Student Achievement in Rhode Island Charter Schools: A Cross-Sectional Analysis

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Abstract:

Using standardized test results from the school year 2018-19 this study compares the performance of 3rd through 8th graders in Rhode Island charter schools to their peers in traditional public schools (TPSs). This study also uses OLS techniques to test if Rhode Island charter schools help to bridge the achievement gap between minority (black and Hispanic) students and white students. The results show that in approximately ¾ of comparable instances, Rhode Island charter schools outperform TPSs on both English and math standardized tests. Additionally, it was found that Hispanic students attending a charter school are predicted to score higher on both English and math standardized tests than Hispanic students attending TPSs, ceteris paribus. Black students attending charter schools were also predicted to score higher on English standardized tests but lower on math standardized tests than black students attending TPSs, ceteris paribus.

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1.0 INTRODUCTION

Charter schools – public schools with increased autonomy over curriculum and staffing procedures – first came about in the 1990's (Epple, 2016). The purpose of the charter school movement is to produce lab schools where various teaching methods and curriculums can be tested under real-world conditions; aspects of successful charter schools can then be adopted by the public school system as a whole. On the other hand, unsuccessful charter schools need to either adapt their teaching methods or else have their charters revoked (Epple, 2016).

Since its conception, the charter school movement has been a magnet for controversy. As the economist Thomas Sowell writes in his book *Charter Schools and their Enemies*:

> Charter schools are often caught in [the] ever-shifting political cross-currents. Favorable political climates for charter schools can turn unfavorable in the wake of just one election – and when it might turn back again is unknowable. In short, charter schools are politically embattled, and even their victories are subject to new attacks (Sowell, 2019, p. 56).

Advocates for charter schools say that they induce a healthy amount of competition into the education system and provide an affordable alternative to students who would otherwise be trapped in failing public schools (Epple, 2016; Horn, 2000; Sowell, 2019). Opponents of charter schools decry that such schools siphon funds away from traditional public schools (TPSs), thus reducing the quality of education for the students left behind. This is because charter schools are often funded through the tax dollars of the students who attend them (tax dollars that would likely have gone to the local public school had the charter not existed) (Epple, 2016; Horn, 2000; Sowell, 2019).

Perhaps the most important question to arise through all the controversy surrounding charters, at least from a parents' perspective, is: *Are charter schools a viable alternative to traditional public schools?* Numerous studies have attempted to answer this question with mixed results. For instance, both Bifulco & Ladd (2006) and Sass (2006) found that students attending charter schools exhibited worse year-to-year achievement gains on standardized tests than their TPS peers, while Greene, Forster & Winters (2006) and Angrist, Pathak and Walters (2013) found the opposite effect.

The lack of consensus in the literature over the scholastic performance of charter schools relative to TPS is likely due to the variability within the public school system itself. As

previously mentioned, charter schools are not a monolith. The purpose of the charter school movement is to test out various teaching styles and curriculums; it is inevitable that some of these methods be more successful than others. Additionally, there are factors such as teacher quality and average level of parental education in a district that can impact student achievement and educational quality between charters and TPSs alike. Thus, any study which seeks to provide a relevant answer to a parents' question as to whether to send their child to a local charter school must compare said charter only to the TPS with which it competes. Comparing charter schools as a block to TPSs as a block may provide insight to academics on an abstract level, but such analyses provide no help to parents who simply want to know whether a specific charter school is a better option for their child than their local TPS.

The purpose of this study is to answer that question for Rhode Island parents, in so far as student achievement at a particular school determines school choice. There are, of course reasons other than test scores why a parent may choose one school over another, such as special needs services offered by a school, foreign language support or keeping a child's friend group intact; however, these reasons are not the purview of this study. Specifically, this study looks to see if Rhode Island charter school students perform better on standardized tests than students attending TPS servicing the same districts. Furthermore, this study tests whether Rhode Island charter schools help to bridge the achievement gap between minority (black and Hispanic) and white students. As far as I know, this is the only study that attempts to answer these questions for Rhode Island parents.

The rest of the paper is organized as follows: Section 2 gives a brief literature review. Sections 3 and 4 outlines some trends in the data. Data and estimation methodology are discussed in section 5. Finally, section 6 presents and discusses the empirical results. This is followed by a conclusion in section 7.

2.0 LITERATURE REVIEW

There has been surprisingly little research to date comparing student performance in charter schools and TPSs. This is a shame given the intended purpose of charter schools as laboratories to test the efficacy of novel teaching methods. The lack of academic interest in the topic is likely due, at least in part, to the political controversies surrounding the charter school

movement. As for the research that does exist, the results are varied, although several interesting patterns do arise.

One such pattern is that studies which compare charter schools as a block, to TPSs as a block, are more likely to find that TPSs outperform charters on metrics of student achievement; however, studies that match competing charters and TPSs are more likely to find the opposite effect. To illustrate, both Bifulco & Ladd (2006) and Sass (2006) used panel data to track the standardized test results for large numbers of North Carolina and Florida students, respectively, overtime. Both studies control for student demographics, but not geography (i.e. do not specifically match charter schools with nearby TPSs). Although, it should be noted that the sample of students from the Bifulco & Ladd (2006) study only contained TPS students from TPSs located near the charter schools in the sample. Both Bifulco & Ladd (2006) and Sass (2006) find that, overall charter school students exhibit worse year-to-year achievement gains on standardized tests than demographically similar TPSs students.

On the other hand, studies which deliberately match charter schools with nearby TPSs find that in a majority of instances charter school students outperform TPS students on metrics of student achievement. For example, Greene et al. (2006), conducted one of the few multi-state analyses in the field, matching charter schools to TPSs in eleven states (Arizona, California, Florida, Texas, Michigan, Ohio, Colorado, North Carolina, Minnesota, Pennsylvania and New Jersey). Importantly, Greene et al. (2006) excludes from the sample charter schools which target specific populations, namely "at-risk students, disabled students and juvenile delinquents," since such populations are likely to produce lower-than-average student achievement metrics. Ultimately, Greene et al. (2006) found that, on average, students who attended charter schools scored 0.04 standard deviations higher on their state's standardized reading test than nearby TPS students and 0.08 standard deviations higher on their state's standardized math test. The highest positive results were found in Florida and Texas. Interestingly, inconclusive results were found for North Carolina, somewhat confirming the findings of Bifulco & Ladd (2006).

Similarly, Sowell (2019) used a paired analysis to compare the performance of New York City charter schools and TPS. In order to be included in the sample for Sowell's study, charter and TPS pairs needed to (a) share at least one grade level; (b) have a majority black and Hispanic student body; and (c) be located in the same building, making Sowell's study once of the most controlled analyses of charter school performance to date. Sowell found that a majority of charter

school students achieved the proficiency level for the New York State English exam in 65% of comparable grade levels, compared to 14% of comparable grade levels for TPS. For mathematics, a majority of charter school students achieved the proficiency level for the exam in 68% of comparable grade levels; for TPSs, that number was just 10%.

Another interesting pattern to arise from the literature is that charter schools tend to provide outsized benefit to minority (black and Hispanic) students, when benefits are indeed detected. For example, Angrist et al. (2013) finds that urban charter schools in Massachusetts, which tend to service poor and minority communities, produce higher achievement gains in English and substantially higher achievement gains in mathematics when compared to a baseline of urban TPSs; black and Hispanic students specifically experienced some of the highest achievement gains over their TPS peers. Conversely, Angrist et al. (2013) finds that non-urban charter schools which, on average, service richer populations with a smaller minority presence, produce almost no achievement gains over a baseline of non-urban TPSs.

Likewise, an analysis of New York schools conducted by the Wall Street Journal in April of 2019 finds that charter schools in New York City close the achievement gap between minority and white students. The Wall Street Journal reports:

> At city charters, 57% of black students and 54% of Hispanic students pass ELA [English Language Arts], compared with 52% of white students statewide. It's the same in math, with 59% of black students and 57% of Hispanics at city charters passing, against 54% of white students statewide.

Finally, the Sowell (2019) study, while it does not specifically compare minority students to white students, does find that students attending majority minority charter schools in New York City preform substantially better than demographically similar TPSs.

3.0 Charter Schools Vs. TPS

In the sample of Rhode Island schools used for this study there were 3598 comparable (i.e. matching) grade-levels between charters and TPSs on the RICAS English exam. Out of those 3598 comparisons, a charter school scored higher (i.e. had a larger percentage of students meet/exceed expectations on the exam) than a TPS 1899 times, or 52.78% of the time. When a hypothesis test of proportions was used to compare the performance of charter and TPSs, it was

found that charter schools scored significantly higher (alpha = 0.05) than TPSs in 1168 comparable grade-levels, or 32.46% of the time (See Figure 1).

On the RICAS Math exam there were 3448 comparable grade-levels. Out of those comparisons, a charter schools scored better than a TPS 1904 times or 55.22% of the time. A charter school scored significantly higher (alpha = 0.05) than a TPS 1205 times on the math exam, or in 34.95% of comparable instances (See Figure 1).

These overall comparisons show that Rhode Island charter schools perform slightly better on both the English and math RICAS exams than TPSs serving the same districts; although, as mentioned in the introduction, one should take overall comparisons of charters and TPSs with a grain of salt, due to the many factors which impact student performance on a school-to-school basis.

Figure 1: Overall Breakdown of Comparable Grade-Levels
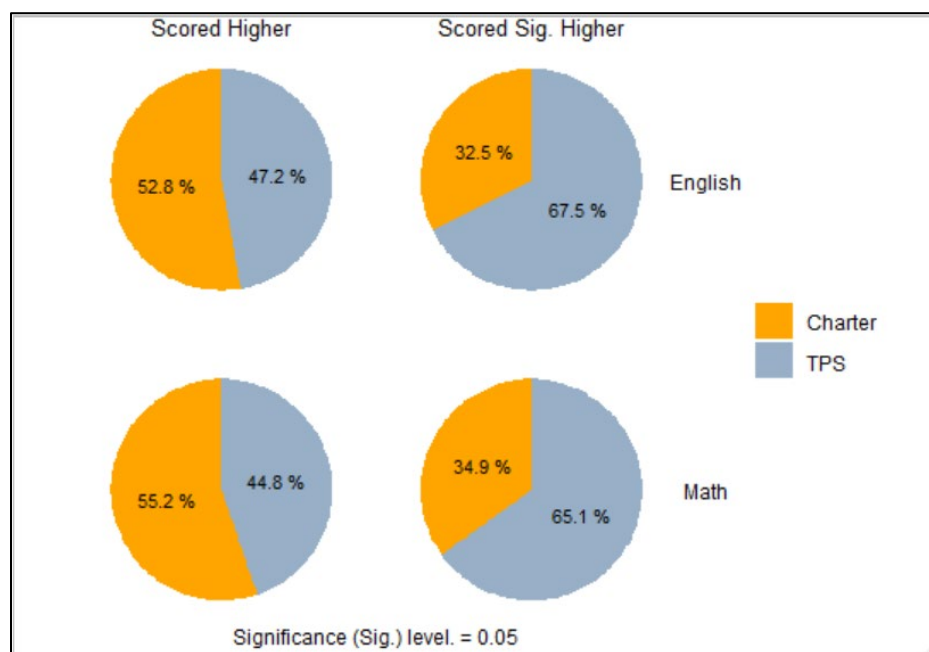
Source: Author's calculations

4.0 Minority Student Achievement Gap

It was found that for both the English and math test results there existed strong negative correlations with the percent of black and Hispanic students in a school, and strong positive correlations with the percent of white students in a school, which indicates the presence of an achievement gap (see Tables 1a and 1b).

Scatter plots comparing the percentage of students meeting/exceeding expectations to the percentage of black and Hispanic students in the school show that the average charter school has a larger percentage of black and Hispanic students than the average TPS in the sample (See Figures 2a-2d). This is consistent with the literature, which notes that charter schools are more likely to serve poor and minority communities (Epple, 2016).

When one compares the percentage of students meeting/exceeding expectations to the percent of black students in the school, the test results for both the English and math RICAS exams for charter schools appear to follow the same downward trend as the test results for TPSs, indicating that charter schools have no major impact on the performance of black students in Rhode Island. On the other hand, when test results are compared to the percentage of Hispanic students in the school, one can see that charter schools perform considerably higher, on both the English and math exams than TPSs with a comparable percentage of Hispanic students. This indicates that charter schools might help close the achievement gap for Hispanic students in Rhode Island.

Table 1a: Correlations with English RICAS Scores	
	Score3plus4
Score3plus4	1.000
FTE	-0.278
Studteach_ratio	-0.177
Spendperpupil	0.013
Med_income	0.676
HS_or_less	-0.697
Col_plus	0.676
Married	0.647
PerBlack	-0.588
PerHispanic	-0.626
PerWhite	0.696
PerAsian	-0.011
PerOther	-0.211

Table 1a: Correlations with Math RICAS Scores	
	Score3plus4
Score3plus4	1.000
FTE	-0.237
Studteach_ratio	-0.147
Spendperpupil	-0.003
Med_income	0.611
HS_or_less	-0.626
Col_plus	0.635
Married	0.568
PerBlack	-0.512
PerHispanic	-0.553
PerWhite	0.625
PerAsian	-0.065
PerOther	-0.247

Source: Author's calculations

**Figure 2a: % of Black Students and
English Test Scores**
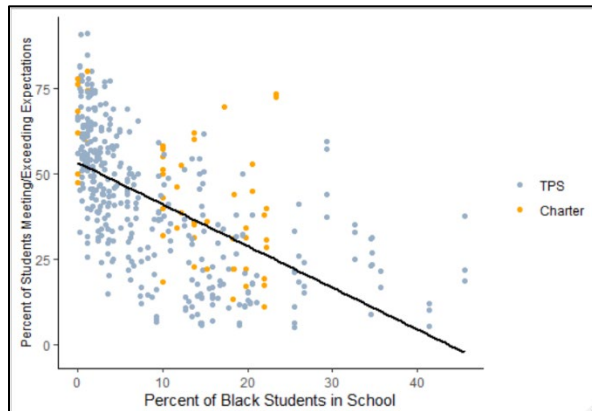
**Figure 2b: % of Black Students and
Math Test Scores**
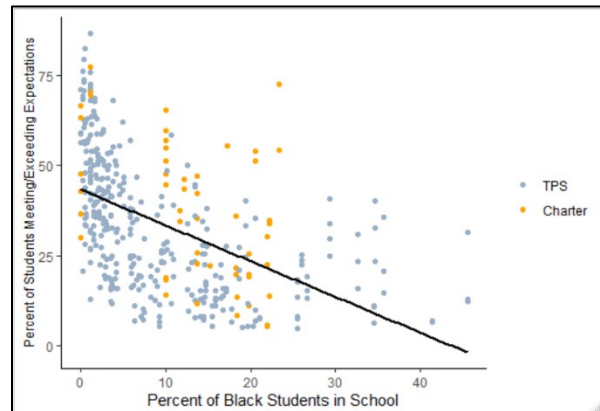
**Figure 2c: % of Hispanic Students and
English Test Scores**
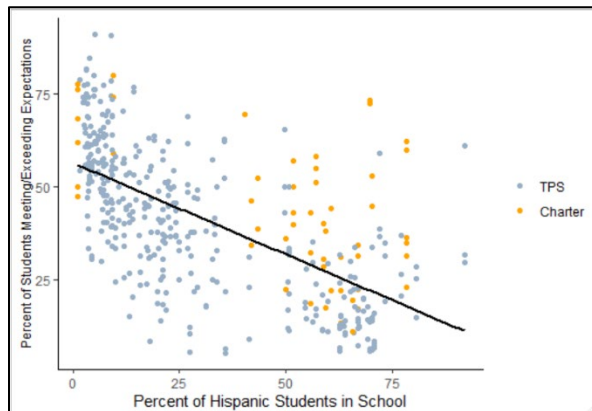
**Figure 2d: % of Hispanic Students and
Math Test Scores**
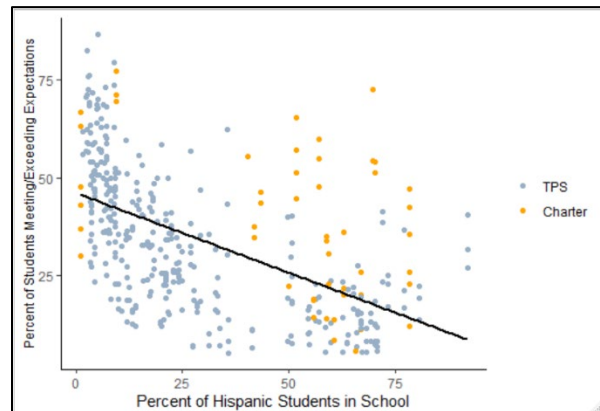
Source: Author's calculations

5.0 DATA AND EMPIRICAL METHODOLOGY

5.1 Metric of Student Achievement

The metric of student achievement in this study are test results for the Rhode Island Comprehensive Assessment System (RICAS) for the school year 2018-19, which are publicly available through the Rhode Island Department of Education's (RIDE) assessment portal. The RICAS is a standardized test given to all 3-8th graders in Rhode Island public schools, including charter schools. The test consists of an English and math section which are scored separately.

The RICAS uses a four-level scoring system. Those levels are defined as follows:

1. Not meeting expectations
2. Partially meeting expectations
3. Meeting expectations
4. Exceeding expectations

The percentage of students who scored either a 3 or a 4 on the RICAS exam (i.e. the percentage of students who either meet or exceeded expectations) in a particular grade level serves as the dependent variable for all analyses in this study. This metric, which will sometimes be denoted as *Score3plus4*, effectively captures the percentage of students, in a particular grade-level, at a particular school, who "passed" the RICAS exam.

5.2 Data

The dataset in this study is comprised of 18 charter schools and 124 TPSs, for a total of 142 schools. All Rhode Island charter schools serving at least one grade-level in the 3-8th grade range for which there are 2018-19 RICAS test results are included in this sample. Due to the paired design of this study, in order for a TPS to be included in the sample it had to meet all of the following conditions: (a) serve at least one grade-level in the 3-8th grade range, (b) have 2018-19 RICAS test results and (c) serve students from the "sending district" (i.e. a school district where a charter school is allowed to draw students) of at least one charter school included in the sample. Charter school sending districts are defined by RIDE.

In some instances, a charter school was listed as servicing the entire state of Rhode Island. While these charters are technically allowed to draw students from all over the state, in actuality they are likely to only draw students from the closest school districts due to transportation constraints. Thus, if a charter was listed as servicing the entire state, I reached out to said charter to determine the school's primary sending districts. If the charter school did not respond to my request, then it was assumed that the school's only sending district was the district in which the school was physically located in. For a complete list of schools and school districts included in this study, see Appendix A.

Some of the analyses in this this study required explanatory variables to control for school and district effects. Values for district-level variables for charter schools were estimated by averaging the values from the charter school's sending districts. If possible, a weighted average was used, where the weights were the percentage of students drawn from a particular sending district. See table 2 for a list of explanatory variables, their descriptions, and sources.

Table 2: Variable Descriptions			
Acronym	Description	Year	Source[1]
Score3plus4	Percent of grade level meeting/exceeding expectations on the RICAS English/Math exams	2018-19	RIDE
Charter	Charter school (1=yes, 0=no)	NA	RIDE
FTE	Full-time equivalent teachers per school	2018-19	NCES
Studteach_ratio	Student-to-teacher ratio	2018-19	NCES
Spendperpupil	District spending per pupil	2017-18	RIDE
Med_income	Median income of parents in the district	2014-18	ACS-ED
HS_or_less	Percent of parents in a district with a high school education or less	2014-18	ACS-ED
Col_plus	Percent of parents in a district with an associate's degree or higher	2014-18	ACS-ED
Married	Percent of parents in a district who are married	2014-18	ACS-ED
PerBlack	Percent of a school's student body who is black	2018-19	NCES
PerHispanic	Percent of a school's student body who is Hispanic	2018-19	NCES
PerWhite	Percent of a school's student body who is White	2018-19	NCES
PerAsian	Percent of a school's student body who is Asian	2018-19	NCES
PerOther	Percent of a school's student body who is Native American, Pacific Islander, or two or more races.	2018-19	NCES

Table 3: Summary Statistics					
Variable	Obs.	Mean	Std. Dev.	Min	Max
Score3plus4	805	0.3788	0.1946	0.05	0.912
FTE	805	29.36	13.02	9	70
Studteach_ratio	805	14.17	2.2	9.37	23.12
Spendperpupil	805	17577.64	1874.17	14199	22434
Med_income	805	71949.12	27741.82	31432	145352
HS_Or_Less	805	0.4	0.1665	0.119	0.782
Col_plus	805	0.3065	0.1576	0.05	0.697
Married	805	0.5664	0.1174	0.42	0.79
PerBlack	805	0.0951	0.0951	0	0.455
PerHispanic	805	0.2985	0.2507	0.011	0.919
PerWhite	805	0.5085	0.3145	0.017	0.932
PerAsian	805	0.0388	0.0396	0	0.206
PerOther	805	0.059	0.0258	0.004	0.161

5.3 Methodology

The first question this study seeks to answer is whether a given charter school produces better test results than the TPSs with which it directly competes. To answer this question grade-

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[1] RIDE = Rhode Island Department of Education; NCES = National Center for Education Statistics; AMS-ED = American Community Survey - Education

levels from a particular charter were compared to matching grade-levels from TPSs located in that charter's sending district(s). To test if the percentage of students who either meet or exceeded expectations on the RICAS differed significantly between a charter school and TPSs a simple hypothesis test of differences in proportions was used (see formula 1). The significance level for all comparisons was set at 0.05.

Formula 1: Hypothesis Test of Proportions

$$z = \frac{(P_C - P_T)}{S_p}$$

Where…

P_C = % of charter school students meeting/exceeding expectations

P_T = % of TPS students meeting/exceeding expectations

S_p = Pooled standard deviation

The second question this study seeks to answer is whether Rhode Island charter schools can help to close the achievement gap between black/Hispanic students and white students. To answer this question OLS techniques were used to exam the relationship between the racial composition of a school, whether a school is a charter or not, and test scores. The model for both English and math scores can be written as follows:

$Score3plus4 = \beta_0 + \beta_1 Charter + \beta_2 S + \beta_3 D + \beta_4 PerBlack + \beta_5 PerHispanic + \beta_6 PerWhite + \beta_7 PerAsian + \beta_8 PerOther + \beta_9 PerBlack*Charter + \beta_{10} PerHispanic*Charter + \beta_{11} PerWhite*Charter + \beta_{12} PerAsian*Charter + \beta_{13} PerOther*Charter$

Where *Charter* is a dummy variable to distinguish between charter and TPSs (1=Charter, 0=TPS) and *S* and *D* are vectors of school and district level explanatory variables, respectively. The variables *PerBlack, PerHispanic, PerWhite, PerAsian* and *PerOther*[2] all describe the percent of a school's student body comprised of the corresponding race/background. All racial background variables have an interaction term with the dummy variable *Charter* to better model how the test results for students of a particular race are impacted by charter schools.

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[2] Other refers to students of Native American or Pacific Islander backgrounds or are of two or more races.

6.0 EMPIRICAL RESULTS

6.1 Charter Schools Vs. TPSs

For the English RICAS exam there were 880 comparable grade-levels between charter schools and TPSs servicing the same districts. Out of those 880 comparable grade-levels 73.75% (649 instances) of the time a larger percentage of charter school students passed the RICAS exam than TPS students; 47.16% (415 instances) of the time a significantly larger percentage of charter school students passed the RICAS exam than TPS students.

On the Math RICAS exam, there were 816 comparable grade-levels[3] between charter schools and TPSs servicing the same districts. Out of those 816 comparable grade-levels 73.53% (600 instances) of the time a larger percentage of charter school students passed the RICAS exam than TPS students; 49.63% (405 instances) of the time a significantly larger percentage of charter school students passed the RICAS exam than TPS students. To see the district level comparisons for each charter school, on both the English and math RICAS, see Appendix B.

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[3] RIDE withholds RICAS results for grade-levels if at least 95% of the students fail to meet expectations. Several grade levels hit the 95% threshold for the Math RICAS, resulting in fewer comparable grade-levels than the English RICAS.

Figure 3: Breakdown of Directly Competing Grade-Levels
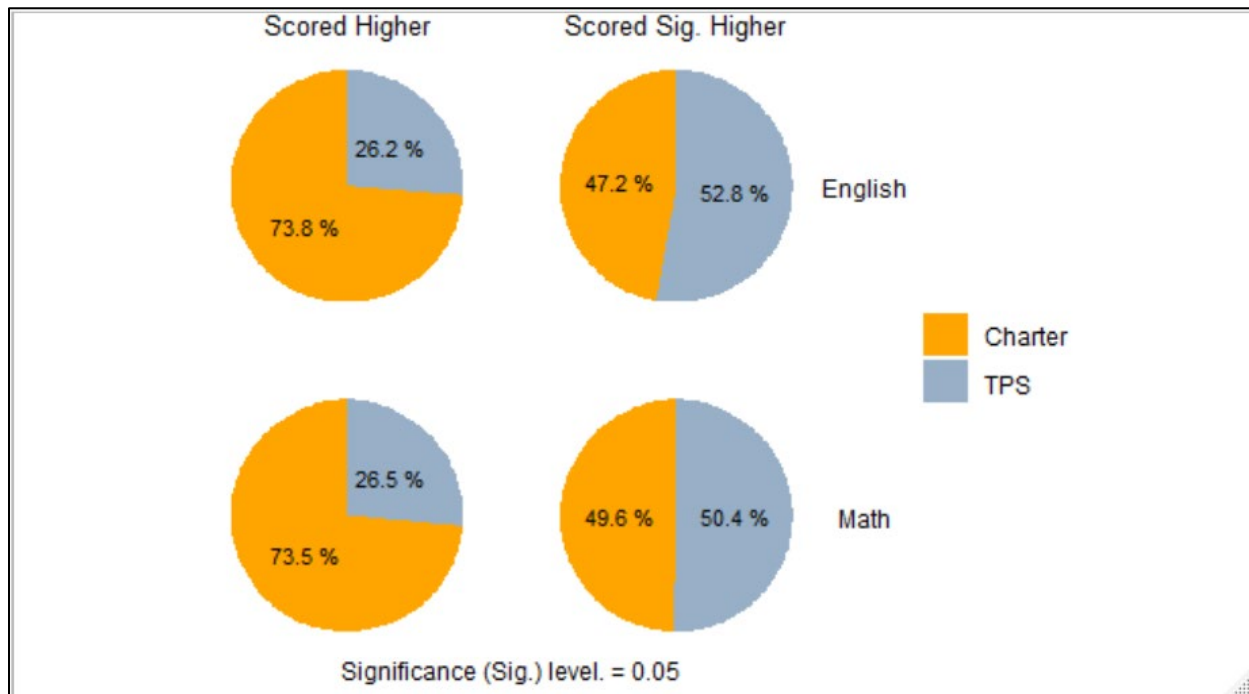
Source: Author's calculations

6.2 Achievement Gap

The OLS estimations for both English and math RICAS scores are presented in table 4.

Examining the model for English RICAS scores first, one can see that the dummy variable *Charter* has a positive coefficient, which indicates that charter schools have a positive impact on English test scores, all other things held equal. Likewise, all coefficients for the interaction terms between *Charter* and race were positive with the exception of *PerOther*. This indicates that charter schools have a positive effect on the English pass rate for all students except those of Native-American/Pacific Islander origin, or those who are of two or more races; however, it should be noted that the coefficients for all the above-mentioned variables, including *Charter,* have large standard error terms which would allow the sign of the coefficient to switch within one standard deviation.

Table 4: Regression Results		
	Score3plus4	
	English Scores Model	Math Scores Model
Constant	-1809.495 (1171.4)	-3008.1488 (1205.38)
Charter	0.9796 (2548.5)	4767.0092* (2527.40)
FTE	-0.1956*** (0.06)	-0.213*** (0.06)
Studteach_ratio	0.3813 (0.34)	0.3816 (0.34)
Spendperpupil	-0.0011** (0.00)	-0.001** (0.00)
Med_income	-0.0003* (0.00)	-0.0003** (0.00)
HS_or_less	0.5277** (0.26)	0.855*** (0.25)
Col_plus	0.8661*** (0.2)	1.2009*** (0.2)
Married	0.569*** (0.21)	0.5894*** (0.2)
PerBlack	17.8398 (11.73)	29.7544** (12.07)
PerHispanic	17.8956 (11.73)	29.5794** (12.07)
PerWhite	18.3241 (11.72)	30.0062** (12.06)
PerAsian	18.0154 (11.74)	29.5858** (12.08)
PerOther	17.8481 (11.72)	28.8497** (12.05)
PerBlack*Charter	0.2944 (25.63)	-48.4187* (25.42)
PerHispanic*Charter	0.1927 (25.44)	-47.321* (25.23)
PerWhite*Charter	0.0833 (25.5)	-47.6663* (25.29)
PerAsian*Charter	0.6679 (25.38)	-43.5992* (25.18)
PerOther*Charter	-1.5584 (25.56)	-48.6788* (25.35)
R^2	0.6115	0.575
F-Statistic	33.23	27.51
Number of Obs.	399	366

Note: ***, **, and * denotes significance at the 1%, 5%, and 10% respectively. Standard errors in parentheses

Significant variables from the English scores model include: *FTE; Spendperpupil; Med_income; HS_or_less; Col_plus;* and *Married.* Interestingly, *Med_income* (median income) has a negative coefficient, suggesting a negative association with English test scores. This is especially surprising given that *Med_income* is positively correlated with both English (Cor = 0.68) and math (Cor = 0.61) RICAS scores (See tables 1a and 1b). Similarly surprising is that

HS_or_less produces a positive coefficient, indicating that the percentage of parents in a district with a high school education or less is positively associated with English RICAS scores.

For the math RICAS scores model the dummy variable *Charter* produces an extremely large positive coefficient of 4767. This is rather absurd, since it suggests that a charter school boosts RICAS scores by 4767%, ceteris paribus (all percentage variables were multiplied by 100). On the other hand, all the interaction terms between *Charter* and race produced negative coefficients, indicating that charter schools have a negative impact on the performance of students from all racial backgrounds; however, these negative coefficients were likely necessary to balance out the large positive impact of charter schools overall.

All explanatory variables from the math scores model were considered significant, although the standard errors for many variables were quite large. Again, the variables *Med_income* and *HS_or_less* produced negative and positive coefficients, respectively.

Ultimately, both the English and math models produced middling R^2 values (English scores model: $R^2 = 0.61$, math scores model: $R^2 = 0.58$), as well as some non-intuitive coefficient estimates. Despite this, these models do provide insights as to the effect charter schools have on student performance. For example, it is predicted that for Hispanics, 20.25% more students will pass the RICAS English exam and 34.9% more will pass the RICAS math exam at charter schools than at TPSs, ceteris paribus. Likewise, 30.42% more black students are predicted to pass the RICAS English exam at charter schools than at TPSs ceteris paribus; however, the pattern breaks when it comes to math. On the math RICAS exam, zero black students attending charter schools are predicted to pass, while 31.11% of black students attending TPSs are predicted to pass; although it should be noted that the predictions for black students may be biased by the low number of Rhode Island schools with a high percentage of black students (at maximum, black students only comprise 45.5% of a school's student body, whereas both white and Hispanic students are recorded as comprising upwards of 90% of a school's student body in some instances). Finally, white students attending charter schools are predicted to receive a slight boost in performance on both the English and math RICAS exams over their TPSs peers. White students are also predicted to score higher than black and Hispanic students on both the English and math RICAS exams regardless of charter status.

Figure 4: English Model Predictions
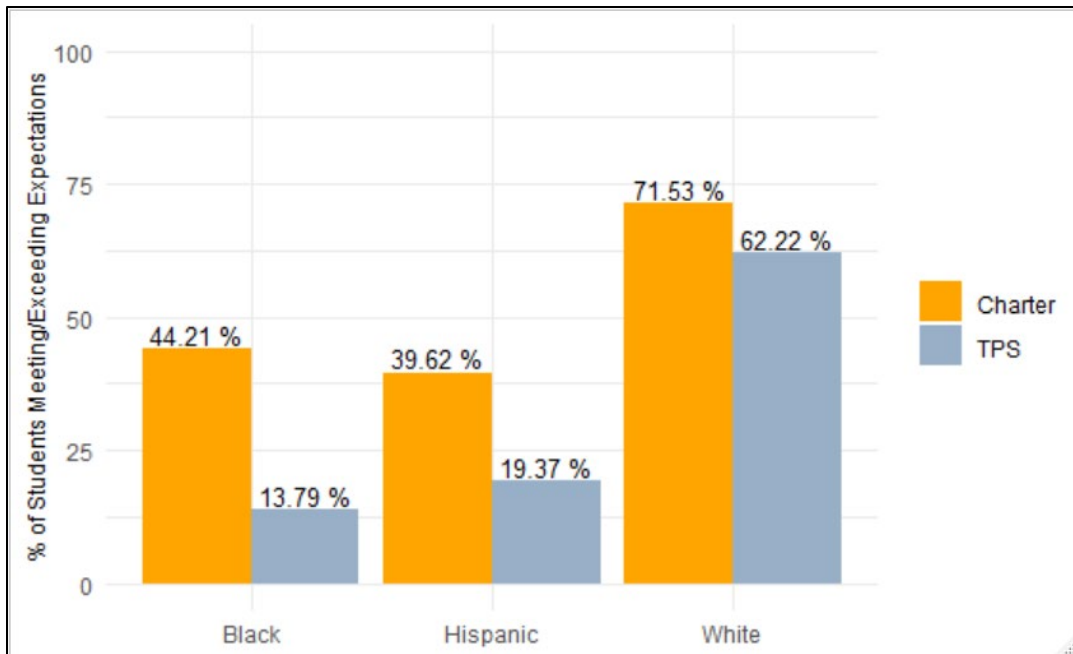
Source: Author's calculations

Figure 5: Math Model Predictions

7.0
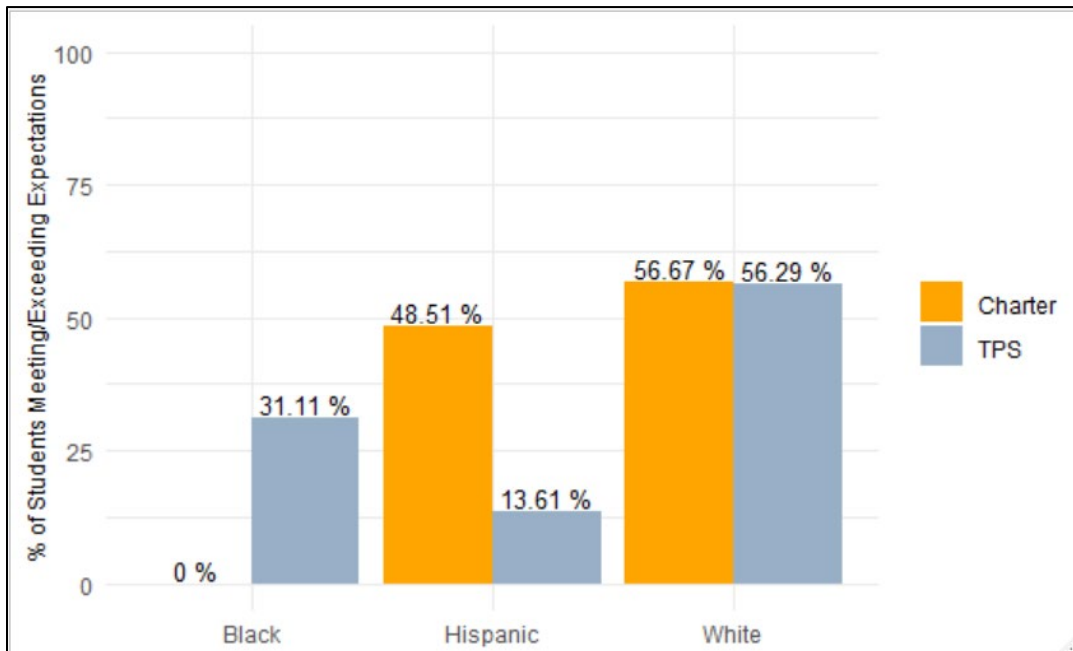
Source: Author's calculations

Conclusion

The purpose of this study was to answer two questions, the first of which was whether a given Rhode Island charter school performed better on standardized tests than the TPSs with which it directly competes. In answer to this question, it was found that, in approximately ¾ of comparable grade-levels a charter school produced a larger percentage of passing students than its competition on both the RICAS English and math exams. Furthermore, it was found that, in approximately half of all comparable grade-levels a charter school produced a significantly larger percentage of passing students than its TPS competition on both the RICAS English and math exams.

The second question of this study was whether Rhode Island charter schools can help bridge the achievement gap between black/Hispanic and white students. Ultimately it was found that, while Rhode Island charter schools do not completely close the achievement gap between minority and white students, black and Hispanic students attending a charter school are predicted to score higher on the RICAS exams than black and Hispanic students attending TPSs, ceteris paribus. The exception being that black students who attend charter schools are predicted to score lower on the math RICAS exam.

In summation, this study finds that Rhode Island charter schools tend to perform quite well compared to their TPS competition and especially help improve the academic performance of Hispanic students. In light of these findings, I find it troubling that Rhode Island has recently voted to place a 3-year moratorium on new charter schools and charter school expansions. This decision denies an unknown number of Rhode Island students the opportunity for a better education and places a particularly heavy cost on the state's Hispanic population, who benefit the most from such schools.

7.1 Limitations and Future Research

One limitation of this study is that grade effects and gender effects were not controlled for in the English and math RICAS score models. Both grade-level and gender are likely to impact test results, so their inclusion in future models would be of benefit.

Another limitation of this study is that it does not control for the innate ability of students. The way most studies control for this factor is by tracking individual students over time and using year-to-year achievement gains on standardized tests as the metric of student achievement. Unfortunately, RIDE does not make public individual students test results, so such

a method was not possible for this study. It would have been possible to track changes in RICAS performance on the school and grade levels; however, such a methodology would require the unrealistic assumption that students do not switch schools. I was also averse to using year-to-year changes in RICAS scores as the metric of student achievement because growth metrics do not capture the magnitude of the actual test results, which I believe is an important factor in assessing the quality of a school. That being said, it would be interesting to see a longitudinal study comparing the achievement gains made by students in Rhode Island charters and TPS.

Appendix A: Districts and Schools

Charter Schools	
School Name	**Districts Served**
Achievement First Rhode Island	
Achievement First Iluminar Mayoral Academy	Cranston, North Providence, Providence, Warwick
Achievement First Providence Mayoral Academy	Cranston, North Providence, Providence, Warwick
Blackstone Valley Prep.	
Blackstone Valley Prep Elementary School	Central Falls, Cumberland, Lincoln, Pawtucket
Blackstone Valley Prep Elementary School 2	Central Falls, Cumberland, Lincoln, Pawtucket
Blackstone Valley Prep Elementary School 3	Central Falls, Cumberland, Lincoln, Pawtucket
Blackstone Valley Prep Middle School	Central Falls, Cumberland, Lincoln, Pawtucket
Blackstone Valley Prep Middle School 2	Central Falls, Cumberland, Lincoln, Pawtucket
Highlander	
Highlander Elementary Charter School[*]	Providence
Highlander Secondary Charter School[*]	Bristol-Warren
International Charter	
International Charter School[*]	Pawtucket
Kingston Hill Academy	
Kingston Hill Academy[*]	Narragansett, North Kingstown
Learning Community	
The Learning Community Charter School	Central Falls, Pawtucket, Providence
Paul Cuffee Charter Schools	
Paul Cuffee Lower School	Providence
Paul Cuffee Middle School	Providence
SouthSide Charter School	
SouthSide Elementary Charter School	Providence
The Compass School	
The Compass School[*]	Chariho, Exeter, North Kingstown, South Kingstown, Westerly
The Hope Academy	
The Hope Academy	North Providence, Providence
Trinity Academy for the Performing Arts	
Trinity Academy for the Performing Arts	Providence

[*] School defined by RIDE as being allowed to draw students from all across Rhode Island. In such cases, the districts served only include the charter school's primary sending districts (districts where the school draws at least 10% of its student body from). If data on where a school draws its students from was unavailable, then the districts served only includes the district in which the charter school is physically located in.

Traditional Public Schools

Bristol-Warren

Colt Andrews School
Guiteras School
Hugh Cole School
Kickemuit Middle School
Rockwell School

Central Falls

Dr. Earl F. Calcutt Middle School
Ella Risk School
Veterans Memorial Elementary

Chariho

Ashaway Elementary School
Chariho Middle School
Charlestown Elementary School
Hope Valley Elementary School
Richmond Elementary School

Cranston

Arlington School
Daniel D. Waterman School
Eden Park School
Edgewood Highland School
Edward S. Rhodes School
Garden City School
George J. Peters School
Gladstone Street School
Glen Hills School
Hope Highlands Middle School
Hugh B. Bain Middle School
Oak Lawn School
Orchard Farms Elementary School
Park View Middle School
Stadium School
Stone Hill School
Western Hills Middle School
William R. Dutemple School
Woodridge School

Cumberland

Ashton School
B.F. Norton Elementary School
Community School
Garvin Memorial School
John J. McLaughlin Cumberland Hill School

Joseph L. McCourt Middle School
North Cumberland Middle School
Exeter
Exeter-West Greenwich Regional Junior High
Metcalf School
Lincoln
Lincoln Central Elementary School
Lincoln Middle School
Lonsdale Elementary School
Saylesville Elementary School
Narragansett
Narragansett Elementary School
Narragansett Pier School
North Kingstown
Davisville Middle School
Fishing Cove Elementary School
Forest Park Elementary School
Hamilton Elementary School
Stony Lane Elementary School
Suzanne M. Henseler Quidnessett Elementary School
Wickford Middle School
North Providence
Birchwood Middle School
Centredale School
Dr. Edward A. Ricci Middle School
Dr. Joseph A Whelan Elementary School
Greystone School
James L. McGuire School
Stephen Olney School
Pawtucket
Agnes E. Little School
Curvin-McCabe School
Elizabeth Baldwin School
Fallon Memorial School
Flora S. Curtis Memorial School
Francis J. Varieur School
Henry J. Winters School
Joseph Jenks Middle School
Lyman B. Goff Middle School
M. Virginia Cunningham School
Nathanael Greene School
Potter-Burns School
Samuel Slater Middle School

Providence
Alan Shawn Feinstein Elementary at Broad Street
Alfred Lima, Sr. Elementary School
Anthony Carnevale Elementary School
Asa Messer Elementary School
Carl G. Lauro Elementary School
Dr. Martin Luther King, Jr. Elementary School
Esek Hopkins Middle School
Frank D. Spaziano Elementary School
George J. West Elementary School
Gilbert Stuart Middle School
Harry Kizirian Elementary School
Leviton Dual Language School
Lillian Feinstein Elementary, Sackett Street
Mary E. Fogarty Elementary School
Nathan Bishop Middle School
Nathanael Greene Middle School
Pleasant View School
Reservoir Avenue School
Robert F. Kennedy Elementary School
Robert L Bailey IV, Elementary School
Roger Williams Middle School
The Sgt. Cornel Young, Jr & Charlotte Woods Elementary School at The B. Joe Clanton Complex
Vartan Gregorian Elementary School
Veazie Street School
Webster Avenue School
West Broadway Middle School
William D Abate Elementary School
South Kingstown
Broad Rock Middle School
Curtis Corner Middle School
Matunuck School
Peace Dale Elementary School
Wakefield Elementary School
West Kingston Elementary School
Warwick
Cedar Hill School
Cottrell F. Hoxsie School
E. G. Robertson School
Greenwood School
Harold F. Scott School
Holliman School
Lippitt School

Norwood School
Oakland Beach Elementary School
Park School
Sherman School
Warwick Neck School
Wyman School
Westerly
Dunns Corners School
Springbrook Elementary School
State Street School
Westerly Middle School

Appendix B: Direct Comparisons Between Charters and TPSs

Achievement First Iluminar Mayoral Academy

Districts Served: Cranston, North Providence, Providence, Warwick

Grades Served: K-4

Grades for which RICAS Results are Available: 3-4

Test Score2 Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
3	94	73.4%	94	54.3%
4	91	72.5%	91	72.5%
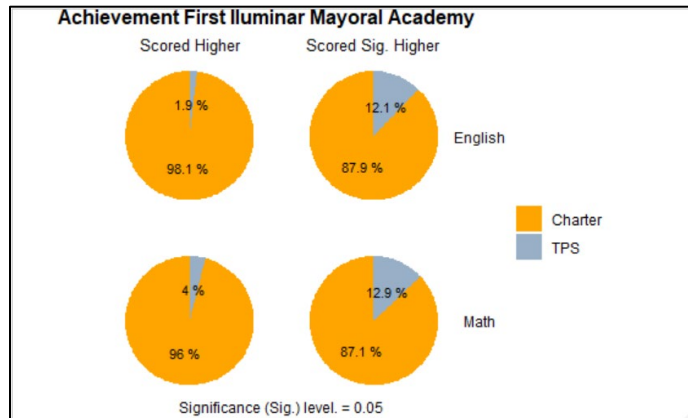
Comparable Grade Levels

English: 107
Math: 101

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Achievement First Iluminar Mayoral Academy	Cranston	3	15	14	93.33	8	53.33
Achievement First Iluminar Mayoral Academy	North Providence	3	5	5	100	5	100
Achievement First Iluminar Mayoral Academy	Providence	3	21	21	100	19	90.48

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Achievement First Iluminar Mayoral Academy	Warwick	3	13	13	100	11	84.62
Achievement First Iluminar Mayoral Academy	Cranston	4	15	14	93.33	13	86.67
Achievement First Iluminar Mayoral Academy	North Providence	4	5	5	100	5	100
Achievement First Iluminar Mayoral Academy	Providence	4	20	20	100	20	100
Achievement First Iluminar Mayoral Academy	Warwick	4	13	13	100	13	100

District-Level Comparisons: Math RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Achievement First Iluminar Mayoral Academy	Cranston	3	14	11	78.57	8	57.14
Achievement First Iluminar Mayoral Academy	North Providence	3	5	4	80	3	60
Achievement First Iluminar Mayoral Academy	Providence	3	19	19	100	19	100
Achievement First Iluminar Mayoral Academy	Warwick	3	13	13	100	9	69.23
Achievement First	Cranston	4	15	15	100	14	93.33

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Iluminar Mayoral Academy							
Achievement First Iluminar Mayoral Academy	North Providence	4	5	5	100	5	100
Achievement First Iluminar Mayoral Academy	Providence	4	18	18	100	18	100
Achievement First Iluminar Mayoral Academy	Warwick	4	12	12	100	12	100

Achievement First Providence Mayoral Academy

Districts Served: Cranston, North Providence, Providence, Warwick

Grades Served: K-4

Grades for which RICAS Results are Available: 3-4

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
3	85	52.9%	86	51.2%
4	89	44.9%	87	54.0%
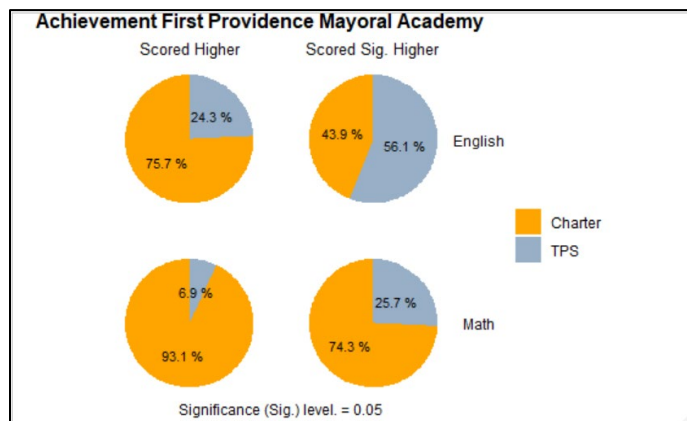
Comparable Grade Levels

English: 107
Math: 101

Comparable Grade-Levels: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Achievement First Providence Mayoral Academy	Cranston	3	15	6	40%	2	13.33%
Achievement First Providence Mayoral Academy	North Providence	3	5	5	100%	1	20%
Achievement First Providence Mayoral Academy	Providence	3	21	19	90.48%	17	80.95%
Achievement First Providence Mayoral Academy	Warwick	3	13	6	46.15%	1	7.69%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Achievement First Providence Mayoral Academy	Cranston	4	15	8	53.33%	6	40%
Achievement First Providence Mayoral Academy	North Providence	4	5	5	100%	1	20%
Achievement First Providence Mayoral Academy	Providence	4	20	20	100%	16	80%
Achievement First Providence Mayoral Academy	Warwick	4	13	12	92.31%	3	23.08%

Comparable Grade-Levels: Math RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Achievement First Providence Mayoral Academy	Cranston	3	14	11	78.57%	6	42.86%
Achievement First Providence Mayoral Academy	North Providence	3	5	4	80%	3	60%
Achievement First Providence Mayoral Academy	Providence	3	19	19	100%	17	89.47%
Achievement First Providence Mayoral Academy	Warwick	3	13	11	84.62%	8	61.54%
Achievement First Providence Mayoral Academy	Cranston	4	15	14	93.33%	8	53.33%
Achievement First Providence Mayoral Academy	North Providence	4	5	5	100%	5	100%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Achievement First Providence Mayoral Academy	Providence	4	18	18	100%	17	94.44%
Achievement First Providence Mayoral Academy	Warwick	4	12	12	100%	11	91.67%

Blackstone Valley Prep Elementary School

Districts Served: Central Falls, Cumberland, Lincoln, Pawtucket

Grades Served: K-4

Grades for which RICAS Results are Available: 3-4

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
3	80	46.3%	80	37.5%
4	79	34.2%	78	34.6%

Comparable Grade Levels
English: 40
Math: 40

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Blackstone Valley Prep Elementary School	Central Falls	3	2	2	100%	1	50%
Blackstone Valley Prep Elementary School	Cumberland	3	5	1	20%	0	0%
Blackstone Valley Prep Elementary School	Lincoln	3	3	0	0%	0	0%
Blackstone Valley Prep Elementary School	Pawtucket	3	10	8	80%	2	20%
Blackstone Valley Prep	Central Falls	4	2	2	100%	2	100%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Elementary School							
Blackstone Valley Prep Elementary School	Cumberland	4	5	0	0%	0	0%
%Blackstone Valley Prep Elementary School	Lincoln	4	3	1	33.33%	0	0%
Blackstone Valley Prep Elementary School	Pawtucket	4	10	9	90%	3	30%

District-Level Comparisons: Math RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Blackstone Valley Prep Elementary School	Central Falls	3	2	2	100.00%	2	100.00%
Blackstone Valley Prep Elementary School	Cumberland	3	5	1	20.00%	0	0.00%
Blackstone Valley Prep Elementary School	Lincoln	3	3	0	0.00%	0	0.00%
Blackstone Valley Prep Elementary School	Pawtucket	3	10	8	80.00%	3	30.00%
Blackstone Valley Prep Elementary School	Central Falls	4	2	2	100.00%	2	100.00%
Blackstone Valley Prep Elementary School	Cumberland	4	5	0	0.00%	0	0.00%
Blackstone Valley Prep Elementary School	Lincoln	4	3	1	33.33%	0	0.00%
Blackstone Valley Prep Elementary School	Pawtucket	4	10	6	60.00%	4	40.00%

Blackstone Valley Prep Elementary School 2

Districts Served: Central Falls, Cumberland, Lincoln, Pawtucket

Grades Served: K-4

Grades for which RICAS Results are Available: 3-4

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
3	82	52.4%	82	46.3%
4	83	38.6%	83	43.4%

Comparable Grade Levels
English: 40
Math: 40

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Blackstone Valley Prep Elementary 2 School	Central Falls	3	2	2	100.00%	2	100.00%
Blackstone Valley Prep Elementary 2 School	Cumberland	3	5	2	40.00%	0	0.00%
Blackstone Valley Prep Elementary 2 School	Lincoln	3	3	0	0.00%	0	0.00%
Blackstone Valley Prep Elementary 2 School	Pawtucket	3	10	8	80.00%	7	70.00%
Blackstone Valley Prep Elementary 2 School	Central Falls	4	2	2	100.00%	2	100.00%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Blackstone Valley Prep Elementary 2 School	Cumberland	4	5	1	20.00%	0	0.00%
Blackstone Valley Prep Elementary 2 School	Lincoln	4	3	1	33.33%	0	0.00%
Blackstone Valley Prep Elementary 2 School	Pawtucket	4	10	10	100.00%	5	50.00%

District-Level Comparisons: Math RICAS

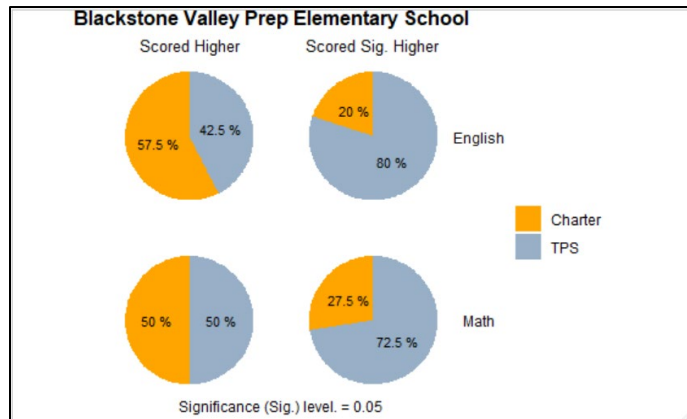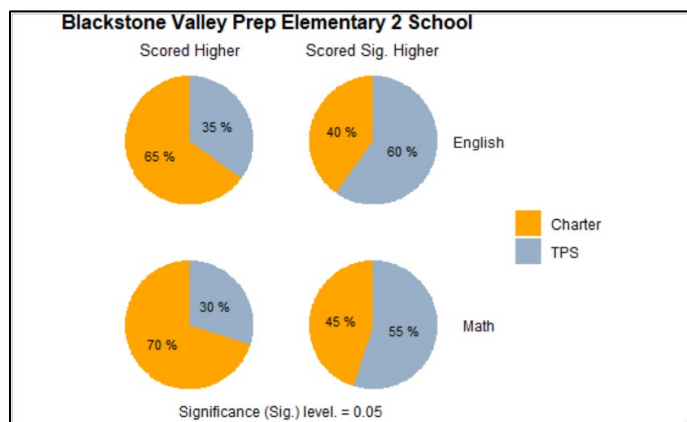| Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Blackstone Valley Prep Elementary 2 School	Central Falls	3	2	2	100.00%	2	100.00%
Blackstone Valley Prep Elementary 2 School	Cumberland	3	5	1	20.00%	0	0.00%
Blackstone Valley Prep Elementary 2 School	Lincoln	3	3	0	0.00%	0	0.00%
Blackstone Valley Prep Elementary 2 School	Pawtucket	3	10	10	100.00%	7	70.00%
Blackstone Valley Prep Elementary 2 School	Central Falls	4	2	2	100.00%	2	100.00%
Blackstone Valley Prep Elementary 2 School	Cumberland	4	5	2	40.00%	0	0.00%
Blackstone Valley Prep Elementary 2 School	Lincoln	4	3	2	66.67%	1	33.33%
Blackstone Valley Prep Elementary 2 School	Pawtucket	4	10	9	90.00%	6	60.00%

Blackstone Valley Prep Elementary School 3

Districts Served: Central Falls, Cumberland, Lincoln, Pawtucket

Grades Served: K-4

Grades for which RICAS Results are Available: 3

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
3	56	69.6%	56	55.4%

Blackstone Valley Prep Elementary 3 School
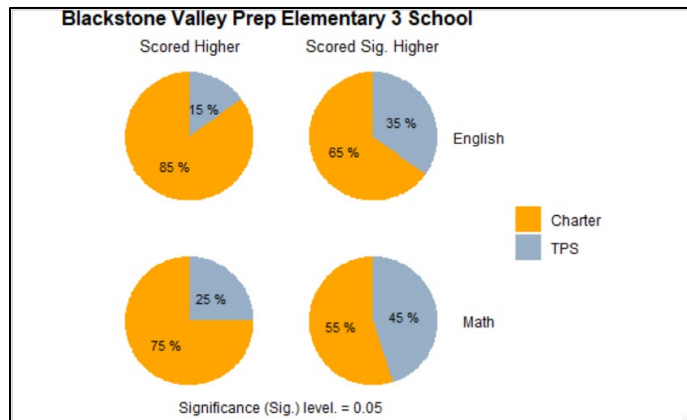
Comparable Grade Levels
English: 20 Math: 20

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Blackstone Valley Prep Elementary 3 School	Central Falls	3	2	2	100.00%	2	100.00%
Blackstone Valley Prep Elementary 3 School	Cumberland	3	5	3	60.00%	2	40.00%
Blackstone Valley Prep Elementary 3 School	Lincoln	3	3	2	66.67%	1	33.33%
Blackstone Valley Prep Elementary 3 School	Pawtucket	3	10	10	100.00%	8	80.00%

District-Level Comparisons: Math RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Blackstone Valley Prep Elementary 3 School	Central Falls	3	2	2	100.00%	2	100.00%
Blackstone Valley Prep Elementary 3 School	Cumberland	3	5	1	20.00%	1	20.00%
Blackstone Valley Prep Elementary 3 School	Lincoln	3	3	2	66.67%	0	0.00%
Blackstone Valley Prep Elementary 3 School	Pawtucket	3	10	10	100.00%	8	80.00%

Blackstone Valley Prep Middle School

Districts Served: Central Falls, Cumberland, Lincoln, Pawtucket

Grades Served: 5-8

Grades for which RICAS Results are Available: 5-8

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
5	84	57.1%	84	51.2%
6	79	43.0%	79	57.0%
7	72	50.0%	72	65.3%
8	83	39.8%	83	44.6%

Comparable Grade Levels
English: 43
Math: 39

Comparable Grade-Levels: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Blackstone Valley Prep Middle School	Central Falls	5	3	3	100.00%	3	100.00%
Blackstone Valley Prep Middle School	Cumberland	5	5	3	60.00%	1	20.00%
Blackstone Valley Prep Middle School	Lincoln	5	3	2	66.67%	1	33.33%
Blackstone Valley Prep	Pawtucket	5	10	10	100.00%	9	90.00%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Middle School							
Blackstone Valley Prep Middle School	Central Falls	6	1	1	100.00%	1	100.00%
Blackstone Valley Prep Middle School	Cumberland	6	2	0	0.00%	0	0.00%
Blackstone Valley Prep Middle School	Lincoln	6	1	0	0.00%	0	0.00%
Blackstone Valley Prep Middle School	Pawtucket	6	4	2	50.00%	2	50.00%
Blackstone Valley Prep Middle School	Central Falls	7	1	1	100.00%	1	100.00%
Blackstone Valley Prep Middle School	Cumberland	7	2	1	50.00%	0	0.00%
Blackstone Valley Prep Middle School	Lincoln	7	1	1	100.00%	1	100.00%
Blackstone Valley Prep Middle School	Pawtucket	7	3	3	100.00%	3	100.00%
Blackstone Valley Prep Middle School	Central Falls	8	1	1	100.00%	1	100.00%
Blackstone Valley Prep Middle School	Cumberland	8	2	0	0.00%	0	0.00%
Blackstone Valley Prep Middle School	Lincoln	8	1	1	100.00%	1	100.00%
Blackstone Valley Prep Middle School	Pawtucket	8	3	3	100.00%	2	66.67%

District-Level Comparisons: Math RICAS

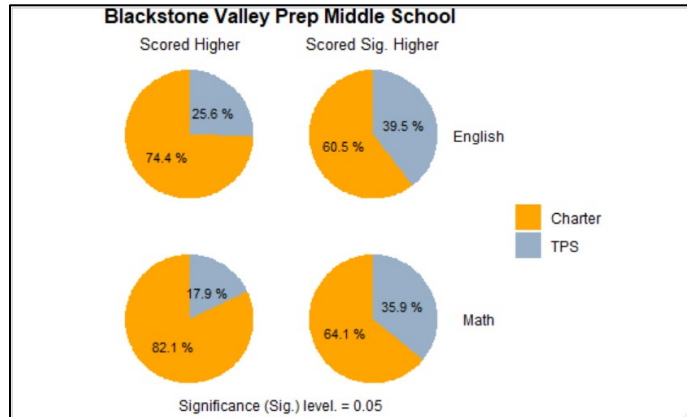| Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Blackstone Valley Prep Middle School	Central Falls	5	3	3	100.00%	3	100.00%
Blackstone Valley Prep Middle School	Cumberland	5	5	2	40.00%	1	20.00%
Blackstone Valley Prep Middle School	Lincoln	5	3	2	66.67%	0	0.00%
Blackstone Valley Prep Middle School	Pawtucket	5	10	10	100.00%	9	90.00%
Blackstone Valley Prep Middle School	Cumberland	6	2	1	50.00%	1	50.00%
Blackstone Valley Prep Middle School	Lincoln	6	1	1	100.00%	0	0.00%
Blackstone Valley Prep Middle School	Pawtucket	6	4	4	100.00%	4	100.00%
Blackstone Valley Prep Middle School	Cumberland	7	2	1	50.00%	1	50.00%
Blackstone Valley Prep Middle School	Lincoln	7	1	1	100.00%	1	100.00%
Blackstone Valley Prep Middle School	Pawtucket	7	2	2	100.00%	2	100.00%
Blackstone Valley Prep Middle School	Cumberland	8	2	1	50.00%	0	0.00%
Blackstone Valley Prep Middle School	Lincoln	8	1	1	100.00%	0	0.00%
Blackstone Valley Prep Middle School	Pawtucket	8	3	3	100.00%	3	100.00%

Blackstone Valley Prep Middle School 2

Districts Served: Central Falls, Cumberland, Lincoln, Pawtucket

Grades Served: 5-8

Grades for which RICAS Results are Available: 5-7

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
5	82	51.2%	82	47.6%
6	82	54.9%	82	59.8%
7	72	58.3%	73	54.8%
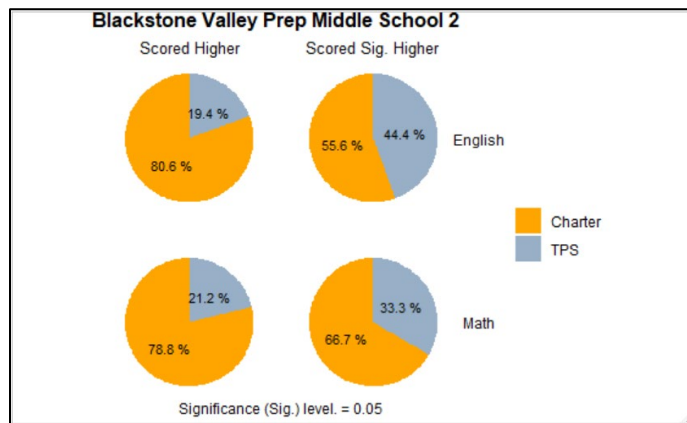
Comparable Grade Levels
English: 36
Math: 33

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Blackstone Valley Prep Middle School 2	Central Falls	5	3	3	100.00%	2	66.67%
Blackstone Valley Prep Middle School 2	Cumberland	5	5	3	60.00%	0	0.00%
Blackstone Valley Prep Middle School 2	Lincoln	5	3	1	33.33%	0	0.00%
Blackstone Valley Prep Middle School 2	Pawtucket	5	10	10	100.00%	9	90.00%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Blackstone Valley Prep Middle School 2	Central Falls	6	1	1	100.00%	1	100.00%
Blackstone Valley Prep Middle School 2	Cumberland	6	2	1	50.00%	0	0.00%
Blackstone Valley Prep Middle School 2	Lincoln	6	1	1	100.00%	0	0.00%
Blackstone Valley Prep Middle School 2	Pawtucket	6	4	3	75.00%	2	50.00%
Blackstone Valley Prep Middle School 2	Central Falls	7	1	1	100.00%	1	100.00%
Blackstone Valley Prep Middle School 2	Cumberland	7	2	1	50.00%	1	50.00%
Blackstone Valley Prep Middle School 2	Lincoln	7	1	1	100.00%	1	100.00%
Blackstone Valley Prep Middle School 2	Pawtucket	7	3	3	100.00%	3	100.00%

District-Level Comparisons: Math RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Blackstone Valley Prep Middle School 2	Central Falls	5	3	3	100.00%	3	100.00%
Blackstone Valley Prep Middle School 2	Cumberland	5	5	2	40.00%	1	20.00%
Blackstone Valley Prep Middle School 2	Lincoln	5	3	1	33.33%	0	0.00%
Blackstone Valley Prep Middle School 2	Pawtucket	5	10	10	100.00%	9	90.00%
Blackstone Valley Prep	Cumberland	6	2	1	50.00%	1	50.00%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Middle School 2							
Blackstone Valley Prep Middle School 2	Lincoln	6	1	1	100.00%	0	0.00%
Blackstone Valley Prep Middle School 2	Pawtucket	6	4	4	100.00%	4	100.00%
Blackstone Valley Prep Middle School 2	Cumberland	7	2	1	50.00%	1	50.00%
Blackstone Valley Prep Middle School 2	Lincoln	7	1	1	100.00%	1	100.00%
Blackstone Valley Prep Middle School 2	Pawtucket	7	2	2	100.00%	2	100.00%

Highlander Elementary Charter School

Districts Served: Providence

Grades Served: K-6

Grades for which RICAS Results are Available: 3-6

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
3	35	17.1%	35	20.0%
4	36	22.2%	36	19.4%
5	35	31.1%	36	11.1%
6	35	34.3%	35	25.7%

Comparable Grade Levels

English: 68
Math: 60

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Highlander Elementary Charter School	Providence	3	21	5	23.81%	0	0.00%
Highlander Elementary Charter School	Providence	4	20	14	70.00%	5	25.00%
Highlander Elementary Charter School	Providence	5	21	15	71.43%	9	42.86%
Highlander Elementary Charter School	Providence	6	6	6	100.00%	5	83.33%

District-Level Comparisons: Math RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Highlander Elementary Charter School	Providence	3	19	12	63.16%	0	0.00%
Highlander Elementary Charter School	Providence	4	18	12	66.67%	6	33.33%
Highlander Elementary Charter School	Providence	5	18	5	27.78%	0	0.00%
Highlander Elementary Charter School	Providence	6	5	4	80.00%	3	60.00%

Highlander Secondary Charter School

Districts Served: Bristol-Warren

Grades Served: 7-12

Grades for which RICAS Results are Available: 7-8

Test Scores Breakdown				
	English		Math	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
7	59	44.1%	59	13.6%
8	59	22.0%	59	8.5%
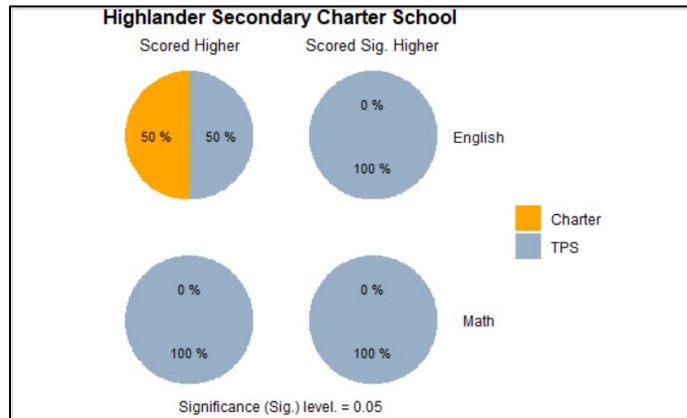
Comparable Grade Levels

English: 2
Math: 2

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Highlander Secondary Charter School	Bristol Warren	7	1	1	100.00%	0	0.00%
Highlander Secondary Charter School	Bristol Warren	8	1	0	0.00%	0	0.00%

District-Level Comparisons: Math RICAS

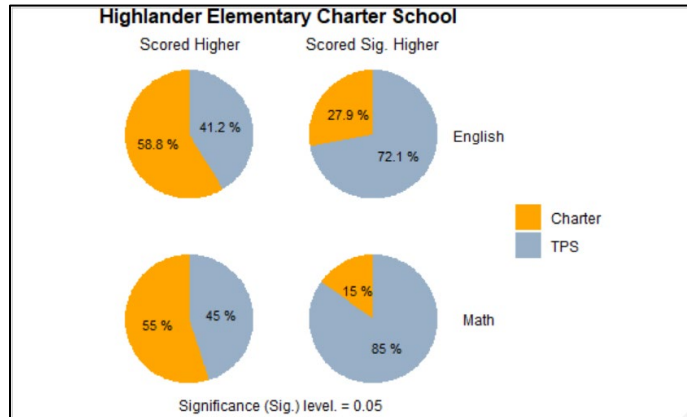| Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Highlander Secondary Charter School	Bristol Warren	7	1	0	0.00%	0	0.00%
Highlander Secondary Charter School	Bristol Warren	8	1	0	0.00%	0	0.00%

International Charter School

Districts Served: Pawtucket

Grades Served: K-8

Grades for which RICAS Results are Available: 3-5

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
3	63	42.9%	64	14.1%
4	53	32.1%	53	18.9%
5	54	18.5%	54	18.5%
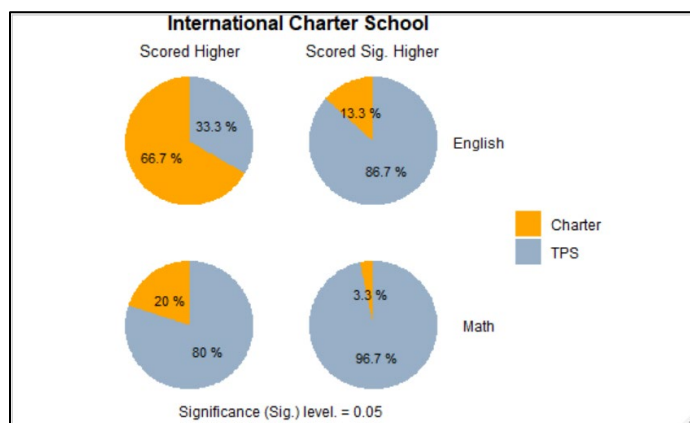
Comparable Grade Levels
English: 30
Math: 30

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
International Charter School	Pawtucket	3	10	8	80.00%	1	10.00%
International Charter School	Pawtucket	4	10	9	90.00%	3	30.00%
International Charter School	Pawtucket	5	10	3	30.00%	0	0.00%

District-Level Comparisons: Math RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
International Charter School	Pawtucket	3	10	0	0.00%	0	0.00%
International Charter School	Pawtucket	4	10	4	40.00%	1	10.00%
International Charter School	Pawtucket	5	10	2	20.00%	0	0.00%

Kingston Hill Academy

Districts Served: Narragansett, North Kingstown

Grades Served: K-5

Grades for which RICAS Results are Available: 3-5

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
3	45	80.0%	46	69.6%
4	39	59.0%	38	71.1%
5	31	74.2%	31	77.4%

Kingston Hill Academy — Scored Higher / Scored Sig. Higher, English and Math. Charter / TPS. Significance (Sig.) level. = 0.05
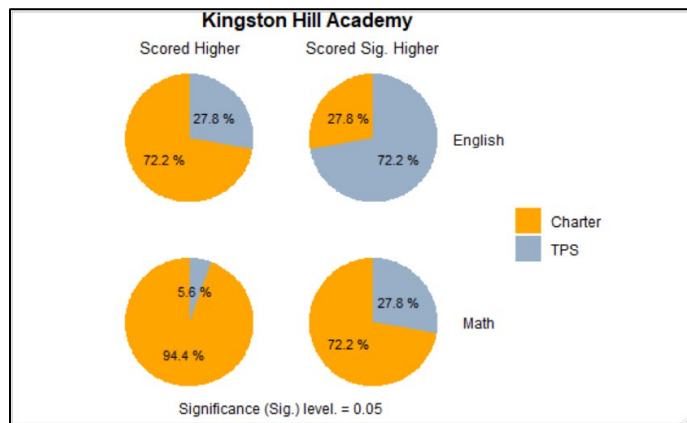
Comparable Grade Levels

English: 18
Math: 18

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Kingston Hill Academy	Narragansett	3	1	1	100.00%	1	100.00%
Kingston Hill Academy	North Kingston	3	5	4	80.00%	3	60.00%
Kingston Hill Academy	Narragansett	4	1	1	100.00%	0	0.00%
Kingston Hill Academy	North Kingston	4	5	2	40.00%	0	0.00%
Kingston Hill Academy	Narragansett	5	1	1	100.00%	0	0.00%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Kingston Hill Academy	North Kingston	5	5	4	80.00%	1	20.00%

District-Level Comparisons: Math RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Kingston Hill Academy	Narragansett	3	1	1	100.00%	1	100.00%
Kingston Hill Academy	North Kingston	3	5	4	80.00%	3	60.00%
Kingston Hill Academy	Narragansett	4	1	1	100.00%	1	100.00%
Kingston Hill Academy	North Kingston	4	5	5	100.00%	3	60.00%
Kingston Hill Academy	Narragansett	5	1	1	100.00%	1	100.00%
Kingston Hill Academy	North Kingston	5	5	5	100.00%	4	80.00%

The Learning Community Charter School

Districts Served: Central Falls, Pawtucket, Providence

Grades Served: K-8

Grades for which RICAS Results are Available: 3-8

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
3	65	60.0%	65	35.4%
4	64	31.3%	66	47.0%
5	66	62.1%	66	42.4%
6	60	35.0%	59	11.9%
7	57	22.8%	57	22.8%
8	58	36.2%	58	25.9%
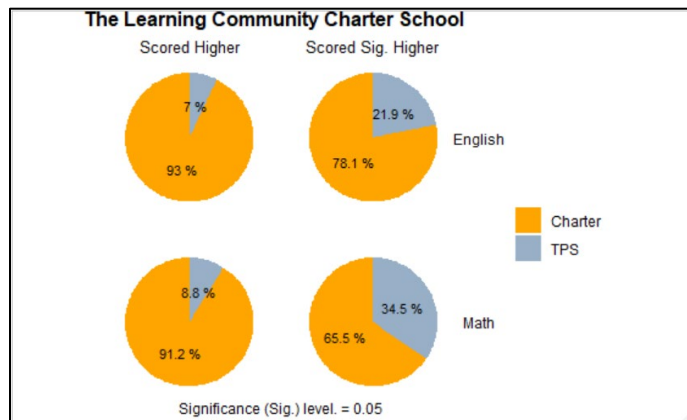
Comparable Grade Levels

English: 128
Math: 113

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
The Learning Community Charter School	Central Falls	3	2	2	100.00%	2	100.00%
The Learning Community Charter School	Pawtucket	3	10	10	100.00%	8	80.00%
The Learning Community	Providence	3	21	19	90.48%	18	85.71%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Charter School							
The Learning Community Charter School	Central Falls	4	2	2	100.00%	2	100.00%
The Learning Community Charter School	Pawtucket	4	10	9	90.00%	3	30.00%
The Learning Community Charter School	Providence	4	20	17	85.00%	13	65.00%
The Learning Community Charter School	Central Falls	5	3	3	100.00%	3	100.00%
The Learning Community Charter School	Pawtucket	5	10	10	100.00%	10	100.00%
The Learning Community Charter School	Providence	5	21	21	100.00%	19	90.48%
The Learning Community Charter School	Central Falls	6	1	1	100.00%	1	100.00%
The Learning Community Charter School	Pawtucket	6	4	2	50.00%	2	50.00%
The Learning Community Charter School	Providence	6	6	6	100.00%	5	83.33%
The Learning Community Charter School	Central Falls	7	1	1	100.00%	1	100.00%
The Learning Community Charter School	Pawtucket	7	3	3	100.00%	2	66.67%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
The Learning Community Charter School	Providence	7	4	4	100.00%	2	50.00%
The Learning Community Charter School	Central Falls	8	1	1	100.00%	1	100.00%
The Learning Community Charter School	Pawtucket	8	3	2	66.67%	2	66.67%
The Learning Community Charter School	Providence	8	6	6	100.00%	6	100.00%

District-Level Comparisons: Math RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
The Learning Community Charter School	Central Falls	3	2	2	100.00%	2	100.00%
The Learning Community Charter School	Pawtucket	3	10	7	70.00%	1	10.00%
The Learning Community Charter School	Providence	3	19	17	89.47%	14	73.68%
The Learning Community Charter School	Central Falls	4	2	2	100.00%	2	100.00%
The Learning Community Charter School	Pawtucket	4	10	10	100.00%	6	60.00%
The Learning Community Charter School	Providence	4	18	18	100.00%	15	83.33%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
The Learning Community Charter School	Central Falls	5	3	3	100.00%	2	66.67%
The Learning Community Charter School	Pawtucket	5	10	10	100.00%	7	70.00%
The Learning Community Charter School	Providence	5	18	18	100.00%	15	83.33%
The Learning Community Charter School	Pawtucket	6	4	1	25.00%	0	0.00%
The Learning Community Charter School	Providence	6	5	3	60.00%	1	20.00%
The Learning Community Charter School	Pawtucket	7	2	2	100.00%	1	50.00%
The Learning Community Charter School	Providence	7	4	4	100.00%	2	50.00%
The Learning Community Charter School	Pawtucket	8	3	3	100.00%	3	100.00%
The Learning Community Charter School	Providence	8	3	3	100.00%	3	100.00%

Paul Cuffee Lower School

Districts Served: Providence

Grades Served: K-5

Grades for which RICAS Results are Available: 3-5

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
3	61	31.1%	61	36.1%
4	59	22.0%	60	21.7%
5	60	13.3%	60	20.0%

Comparable Grade Levels
English: 62
Math: 55

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Paul Cuffee Lower School	Providence	3	21	14	66.67%	7	33.33%
Paul Cuffee Lower School	Providence	4	20	14	70.00%	7	35.00%
Paul Cuffee Lower School	Providence	5	21	6	28.57%	1	4.76%

District-Level Comparisons: Math RICAS

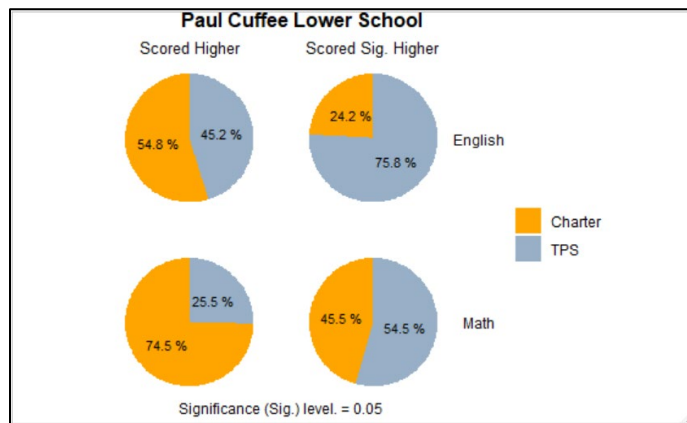| Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Paul Cuffee Lower School	Providence	3	19	17	89.47%	14	73.68%
Paul Cuffee Lower School	Providence	4	18	13	72.22%	6	33.33%
Paul Cuffee Lower School	Providence	5	18	11	61.11%	5	27.78%

Paul Cuffee Middle School

Districts Served: Providence

Grades Served: 6-8

Grades for which RICAS Results are Available: 6-8

Test Scores Breakdown				
	English		Math	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
6	65	40.0%	65	13.8%
7	63	28.6%	63	34.9%
8	62	30.6%	62	33.9%
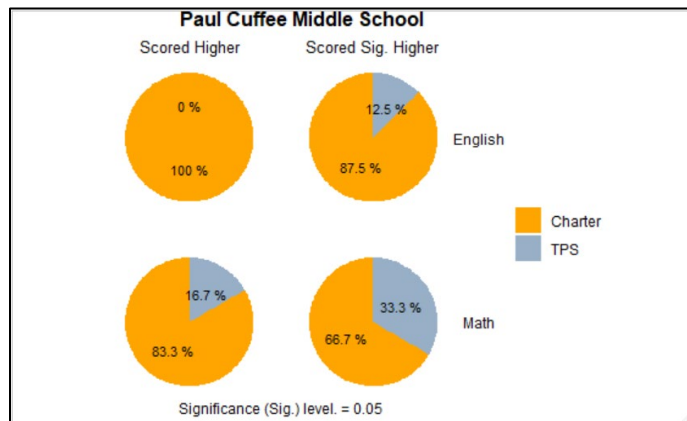
Comparable Grade Levels

English: 16
Math: 12

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Paul Cuffee Middle School	Providence	6	6	6	100.00%	5	83.33%
Paul Cuffee Middle School	Providence	7	4	4	100.00%	4	100.00%
Paul Cuffee Middle School	Providence	8	6	6	100.00%	5	83.33%

District-Level Comparisons: Math RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Paul Cuffee Middle School	Providence	6	5	3	60.00%	1	20.00%
Paul Cuffee Middle School	Providence	7	4	4	100.00%	4	100.00%
Paul Cuffee Middle School	Providence	8	3	3	100.00%	3	100.00%

SouthSide Elementary Charter School

Districts Served: Providence

Grades Served: K-5

Grades for which RICAS Results are Available: 3-4

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
3	21	38.1%	22	22.7%
4	23	17.1%	23	30.4%

SouthSide Elementary Charter School

Scored Higher — Scored Sig. Higher

26.8% / 73.2% — 24.4% / 75.6% — English

24.3% / 75.7% — 24.3% / 75.7% — Math

Charter / TPS

Significance (Sig.) level. = 0.05
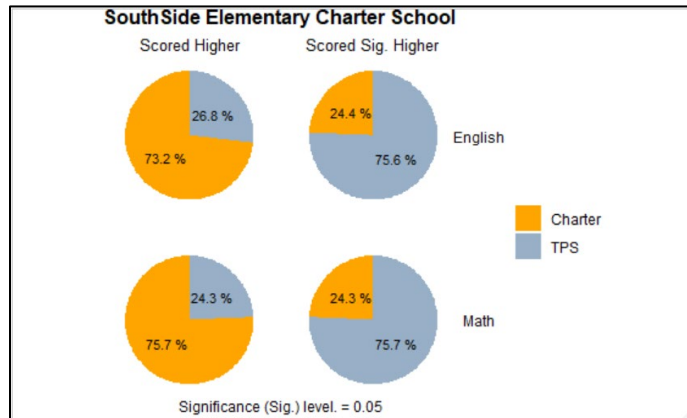
Comparable Grade Levels
English: 41
Math: 37

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
SouthSide Elementary Charter School	Providence	3	21	17	80.95%	9	42.86%
SouthSide Elementary Charter School	Providence	4	20	13	65.00%	1	5.00%

District-Level Comparisons: Math RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
SouthSide Elementary Charter School	Providence	3	19	14	73.68%	0	0.00%
SouthSide Elementary Charter School	Providence	4	18	14	77.78%	9	50.00%

The Compass School

Districts Served: Chariho, Exeter-West Greenwich, North Kingstown, South Kingstown, Westerly

Grades Served: K-8

Grades for which RICAS Results are Available: 3-8

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
3	20	50.0%	20	30.0%
4	19	47.4%	19	36.8%
5	21	61.9%	21	42.9%
6	19	68.4%	19	63.2%
7	18	77.8%	18	66.7%
8	21	76.2%	21	47.6%
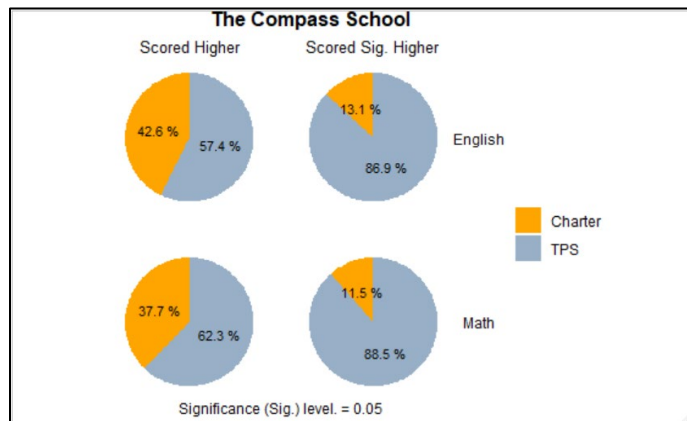
Comparable Grade Levels
English: 61
Math: 61

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
The Compass School	Chariho	3	4	0	0.00%	0	0.00%
The Compass School	Exeter-West Greenwich	3	1	0	0.00%	0	0.00%
The Compass School	North Kingston	3	5	1	20.00%	0	0.00%
The Compass School	South Kingston	3	4	0	0.00%	0	0.00%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
The Compass School	Westerly	3	3	1	33.33%	0	0.00%
The Compass School	Chariho	4	4	0	0.00%	0	0.00%
The Compass School	Exeter-West Greenwich	4	1	0	0.00%	0	0.00%
The Compass School	North Kingston	4	5	1	20.00%	0	0.00%
The Compass School	South Kingston	4	4	1	25.00%	0	0.00%
The Compass School	Westerly	4	3	1	33.33%	0	0.00%
The Compass School	Chariho	5	1	1	100.00%	0	0.00%
The Compass School	Exeter-West Greenwich	5	1	1	100.00%	1	100.00%
The Compass School	North Kingston	5	5	2	40.00%	0	0.00%
The Compass School	South Kingston	5	1	1	100.00%	0	0.00%
The Compass School	Westerly	5	1	0	0.00%	0	0.00%
The Compass School	Chariho	6	1	1	100.00%	0	0.00%
The Compass School	Exeter-West Greenwich	6	1	1	100.00%	1	100.00%
The Compass School	North Kingston	6	2	1	50.00%	0	0.00%
The Compass School	South Kingston	6	1	1	100.00%	0	0.00%
The Compass School	Westerly	6	1	1	100.00%	0	0.00%
The Compass School	Chariho	7	1	1	100.00%	1	100.00%
The Compass School	Exeter-West Greenwich	7	1	1	100.00%	0	0.00%
The Compass School	North Kingston	7	2	2	100.00%	1	50.00%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
The Compass School	South Kingston	7	1	1	100.00%	1	100.00%
The Compass School	Westerly	7	1	1	100.00%	1	100.00%
The Compass School	Chariho	8	1	1	100.00%	0	0.00%
The Compass School	Exeter-West Greenwich	8	1	1	100.00%	0	0.00%
The Compass School	North Kingston	8	2	1	50.00%	1	50.00%
The Compass School	South Kingston	8	1	1	100.00%	0	0.00%
The Compass School	Westerly	8	1	1	100.00%	1	100.00%

District-Level Comparisons: Math RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
The Compass School	Chariho	3	4	0	0.00%	0	0.00%
The Compass School	Exeter-West Greenwich	3	1	0	0.00%	0	0.00%
The Compass School	North Kingston	3	5	0	0.00%	0	0.00%
The Compass School	South Kingston	3	4	0	0.00%	0	0.00%
The Compass School	Westerly	3	3	0	0.00%	0	0.00%
The Compass School	Chariho	4	4	0	0.00%	0	0.00%
The Compass School	Exeter-West Greenwich	4	1	0	0.00%	0	0.00%
The Compass School	North Kingston	4	5	1	20.00%	0	0.00%
The Compass School	South Kingston	4	4	0	0.00%	0	0.00%

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
The Compass School	Westerly	4	3	1	33.33%	0	0.00%
The Compass School	Chariho	5	1	1	100.00%	0	0.00%
The Compass School	Exeter-West Greenwich	5	1	0	0.00%	0	0.00%
The Compass School	North Kingston	5	5	2	40.00%	0	0.00%
The Compass School	South Kingston	5	1	0	0.00%	0	0.00%
The Compass School	Westerly	5	1	1	100.00%	0	0.00%
The Compass School	Chariho	6	1	1	100.00%	1	100.00%
The Compass School	Exeter-West Greenwich	6	1	1	100.00%	1	100.00%
The Compass School	North Kingston	6	2	2	100.00%	1	50.00%
The Compass School	South Kingston	6	1	1	100.00%	0	0.00%
The Compass School	Westerly	6	1	1	100.00%	1	100.00%
The Compass School	Chariho	7	1	1	100.00%	1	100.00%
The Compass School	Exeter-West Greenwich	7	1	1	100.00%	0	0.00%
The Compass School	North Kingston	7	2	2	100.00%	0	0.00%
The Compass School	South Kingston	7	1	1	100.00%	0	0.00%
The Compass School	Westerly	7	1	1	100.00%	1	100.00%
The Compass School	Chariho	8	1	1	100.00%	0	0.00%
The Compass School	Exeter-West Greenwich	8	1	1	100.00%	0	0.00%
The Compass School	North Kingston	8	2	1	50.00%	0	0.00%

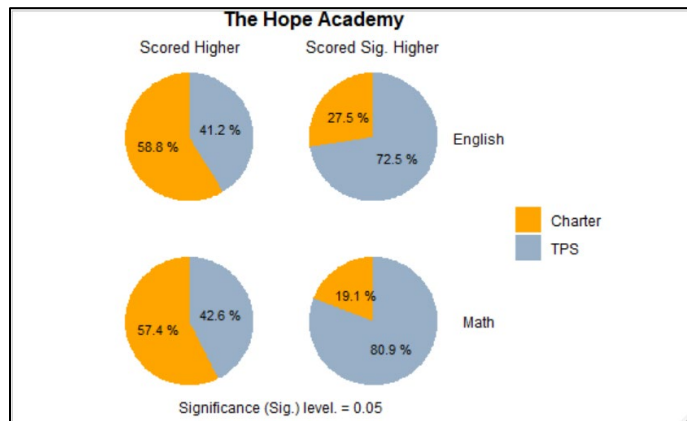| Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
The Compass School	South Kingston	8	1	1	100.00%	0	0.00%
The Compass School	Westerly	8	1	1	100.00%	1	100.00%

The Hope Academy

Districts Served: North Providence, Providence

Grades Served: K-8

Grades for which RICAS Results are Available: 3-4

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
3	36	22.2%	36	22.2%
4	36	36.1%	36	22.2%

Comparable Grade Levels
English: 51
Math: 47

District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
The Hope Academy	North Providence	3	5	0	0.00%	0	0.00%
The Hope Academy	Providence	3	21	9	42.86%	0	0.00%
The Hope Academy	North Providence	4	5	2	40.00%	0	0.00%
The Hope Academy	Providence	4	20	19	95.00%	14	70.00%

District-Level Comparisons: Math RICAS

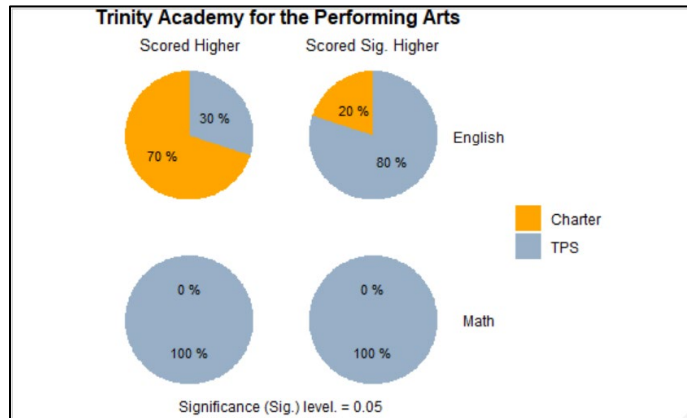| Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
The Hope Academy	North Providence	3	5	0	0.00%	0	0.00%
The Hope Academy	Providence	3	19	13	68.42%	3	15.79%
The Hope Academy	North Providence	4	5	1	20.00%	0	0.00%
The Hope Academy	Providence	4	18	13	72.22%	6	33.33%

Trinity Academy for the Performing Arts

Districts Served: Providence

Grades Served: 7-12

Grades for which RICAS Results are Available: 7-8

Test Scores Breakdown				
	English		**Math**	
Grade	Students Tested	% Scored 3 or 4	Students Tested	% Scored 3 or 4
7	36	11.1%	36	5.6%
8	36	19.4%	35	5.7%


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Comparable Grade Levels

English: 10
Math: 7
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District-Level Comparisons: English RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Trinity Academy for the Performing Arts	Providence	7	4	2	50.00%	0	0.00%
Trinity Academy for the Performing Arts	Providence	8	6	5	83.33%	2	33.33%

District-Level Comparisons: Math RICAS

Charter	District	Grade	Comparable Grade-Levels	Scored Higher	Percent	Scored Significantly Higher	Percent
Trinity Academy for the Performing Arts	Providence	7	4	0	0.00%	0	0.00%
Trinity Academy for the Performing Arts	Providence	8	3	0	0.00%	0	0.00%

Appendix C: Miscellaneous

Correlations between variables for English RICAS scores model

	Score3plus4	FTE	Studteach_ratio	Spendperpupil	Med_income	HS_or_less	Col_plus	Married	PerBlack	PerHispanic	PerWhite	PerAsian	PerOther
Score3plus4	1.00	-0.28	-0.18	0.01	0.68	-0.70	0.68	0.65	-0.59	-0.63	0.70	-0.01	-0.21
FTE	-0.28	1.00	-0.17	0.03	-0.19	0.20	-0.17	-0.18	0.22	0.15	-0.16	-0.14	-0.04
Studteach_ratio	-0.18	-0.17	1.00	0.18	-0.22	0.23	-0.23	-0.20	0.09	0.21	-0.20	0.08	-0.06
Spendperpupil	0.01	0.03	0.18	1.00	0.20	-0.08	0.08	0.24	-0.30	-0.15	0.23	-0.14	0.00
Med_income	0.68	-0.19	-0.22	0.20	1.00	-0.96	0.94	0.93	-0.69	-0.79	0.85	0.03	-0.20
HS_or_less	-0.70	0.20	0.23	-0.08	-0.96	1.00	-0.95	-0.87	0.68	0.82	-0.87	-0.06	0.20
Col_plus	0.68	-0.17	-0.23	0.08	0.94	-0.95	1.00	0.80	-0.68	-0.71	0.78	0.06	-0.16
Married	0.65	-0.18	-0.20	0.24	0.93	-0.87	0.80	1.00	-0.73	-0.74	0.82	0.09	-0.23
PerBlack	-0.59	0.22	0.09	-0.30	-0.69	0.68	-0.68	-0.73	1.00	0.49	-0.69	-0.18	0.30
PerHispanic	-0.63	0.15	0.21	-0.15	-0.79	0.82	-0.71	-0.74	0.49	1.00	-0.95	0.05	0.05
PerWhite	0.70	-0.16	-0.20	0.23	0.85	-0.87	0.78	0.82	-0.69	-0.95	1.00	-0.12	-0.22
PerAsian	-0.01	-0.14	0.08	-0.14	0.03	-0.06	0.06	0.09	-0.18	0.05	-0.12	1.00	0.03
PerOther	-0.21	-0.04	-0.06	0.00	-0.20	0.20	-0.16	-0.23	0.30	0.05	-0.22	0.03	1.00

Correlations between variables for Math RICAS scores model

|	Score3plus4	FTE	Studteach_ratio	Spendperpupil	Med_income	HS_or_less	Col_plus	Married	PerBlack	PerHispanic	PerWhite	PerAsian	PerOther
Score3plus4	1.00	-0.24	-0.15	0.00	0.61	-0.63	0.64	0.57	-0.51	-0.55	0.63	-0.07	-0.25
FTE	-0.24	1.00	-0.20	0.01	-0.15	0.16	-0.13	-0.14	0.19	0.12	-0.13	-0.12	-0.04
Studteach_ratio	-0.15	-0.20	1.00	0.17	-0.20	0.20	-0.21	-0.19	0.06	0.18	-0.16	0.06	-0.07
Spendperpupil	0.00	0.01	0.17	1.00	0.23	-0.11	0.11	0.26	-0.32	-0.18	0.25	-0.14	0.01
Med_income	0.61	-0.15	-0.20	0.23	1.00	-0.96	0.93	0.93	-0.69	-0.78	0.84	0.03	-0.21
HS_or_less	-0.63	0.16	0.20	-0.11	-0.96	1.00	-0.95	-0.87	0.68	0.81	-0.86	-0.05	0.20
Col_plus	0.64	-0.13	-0.21	0.11	0.93	-0.95	1.00	0.80	-0.68	-0.70	0.77	0.05	-0.16
Married	0.57	-0.14	-0.19	0.26	0.93	-0.87	0.80	1.00	-0.73	-0.73	0.81	0.09	-0.23
PerBlack	-0.51	0.19	0.06	-0.32	-0.69	0.68	-0.68	-0.73	1.00	0.48	-0.68	-0.18	0.30
PerHispanic	-0.55	0.12	0.18	-0.18	-0.78	0.81	-0.70	-0.73	0.48	1.00	-0.95	0.06	0.05
PerWhite	0.63	-0.13	-0.16	0.25	0.84	-0.86	0.77	0.81	-0.68	-0.95	1.00	-0.12	-0.22
PerAsian	-0.07	-0.12	0.06	-0.14	0.03	-0.05	0.05	0.09	-0.18	0.06	-0.12	1.00	0.02
PerOther	-0.25	-0.04	-0.07	0.01	-0.21	0.20	-0.16	-0.23	0.30	0.05	-0.22	0.02	1.00

Breakdown of directly competing grade-levels by grade

English RICAS
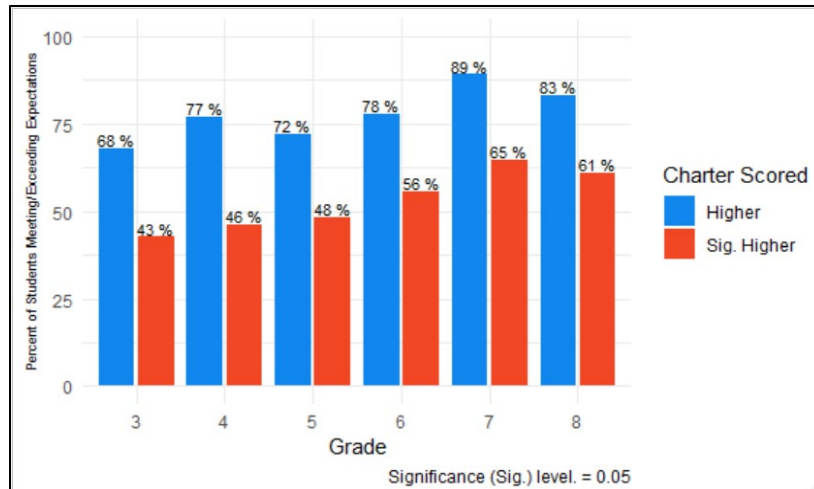
Source: Author's calculations

Math RICAS
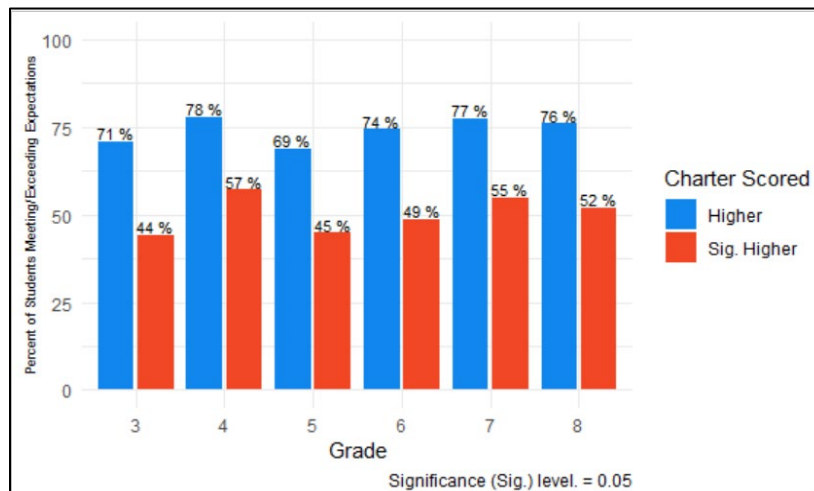
Source: Author's calculations

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