Significant trends in the district-wide school data

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City’s school district performance data was provided for our analysis to identify any trends that might assist the school board and mayor, to make strategic decisions regarding future school budgets and priorities.

In this capacity, I have analysed the district-wide standardised test results at out Data Analytics department, to determine the performance of schools based on student's math and reading scores, as well as other relevant information on the schools such as school type, school size, and schools’ annual budget.

Table 1: District Summary

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Schools** | **Total Students** | **Total Budget** | **Ava Math Score** | **Avr**  **Reading Score** | **% Passing maths** | **% Passing reading** | **% Overall passing** |
| 15 | 39170 | 24649428 | 78.985371 | 81.87784 | 74.980853 | 85.805463 | 65.172326 |

Even though, the overall district summary of school performance does not seem to be a problem; however, on closer inspection of the data and further analyses revealed a striking and significant insights.

1. Charter schools were at the top of the performance table (table 2) based on students’ performance in maths and reading combined (>89% pass rate). This trend was independent of the budget allocated to spend per student. This trend coincided with the size of the school (within this type- Charter) being either small or medium sized.
2. On the other hand, district schools were at the bottom of the performance table (table 2) based on students’ performance in maths and reading combined (pass rate of <55%). This trend was again independent of the budget available to spend per student. There was a striking correlation of low performing district schools to being a large school size.

Table 2: Performance based of the type of the schools

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

1. The average math scores of students from large-sized district schools were of the lower level compared to the small/medium sized charter schools. Charter schools of small or medium size were at the top of the performance table (Table 3).

Table 3: Performance based of the size of the schools

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Average Math Score** | **Average Reading Score** | **% Passing Math** | **% Passing Reading** | **Overall Passing Rate** |
| **School size** |  |  |  |  |  |
| **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 |

1. The average reading scores and its pass rate across different types and sizes of schools were similar (Tables 2& 3), indicating the resources available for English language seemed to be of an appropriate standard requiring minimum policy changes in this area. However, the strikingly large difference in the students performance in maths subject across various types and size of schools (Tables 2& 3) demands a review of the facilities and resources available for teaching maths in large district schools. A review plan into the modes of improving maths education and taking necessary steps to improve are highly recommended for the district schools.

Table 4: Performance based on budget availability per student

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Average Math Score** | **Average Reading Score** | **% Passing Math** | **% Passing Reading** | **Overall Passing Rate** |
| **Spending ranges** |  |  |  |  |  |
| **<$599** | 83.455399 | 83.933814 | 93.460096 | 96.610877 | 90.369459 |
| **$600-625** | 83.599686 | 83.885211 | 94.230858 | 95.900287 | 90.216324 |
| **$626-649** | 79.079225 | 81.891436 | 75.668212 | 86.106569 | 66.112060 |
| **$650-675** | 76.997210 | 81.027843 | 66.164813 | 81.133951 | 53.526855 |

1. The availability of budget per student was of a higher value in the low performing large district schools (‘$626-649’ & ‘$650-675’) compared to high performing Charter schools (‘<$599’ & ‘$600-625’). This increased availability of budget per student needs to be utilised by the district schools more wisely in improving the maths education facilities and provisions.