Py City School District Analysis

Purpose

The purpose of this project is to review the overall performance of the Py City School District high schools to improve individual schools within the district as well as the district overall. Using comparative metrics, the client wishes to determine if specific schools would benefit from additional support to increase performance rankings. Performance measures are math scores, reading scores, and overall passing percentage, which is the two (math and reading scores) together. Independent variables are size and type of school, that is, the number of students and whether the school is charter or district; the total budget for each school, and the budget per student. The analysis examines the relationship between these variables to see which ones may affect performance.

Composition of the District

Py City Schools comprises 15 schools, eight of which are district schools, seven which are charter. Schools include grades 9 thru 12. Total student population is 39,170 with school size varying from 427 to nearly 5,000. The total budget for the district is approximately $ 24,650,000.

Issues

The client reports that one school, Thomas High School, is suspected of academic dishonesty in possible alteration of the 9th grade math and reading scores. Accordingly, a second analysis was conducted omitting that data. This summary briefly compares the two.

Findings

Performance

* Overall, charter schools performed better than district schools:
  + Charter averaged 90% overall passing
  + District averaged 54% overall passing
* Ranked by overall performance, the top five schools are charter schools, and the bottom five are district schools. In fact, charter schools are all ranked ahead of district schools.

Size

* Charter schools have smaller student populations
  + Charter schools average about 1,525
  + District average close to 3,850, about 2 ½ times as many
  + There is a strong negative correlation between school size and pass rates: Pass rates for smaller schools is significantly higher than for larger schools

Budget

* Per capita, district schools on average, spend about 7% more per school per student than charter schools
* District schools comprise 47% of the total 15 schools, but are apportioned 69% of the budget
* There is a strong negative correlation between per capita spending and overall rates of passing: district schools have greater budgets, but lower passing rates.

1 <$586

2 $586-630

3 $631-645

4 $646-675

* This may be due to higher facility costs for the larger district schools

Effect of Omitted Data

The second analysis was conducted on the original data set with null values for Thomas High School’s ninth grade math and reading score. This analysis did not reveal discrepancies in the results.

Conclusion

The most significant trend meriting further investigation is the correlation between per capita budget and pass rates. Doing a cost analysis of the same schools across the board, as conducted here, could be assistive in identifying specific costs, whether fixed or variable, that feed into and form the budgets. Such an analysis could be of benefit in developing an informed and effective strategy to boost performance. Additionally, outside of the cost metrics, reviewing ratios of instructor to pupil as well as looking closely at soft data such as culture, expectations, and other qualitative inputs could be informative; in essence, I believe conducting social science analyses would be worthwhile.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Py School District Summary by School** | | | | | | | | | |
|
| **School** | School Type | Total Students | Total School Budget | Per Student Budget | Average Math Score | Average Reading Score | % Passing Math | % Passing Reading | % Overall Passing |
| **Bailey High School** | District | 4,976 | $3,124,928 | $628 | 77 | 81 | 67% | 82% | 55% |
| **Cabrera High School** | Charter | 1,858 | $1,081,356 | $582 | 83 | 84 | 94% | 97% | 91% |
| **Figueroa High School** | District | 2,949 | $1,884,411 | $639 | 77 | 81 | 66% | 81% | 53% |
| **Ford High School** | District | 2,739 | $1,763,916 | $644 | 77 | 81 | 68% | 79% | 54% |
| **Griffin High School** | Charter | 1,468 | $917,500 | $625 | 83 | 84 | 93% | 97% | 91% |
| **Hernandez High School** | District | 4,635 | $3,022,020 | $652 | 77 | 81 | 67% | 81% | 54% |
| **Holden High School** | Charter | 427 | $248,087 | $581 | 84 | 84 | 93% | 96% | 89% |
| **Huang High School** | District | 2,917 | $1,910,635 | $655 | 77 | 81 | 66% | 81% | 54% |
| **Johnson High School** | District | 4,761 | $3,094,650 | $650 | 77 | 81 | 66% | 81% | 54% |
| **Pena High School** | Charter | 962 | $585,858 | $609 | 84 | 84 | 95% | 96% | 91% |
| **Rodriguez High School** | District | 3,999 | $2,547,363 | $637 | 77 | 81 | 66% | 80% | 53% |
| **Shelton High School** | Charter | 1,761 | $1,056,600 | $600 | 83 | 84 | 94% | 96% | 90% |
| **Thomas High School** | Charter | 1,635 | $1,043,130 | $638 | 83 | 84 | 93% | 97% | 91% |
| **Wilson High School** | Charter | 2,283 | $1,319,574 | $578 | 83 | 84 | 94% | 97% | 91% |
| **Wright High School** | Charter | 1,800 | $1,049,400 | $583 | 84 | 84 | 93% | 97% | 90% |
|  |  |  |  |  |  |  |  |  |  |
| **Py School District Summary by School** | | | | | | | | | |
|  | School Type | Total Students | Total School Budget | Per Student Budget | Average Math Score | Average Reading Score | % Passing Math | % Passing Reading | % Overall Passing |
| **Totals & Averages** | District **7** Charter **8** | **39,170** | **$24,649,428** | **$620** | **79** | **82** | **75%** | **86%** | **65%** |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **School** | **School Type** | **Total Students** | **Total School Budget** | **Per Student Budget** | **Average Math Score** | **Average Reading Score** | **% Passing Math** |
| **Cabrera High School** | Charter | 1,858 | $ 1,081,356.00 | $ 582 | 83.1 | 84.0 | 94% |
| **Thomas High School** | Charter | 1,635 | $ 1,043,130.00 | $ 638 | 83.4 | 83.8 | 93% |
| **Griffin High School** | Charter | 1,468 | $ 917,500.00 | $ 625 | 83.4 | 83.8 | 93% |
| **Wilson High School** | Charter | 2,283 | $ 1,319,574.00 | $ 578 | 83.3 | 84.0 | 94% |
| **Pena High School** | Charter | 962 | $ 585,858.00 | $ 609 | 83.8 | 84.0 | 95% |
| **Wright High School** | Charter | 1,800 | $ 1,049,400.00 | $ 583 | 83.7 | 84.0 | 93% |
| **Shelton High School** | Charter | 1,761 | $ 1,056,600.00 | $ 600 | 83.4 | 83.7 | 94% |
| **Holden High School** | Charter | 427 | $ 248,087.00 | $ 581 | 83.8 | 83.8 | 93% |
| **Bailey High School** | District | 4,976 | $ 3,124,928.00 | $ 628 | 77.0 | 81.0 | 67% |
| **Ford High School** | District | 2,739 | $ 1,763,916.00 | $ 644 | 77.1 | 80.7 | 68% |
| **Johnson High School** | District | 4,761 | $ 3,094,650.00 | $ 650 | 77.1 | 81.0 | 66% |
| **Hernandez High School** | District | 4,635 | $ 3,022,020.00 | $ 652 | 77.3 | 80.9 | 67% |
| **Huang High School** | District | 2,917 | $ 1,910,635.00 | $ 655 | 76.6 | 81.2 | 66% |
| **Figueroa High School** | District | 2,949 | $ 1,884,411.00 | $ 639 | 76.7 | 81.2 | 66% |
| **Rodriguez High School** | District | 3,999 | $ 2,547,363.00 | $ 637 | 76.8 | 80.7 | 66% |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Math Scores** | | | | **Reading Scores** | | | |
| **School** | **9th** | **10th** | **11th** | **12th** | **9th** | **10th** | **11th** | **12th** |
| Bailey High School | 77 | 77 | 78 | 76 | 81 | 81 | 81 | 81 |
| Cabrera High School | 83 | 83 | 83 | 83 | 84 | 84 | 84 | 84 |
| Figueroa High School | 76 | 77 | 77 | 77 | 81 | 81 | 81 | 81 |
| Ford High School | 77 | 78 | 77 | 76 | 81 | 81 | 80 | 81 |
| Griffin High School | 82 | 84 | 84 | 83 | 83 | 84 | 84 | 84 |
| Hernandez High School | 77 | 77 | 77 | 77 | 81 | 81 | 81 | 81 |
| Holden High School | 84 | 83 | 85 | 83 | 84 | 83 | 84 | 85 |
| Huang High School | 77 | 76 | 76 | 77 | 81 | 82 | 81 | 80 |
| Johnson High School | 77 | 77 | 77 | 77 | 81 | 81 | 81 | 81 |
| Pena High School | 84 | 83 | 84 | 84 | 84 | 84 | 84 | 85 |
| Rodriguez High School | 77 | 77 | 76 | 78 | 81 | 81 | 81 | 80 |
| Shelton High School | 83 | 83 | 83 | 84 | 84 | 83 | 84 | 83 |
| Thomas High School | 84 | 83 | 83 | 83 | 84 | 84 | 84 | 84 |
| Wilson High School | 83 | 84 | 83 | 83 | 84 | 84 | 84 | 84 |
| Wright High School | 83 | 84 | 84 | 84 | 84 | 84 | 84 | 84 |
| Averages | 80 | 80 | 81 | 80 | 83 | 83 | 83 | 83 |