to prior achievement, the model includes a vector of student characteristics (X_i) including students' gender, race/ethnicity, economic disadvantage, special education status, English as a second language status, grade, and county. Propensity score estimation was limited to students who had complete data on all covariates, including baseline test scores. The predicted values from the above model returned propensity scores that indicated the probability that a student would attend a charter school. These propensity scores ($P(X_i)$) were used in the following equation to estimate inverse probability weights for TPS students:

$$w_i = \frac{P(X_i)}{1 - P(X_i)}$$

This estimation procedure gives more weight to TPS students who have larger propensity scores, or in other words, look more like charter school students. Along with the weights for TPS students, all charter school students were assigned a weight equal to 1.

To ensure the reliability of our estimates, we employed a trimming procedure that excludes students, both TPS and charter, who have an estimated propensity score greater than 0.9. This cut-off is consistent with the upper bound from Crump et al.'s (2009) rule of thumb for trimming. We additionally tested our analysis with trimming at the recommended lower-bound of 0.1 and found that the results were not sensitive to the specification change.

[8] While our main analyses do not include outcomes from 2017-18, we use this sample criteria to ensure that we are not capturing charter school effects within their first year, in which lower performance is expected.

[9] Results are robust to the inclusion of these students and schools.

While propensity score approaches assume that weighting on these observable characteristics makes the outcomes independent of treatment status, it is notable that unobservable characteristics may exist that correlate with both student outcomes and charter school enrollment. To the extent that these unobservable characteristics differentiate charter and TPS students, the effect estimates based on propensity scores will be biased. While it is not possible to assess differences among unobservable characteristics, we conducted balance checks to ensure that the treatment group and the comparison group were similar on observable characteristics. Appendix Table A1 shows student characteristics before and after weighting for the statewide sample included in the student achievement analysis of the COVID period. In the table, values in bold in the unweighted sample are statistically different between the charter and TPS populations. As designed, the weighting approach significantly reduced all observable differences in student characteristics among the charter school and comparison TPS samples. We conducted a similar comparison for the achievement analysis in the post COVID period as well as COVID and post-COVID periods for the absenteeism analysis. For all comparisons, we found good balance on observable characteristics.[10]

Table A1. Baseline Covariate Balance of Charter and TPS Students for Statewide During-COVID Student Achievement Analysis

Characteristic	***Unweighted Sample***		***Math – Weighted Analytical Sample***		***ELA – Weighted Analytical Sample***	
	Charter	*TPS*	*Charter*	*TPS*	*Charter*	*TPS*
Female	49.2%	49.1%	48.1%	48.2%	48.1%	48.2%
Race						
Hispanic	19.8%	16.6%	21.5%	20.9%	21.4%	20.9%
Black	**46.1%**	**18.7%**	48.6%	47.3%	48.6%	47.3%
Asian	1.7%	3.7%	1.5%	1.5%	1.5%	1.5%
Economically Disadvantaged	**73.5%**	**53.3%**	77.7%	77.0%	77.7%	77.0%
Special Education	15.8%	15.6%	17.9%	17.9%	17.9%	17.9%
English Language Learner	11.9%	9.7%	11.6%	11.4%	11.7%	11.4%
Baseline Math Score	**-0.43**	**-0.01**	-0.43	-0.42	-0.43	-0.42
Baseline English Score	**-0.39**	**-0.02**	-0.40	-0.39	-0.40	-0.39
Baseline Unexcused Absences	**6.01**	**3.07**	5.24	4.89	5.25	4.90
Baseline Total Absences	**9.39**	**7.06**	8.31	7.94	8.31	7.94
>0 to <5% Unexcused Absences	51.2%	46.8%	53.8%	53.4%	53.6%	53.4%
5% to <10% Unexcused Absences	**16.8%**	**7.7%**	15.0%	14.9%	15.0%	14.9%
>=10% Unexcused Absences	**7.5%**	**2.8%**	5.3%	5.1%	5.4%	5.2%

Notes: Baseline characteristics from 2018-19 are displayed for the respective student pool in the "During-COVID" (2020-21) analysis. Statistically significant differences at the 5% level are bolded. Results for binary variables are represented as a percentage of the sample with the given characteristics. Results for continuous variables represent mean values.

[10] Tables of the balance checks for post-pandemic periods are available upon request.

Table A2. Full Subgroup Results

	COVID (2021)		Post-COVID (2022)		Post-COVID (2023)		Post-COVID (2024)	
	Math	**ELA**	**Math**	**ELA**	**Math**	**ELA**	**Math**	**ELA**
Black	0.047	0.088**	0.160***	0.162***	0.224***	0.227***	0.250***	0.274***
	(0.029)	(0.034)	(0.026)	(0.029)	(0.048)	(0.037)	(0.055)	(0.055)
Hispanic	0.098**	0.125**	0.002	0.051	0.098	0.118**	0.067	0.149*
	(0.034)	(0.042)	(0.036)	(0.030)	(0.062)	(0.040)	(0.096)	(0.066)
White	-0.064	0.042	-0.043	0.014	0.015	0.034	-0.049	0.038
	(0.037)	(0.027)	(0.041)	(0.034)	(0.061)	(0.042)	(0.076)	(0.045)
N	95912	95974	103333	103396	75101	75140	46880	46933
ESL	0.060	0.089	0.018	0.067	0.127*	0.133**	0.113	0.180**
	(0.049)	(0.058)	(0.039)	(0.038)	(0.060)	(0.040)	(0.079)	(0.058)
non-ESL	0.023	0.082*	0.080**	0.102***	0.135**	0.147***	0.117	0.171***
	(0.024)	(0.025)	(0.031)	(0.026)	((0.051)	(0.034)	(0.070)	(0.044)
N	95912	95974	103333	103396	75101	75140	46880	46933
Special Ed	0.050	0.104**	0.004	0.075*	0.039	0.116***	0.048	0.152***
	(0.027)	(0.032)	(0.025)	(0.031)	(0.048)	(0.029)	(0.059)	(0.043)
Non-Spec Ed	0.022	0.078**	0.085**	0.101***	0.154**	0.152***	0.132	0.178***
	(0.026)	(0.026)	(0.032)	(0.027)	(0.053)	(0.037)	(0.074)	(0.047)
N	95912	95974	103333	103396	75101	75140	46880	46933
Male	0.040	0.099***	0.086**	0.116***	0.146**	0.165***	0.127	0.209***
	(0.025)	(0.026)	(0.031)	(0.026)	(0.050)	(0.031)	(0.065)	(0.039)
Female	0.013	0.065*	0.054	0.076**	0.120*	0.123***	0.105	0.133**
	(0.025)	(0.027)	(0.029)	(0.027)	(0.053)	(0.037)	(0.075)	(0.051)
N	95912	95974	103333	103396	75101	75140	46880	46933
Econ Disadv	0.045	0.097***	0.089**	0.107***	0.164**	0.160***	0.151*	0.190***
	(0.025)	(0.028)	(0.029)	(0.024)	(0.051)	(0.034)	(0.074)	(0.048)
Non Econ	-0.037	0.032	0.010	0.065*	0.034	0.097**	0.000	0.115**
Disadv	(0.032)	(0.025)	(0.035)	(0.032)	(0.051)	(0.035)	(0.060)	(0.038)
N	95912	95974	103333	103396	75101	75140	46880	46933
Lowest	0.055*	0.112***	0.078**	0.118***	0.137***	0.183***	0.150**	0.211***
Tercile	(0.023)	(0.030)	(0.025)	(0.027)	(0.037)	(0.031)	(0.047)	(0.039)
Middle	0.042	0.077**	0.078	0.095**	0.170*	0.134**	0.087	0.158**
Tercile	(0.033)	(0.029)	(0.041)	(0.034)	(0.068)	(0.045)	(0.091)	(0.058)
Top	-0.053	0.037	0.034	0.038	0.068	0.054	0.051	0.074
Tercile	(0.032)	(0.028)	(0.045)	(0.023)	(0.079)	(0.045)	(0.120)	(0.066)
N	95912	95974	103333	103396	75101	75140	46880	46933

Notes: All models include grade and county fixed effects. Standard errors are clustered at the school-level and reported in parentheses.
* for p<0.05, ** for p<0.01, and *** for p<0.001