Py City Schools Written Report

Data Analysis and Summary by: Kade Rivers

Purpose

The purpose of this data analysis and summary is to display the reading and math data for the Py City School District high schools and determine top performing schools, lowest performing schools as well as various factors of the type of school, school size, and school budget in comparison to the passing rates for reading and math. The data included the reading and math testing scores for a total of 15 unique high schools in the district. There are seven public schools in the district and eight charter schools with a total of 39,170 students.

Key Findings:

District Summary

	Total Number of Unique Schools	Total Students	Total Budget	Average Math Score	Average Reading Score	Percentage Passing Math	Percentage Passing Reading	Percentage Overall Passing Math and Reading
0	15	39,170	\$82,932,329,558.00	78.985371	81.87784	74.980853	85.805463	65.172326

For the district, the DataFrame above displays the District's Average Math Score for grades 9-12 at a rounded 79%, and Average Reading Score at a rounded 82%. The percentage of students in the district for grades 9-12 that are passing math is a rounded 75% and the percentage of students in the district for grades 9-12 passing reading are a rounded 86%. The final display is the percentage of students grades 9-12 which are passing both math and reading at only 65%.

Math Scores by Grade and School

i	index	Bailey High School	Cabrera High School	Figueroa High School	Ford High School	Griffin High School	Hernandez High School	Holden High School	Huang High School	Johnson High School	Pena High School	Rodriguez High School	Shelton High School	Thomas High School	Wilsor High Schoo
	9th	77.083676	83.094697	76.403037	77.361345	82.044010	77.438495	83.787402	77.027251	77.187857	83.625455	76.859966	83.420755	83.590022	83.085578
	10th	76.996772	83.154506	76.539974	77.672316	84.229064	77.337408	83.429825	75.908735	76.691117	83.372000	76.612500	82.917411	83.087886	83.724422
	11th	77.515588	82.765560	76.884344	76.918058	83.842105	77.136029	85.000000	76.446602	77.491653	84.328125	76.395626	83.383495	83.498795	83.195326
	12th	76.492218	83.277487	77.151369	76.179963	83.356164	77.186567	82.855422	77.225641	76.863248	84.121547	77.690748	83.778976	83.497041	83.035794
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The math scores by grade and school display that schools have similar testing scores grades 9-12 for each. This is a good indication that the school is providing similar quality in math education for grades 9-12 at each individual school, however, noticing the varying scores by high school, some schools clearly have a higher average for the math test scores in grades 9-12 over others.

Reading Scores by Grade and School

ndex	Bailey High School	Cabrera High School	Figueroa High School	Ford High School	Griffin High School	Hernandez High School	Holden High School	Huang High School	Johnson High School	Pena High School	Rodriguez High School	Shelton High School	Thomas High School	Wilson High School
9th	81.303155	83.676136	81.198598	80.632653	83.369193	80.866860	83.677165	81.290284	81.260714	83.807273	80.993127	84.122642	83.728850	83.939778
10th	80.907183	84.253219	81.408912	81.262712	83.706897	80.660147	83.324561	81.512386	80.773431	83.612000	80.629808	83.441964	84.254157	84.021452
11th	80.945643	83.788382	80.640339	80.403642	84.288089	81.396140	83.815534	81.417476	80.616027	84.335938	80.864811	84.373786	83.585542	83.764608
12th	80.912451	84.287958	81.384863	80.662338	84.013699	80.857143	84.698795	80.305983	81.227564	84.591160	80.376426	82.781671	83.831361	84.317673
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Overall the reading scores are higher across the district for grades 9-12. Similar data is displayed that while the education in grades 9-12 appears to be equitable at each individual high school, there are schools with a higher average set of scores indicating a shift in quality of education depending on which school is attended in the district.

Per School Summary

		School	Total	Total School	Per Student	Average Math	Average	Percent	Percent Passing	Percent Overall
	School Name	Туре	Students	Budget	Budget	Score Score	Reading Score	Passing Math	Reading	Passing
0	Bailey High School	District	4976	\$3,124,928.00	\$628.00	77.048432	81.033963	66.680064	81.933280	54.642283
1	Cabrera High School	Charter	1858	\$1,081,356.00	\$582.00	83.061895	83.975780	94.133477	97.039828	91.334769
2	Figueroa High School	District	2949	\$1,884,411.00	\$639.00	76.711767	81.158020	65.988471	80.739234	53.204476
3	Ford High School	District	2739	\$1,763,916.00	\$644.00	77.102592	80.746258	68.309602	79.299014	54.289887
4	Griffin High School	Charter	1468	\$917,500.00	\$625.00	83.351499	83.816757	93.392371	97.138965	90.599455
5	Hernandez High School	District	4635	\$3,022,020.00	\$652.00	77.289752	80.934412	66.752967	80.862999	53.527508
6	Holden High School	Charter	427	\$248,087.00	\$581.00	83.803279	83.814988	92.505855	96.252927	89.227166
7	Huang High School	District	2917	\$1,910,635.00	\$655.00	76.629414	81.182722	65.683922	81.316421	53.513884
8	Johnson High School	District	4761	\$3,094,650.00	\$650.00	77.072464	80.966394	66.057551	81.222432	53.539172
9	Pena High School	Charter	962	\$585,858.00	\$609.00	83.839917	84.044699	94.594595	95.945946	90.540541
10	Rodriguez High School	District	3999	\$2,547,363.00	\$637.00	76.842711	80.744686	66.366592	80.220055	52.988247
11	Shelton High School	Charter	1761	\$1,056,600.00	\$600.00	83.359455	83.725724	93.867121	95.854628	89.892107
12	Thomas High School	Charter	1635	\$1,043,130.00	\$638.00	83.418349	83.848930	93.272171	97.308869	90.948012
13	Wilson High School	Charter	2283	\$1,319,574.00	\$578.00	83.274201	83.989488	93.867718	96.539641	90.582567
14	Wright High School	Charter	1800	\$1,049,400.00	\$583.00	83.682222	83.955000	93.333333	96.611111	90.333333

Outputting the data by each individual high school across the district is a great snapshot of how each school is doing for themselves as well as comparison to other schools around the district to find schools that have comparable scores as well as where individual schools are sitting overall within the district.

Other displays of scores and information are displayed to determine highest performing schools, lowest performing schools, and comparisons of scores in public vs charter schools, score averages vs funding, and score averages vs school size.

Highest Performing Schools

	School Name	School Type	Total Students	Total School Budget	Per Student Budget	Average Math Score	Average Reading Score	Percent Passing Math	Percent Passing Reading	Percent Overall Passing
1	Cabrera High School	Charter	1858	\$1,081,356.00	\$582.00	83.061895	83.975780	94.133477	97.039828	91.334769
12	Thomas High School	Charter	1635	\$1,043,130.00	\$638.00	83.418349	83.848930	93.272171	97.308869	90.948012
4	Griffin High School	Charter	1468	\$917,500.00	\$625.00	83.351499	83.816757	93.392371	97.138965	90.599455
13	Wilson High School	Charter	2283	\$1,319,574.00	\$578.00	83.274201	83.989488	93.867718	96.539641	90.582567
9	Pena High School	Charter	962	\$585,858.00	\$609.00	83.839917	84.044699	94.594595	95.945946	90.540541

Lowest Performing Schools

	School Name	School Type	Total Students	Total School Budget	Per Student Budget	Average Math Score	Average Reading Score	Percent Passing Math	Percent Passing Reading	Percent Overall Passing
10	Rodriguez High School	District	3999	\$2,547,363.00	\$637.00	76.842711	80.744686	66.366592	80.220055	52.988247
2	Figueroa High School	District	2949	\$1,884,411.00	\$639.00	76.711767	81.158020	65.988471	80.739234	53.204476
7	Huang High School	District	2917	\$1,910,635.00	\$655.00	76.629414	81.182722	65.683922	81.316421	53.513884
5	Hernandez High School	District	4635	\$3,022,020.00	\$652.00	77.289752	80.934412	66.752967	80.862999	53.527508
8	Johnson High School	District	4761	\$3,094,650.00	\$650.00	77.072464	80.966394	66.057551	81.222432	53.539172

Scores by School Type

Average Math Score Average Reading Score Percent Passing Math Percent Passing Reading Percent Overall Passing

School Type					
Charter	83.473852	83.896421	93.620830	96.586489	90.432244
District	76.956733	80.966636	66.548453	80.799062	53.672208

Scores by School Spending

	Average Math Score	Average Reading Score	Percent Passing Math	Percent Passing Reading	Percent Overall Passing
Spending Ranges (Per Student)					
<\$585	83.455399	83.933814	93.460096	96.610877	90.369459
\$585-630	81.899826	83.155286	87.133538	92.718205	81.418596
\$630-645	78.518855	81.624473	73.484209	84.391793	62.857656
\$645-680	76.997210	81.027843	66.164813	81.133951	53.526855

Scores by School Size

ame	School Type	Total Students	Total School Budget	Per Student Budget	Average Math Score	Average Reading Score	Percent Passing Math	Percent Passing Reading	Percent Overall Passing	School Size
High hool	District	4976	\$3,124,928.00	\$628.00	77.048432	81.033963	66.680064	81.933280	54.642283	Large (2000-5000)
High hool	Charter	1858	\$1,081,356.00	\$582.00	83.061895	83.975780	94.133477	97.039828	91.334769	Medium (1000-2000)
High hool	District	2949	\$1,884,411.00	\$639.00	76.711767	81.158020	65.988471	80.739234	53.204476	Large (2000-5000)
High hool	District	2739	\$1,763,916.00	\$644.00	77.102592	80.746258	68.309602	79.299014	54.289887	Large (2000-5000)
High hool	Charter	1468	\$917,500.00	\$625.00	83.351499	83.816757	93.392371	97.138965	90.599455	Medium (1000-2000)
ndez hool	District	4635	\$3,022,020.00	\$652.00	77.289752	80.934412	66.752967	80.862999	53.527508	Large (2000-5000)
High hool	Charter	427	\$248,087.00	\$581.00	83.803279	83.814988	92.505855	96.252927	89.227166	Small (<1000)
High hool	District	2917	\$1,910,635.00	\$655.00	76.629414	81.182722	65.683922	81.316421	53.513884	Large (2000-5000)
High hool	District	4761	\$3,094,650.00	\$650.00	77.072464	80.966394	66.057551	81.222432	53.539172	Large (2000-5000)
High hool	Charter	962	\$585,858.00	\$609.00	83.839917	84.044699	94.594595	95.945946	90.540541	Small (<1000)
guez hool	District	3999	\$2,547,363.00	\$637.00	76.842711	80.744686	66.366592	80.220055	52.988247	Large (2000-5000)
High hool	Charter	1761	\$1,056,600.00	\$600.00	83.359455	83.725724	93.867121	95.854628	89.892107	Medium (1000-2000)
High hool	Charter	1635	\$1,043,130.00	\$638.00	83.418349	83.848930	93.272171	97.308869	90.948012	Medium (1000-2000)
High hool	Charter	2283	\$1,319,574.00	\$578.00	83.274201	83.989488	93.867718	96.539641	90.582567	Large (2000-5000)
High hool	Charter	1800	\$1,049,400.00	\$583.00	83.682222	83.955000	93.333333	96.611111	90.333333	Medium (1000-2000)
	hool High High High High High High High High	High hool District High hool Charter High hool District High Charter Juez District High Charter High Charter High Charter High Charter High Charter High Charter	High hool District 4976 High hool Charter 1858 High hool District 2949 High hool District 2739 High hool Charter 1468 High hool Charter 4635 High hool District 4635 High hool District 4761 High hool District 3999 High hool Charter 962 Juez District 3999 High hool Charter 1761 High hool Charter 1761 High hool Charter 1761 High hool Charter 1635 High Charter 1635 High Charter 2283 High Charter 2283	High hool District 4976 \$3,124,928.00 High hool Charter 1858 \$1,081,356.00 High hool District 2949 \$1,884,411.00 High hool District 2739 \$1,763,916.00 High hool Charter 1468 \$917,500.00 High hool District 4635 \$3,022,020.00 High hool District 2917 \$1,910,635.00 High hool District 4761 \$3,094,650.00 High hool District 3999 \$2,547,363.00 High hool Charter 1761 \$1,056,600.00 High Charter 1761 \$1,056,600.00 High Charter 1635 \$1,043,130.00 High Charter 1635 \$1,043,130.00 High Charter 1283 \$1,319,574.00 High Charter 2283 \$1,319,574.00	High hool District 4976 \$3,124,928.00 \$628.00 High hool District 2949 \$1,884,411.00 \$639.00 High hool District 2739 \$1,763,916.00 \$644.00 High hool District 4635 \$3,022,020.00 \$652.00 High hool District 4635 \$3,022,020.00 \$652.00 High hool District 4761 \$3,022,020.00 \$655.00 High hool District 2917 \$1,910,635.00 \$655.00 High hool District 4761 \$3,094,650.00 \$655.00 High hool District 4761 \$3,094,650.00 \$650.00 High hool District 3999 \$2,547,363.00 \$637.00 High hool Charter 1761 \$1,056,600.00 \$600.00 High Charter 1635 \$1,043,130.00 \$638.00 High hool Charter 1635 \$1,043,130.00 \$638.00 High hool Charter 2283 \$1,319,574.00 \$578.00 High Charter 2283 \$1,319,574.00 \$578.00	High hool District 4976 \$3,124,928.00 \$628.00 77.048432 High hool Charter 1858 \$1,081,356.00 \$582.00 83.061895 High hool District 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96.539641 High Charter 1635 \$1,043,130.00 \$538.00 83.418349 83.848930 93.272171 97.308869 High Charter 1800 \$1,044,400.00 \$578.00 83.62222 83.965000 83.333333 96.611111	High hool District 4976 \$3,124,928.00 \$628.00 77.048432 81.033963 66.680064 81.933280 54.642283 High hool District 2949 \$1,884,411.00 \$639.00 76.711767 81.158020 65.988471 80.739234 53.204476 hool District 2739 \$1,763,916.00 \$625.00 83.351499 83.816757 93.392371 97.138965 90.599455 hool Charter 1468 \$917,500.00 \$625.00 77.289752 80.934412 66.752967 80.862999 53.527508 high hool District 2917 \$1,910,635.00 \$655.00 76.629414 81.182722 65.683922 81.316421 53.513884 high hool District 2917 \$1,910,635.00 \$650.00 77.072464 80.966394 66.057551 81.222432 53.539172 high hool Charter 962 \$585,858.00 \$609.00 83.839917 84.044699 94.594595 95.945946 90.540541 \$1000 Charter 1761 \$1,056,600.00 \$600.00 83.359455 83.725724 93.867121 95.854628 89.892107 high hool Charter 1761 \$1,056,600.00 \$600.00 83.359455 83.725724 93.867121 95.854628 89.892107 high hool Charter 1761 \$1,056,600.00 \$600.00 83.359455 83.725724 93.867121 95.854628 89.892107 high hool Charter 1761 \$1,056,600.00 \$600.00 83.359455 83.725724 93.867121 95.854628 89.892107 high hool Charter 1283 \$1,043,130.00 \$638.00 83.418349 83.848930 93.272171 97.308669 90.948012 high hool Charter 1283 \$1,043,130.00 \$638.00 83.418349 83.848930 93.272171 97.308669 90.948012 high hool Charter 1283 \$1,043,130.00 \$638.00 83.418349 83.848930 93.272171 97.308669 90.948012 high hool Charter 1283 \$1,043,130.00 \$638.00 83.418349 83.848930 93.272171 97.308669 90.948012 high hool Charter 1283 \$1,043,130.00 \$638.00 83.418349 83.848930 93.272171 97.308669 90.948012 high hool Charter 1283 \$1,319,574.00 \$578.00 83.848222 83.955000 93.333333 96.611111 90.333333

Conclusions:

This is a fairly large school district with a lot of data to compare. Overall the district only has 65% of students in grades 9-12 passing both reading and math, however some individual scores are clearly higher ranking above others due their passing rates.

- Conclusion 1: Charter schools in this district are significantly higher ranking with both reading and math scores while also having a lower cost per student, indicating that students able to attend charter schools in the district will have a higher quality education overall.
- Conclusion 2: School sizes with higher student populations indicate lower test scores overall. While there is one large charter school, the total students is still only 2283 students while the smallest public school is still 2739 students! A public school with higher numbers of students, without access to private tuition, and with parents that are more likely to be middle or lower class economically than the parents that have access to send their students to a privately paid charter school, may become overloaded and unable to keep class sizes at ideal numbers in order to have the opportunity to educate all students equitably, and socioeconomic status (SES) of public school families is a large indication of how much support students are able to get at home when parents may be working odd hours or multiple jobs and unable to reinforce materials at home.

Recommendations:

While there is a clear indicator of charter schools having higher test scores in this district, the reality is that not every student can attend a charter school, and that class sizes matter. My recommendations as a former educator and current data analyst in training, are for the district to obtain and look into curriculum differences in the public vs charter schools to infer if the drastic changes in passing scores can be minimized by modifying curriculum. A big indicator of passing scores may also be comparing the curriculum standards being utilized and assessed at the public vs the charter schools as public schools have far more regulations on curriculum and scheduling within their school days. Looking into weekly instructional minutes for public vs charter schools in the subjects of reading and math as well as looking at student attendance records in the public vs the charter schools and family SES in public vs charter schools may provide more insight into the "why" there is such a gap between public and charter test scores.

It is important to remember that although there may be large gaps between passing test scores, there are a lot of factors as to how an individual school performs within a district. The amount of students with low SES vs middle or upper class SES can have a large impact on school performance. A smaller charter school may be simply educating and supporting many of their students individually within the classroom, and a very large public school may have much larger class sizes, less special education or paraprofessionals within the classrooms, and more family and behavioral problems that are a part of their day. Many public schools in areas with low SES are providing free meals both at school and sending bags of food and toiletries home so families are able to feed their kids and have hygienic products on the weekend. While a private charter school may be hosting family gatherings and fundraisers for additional experiences and events at their school, many public schools are collecting non-perishable items to stock the food bags, collecting pennies to donate to local shelters, and even having clothing and toy drives to provide families with clothing for their children and some presents for the holidays.

While the data shows a clear indication of the top performing and the lowest performing schools in this district, it is only a snapshot into this district and further information and data from individual schools should be collected to determine growth and progress for the student growth within the schools they attend as they progress throughout high school to indicate growth at the individual schools themselves. A baseline for the district and school performance from the district is a great start, now it's time to dig deeper into the inner workings of each school and determine growth points for individual schools and students to get a better image of the individual schools.