

PyCitySchools Analysis

This Analysis is based on the dataset provided in the 2 CSV files for the schools and students of the district. The analysis was performed by Jupyter Notebook and Pandas. The following would be a summary of the data that was analyzed:

District Summary:

- Total number of school is 15.
- Total number of students is 39,170.
- Total budget for the schools is \$2,464,9428.
- Average math score for all the students is 78.99%.
- Average reading score for all the students is 81.88%.
- The percentage of students who passed math is 74.98%.
- The percentage of students who passed reading is 85.81%.
- The percentage of students who passed math and reading (overall %) is 65.17%.

School Summary:

- There are 2 types of schools District and Charter.
- District schools have more students within range of 2500 to 5000 student per school.
- Charter schools have less students than District within range of 400 to 2300 students per school.
- Budget for district schools are higher within range between \$1.7M to \$3.15M.
- Charter schools budget are lower within range between \$248K to 1.320M.
- The schools budget per student for all the schools are ranging from \$578 to \$655 per student.
- The average math score for District schools is between 76% to 78% while for Charter schools it is around 83%.
- The average reading score for District schools is between 80% and 82% while for Charter schools it is between 83% and 85%.
- The percentage for students who passed math in District schools is between 65% and 67% and for Charter schools between 92% and 95%.
- The percentage for students who passed reading in District schools is between 79% and 82% and for Charter schools between 95% and 98%.
- Overall passing for both math and reading for District schools is within 53% and 55% and for Charter schools is between 89% and 91%.

Highest-Performing schools:

The following image shows the top 5 highest performing schools:

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

Lowest-Performing schools:

The following image shows the 5 lowest performing schools:

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

Math score by grades:

The following image shows the the math scores average for each schools based on gardes 9th, 10th, 11th and 12th.

	9th	10th	11th	12th
Bailey High School	77.083676	76.996772	77.515588	76.492218
Cabrera High School	83.094697	83.154506	82.765560	83.277487
Figueroa High School	76.403037	76.539974	76.884344	77.151369
Ford High School	77.361345	77.672316	76.918058	76.179963
Griffin High School	82.044010	84.229064	83.842105	83.356164
Hernandez High School	77.438495	77.337408	77.136029	77.186567
Holden High School	83.787402	83.429825	85.000000	82.855422
Huang High School	77.027251	75.908735	76.446602	77.225641
Johnson High School	77.187857	76.691117	77.491653	76.863248
Pena High School	83.625455	83.372000	84.328125	84.121547
Rodriguez High School	76.859966	76.612500	76.395626	77.690748
Shelton High School	83.420755	82.917411	83.383495	83.778976
Thomas High School	83.590022	83.087886	83.498795	83.497041
Wilson High School	83.085578	83.724422	83.195326	83.035794
Wright High School	83.264706	84.010288	83.836782	83.644986

Reading score by grades:

The following image shows the reading scores average for each schools based on grades 9th, 10th, 11th and 12th.

	9th	10th	11th	12th
Bailey High School	81.303155	80.907183	80.945643	80.912451
Cabrera High School	83.676136	84.253219	83.788382	84.287958
Figueroa High School	81.198598	81.408912	80.640339	81.384863
Ford High School	80.632653	81.262712	80.403642	80.662338
Griffin High School	83.369193	83.706897	84.288089	84.013699
Hernandez High School	80.866860	80.660147	81.396140	80.857143
Holden High School	83.677165	83.324561	83.815534	84.698795
Huang High School	81.290284	81.512386	81.417476	80.305983
Johnson High School	81.260714	80.773431	80.616027	81.227564
Pena High School	83.807273	83.612000	84.335938	84.591160
Rodriguez High School	80.993127	80.629808	80.864811	80.376426
Shelton High School	84.122642	83.441964	84.373786	82.781671
Thomas High School	83.728850	84.254157	83.585542	83.831361
Wilson High School	83.939778	84.021452	83.764608	84.317673
Wright High School	83.833333	83.812757	84.156322	84.073171

Scores by school spending:

The image below show the score average and percentage of students passing based on the school spending per student:

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

Scores by school size:

The following image show the score average and the passing percentage based on school size:

School Size	Average Math Score	Average Reading Score	% Passing Math	% Passing Reading	% Overall Passing
Small (<1000)	83.821598	83.929843	93.550225	96.099437	89.883853
Medium (1000-2000)	83.374684	83.864438	93.599695	96.790680	90.621535
Large (2000-5000)	77.746417	81.344493	69.963361	82.766634	58.286003

Scores by school type:

The image below shows the schools performance based on school type:

School Type	Average Math Score	Average Reading Score	% Passing Math	% Passing Reading	% Overall Passing
Charter	83.473852	83.896421	93.620830	96.586489	90.432244
District	76.956733	80.966636	66.548453	80.799062	53.672208

Draws and conclusion:

1. From the analysis and calculation, we conclude that schools that have less students tend to have better education and scores average. In this analysis, Charter Schools have less students and higher students performance than District schools students.
2. Another conclusion, the lower the spending per student the better performance percentage we see. In the **Scores by school spending** part we see that the highest spending per students has the lowest performance while the lowest spending per students has the best performance.