Pandas Challenge – Written Report

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**Sunshine City School District Standardised Test Results Analysis**

This report summarises the results of the National Aptitude Test (NAT) among the schools in the Sunshine City School District (SCSD). It aims to help the school board and mayor make strategic decisions regarding future school budgets and priorities. This year, over 39000 students from 15 schools in the SCSD took part in the NAT. The district-wide average Math Score and Reading Score were 79.0 and 82.0 respectively.

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| --- | --- | --- | --- | --- | --- | --- | --- |
| **Total Schools** | **Total Students** | **Total Budget** | **Average Math Score** | **Average Reading Score** | **% Passing Math** | **% Passing Reading** | **% Overall Passing** |
| 15 | 39,170 | $24,649,428.00 | 78.985371 | 81.87784 | 74.980853 | 85.805463 | 65.172326 |

Based on the overall passing rate, the top 5 highest-performing schools are all Charter schools. On the contrary, the lowest-performing schools are all District schools. For both Math and Reading, students' performance is consistent within each school. Students in different grades within a school performed similarly. The consistency in results shows that the test is reliable and can reveal the student's aptitude.

**School Spending and Student Performance**

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| --- | --- | --- | --- | --- | --- |
| **Spending Ranges (Per Student** | **Average Math Score** | **Average Reading Score** | **% Passing Math** | **% Passing Reading** | **% Overall Passing** |
| <$585 | 83.455399 | 83.933814 | 93.460096 | 96.610877 | 90.369459 |
| $585-630 | 81.899826 | 83.155286 | 87.133538 | 92.718205 | 81.418596 |
| $630-645 | 78.518855 | 81.624473 | 73.484209 | 84.391793 | 62.857656 |
| $645-680 | 76.99721 | 81.027843 | 66.164813 | 81.133951 | 53.526855 |

In terms of school spending, a general assumption is that the more resources are given to each student, the more effective education is. However, in contradiction to common beliefs, it was found that students in lower-spending schools performed significantly better than those from higher-spending schools. In fact, the highest-spending schools perform the worst among all schools in the district. Some people may argue that the figure shows that weaker students deserve more attention and support. Yet, from the perspective of the whole school board, the results are a timely reminder that SCSD needs to re-evaluate the use of school funding and allocate their resources more effectively.

**School Size and Student Performance**

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| --- | --- | --- | --- | --- | --- |
| **School Size** | **Average Math Score** | **Average Reading Score** | **% Passing Math** | **% Passing Reading** | **% Overall Passing** |
| Small (<1000) | 83.821598 | 83.929843 | 93.550225 | 96.099437 | 89.883853 |
| Medium (1000-2000) | 83.374684 | 83.864438 | 93.599695 | 96.79068 | 90.621535 |
| Large (2000-5000) | 77.746417 | 81.344493 | 69.963361 | 82.766634 | 58.286003 |

School size has a close correlation with students’ performance. While students in small and medium schools perform comparably, we discover that the average score and the passing rate of the students in large schools are drastically lower than those in small and medium-sized schools. The more students there are, the less care and attention is given to each individual. Conventionally, the authorities tend to provide funding to schools to improve education. Nevertheless, results suggest that it is far more important to adjust the school size than to provide extra monetary support for schools.

**School Type and Student Performance**

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

The type of school a student belongs to also affects his/her academic performance. Students in charter schools perform exceptionally well while students in district schools give disappointing results. The syllabus and the independence from the authorities may contribute to this difference. A reformation for district schools is needed in order to narrow the margin between them and their (charter schools) counterparts.

The results of this test give insights to the school board into why and how we should reform our education system so that students can cope with the needs of the present and future society.