

EFFECT SIZE ANALYSIS

WHAT YOU NEED TO KNOW

CHANGES TO THE INSTITUTE'S EFFECT SIZE ANALYSIS OF ELA AND MATHEMATICS PERFORMANCE FOR GRADES 3-8

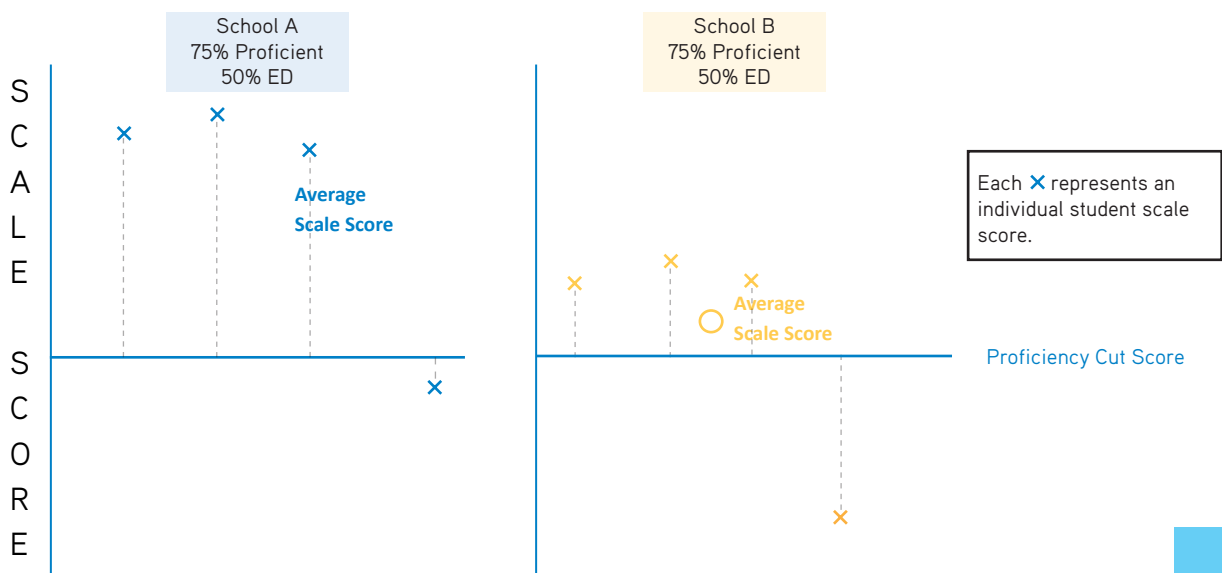
The Institute will revise the methodology it uses to calculate the effect size Accountability Plan measure starting with the analysis of the 2018-19 state assessment data. Although the Institute will modify the calculation slightly, the effect size remains one data point among many that the Institute uses to determine school effectiveness and academic goal attainment. It remains an important indicator of school performance in English language arts ("ELA") and mathematics.

What is changing?

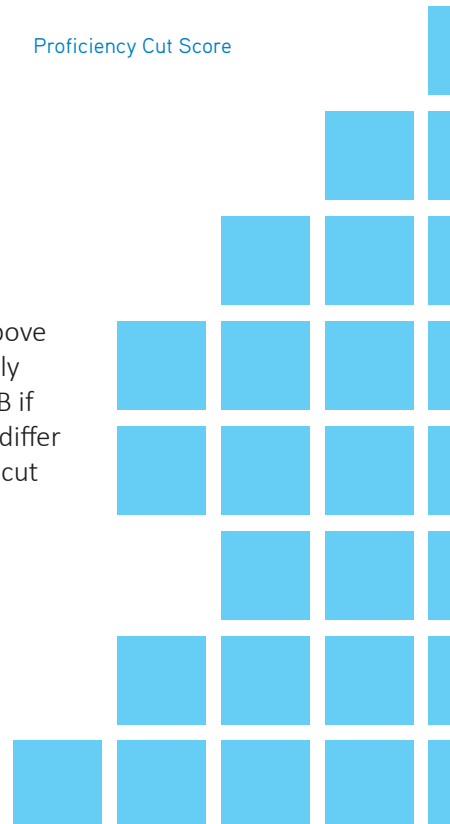
Starting with the 2018-19 ELA and mathematics outcomes, the Institute will use each school's average scale score as the measure of achievement in the effect size calculation. Prior to 2018-19, the Institute used the proportion of students scoring at or above the proficiency cut score (performance levels 3 or 4) as the academic achievement measure in the effect size calculation.

Why change?

The change will improve the accuracy of the measure. Although the effect size based on proficiency has been and would continue to be a valid and reliable comparative measure of student achievement, using scale scores allows schools where student performance is significantly higher than average to realize higher effect sizes than schools where achievement is closer to average. The image below illustrates the concept.



In this scenario, School A and School B both have 75% of enrolled students scoring above the proficiency cut score and both schools enroll the same percentage of economically disadvantaged students. The effect size of School A would be equal to that of School B if based on proficiency. An effect size based on a standardized mean scale score would differ such that school A realizes more credit for students scoring far above the proficiency cut point.



What do the changes mean for schools?

This change will affect all schools administering the state ELA and mathematics exams in grades 3–8 in 2018-19 and thereafter.

Besides exchanging proficiency rates for scale scores, the Institute is changing nothing else about the effect size calculation method or how it uses effect sizes to determine ELA and mathematics Accountability Plan goal attainment. A school's effect size data, at grade level and overall, will continue to provide the Institute with a comparative view of the school's academic performance. The target effect size in every Accountability Plan will remain 0.3 and the Institute will continue to carefully consider each school's performance on this important measure when evaluating performance and determining attainment of ELA and mathematics goals.

Following the release of the 2018-19 data, the Institute will calculate effect sizes using both proficiency rates and scale scores in separate, parallel analyses. Analyzing the results of both methods will help ensure a smooth transition and provide transparent information. We will then address on a case by case basis those instances where wide differences may exist between the results of these two analyses. All schools, but especially those up for renewal in fall 2019, will have an opportunity to work with the Institute to understand how the analysis might affect the Institute's determination of ELA and mathematics goal attainment. The effect size provides important comparative information about academic achievement but is one of many Accountability Plan measures. When formulating a school's renewal recommendation, the Institute will continue to consider all the evidence and data available, including its analysis of a school's educational program resulting from qualitative evaluation visits.

What do I need to do right now?

This change in the measure does not require any new action on the part of any school. The Institute will continue to collect the data it needs for this analysis from the New York State Education Department ("NYSED"). Schools should continue to verify the accuracy of the NYSED's data records for the enrollment of economically disadvantaged students and the ELA and mathematics performance of all tested students.

More detail about effect sizes and the Institute's changes to its calculation method

Using statewide data, the effect size measures a school's performance on the ELA or mathematics exams in comparison to the statewide average based on patterns of enrollment of economically disadvantaged students. To do this, schools are sorted into groups based on the proportion of economically disadvantaged students each school enrolls. A regression analysis calculates the extent to which patterns in the enrollment of economically disadvantaged students affect the results of the ELA and mathematics exams. The effect size compares a school's predicted result to its actual result on the state exams within each grouping. A high effect size indicates that a school performed higher than the statewide average conditioned by the proportion of economically disadvantaged students enrolled at the school.

Rather than using proficiency rates as the measure of student achievement, the Institute will use a standardized mean scale score or z-score, to compute each school's effect size. A standardized scale score tells how far a school's scale score lies above or below the grade level average. Dividing by the standard deviation allows for a combined result across all grades. Unlike many measures of distance that have dimension (like inches or feet), standard deviations are dimensionless in the sense that they measure how spread out the groups of scores are but are also transferrable. This makes z-scores useful for combining the results across two or more grade levels that might have different average scale scores.

Contact the Institute with any questions:

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