**CHALLENGE 4**

**REPORT**

To receive all points, the written report presents a cohesive written analysis that:

* Summarizes the analysis (5 points)
* Draws two correct conclusions or comparisons from the calculations (10 points)

**Introduction**:

District schools as well as Charter schools are publicly funded schools. However, the mode of operation of each type of schools is drastically different from each other’s.

Traditional district schools are funded by the size of the population in each district. Teachers require standard teaching qualifications and may be unionized. Whereas charter schools are founded by private parties, who propose accountability with public funds along with high academic performance. In order to avoid closure, charter schools promise high achievement in basic learning, which is evident from the following data.

Since each type operates in dissimilar ways, it is difficult to compare performances.

Reference: [What are charter schools and do they deliver? | Brookings](https://www.brookings.edu/articles/what-are-charter-schools-and-do-they-deliver/)

**Analysis**:

The test results of one particular city’s school district are collected. The data is then aggregated, and the trends analyzed.

Table 1 shows that there are 15 schools in the city’s school district. There are over 39 thousand students in the school district. The collective operational cost for the schools is ~ $ 24.5 million.

The average math and average reading score for each student is, respectively, in the neighborhood of 80. But percentage of students passing math test is ~4% lower (75%) than the average math score, and the percentage of students passing reading is ~4% higher (85%) than the average reading score.

Only ~65% of students passed both math and reading.

Table 1

|  |  |
| --- | --- |
| **Overall District-Schools Summary** | **Statistics** |
| Total number of unique schools | 15 |
| Total students | 39,170 |
| Total budget | $24,649,428 |
| Average math score | 78.99 |
| Average reading score | 81.88 |
| % passing math (the percentage of students who passed math) | 74.98% |
| % passing reading (the percentage of students who passed reading) | 85.81% |
| % overall passing (the percentage of students who passed math AND reading) | 65.17% |

Table 2 and Table 3 provide data for each school within the school district.

The rows in Table 2 are ranked by the overall test performance by students in each school. “% Overall Passing” is calculated by the number of students who passed both **math and reading** tests by receiving more than or equal to 70% in each test.

The data shows that:

* Charter schools performed significantly **better academically** than traditional District schools.
* In Charter schools, the percentage of students receiving passing grades in math as well as in reading is about the same, ~ 95%. Whereas the percentages for District schools shows disparity between students passing math and those passing reading, percentage of students passing math being 15 – 20% lower than that of reading.
* Charter schools are **smaller** in size compared to District schools; a typical Charter school being about **half** the size of a typical District school.
* For both District and Charter schools, the **total budget** of each school is proportionate to the size of the school. Since Charter schools are smaller in size in this district, the total budget is lower compared to District schools.
* Total budget being proportionate to the size of each school doesn’t, however, imply that the average cost of education per child is the same, regardless of the type of school.

It is observed that the **cost is lower** per student in Charter schools compared to that in District schools.

Table2

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **School Type** | **Total Students** | **Total School Budget ($)** | **% Passing Math** | **% Passing Reading** | **% Overall Passing** | **Spending Range Per student ($)** | **School Size (k=1000)** |
| Charter | 1858 | 1,081,356 | 94.13 | 97.04 | 91.33 | < 585 | Medium(1k-2k) |
| Charter | 1635 | 1,043,130 | 93.27 | 97.31 | 90.95 | 630 – 645 | Medium(1k-2k) |
| Charter | 1468 | 917,500 | 93.39 | 97.14 | 90.60 | 585 – 630 | Medium(1k-2k) |
| Charter | 2283 | 1,319,574 | 93.87 | 96.54 | 90.58 | < 585 | Large (2k-5k) |
| Charter | 962 | 585,858 | 94.59 | 95.95 | 90.54 | 585 – 630 | Small (<1k) |
| Charter | 1800 | 1,049,400 | 93.33 | 96.61 | 90.33 | < 585 | Medium(1k-2k) |
| Charter | 1761 | 1,056,600 | 93.87 | 95.85 | 89.89 | 585 – 630 | Medium(1k-2k) |
| Charter | 427 | 248,087 | 92.51 | 96.25 | 89.23 | < 585 | Small (<1k) |
| District | 4976 | 3,124,928 | 66.68 | 81.93 | 54.64 | 585 – 630 | Large (2k-5k) |
| District | 2739 | 1,763,916 | 68.31 | 79.30 | 54.29 | 630 – 645 | Large (2k-5k) |
| District | 4761 | 3,094,650 | 66.06 | 81.22 | 53.54 | 645 – 680 | Large (2k-5k) |
| District | 4635 | 3,022,020 | 66.75 | 80.86 | 53.53 | 645 – 680 | Large (2k-5k) |
| District | 2917 | 1,910,635 | 65.68 | 81.32 | 53.51 | 645 – 680 | Large (2k-5k) |
| District | 2949 | 1,884,411 | 65.99 | 80.74 | 53.20 | 630 – 645 | Large (2k-5k) |
| District | 3999 | 2,547,363 | 66.37 | 80.22 | 52.99 | 630 – 645 | Large (2k-5k) |

Table 3 shows the average testing scores in Math and Reading for grades 9, 10, 11 and 12 for each school.

* Charter school students show greater proficiency in Math and reading compared to peers in District schools.
* Both District schools and Charter schools show consistency in their academic performance.

Charter school students of all four grades show a constant 82 – 84 average score in Math as well as in Reading. District schools show all four grades achieving 76 – 77 average score in Math and 80 – 81 average score in Reading.

Table 3

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **School Type** | **9th Grade** | | **10th Grade** | | **11th Grade** | | **12th Grade** | |
| **Math** | **Reading** | **Math** | **Reading** | **Math** | **Reading** | **Math** | **Reading** |
| Charter | 83.09 | 83.68 | 83.15 | 84.25 | 82.77 | 83.79 | 83.28 | 84.29 |
| Charter | 83.59 | 83.73 | 83.09 | 84.25 | 83.50 | 83.59 | 83.50 | 83.83 |
| Charter | 82.04 | 83.37 | 84.23 | 83.71 | 83.84 | 84.29 | 83.36 | 84.01 |
| Charter | 83.09 | 83.94 | 83.72 | 84.02 | 83.20 | 83.76 | 83.04 | 84.32 |
| Charter | 83.63 | 83.81 | 83.37 | 83.61 | 84.33 | 84.34 | 84.12 | 84.59 |
| Charter | 83.26 | 83.83 | 84.01 | 83.81 | 83.84 | 84.16 | 83.64 | 84.07 |
| Charter | 83.42 | 84.12 | 82.92 | 83.44 | 83.38 | 84.37 | 83.78 | 82.78 |
| Charter | 83.79 | 83.68 | 83.43 | 83.32 | 85.00 | 83.82 | 82.86 | 84.70 |
| District | 77.08 | 81.30 | 77.00 | 80.91 | 77.52 | 80.95 | 76.49 | 80.91 |
| District | 77.36 | 80.63 | 77.67 | 81.26 | 76.92 | 80.40 | 76.18 | 80.66 |
| District | 77.19 | 81.26 | 76.69 | 80.77 | 77.49 | 80.62 | 76.86 | 81.23 |
| District | 77.44 | 80.87 | 77.34 | 80.66 | 77.14 | 81.40 | 77.19 | 80.86 |
| District | 77.03 | 81.29 | 75.91 | 81.51 | 76.45 | 81.42 | 77.23 | 80.31 |
| District | 76.40 | 81.20 | 76.54 | 81.41 | 76.88 | 80.64 | 77.15 | 81.38 |
| District | 76.86 | 80.99 | 76.61 | 80.63 | 76.40 | 80.86 | 77.69 | 80.38 |

**Conclusion**:

1. Academic performance of Charter schools is superior compared to that of traditional District schools.
2. Educational spending per student is lower in Charter schools compared to that in District schools.
3. The average number of students attending a Charter school is smaller than that attending a District school.

The reasons for these observations cannot be determined from the present data.

However, urban Charter schools have autonomy over how they operate and tend to choose disadvantaged students who would otherwise perform poorly in traditional school setting.

The smaller number of students ensures more academic coaching and attention given to each student compared to students in large District schools.

Additionally, when academics is the main and sometimes the only focus of Charter schools, less financial resources are not of primary concern. By comparison, more resources are needed in District schools to accommodate diverse interests, such as sports, maintenance of school buildings, after-school activities, to name a few.