# Instructional Data Warehouse News 

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## Can We Measure Growth by Changes in NY State Proficiency Levels? How can we determine if our students are making academic progress?

by Fred Cohen

In a perfect world, New York's Grade 3-8 Math and ELA assessments would accurately measure academic proficiency, and academic proficiency would be vertically aligned. Vertical alignment assures that proficiency would have the same meaning at each grade level. In this perfect world, of course, test results would be used exclusively for the improvement of teaching and learning, and students, parents, and teachers would encourage students to take the grade 3-8 assessments with little exception.

Now, let's talk about the world we inhabit today, to see if we can make the best of our current state of affairs in a post pandemic world. These are some of the challenges we must overcome.

1. How can growth be measured for the 2021-2022 school year when 2020-2021 tests were not comparable, and many fewer students participated?
2. How can growth be measured when the last full instructional year was 2019 , and the median district refusal rate in Nassau County was then over 39 percent?
3. How can growth be measured when proficiency seems to change from year to year and even from grade to grade?

First, let's substantiate the third challenge. Does the definition of proficiency actually change from year to year? Review the Trends Report below for one district's ELA 4 scores, but focus on the white line going across the chart (see arrows).



IDW Trainings:

Achieving Equitable Outcomes

3/1/2023 9:00-10:30

HS Guidance
3/8/2023 9:00-10:30

Special Bullseye
Program for Third Party Exams
(iReady, STAR, and NWEA)

3/14/2023 1:00-3:30

The chart shows a high performing district with yearly proficiency rates (dark and light green bars) at or above the Nassau County Region's benchmark. Be sure to concentrate on the Region Success Rate (white line and white dot) and how it changes dramatically between some years. Look at the change in the Region's Success Rate. We may remember that SED cited that proficiency scores were too high in 2008-09 and added rigor to the assessments in 2009-10, resulting in a decline from $91 \%$ proficient to $\mathbf{7 6 \%}$ proficient. Few would assert that the 2009-10 fourth graders were $15 \%$ lower in proficiency than 2008-09 fourth graders. We recognize that SED changed how it defined fourth grade proficiency, as it did again when the Common Core was introduced in 2012-13, and proficiency declined again from 74.8\% in 2011-12 to 42.6\% in 2012-13. We had to accept SED's change in what it meant to be proficient. Math scores and other grade levels had comparable declines. State proficiency percentages, though significantly lower, faced similar declines.
However, the third challenge also suggests that proficiency might be different from one grade to another in the same test year. SED, in earlier years, had stated that tests were vertically aligned, meaning that proficiency was measured the same way at each grade. It hedged on whether Levels 1, 2, 3, and 4 were all aligned in each grade but claimed that proficiency (reaching Level 3) was measured the same way in each grade. Currently, in its School Report Card glossary, SED defines proficiency similarly for all grade 3-8 assessments. One would therefore expect that approximately equal percentages of students would be proficient at each grade level, at least in the typical elementary grades (Grade 3 through 6). Take a look at the table below showing proficiency levels for Grade 3-6 ELA assessments for the Nassau County Region. The proficiency percentages for the 10,000 or so students who took each exam are circled in red Why are $21 \%$ more Nassau County students proficient in Grade 6 than in grade 5? Is this a Nassau County anomaly?


A review of the State Report Card below shows the same pattern. Fairly close levels of proficiency in Grades 3 and 4 and then a fall-off in Grade 5 with a massive increase in proficiency in Grade 6 of 19\%. What would cause the fall-off in Grade 5, and what could account for the increased proficiency in Grade 6 ? Look at the percentages of students in each grade who scored at Level 4 is remarkably misaligned.

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I have not heard of an instructional explanation for why Grade 5 proficiency level would be so low and Grade 6 proficiency levels so high beyond the imperfect determination of how ELA proficiency is determined at each grade level. A look back at 2019, the last year before the pandemic, shows that scores were even more so closely aligned, but grade 5 proficiency remained the lowest of the four elementary grades by far, with a $9 \%$ increase in Grade 6 both Countywide and Statewide. Is it possible that SED, in determining proficiency in Grade 5 ELA, adopted a more rigorous standard for proficiency, or is there another explanation?

A review of the 2018 school year shows a similar pattern-Grade 5 falloff and grade 6 increase. Previous years show that Grades 5 and 6 proficiency levels were consistent and only slightly below Grades 3 and 4 in 2017 and 2016. In addition, Math scores show only slight variations in grade level proficiency and seem within reasonable expectations of vertical alignment. The 2022 Regional Snapshot for Math is shown below. Grade 5 still exhibits the lowest level of proficiency, but just below Grade 6. NY State percentages in Math reflect the Nassau County Region's figures. Grade 5 proficiency is lower by a small margin.

| Subject | Test | \# L1 | \# L2 | \# L3 | \# L4 | Total | L3+L4 | $\begin{aligned} & \text { \% } \\ & \text { L1 } \end{aligned}$ | $\begin{aligned} & \text { \% } \\ & \text { L2 } \end{aligned}$ | $\begin{aligned} & \text { \% } \\ & \text { L3 } \end{aligned}$ | $\begin{aligned} & \% \\ & \text { L4 } \end{aligned}$ | L3+L4\% |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mathematics | Grade 3 Math | 1,651 | 2,210 | 4,034 | 3,156 | 11,051 | 7,190 | 15\% | 20\% | 37\% | 29\% | 65\% |
|  | Grade 4 Math | 1,666 | 2,287 | 3,010 | 3,889 | 10,852 | 6,899 | 15\% | 21\% | 28\% | 36\% | 64\% |
|  | Grade 5 Math | 2,385 | 2,319 | 2,629 | 3,046 | 10,379 | 5,675 | 23\% | 22\% | 25\% | 29\% | 55\% |
|  | Grade 6 Math | 1,983 | 2,143 | 2,572 | 3,100 | 9,798 | 5,672 | 20\% | 22\% | 26\% | 32\% | 58\% |

We must return now to the first two challenges noted on page 1. We have a need to measure our students' growth, especially when compared to other students in other districts. Some districts will look at their third party assessments (NWEA, STAR, iReady), and rely on reports that offer projected proficiency levels. These reports, however, translate their own test results into "projected" scores on the NY State assessments. Their predictions are based on NY State assessment results. Thus, their predictions look much like the Regional Snapshot on page 2 where Grade 5 ELA proficiency is the lowest. As one would expect, (see below), Grade 5 proficiency for this typical district (in yellow) is below the other grades for all three seasonal iterations of the assessments (Fall, Winter, and Spring). Although the example below is for the NWEA assessment, other third party ELA assessments show the same pattern.


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Thus, any district attempting to measure student growth by seeing changes in proficiency will likely see students declining in proficiency as they move from Grade 4 to 5 and increasing in proficiency from Grade 5 to 6. Does this represent true change, or is it simply an artifact of the State's proficiency alignment? When NY State test results are published next year, districts can once again use the IDW's "Performance Level Comparison Reports" to measure true change. These reports compare students taking both State exams in consecutive years to check for growth or decline in proficiency. But these reports add a link to the county benchmark which allows the user to compare a district's or school's growth to the Region's growth, thus revealing a standard for comparison. The ELA 5 sample below from 2019 is illustrative.

District A (below left) was initially disappointed in 2019 when more of its students decreased a Performance Level than increased a Level (going from ELA 4 to ELA 5). When they saw how their decline compared to the County's decline, they realized that decline was likely a result of test design. Nassau County, a reliable benchmark, saw a greater decline and showed a smaller percentage increase. That is how relative growth must be measured in this strange era lacking true vertical alignment. This report will return for 2023.


As always, IDW personnel are available to provide telephone assistance as well as virtual and in-district training for any district seeking to learn more about this newsletter, or about other best data practices. To schedule a training session or ask any IDW-related questions, please call Fred Cohen at (516) 608-6640, Stephanie Witt at (516) 608-6623, or Tammy Mazza at (516) 608-6633.


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