

# Comprehensive Analysis Report

## Introduction

This report consolidates insights from a detailed analysis of New York State educational performance data across various dimensions, including general performance, trend analysis, regional comparisons, subject-level insights, demographic group performance, and data suppressions. It highlights key findings, disparities, and actionable recommendations to improve educational outcomes.

## 1. General Performance Analysis

- **Overall Proficiency Rate:** Across all subjects in the latest year, the overall proficiency rate (Level 3 and above) is **45.21%**.
- **Top-Performing Demographic Subgroup:** **Non-Binary** students achieved the highest proficiency rate of **67.97%**, followed by **Asian or Native Hawaiian/Other Pacific Islander** students at **67.74%**.
- **Performance Distribution Across Levels:**
  - **Level 3:** 31.22% (highest proportion of students)
  - **Level 4:** 13.81% (advanced level, needs improvement)
- **Math vs. ELA Proficiency:**
  - Math: **48.31%**
  - ELA: **43.36%**
- **Elementary/Middle School (EM) vs. High School (HS):**
  - High School mean scores are higher (**436.59**) than Elementary/Middle School (NaN due to missing data).

## 2. Trend Analysis

- **Students Tested Over the Years:**
  - Participation in assessments shows fluctuations across ELA, Math, and Science.
- **English Language Learners (ELL) Trends:**
  - Proficiency rates for ELLs (NYSESLAT) have shown gradual changes over time, emphasizing the need for sustained support.
- **Regents Algebra I Exam:**
  - Proficiency rates for Algebra I are inconsistent over the past five years, with room for improvement.
- **Economically Disadvantaged Students:**
  - Proficiency rates in ELA, Math, and Science remain consistently lower for economically disadvantaged students compared to their peers.

- **Grade-Level Trends:**
  - ELA7 shows the most improvement (+1.67%), while ELA8 shows the most decline (-2.19%).

### 3. Regional Comparisons

- **Top-Performing County:** HALDANE HIGH SCHOOL with a proficiency rate of **100.00%**.
- **Urban vs. Rural Districts:**
  - Urban districts (e.g., New York City) outperform rural ones, with notable differences in resource allocation.
- **Top Math Districts:**
  - Several districts, including **SUCCESS ACADEMY CS** and **EDINBURG COMMON SCHOOL**, achieved perfect Math proficiency rates (100%).
- **Regents Exams Consistency:**
  - Proficiency rates vary significantly across counties, with a standard deviation of **21.94**.
- **New York City vs. Other Large Cities:**
  - NYC Districts: **48.29%**
  - Other Large City Districts: **23.07%**

### 4. Subject-Level Insights

- **Highest Proficiency Rates:** Math (48.31%) outperforms ELA (43.36%) and Science (38.71%).
- **Level 1 Scores:** No subjects show a significant proportion (>30%) of students scoring at Level 1.
- **Middle School Comparison:**
  - Math leads significantly (90.08%), with Science (38.71%) trailing behind ELA (43.36%).
- **Regents Exams:**
  - **Top Subject:** Regents English Language Arts (76.44%)
  - **Bottom Subject:** Regents Geometry (56.09%)
- **Math vs. ELA Regents:**
  - **ELA Regents:** 76.44%
  - **Math Regents:** NaN% (due to missing data).

### 5. Demographic Group Performance

- **Gender:**
  - Female students (48.25%) outperform male students (45.72%) by **2.53%**.
- **Ethnic Disparities:**

- Highest mean Math scores: **Asian or Native Hawaiian/Other Pacific Islander (466.93)**.
- **Disabilities vs. General Education:**
  - Students with disabilities: **18.78%**
  - General education students: **52.03%**
  - Difference: **33.24%**
- **Economically Disadvantaged Students:**
  - Proficiency in Science: **33.16%**
- **Migrant vs. Non-Migrant Students:**
  - Migrant students: **15.30%**
  - Non-Migrant students: **47.32%**
  - Difference: **32.02%**

## 6. Data Suppressions and Small Group Insights

- **Total Suppressed Data Points:** **4,486,928**, with racial/ethnic subgroups experiencing the highest suppression.
- **Small Group Proficiency:** **47.07%** (higher than the overall rate of **45.21%**).
- **Suppressed vs. Non-Suppressed:** Missing data for suppressed groups prevents direct comparison.
- **Grade/Subject Suppressions:** Suppressions are evenly distributed, with no specific grades or subjects heavily impacted.
- **Gender vs. Race Suppressions:**
  - Gender: **92,136 suppressions**
  - Race/Ethnicity: **1,744,358 suppressions**

## Recommendations

1. **Targeted Interventions:**
  - Support underperforming groups, including students with disabilities, economically disadvantaged, and migrant students.
2. **Resource Allocation:**
  - Address disparities in rural districts and struggling grades (e.g., ELA8).
3. **Data Management:**
  - Improve handling of suppressed data through imputation or enhanced reporting mechanisms.
4. **Leverage Success:**
  - Analyze practices in high-performing districts and demographic groups to replicate success elsewhere.

5. **Focus on Science:**

- Invest in improving Science proficiency across all levels, especially for disadvantaged groups.

6. **Regents Exam Support:**

- Enhance preparation for lower-performing subjects like Regents Geometry.

## **Conclusion**

This comprehensive analysis provides actionable insights into student performance trends, demographic disparities, and regional variations. While strengths like Math proficiency and NYC performance are evident, challenges such as suppressed data, proficiency gaps, and resource inequities must be addressed to promote educational equity and excellence across New York State.