Washington DC Student Enrollment

Audit Analysis 2023-2024

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This month's data set is about Washington, DC school enrollment for 2023-2024. This inspired me as I was watching the news, and the news mentioned going back to school. My thoughts were ok, since some schools have already started let us look at a particular state enrollment

Disclaimer: My recommendation is to review this data and use it as a guide for future actions.

Title: Washington DC School Enrollment 2023-2024 Audit Analysis

Introduction: The aim of this analysis is to examine the DC school enrollment figures for the 2023-2024 academic year. Data was gathered from public schools, special education institutions, and academic schools. Enrollment numbers of influence areas such as:

- Resource allocation. School funding ensures schools receive allocated resources such as staffing, textbooks based on the number of students being served.
- Capacity planning based on classroom size and the number of classrooms needed. This in turn may affect transportation (using bus routes) and meal planning for the students.
- Education equity – Schools may identify the distinct types of programs that are needed or in demand based on enrollment data and adjust accordingly.
- Demographic Insights – Socioeconomic may provide insights such as information on income level.
- Community Impact may be how the community is growing to bring in more businesses and new residents.

Data Description

- **Data Source**: District of Columbia Public Schools
  URL: https://dcps.dc.gov/node/1018342

- **Data Scope**: The data scope outlines the types of schools included and the total enrollment for the 2023-2024 school year.

- **Variables**: Total enrollment, school type (public, academy, and special education), and grade level distribution.

Data Analysis Approach: The data was cleaned by updating the title formatting, which was originally displayed as vertical text, and removing the logo. Missing values were addressed where applicable.

Tools/Software: Excel, Python, PowerBI (This will be uploaded to GitHub)

Results

- **Overall Enrollment**: Report the total number of students enrolled in all schools.

- **Breakdown by School Type**: The enrollment numbers by categories are:

    o **Public Schools**: 49753 students

    o **Academy Schools**: 1420 students

    o **Special Education Schools**: 120 students

- **Grade Level Distribution**: The total number of students distributed across grades:

Elementary Schools

Grade Level	Number of Students
PreK-3	2064
PreK-4	3001
Kindergarten	3662
1st Grade	3673
2nd Grade	3686
3rd Grade	3547
4th Grade	3429
5th Grade	3147

Middle School

Grade Level	Number of Students
6th Grade	2090
7th Grade	2040
8th Grade	2176

High School

Grade Level	Number of Students
9th Grade	3750
10th Grade	2981
11th Grade	2429
12th Grade	1884

Other
Note: Other includes students classified evening students and students classified as Certificate Option (CE) who are special education students on a certificate non-diploma track.

Grade Level	Number of Students
AO	455
UN/CE	191

Geographic Distribution
Below is the enrollment distribution across the different eight wards within DC.

Ward 1 – Ward 1 covers the following neighborhood area: Adams Morgan, Columbia Heights, Howard University, Kalorama Triangle, LeDroit Park, Lanier Heights, Meridian Hill, Mount Pleasant, Park View, Pleasant Plains, Shaw, and U Street.
Total enrollment is 5104.

Ward 2 – Ward 2 covers the following neighborhood area: Burleith, Chinatown, Downtown, Dupont Circle, Federal Triangle, Foggy Bottom, Georgetown, Sheridan-Kalorama, Logan Circle, Mount Vernon Square (Part of the neighborhood is also in Ward 6), Penn Quarter, Shaw (Parts of the neighborhood are also in Ward 1), Southwest Federal Center, U Street Corridor (Part of the neighborhood is also in Ward 1), West End.
Total enrollment is 3992.

Ward 3 – Ward 3 covers the following neighborhood area: American University Park, Berkley, Cathedral Heights, Chevy Chase, Cleveland Park, Colony Hill, Forest Hills, Foxhall, Friendship Heights, Glover Park, Kent, Massachusetts Heights, McLean Gardens, North Cleveland Park, Observatory Circle, The Palisades, Potomac Heights, Spring Valley, Tenleytown, Wakefield, Wesley Heights, Woodland Normanstone, Woodley Park, Woodmont.
Total enrollment is 7715.

Ward 4 – Ward 4 covers the following neighboring areas: Barnaby Woods, Brightwood, Brightwood Park, Chevy Chase (Part of the neighborhood is also in Ward 3), Colonial Village, Crestwood, Fort Totten, Hawthorne, Manor Park, Petworth, Riggs Park (also known as Lamond Riggs), Shepherd Park, Sixteenth Street Heights, Takoma.
==Total enrollment is 9747==. *The enrollment is the highest of all other DC Wards*

Ward 5 – Ward 5 covers the following neighborhoods: Arboretum, Bloomingdale, Brentwood, Brookland, Carver Langston, Eckington, Edgewood Fort Lincoln, Fort Totten, Gateway, Ivy City, Langdon, Michigan Park, North Michigan Park, Pleasant Hill, Queens Chapel, Riggs Park (Part of the neighborhood is also in Ward 4), Stronghold, Trinidad, Truxton Circle, Woodridge.
Total enrollment is 5226

Ward 6 – Ward 6 covers the following neighborhoods: Barney Circle, Buzzard Point, Capitol Hill, Lincoln Park, Judiciary Square, Kingman Park (Part of the neighborhood is also in Ward 7), Mount Vernon Triangle, Near Northeast, NoMa, Shaw, Southwest Waterfront, Sursum Corda, Swampoodle.
Total enrollment is 5825.

Ward 7 – Ward 7 covers the following neighborhoods: Benning, Benning Heights, Benning Ridge, Burrville, Capitol View, Central Northeast, Civic Betterment, Deanwood, Dupont Park, East Corner, East River Heights, Eastland Gardens, Fairfax Village, Fort Davis, Fort Dupont, Fort Stanton, Greenway, Hillbrook, Hillcrest, Hill East, Kenilworth, Lincoln Heights, Marshall Heights, Mayfair, Naylor Gardens, Northeast Boundary, Penn Branch, Randle Highlands, River Terrace, Twining.
Total enrollment is 6116.

Ward 8 – Ward 8 covers the following neighborhoods: Anacostia, Barry Farm, Bellevue, Buena Vista, Congress Heights, Douglass, Fairlawn, Garfield Heights, Good Hope, Knox Hill, Navy Yard, Park Naylor, Shipley Terrace, Skyland, Washington Highlands, Woodland.
Total enrollment 7568

2023 DC Population by Ward

Ward	Total Population
1	83,885
2	83,162
3	77,813
4	83,103
5	88,965
6	106,206 (Population is the highest of all other DC wards)
7	74,561
8	73,200

Discussion

Key Observations: According to the data collected; here are a few key observations:

- Public schools dominated enrollment vs academy and special schools.
- Second grade for elementary schools dominated over the grade levels (PreK-3 to fifth grade)
- Eighth grade for middle schools dominated enrollment over grades 6th & 7th grade.
- Ninth grade for high school dominated enrollment over grades 10th-12th.
- Ward 4 has the largest number of enrollments, however, looking at the DC population from 2023 for Ward 4 it indicates it is 83,103 while some other wards like 1, 2, 5, 6 are higher in population.

- Kindergarten, first-grade, and second-grade enrollments seem to be the highest as students begin their formal education.

Additional Insights:

- Certain grade levels have lower enrollment such as PreK-3, seventh, and 12th grade.
- Ward 2 shows low enrollment.

6. Conclusion

Summary: Enrollment numbers can vary widely due to population changes and demographic shifts within the wards. 1st and 2nd grade seems to be the highest in enrollment while slightly decreasing in higher grades. This could be factors such as families moving and school transfers.
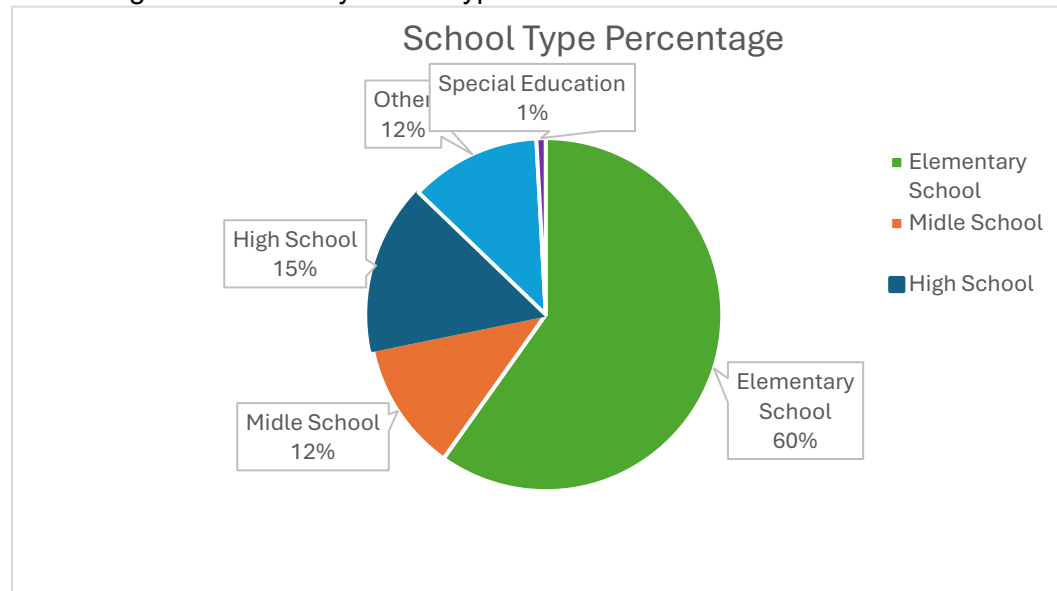
Implications: Enrollment in special education programs may affect overall student enrollment numbers and resource distribution.
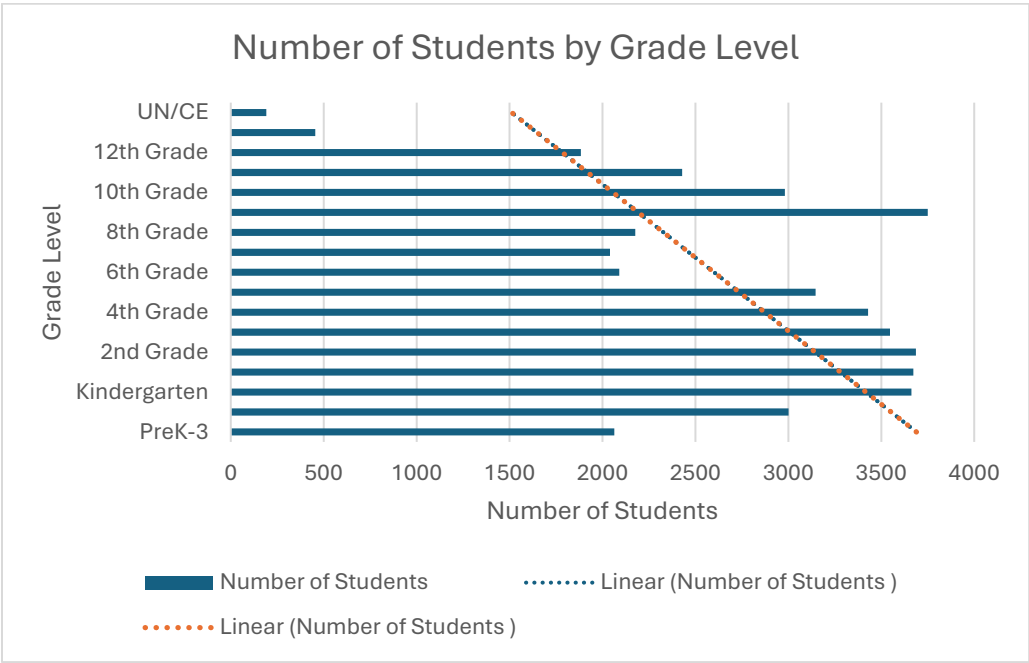
7. References

- **DC Population in 2023 Data:**
  URL: https://mchb.tvisdata.hrsa.gov/Narratives/Overview/a65a14a0-d869-421f-9d2b-76f53a6cb812

- **District of Columbia Public Schools**
  URL: https://dcps.dc.gov/node/1018342

8. Visualizations

Percentage breakdown by school type

Enrollment across grade levels

Number of Students by Grade Level

Additional Information

Increase/Decrease in Enrollment: There are some noticeable trends in overall student enrollment. This table compares the current student enrollment (2023-2024) with the previous student enrollment (2022-2023). It looks like kindergarten, first grade, and second grade for elementary schools still had dominated the student enrollment. In addition, ninth grade dominated the student enrollment as well.

Grade Level	Number of Students School Year 2022-2023	Number of Students School Year 2023-2024	Increase/Decrease
PreK-3	2023	2064	41
PreK-4	2955	3001	46
Kindergarten	3579	3662	83
1st Grade	3659	3673	14
2nd Grade	3447	3686	239
3rd Grade	3349	3547	198
4th Grade	3313	3429	116
5th Grade	3151	3147	-4
6th Grade	1977	2090	113
7th Grade	2124	2040	-84
8th Grade	2123	2176	53
9th Grade	3859	3750	-109
10th Grade	2892	2981	89
11th Grade	2126	2429	303
12th Grade	1984	1884	-100
AO	444	455	11
UN/CE	176	191	15

Student Enrollment Current 2023-2024 vs Previous Year 2022-2023