

Comparison Study of Performance between VGV and Sending School Districts, State, and Cross-States on the Spring 2016 PARCC Assessments

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Abstract

One metric that has been used for assessing charter school performance has been the comparison of the charter school's performance on state testing compared to the performance of its sending school districts. The expectations are that charter schools will outperform their sending school districts. The purpose of this study was to ascertain whether the Village Green Virtual Charter High School (Providence, Rhode Island) met this expectation on the spring 2016 PARCC assessments in English Language Arts & Literacy (ELA/L 9 and ELA/L 10) and Mathematics (Algebra 1 & Geometry). This study also compared the schools performance to that of the state and PARCC cross-states. Results revealed that VGV exceeded its sending school districts target percentage in all four assessments. VGV exceeded the Rhode Island state and cross-states proficiency percentage in both ELA/L 9 and ELA/L 10. VGV's performance in both Algebra 1 and Geometry closely matched that of the RI state performance but fell well under the cross-states performance (as did the RI state) in both Algebra 1 and Geometry.

Need for This Study

One metric that has been used for assessing charter school performance has been the comparison of the charter school's performance on state testing compared to the performance of its sending school districts. The expectations are that charter schools will outperform their sending districts, with regards to similar populations, on standardized tests. "Sending school districts" refers to the school district that the student would attend if not enrolled in the charter school. The "performance" metric for comparison sake is the percentage of test-takers that were "proficient or above" (i.e., the 4s and 5s combined).

Another comparison of interest is the comparison of the school with the averaged state performance as well as the averaged national performance. In the case of the PARCC assessments (Partnership for Assessment for Assessment of Readiness for College and Careers), "cross-states" is the terminology used in place of "national" as there is a small number of states that administer the PARCC and "national" implies a more expansive use.

For the 2015-2016 school year, the second administration of the PARCC assessments, there were approximately 3.2 million students that tested across seven states: Colorado, Illinois, Maryland, Massachusetts, New Jersey, New Mexico, Rhode Island, and the District of Columbia.

Rhode Island charter schools are typically given a 5-year charter. Every five years the charter school is evaluated by RIDE (Rhode Island Department of Education) through a charter renewal process. The performance on state testing (i.e., PARCC) is a major metric used in the renewal process.

This study compares the performance of the Village Green Virtual Charter School (Providence, Rhode Island) students who took the spring 2016 PARCC ELA/L (Grades 9 and 10) and mathematics (Algebra 1 and Geometry) assessments against their sending school districts, Rhode Island state, and cross-state performance.

Research Questions:

- 1. Is Village Green Virtual Charter School outperforming its students' sending districts as measured by the 2016 spring PARCC ELA/L and Mathematics assessments?**
- 2. How does VGV's performance compare with the state and cross-states PARCC performance?**

Method:

VGV draws students statewide from a number of Rhode Island school districts. The number of students from the sending districts varies widely as does the sending districts’ performance on state testing.

The method of comparing VGV’s performance to that of an average percentage of all of its sending districts requires assigning a “fractional weight” based on the proportion of VGV test-taker students from each district. The fractional weights should all add up to a value of 1.0. The fractional weight for each separate sending school district is then multiplied by the percent proficient or above for that specific district. The sum of all of these products is the target averaged proficiency for VGV to exceed.

Example Calculations (Refer to Table A):

- Step 1. List all of the sending school districts that the VGV test-takers were from in Column A.
- Step 2. List the number of test-takers from each sending school district in Column B and calculate the total number of test-takers which is 43 in our example.
- Step 3. Divide each value for the number of test-takers in Column B by 43 and write the value in the appropriate row in Column C. This is the ‘Fractional Weight’ for each sending school district. Check that all of the values in Column C add to 1.0. If not, check your math before proceeding.
- Step 4. Refer to RIDE’s Instructional Support System (ISS) to find the PARCC performance district/school comparison tool and record the reported sending district percent “proficient or above” (i.e., the 4s and 5s) in the appropriate row in Column D.
- Step 5. Multiply column C by Column D and record in Column E. Sum the values in Column E to get the target percent “proficient or above” that VGV must exceed. In the example in Table A, the value is 41%.

Table A. Example spreadsheet layout for calculating the sending districts target proficiency percent

	A	B	C	D	E
	Sending District (High School)	No. of VGV Students Tested	Sending District Fractional Weight	Sending District ELA/L % Proficient	Sending District Weight % (Column C x D)
1	District A	5	0.11628	35.2	4.09302
2	District B	2	0.04651	31.7	1.47442
3	District C	30	0.69767	36.8	25.67442
4	District D	6	0.13953	69.7	9.72558
	Totals:	43	1.00000	Sending Districts:	41

Results

Note: all results involve comparisons at the high school level

ELA/L 9:

As shown in Table 1 and corresponding Figure 1, VGV test-takers' ($n = 44$) performance (50%) exceeded all three categories: sending school districts (24%), RI state (33%), and PARCC cross-states (39%).

ELA/L 10:

As shown in Table 2 and corresponding Figure 2, VGV test-takers' ($n = 31$) performance (68%) exceeded all three categories: sending school districts (23%), RI state (31%), and PARCC cross-states (41%).

Six VGV students not included in the 68% calculation because they were either Grade 11 or 12 students and had not previously taken the ELA/L 10 assessment because they had accelerated in their program of study, took the spring 2016 assessment. Five out of the six attained "proficient or above" while the sixth student had a scaled score of 747, just short of the proficiency cutoff score of 750. Factoring in these six students, 26 of 37 were "proficient or above" or 70.3%.

ELA/L 9 & 10 combined (All ELA/L test-takers — all grades):

As shown in Table 3 and corresponding Figure 3, VGV test-takers' ($n = 81$) performance (58%) exceeded all three categories: sending school districts (23%), RI state (32%), and PARCC cross-states (40%).

Algebra 1 (Grade 9 test-takers only):

As shown in Table 4 and corresponding Figure 4, VGV test-takers' ($n = 33$) performance (18%) exceeded its sending school districts (14%), and the RI state (16%), but did not exceed the PARCC cross-states (33%).

Geometry (Grade 10 test-takers only):

As shown in Table 5 and corresponding Figure 5, VGV test-takers' ($n = 23$) performance (9%) exceeded its sending school districts (7%), matched the RI state (9%), but did not exceed the PARCC cross-states (27%).

Results Summary

A summary of these results are shown graphically in Figure 6.

Table 1. Calculations of Sending Districts' Fractional Weights and Contributing Proficiency Percent for the PARCC ELA/L 9 Assessment – Spring 2016
 Note: source of sending school district data is from RIDE's ISS

PARCC ELA/L 9 Spring 2016				
A	B	C	D	E
Sending District (High School)	No. of VGV Students Tested	Sending District Fractional Weight	Sending District ELA/L 9 % Proficient	Sending District Weight % (Column C x D)
1 Coventry	1	0.02273	36.0	0.81818
2 Cranston	4	0.09091	35.0	3.18182
3 East Greenwich	1	0.02273	73.0	1.65909
4 East Providence	3	0.06818	10.0	0.68182
5 North Smithfield	1	0.02273	73.0	1.65909
6 Pawtucket	6	0.13636	17.0	2.31818
7 Providence	27	0.61364	21.0	12.88636
8 West Warwick	1	0.02273	39.0	0.88636
Totals:	44	1.00000	Sending Districts:	24
			VGV:	50
			State:	33
			Cross-States:	39

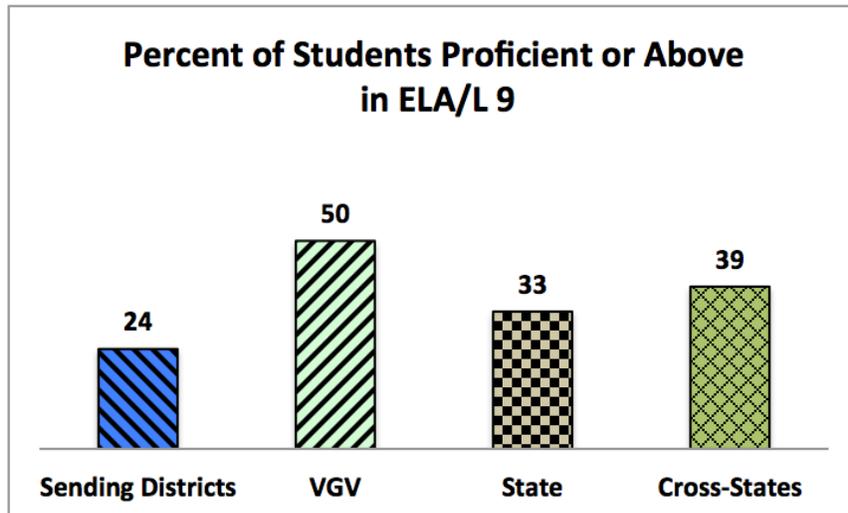


Figure 1. Results from Table 1 for ELA/L 9

Table 2. Calculations of Sending Districts' Fractional Weights and Contributing Proficiency Percent for the PARCC ELA/L 10 Assessment – Spring 2016

Note: source of sending school district data is from RIDE's ISS

PARCC ELA/L 10 Spring 2016				
A	B	C	D	E
Sending District (High School)	No. of VGV Students Tested	Sending District Fractional Weight	Sending District ELA/L 9 % Proficient	Sending District Weight % (Column C x D)
1 Cumberland	2	0.06452	32.0	2.06452
2 East Providence	3	0.09677	16.0	1.54839
3 Pawtucket	1	0.03226	15.0	0.48387
4 Providence	25	0.80645	23.0	18.54839
Totals:	31	1.00000	Sending Districts:	23
			VGV:	68
			State:	31
			Cross-States:	41

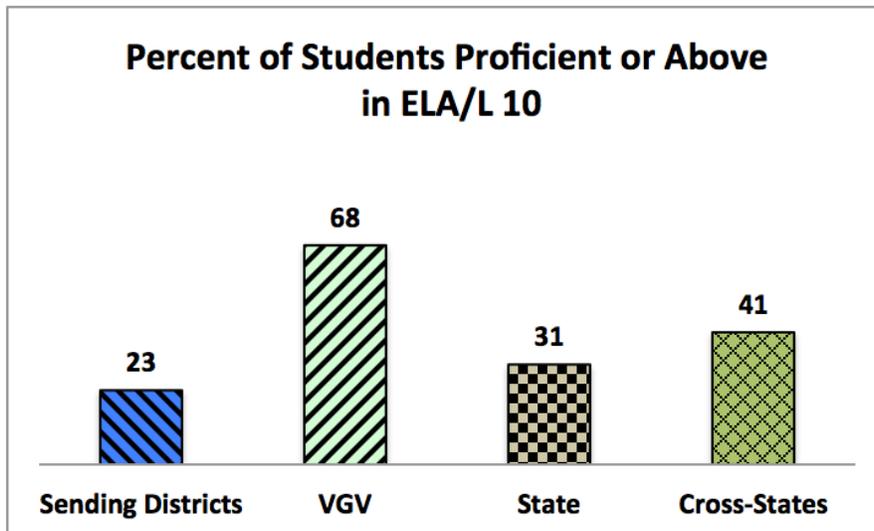


Figure 2. Results from Table 2 for ELA/L 10

Table 3. Calculations of Sending Districts' Fractional Weights and Contributing Proficiency Percent for Combined PARCC ELA/L 9 and ELA/L 10 Test-Takers (9-12) – Spring 2016

Note: source of sending school district data is from RIDE (2016)

PARCC ELA/L Spring 2016 - Combined High School Grades				
A	B	C	D	E
Sending District (High School)	No. of VGV Students Tested	Sending District Fractional Weight	Sending District ELA/L HS % Proficient	Sending District Weight % (Column C x D)
1 Coventry	1	0.01235	35.2	0.43457
2 Cranston	4	0.04938	31.7	1.56543
3 Cumberland	2	0.02469	36.8	0.90864
4 East Greenwich	1	0.01235	69.7	0.86049
5 East Providence	8	0.09877	12.5	1.23457
6 North Smithfield	1	0.01235	73.8	0.91111
7 Pawtucket	7	0.08642	15.9	1.37407
8 Providence	55	0.67901	21.5	14.59877
9 South Kingstown	1	0.01235	33.0	0.40741
10 West Warwick	1	0.01235	35.0	0.43210
Totals:	81	1.00000	Sending Districts:	23
			VGV:	58
			State:	32
			Cross-States:	40

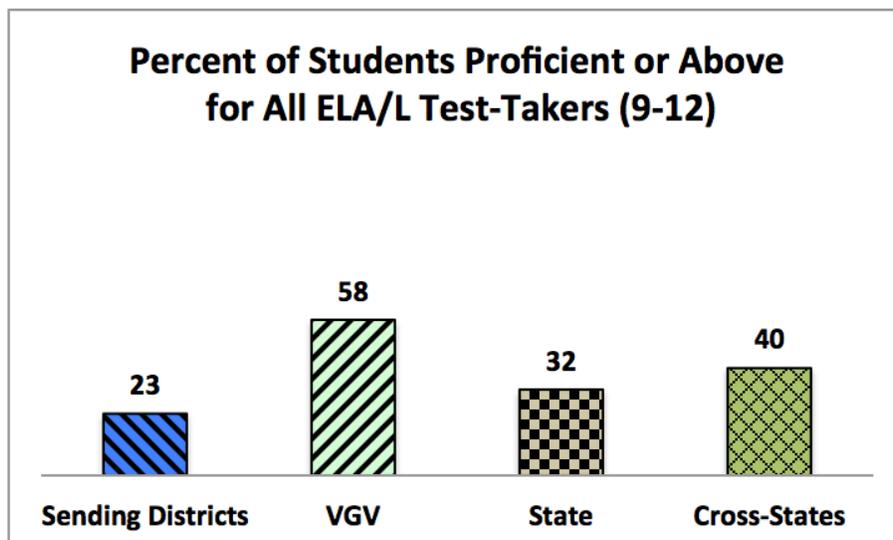


Figure 3. Results from Table 3 for ELA/L 9 and ELA/L 10 Combined

Table 4. Calculations of Sending Districts' Fractional Weights and Contributing Proficiency Percent for the PARCC Algebra 1 Assessment – Spring 2016 (Grade 9 only)

Note: source of sending school district data is from RIDE's ISS)

PARCC Algebra 1 (Grade 9 only) Spring 2016				
A	B	C	D	E
Sending District (High School)	No. of VGV Students Tested	Sending District Fractional Weight	Sending District ELA/L 9 % Proficient	Sending District Weight % (Column C x D)
1 Coventry	1	0.03030	21.0	0.63636
2 Cranston	2	0.06061	13.0	0.78788
3 East Greenwich	1	0.03030	79.0	2.39394
4 East Providence	3	0.09091	0.0	0.00000
5 North Smithfield	1	0.03030	34.0	1.03030
6 Pawtucket	4	0.12121	0.0	0.00000
7 Providence	20	0.60606	14.0	8.48485
8 West Warwick	1	0.03030	33.0	1.00000
Totals:	33	1.00000	Sending Districts:	14
			VGV:	18
			State:	16
			Cross-States:	33

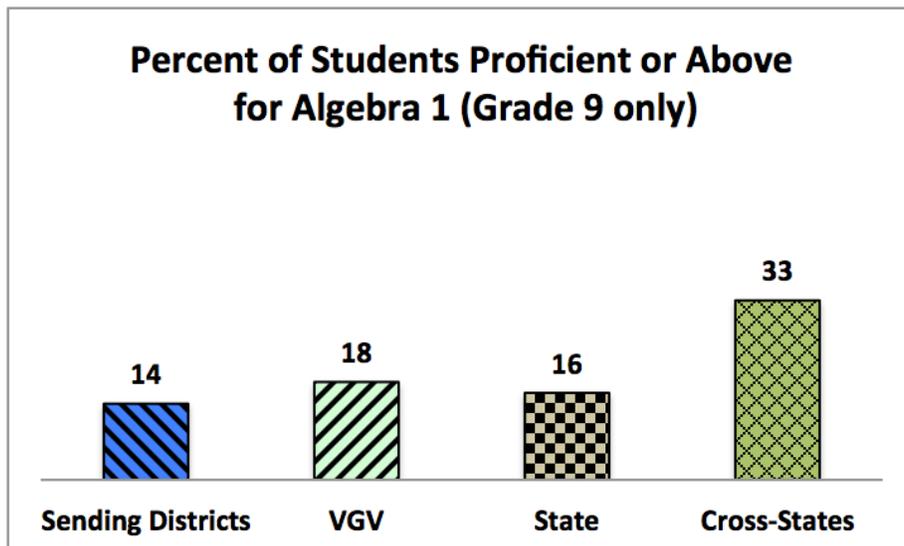


Figure 4. Results from Table 4 for Algebra 1 (Grade 9 only)

Note: PARCC (2016) does not provide “Cross-States” results for “Grade 9 students only” taking the Algebra 1 Assessment so the results for Cross-State are inflated.

Table 5. Calculations of Sending Districts' Fractional Weights and Contributing Proficiency Percent for the PARCC Geometry Assessment – Spring 2016 (Grade 10 only)
 Note: source of sending school district data is from RIDE's ISS

PARCC Geometry (Grade 10 only) Spring 2016				
A	B	C	D	E
Sending District (High School)	No. of VGV Students Tested	Sending District Fractional Weight	Sending District ELA/L 10 % Proficient	Sending District Weight % (Column C x D)
1 Cranston	1	0.04348	3.0	0.13043
2 Cumberland	2	0.08696	4.0	0.34783
3 East Providence	3	0.13043	1.0	0.13043
4 Pawtucket	1	0.04348	0.0	0.00000
5 Providence	16	0.69565	9.0	6.26087
Totals:	23	1.00000	Sending Districts:	7
			VGV:	9
			State:	9
			Cross-States:	27

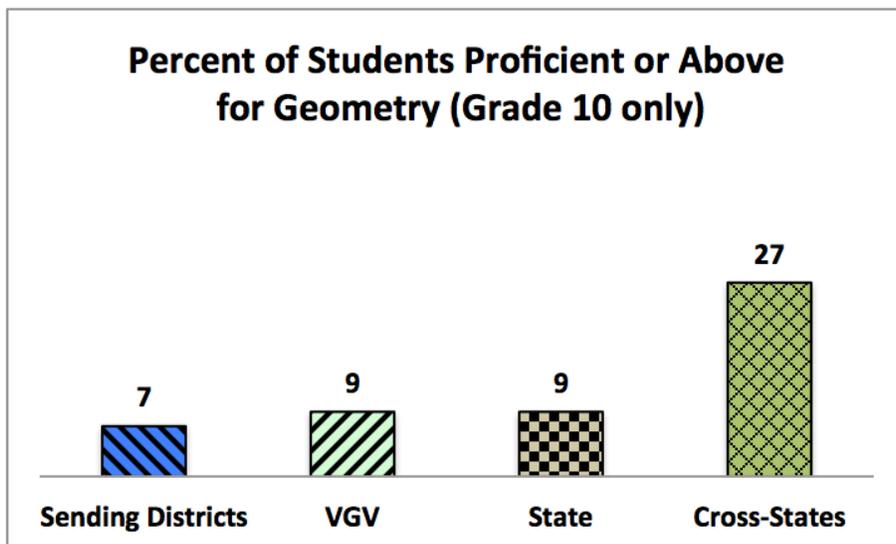


Figure 5. Results from Table 5 for Geometry (Grade 10 only)
 Note: PARCC (2016) does not provide “Cross-States” results for “Grade 10 students only” taking the Geometry Assessment so the results for Cross-State are inflated.

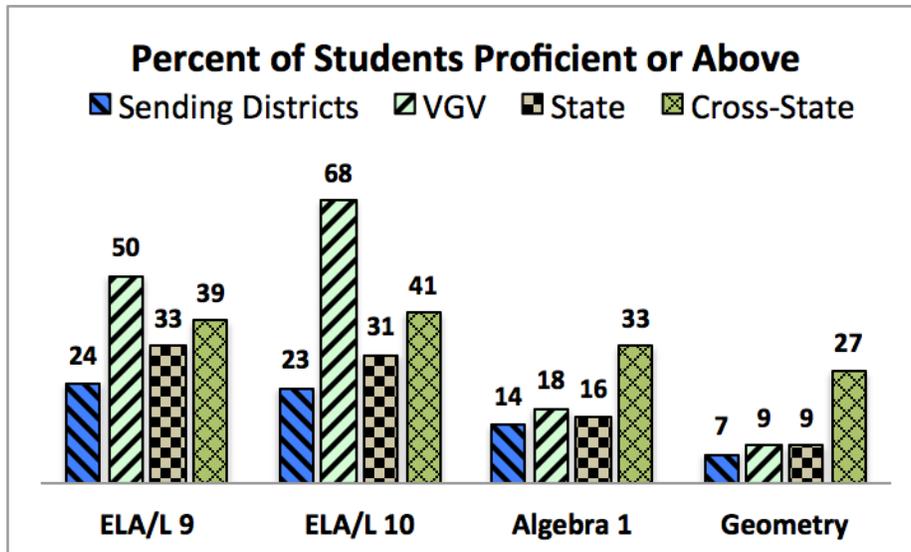


Figure 6. Summary of comparisons across PARCC assessments

Note: PARCC (2016) does not provide “Cross-State” results for “Grade 9 students only” taking the Algebra and “Grade 10 students only” taking the Geometry Assessment so the results for Cross-State are inflated.

Conclusions:

Referring back to the research questions:

1. Is Village Green Virtual Charter School outperforming its students’ sending districts as measured by the 2016 spring PARCC ELA/L and Mathematics assessments?

As shown in Figure 6, VGV exceeded its sending school districts target percentage in all four assessments (i.e., ELA/L 9, ELA/L 10, Algebra 1, Geometry).

2. How does VGV’s performance compare with the state and cross-states PARCC performance?

As shown in Figure 6,

- **VGV exceeded the Rhode Island state and cross-states proficiency percentage in both ELA/L 9 and ELA/L 10.**
- **VGV’s performance in both Algebra 1 and Geometry closely matched that of the RI state performance but fell well under the cross-states performance (as did the RI state) in both Algebra 1 and Geometry.**

References

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