

School Quality Reports: Using “Comparison Group” Results To Better Understand a School’s Performance

What are Comparison Group results?

- They are expected outcomes for the students at the school, based on an estimate of how those students would have performed if they had attended other schools throughout the city.
- We produce this estimate by looking at the performance results achieved by students from other schools throughout the city who were very similar to the students at the school—based on their prior test scores and factors such as disability status, English Language Learner (“ELL”) status, overage/undercredit status, and economic need.
- Comparing a school’s result to its Comparison Group helps to show how well the school has helped its students improve and exceed expected outcomes.

Why does the DOE show Comparison Group results?

- Comparing a school’s results to city, borough, or district results provides some context on whether student outcomes at the school are high or low. But these comparisons may not reflect the school’s effectiveness because they do not take into account the specific student population served by the school.
- To understand how effectively a school is helping its students, we need to take into account students’ starting points and challenges that they face.
 - **Example:** A school whose students scored slightly below the city average may be very effective if those students started out far below the city average when they entered the school.
- The Comparison Group takes into account the student population served by the school, provides an accurate point of comparison, and helps to show the school’s effectiveness at helping its students improve.
- The Comparison Group helps to avoid the common pitfall of mischaracterizing schools as ineffective simply because they serve higher-need students.

How can the Comparison Group be used to interpret a school’s results?

- The Comparison Group results can be interpreted as (1) an estimate of how the students at the main school would have performed if they had attended other schools throughout the city, or (2) an estimate of the performance results of a very large, hypothetical school composed of students very similar to the students at the main school.
- A school result that is substantially higher than the Comparison Group’s result suggests that the school has effectively helped its students improve in that area; a school result that is substantially lower suggests the opposite.
 - **Example:** A school’s Snapshot shows that 28% of students met State standards on the State Math test, which was slightly below the city average of 30%. But only 15% of the school’s Comparison Group met State standards on the State English test. This shows that, although the school’s results were slightly below average, it has been effective at helping students improve and exceed expected outcomes.

How are Comparison Groups (and their results) created?

- Each student at the school is matched to the 50 most similar students from other schools throughout the city.
- The similar students identified for each student at the school are grouped together into a large Comparison Group.
 - **Example:** If a school has 300 students and each student has 50 similar students, the Comparison Group will have $300 \times 50 = 15,000$ students in it.
- The DOE then calculates the performance results of the Comparison Group.
 - **Example:** A school with 300 students had an average score of 2.6 on the state math test, slightly below the city average—but the school’s comparison group of 15,000 students had an average test score of 2.2.

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What factors are used to match students, and how are matches made?

- The process of matching each student with the 50 most similar students involves two main steps.
- Step 1:** For each student, we identify a large group of students who are exact matches on the following student characteristics:

| Elementary School (K-5) | Middle School (6-8) | High School (9+) |
|--|--|---|
| -Grade Level -ELL category -Disability category (past 4 years) -Temporary housing (past 4 years) or eligibility for public assistance | -Grade Level -ELL category -Disability category (past 4 years) -Temporary housing (past 4 years) or eligibility for public assistance | -Graduation Cohort -Overage/undercredited or history of incarceration category ¹ -Disability category (past 5 years) -Temporary housing (past 4 years) or eligibility for public assistance |

- Example:** If a student is in 4th grade, is not an ELL, is in a self-contained disability setting, and was in temporary housing, the first step is to identify all other students from other schools who were in 4th grade, were not ELLs, were in self-contained disability settings, and were in temporary housing or eligible for public assistance.
- Step 2:** Within the group of students identified in Step 1, we find the 50 students who are the most similar to the main student based on the following factors:

| Elementary School (K-5) | Middle School (6-8) | High School (9+) |
|---|--|---|
| Primary Factors² -Grade 3 ELA score -Grade 3 Math score Secondary Factors -School’s % students with disabilities -School’s Economic Need -School’s % ELL | Primary Factors -Grade 5 ELA score -Grade 5 Math score Secondary Factors -School’s % students with disabilities -School’s Economic Need -School’s % overage -School’s % ELL | Primary Factors -Grade 8 ELA score -Grade 8 Math score Secondary Factors - School’s % students with disabilities -School’s Economic Need -School’s % overage/undercredited or history of incarceration -School’s % ELL |

- To find the 50 most similar students from the group, the primary factors are weighed more heavily than the secondary factors.
 - Example:** Alisha is a 7th grader. Her group of Step 1 matches includes Brian and Carlos. Alisha scored 2.8 on both her Grade 5 ELA and Math exams, Brian scored 2.1, and Carlos scored 2.9. Alisha is more likely to be matched with Carlos than with Brian.
 - Example:** David is a 5th grader. His group of Step 1 matches includes Emily and Frank. All three students scored 2.7 on both their Grade 3 ELA and Math exams. David’s school has 25% students with disabilities, Emily’s school has 23% students with disabilities, and Frank’s school has 2% students with disabilities. David is more likely to be matched with Emily than with Frank.
- In addition to the primary factors based on the student’s own characteristics, the secondary factors about school characteristics are also taken into account because the school’s population can have “peer effects” on the student.

¹ For transfer high schools and YABC programs, the Comparison Group also takes into account the year the student entered the school. Students at transfer high schools and YABC programs are matched with high school students who had the same overage/undercredited status in that year, and with other transfer high school or YABC students with the same overage/undercredited status upon entry.

² For third graders (who do not yet have state test scores), Grade 2 attendance is used as a matching factor.

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Appendix

- **ELL Category:** Students are placed into one of three possible ELL categories based on their latest score on the NYSESLAT, grouped as: (1) Beginning or Intermediate (Entering, Emerging, or Transitioning), (2) Advanced (Expanding), (3) Proficient (Commanding) or not ELL.
- **Disability Category:** Students are placed into one of three possible disability categories based on the amount of time that they spend with general-education peers. The IEP category is defined as the student’s most restrictive setting during the lookback period: (1) Self-Contained, (2) ICT or SETSS, (3) Related Services only or no IEP.
- **Temporary Housing / Eligible for Public Assistance:** This factor looks at whether a student was in temporary housing during the last four years or is eligible for public assistance.
- **ELA and Math State Test Scores:** If the applicable ELA or Math state test scores are missing, prior-grade scores are used (e.g., if a high school student is missing an 8th grade score, the 7th grade score will be used in the Step 2 matching process). If those scores are unavailable, the ELA or Math scores are imputed with multiple regression using the student’s exact-match characteristics, the student’s prior attendance, the student’s prior NYSESLAT score, and the school’s average incoming proficiency in the subject.
- **School’s % Students with Disabilities:** For elementary and middle schools, this factor looks at students’ most restrictive disability category during the past four years. For high schools, the look back extends five years.
- **School’s Economic Need:** The school’s Economic Need is defined by its Economic Need Index (ENI), which determines the likelihood that students at the school are in poverty. The ENI is calculated as follows:
 - If the student is HRA-eligible or living in temporary housing, the student’s Economic Need Value is 1.0.
 - For high school students, if the student has a home language other than English and entered the NYC DOE for the first time within the last four years, the student’s ENI value is 1.0.
 - Otherwise, the student’s Economic Need Value is based on the percentage of families (with school-age children) in the student’s Census tract whose income is below the poverty level, as estimated by the American Community Survey 5-Year Estimate. The student’s Economic Need Value equals the decimal value of this percentage (e.g., if 62% of families in the Census tract have income below the poverty line, the student’s Economic Need Value is 0.62).
 - The school’s Economic Need Index is the average of its students’ Economic Need Values.
- **Overage / Undercredited / Most-at-Risk:** Students who enter the school overage with a low number of credits and Regents passed are considered overage/undercredited. A high-need subset of this group, who are very far behind in their credits and Regents, is considered most-at-risk. Students who have a history of incarceration are considered most-at-risk.