**Challenge 4 Challenge: PyCity Schools Analysis**

Tasked with strategizing future directions in school budgets and priorities for PyCity, this report will analyze district-wide standardized test results from aggregated data, data trends and preliminary correlations.

**<< District Summary >>**

This report begins with a preliminary district summary in order to view school metrics to consider any overviewing, generalized trends. This analysis considers 15 unique schools across 4 high school grades, 39,170 students, with a city-wide, total budget of approximately $26,649, 428. This year. The average math score (78.985%) is generally higher than reading at 81.878%. Students are also more likely to pass reading, with a passing percentage of 85.805%, whereas the passing rate for math is approximately 74.981%.

**<< School Summary >>**

More detailed analysis was considered in a school-based format, where school type, total students, per student budget, average math score, average reading score, percentage of students passing math, percentage of students passing reading and overall passing (passing both subjects with grades >70%) were analyzed in separated categories in relation to the high school and a few other metrics.

**<< Highest-Performing Schools by % Overall Passing >>**

The highest performing schools based on overall passing revealed Cabrera, Thomas, Griffin, Wilson, Pena as the top performers. Per student budget tended between $578 - $638, and it should be noted that all 5 schools were Charter schools. These schools saw more consistent grades with less fluctuations (stability at approximately 83-84% average in reading, and approximately 83% in math averages). Overall passing percentage was between 90-91%.

**<< Bottom Performing Schools >>**

The worst performing schools based on overall passing revealed Rodriguez, Figueroa, Huang, Hernandez, Johnson high schools as schools with the lowest overall passing percentages. For these high schools, per student budget fluctuated between $637 - $655, and they were all District Schools. Math still continued to reveal lower averages in comparison to reading (76-77% and 80-81%, respectively). Particularly prominent is the lowered percentage of students passing math, which was approximately 65-66%, compared to reading at approximately 80-81%. Overall passing percentage was low at 52-53%.

**<< Math Scores and Reading Scores by Grade >>**

Math had a higher range in passing percentages amongst the grades, with above 70% to approximately under 85%. Reading saw a smaller range, at between 80% to under 85%. Grade differences did not appear significantly correlated with passing percentage.

**<< Scores by School Spending >>**

When considering scores in relation to school spending, we are seeing an overall trend that recognizes higher passing percentages for high schools that spend less money per student (lower budget per student/per capita). At under $585 per student, we are seeing over 90% passing both subjects, whereas a per student budget investment of a higher tier ($645-680) is looking at and overall passing percentage of approximately 53.27%, with an outstanding low percentage of passing in math (approximately 66.165%).

**<< Scores by School Size >>**

Looking at scores versus school size, small and medium schools perform approximately equally well (the cohorts being <1000 students, and 100 – 2000 students), whereas the largest school reveal the lowest percentage of overall passing of both subjects together.

**<< Scores by School Type>>**

It is clear that through analysis of scores versus school type, that Charter schools perform better than District schools, and this trend is observed when looking at the overall passing percentage of 90.432% in Charter schools, and 53.672% in District schools. This is particularly obvious when analyzed more closely at the level of math passing percentage, that being of 90.432% for Charter Schools, and 66.548% in District Schools, and reading, 96.586% Charter versus 80.799% District.