PyCity Schools Written Report

# Analysis Summary

The main objective of this analysis was to help the school board and mayor make strategic decisions regarding future school budgets and priorities. I was given two initial datasets and standardized test scores for reading and math. In order to showcase trends in school performance, I had to aggregate these two initial datasets:

**schools\_complete.csv** which contained each school’s:

* School ID, School Name, Type, Size, and Budget

**students\_complete.csv** which contained each student’s:

* Student ID, Student Name, Gender, Grade, School Name, Reading Score, and Math Score

After combining the datasets into a single dataset called **school\_data\_complete**, there were 15 unique schools with a total of 39,170 students all together.

The average reading score for the 15 schools was 81.87% and average math score was 78.98%. The percentage of students that had a passing reading score was 85.80% while the percentage of students that had a passing math score was 74.98%. The overall percentage of students who passed both the reading and math test was 65.17%. From this initial assessment we can observe that students on average performed better on the reading test when compared to the math test.

Further analysis of each individual school selected by type (either District or Charter) provided each school’s:

* School Name, School Type, Total Students, Total School Budget, Per Student Budget, Average Math Score, Average Reading Score, % Passing Math, % Passing Reading, and % Overall Passing

The top five highest-performing schools by overall passing percentage were all charter schools and the lowest-performing schools were all district schools. Charter schools appear to have had less students than District schools and had more students who passed both the reading and math standardized tests overall. One interesting observation is that the Per Student Budget costs are higher for district schools when compared to charter schools.

The math and reading scores were then analyzed per grade level 9th – 12th. Each individuals schools math and reading scores remained fairly consistent in each grade.

Analysis of test scores by school spending and school size had interesting trends. For the school spending ranges, the more money that is spent per student, the lower the test scores. Similarly, the larger the school size, the lower the test scores.

Finally, the last analysis was the test scores by school type (charter or district). As mentioned previously, the charter schools had much better test results with 90.43% of students passing both reading and math scores. District schools on the other hand only had 53.67% of students passing both reading and math scores.

# Conclusion

The two main conclusions that I can draw from the analysis of these datasets are:

* District schools are significantly worse on standardized test passing rates. Primarily, district schools perform very poorly on the math tests when compared to reading tests with an average of 66.54% passing the math tests and 80.79% passing the reading tests. This is interesting considering district school types have higher per student budgets than charter schools on average. I would conclude that the Per Student Budget in district school is not having as big of an impact as would be expected on standardized test scores. I would recommend looking more into how district schools are using their budgets compared to charter schools.
* District school have more total students on average than charter schools. This may be a potential reason for lower standardized test scores, however, if we compare the smallest district school (Ford High School – 2739 students) and largest charter school (Wilson High School – 2283 students) there is not a large difference in size. Taking a look at the overall passing scores however has Ford High School with 54.28% overall passing and Wilson High school with 90.58% overall passing. Therefore, I would say that school size may not be as big of a factor on overall passing rates as the data may initial seem to show.