A Teacher's Guide to Interpreting Your New York State-Provided Growth Score

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New York State Growth Measures

Understanding the Growth Subcomponent of 2011–12 Annual Professional Performance Reviews: New York State-Provided Growth Scores

The Role of Growth Scores in Annual Performance Ratings

As part of the new Annual Professional Performance Review (APPR) process, New York State teachers of Math and English Language Arts (ELA) in grades 4 through 8 and their principals will receive State-provided growth scores based on 2011–12 State tests. These growth scores describe how much students in their classrooms and schools are growing academically in mathematics and ELA (as measured by the New York State tests) compared to similar students. State-provided growth scores are **one** of the **multiple** measures that make up new performance ratings and will count for 20 percent of an evaluation score for the 2011–12 school year (see box at right).

APPRs are required by law in New York State to play a significant role in employment decisions and in the provision of targeted professional development.

The Role of Stakeholders in Designing the System

The Regents Task Force on Teacher and Principal Effectiveness, comprised of representatives from key stakeholder groups, including **educators, educator unions, and educator professional organizations**, has given input into the development of APPR regulations and the design of the State-provided growth scores over the course of the last two years.

In addition, a technical advisory committee of leading experts in the nation reviewed the statistical methodology used to calculate scores for technical accuracy and utility.

Further, teachers were given an opportunity to verify the data about which students would be included in their growth scores.

Multiple Measures for Performance Ratings

Growth is one of three components of the State's comprehensive approach to measuring educator effectiveness.

Growth
20%
- Student growth on State assessments (State-provided)
- Student learning objectives

Locally Selected Measures
20%
- Student growth or achievement
- Options selected through collective bargaining

Other Measures
60%
- Rubrics
- Sources of evidence: observations, visits, surveys, etc.
- Options selected through collective bargaining

Based on these multiple measures, educators will receive an overall quality rating from one of four rating categories: Highly Effective, Effective, Developing, and Ineffective, and a single composite effectiveness score of up to 100 points for use in the educator's evaluation. The growth subcomponent receives its own rating and a score of up to 20 points for school year 2011–12.

WHERE AND WHEN WILL DATA BE AVAILABLE?
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Reports with State-provided growth scores for the 2011–12 school year will be provided to districts in August 2012.

WHERE CAN I GET MORE INFORMATION?
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Visit **http://www.engageny.org** for additional information on the State's teacher and leader effectiveness reform agenda and detailed information on State-provided growth scores. Visit **http://usny.nysed.gov/rttt/teachers-leaders/#appr** for additional information on the APPRs.

For specific questions about APPRs or State-provided growth scores, please email educatoreval@mail.nysed.gov.

For a list of task force members, visit
http://www.regents.nysed.gov/meetings/2011Meetings/April2011/RegentsTaskforceonTeacherand PrincipalEffectiveness.pdf.

For a list of technical advisory committee members, visit
http://engageny.org/resource/resources-about-state-growth-measures/.

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Background

Why Growth?

Students enter teachers' classrooms at differing levels of proficiency or academic achievement. By measuring academic growth rather than just proficiency, we can identify strengths and gaps in student progress and help teachers to better support students with different academic needs. In addition, these growth measures are one part of a multi-measure annual evaluation system that gives all teachers a fair chance to do well no matter the starting achievement levels of their students.

How Is Student Growth Measured?

The simplest way to measure growth would be to subtract a student's test score in a prior year from his or her test score in the current year. However, most tests are not designed to allow for this kind of calculation, and the New York State tests are no exception. Therefore, we take a different approach to measuring growth for the State-provided growth measures. This approach relies on comparing the current year scores of *similar* students — that is, students who had the same prior test scores. This method is illustrated in Figure 1 below, where Student A had an English Language Arts (ELA) score of 450 in 2011. Compared to other students who also had a score of 450 in 2011, Student A's 2012 ELA test score was somewhere in the middle. We can describe Student A's growth in relative terms as a "student growth percentile" or SGP. In this example, since Student A's SGP is 48, it means that she performed the same as or better than 48 percent of similar students. SGPs range from 1 to 99, and they always tell you where a student stands in a distribution of similar students (specifically, what share of students he or she performed the same as or better than). In New York State's evaluation system, SGPs are calculated separately by subject and grade.

> **Student Growth Percentile (SGP):**
> A measure of a student's academic growth compared to similar students

Figure 1. Measuring Student Growth Compared to Similar Students

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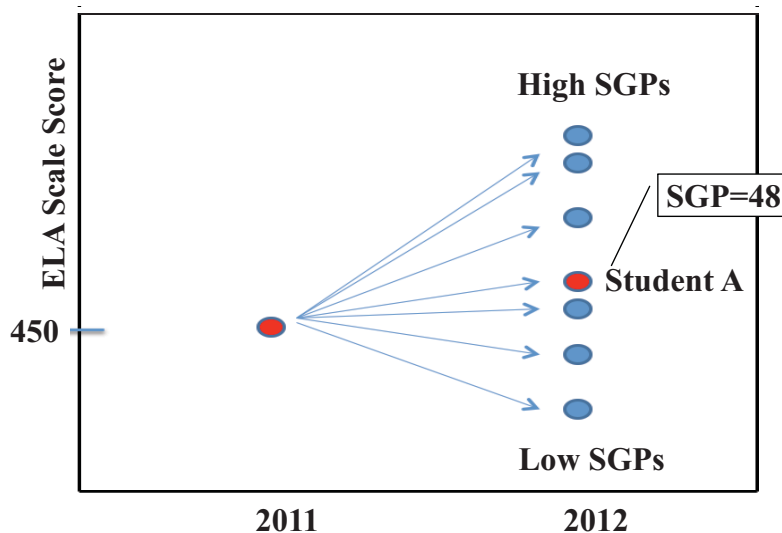
Background

For teacher evaluation, we further refine the definition of similar students to mean not just students with the same past test history, but also the same English language learner (ELL), economic disadvantage, and student with disabilities (SWD) status.

How Is Student Growth Used for Teacher Evaluation?

A teacher's growth subcomponent rating (Highly Effective, Effective, Developing, or Ineffective) and growth points (0–20) are based on an aggregate measure of his or her student growth called a "Mean Growth Percentile," or MGP. An MGP is calculated by finding the average of all the SGPs in or across a teacher's classroom(s). Recall that SGPs are a measure of a student's academic growth compared to similar students and since this is in the context of teacher evaluation, similar students are not just students with the same past test history, but also the same ELL, economic disadvantage, and SWD status. Since we calculate each teacher's score based on our refined definition of similar students, we call this the *adjusted* MGP, and this is the number on which HEDI ratings and scores for the growth subcomponent are based.

> **Mean Growth Percentile (MGP):**
> The average of all SGPs in a teacher's classrooms

MGPs are provided by subject and grade, and then an overall MGP for a teacher is found that combines all of his or her students across grades and subjects (if applicable). MGPs are based only on students who had test scores from the current and prior school year and who met the State's continuous enrollment standard (203 calendar days for Math and 195 days for ELA) in the current school year. Also, an MGP is only reported if it is made up of at least 16 SGPs — with at least 16 SGPs, the statistical calculations have a high degree of accuracy and most teachers have enough SGPs to get an MGP.

MGPs are also reported with a confidence range with an upper and a lower limit (see Figure 2).

Figure 2. MGP and Confidence Range

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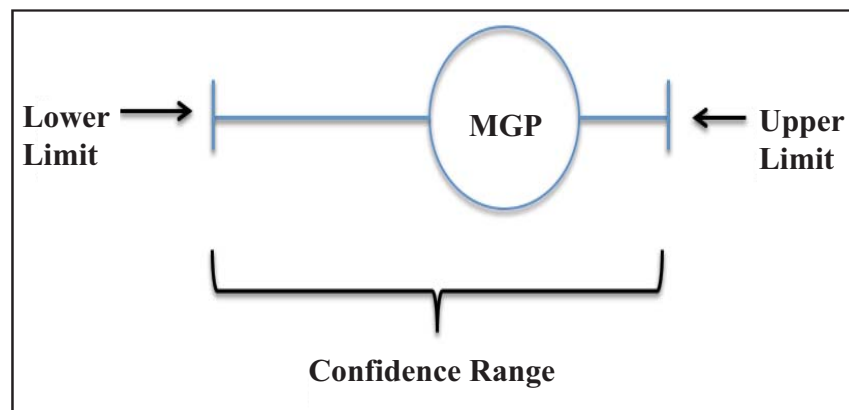
Background

All statistical calculations contain some uncertainty. While the reported MGP is the most likely result for any teacher, we can also quantify mathematically a range in which we can be 95% sure that the "true" answer lies. This is similar to the way we are used to seeing results from other statistical calculations, for example, political polls, where a candidate can be ahead in the polls by six points plus or minus three points. This reminds us that, if we polled respondents multiple times, we may not get exactly six points (some respondents might change their answer for a variety of reasons), but we know we are highly likely to get a number within a range of plus or minus three points around six. While we cannot actually give the same State test again with the same teacher and students (without the students remembering anything from the first test administration), the concept of a range of possible results is similar with the reported MGP being by far the most likely of other numbers in the range.

We report the upper and lower limit MGPs because we want to be transparent about the data, and we want to be able to take this confidence information into account when rating teachers based on student growth. The width of the confidence range (that is, the distance between the the upper and lower limit MGPs) is affected by the number of students included in generating the score, by the spread of student scores in the teacher's classroom, and by characteristics of the test itself, among other factors.

We use a teacher's overall adjusted MGP (that is, the MGP that combines information across all applicable grade levels and subjects that the teacher teaches) and upper and lower limit MGPs to determine his or her growth rating, as shown in Figure 3.

Figure 3. Determining Teacher Growth Ratings
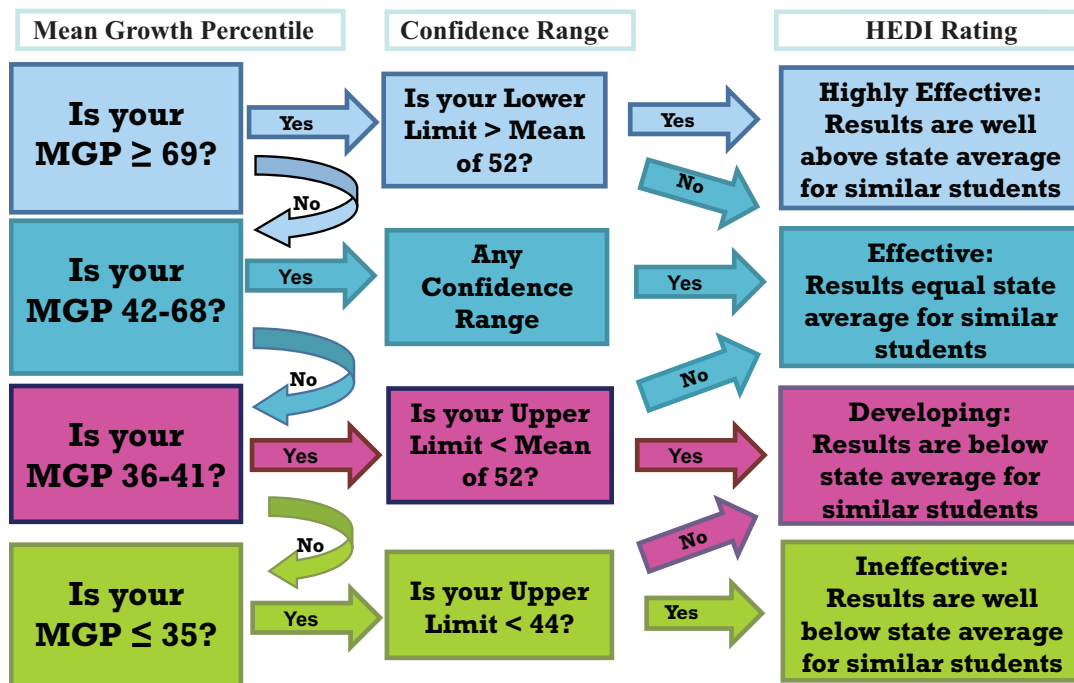
Growth points (0–20) are assigned based on MGPs within each rating category.

New York State-Provided Growth Data for Each Teacher

	Number of Student Scores	Percent of Students Above State Median	Unadjusted MGP	Adjusted MGP	Adjusted MGP Confidence Range		Growth Rating	Growth Score
					Lower limit	Upper limit		
Jane Doe	34	44	47	49	40	58	Effective	11

	Number of Student Scores	Percent of Students Above State Median	Unadjusted MGP	Adjusted MGP	Adjusted MGP range	
					Lower limit	Upper limit
Jane Doe						
All	34	44	47	49	40	58
Math	17	41	42	44	34	53
Math Grade 5	17	41	42	44	34	53
ELA	17	47	53	55	41	68
ELA Grade 5	17	47	53	55	41	68
Students with disabilities	8					
English language learners	24	50	48	52	42	62
Economically disadvantaged	28	43	47	50	40	60
Low achieving	1					
High achieving	7					

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New York State-Provided Growth Data for Each Teacher

Mean Growth Percentile (MGP) for Jane Doe based on student growth percentiles (SGPs) that do NOT account for ELL, SWD, and economic disadvantage status. On average your students performed better than about 47% of students with a similar academic history.

Growth rating: HEDI rating based exclusively on the growth subcomponent.

Growth score: growth subcomponent points between 0 and 20.

	Number of Student Scores	Percent of Students Above State Median	Unadjusted MGP	Adjusted MGP	Adjusted MGP Confidence Range		Growth Rating	Score
					Lower limit	Upper limit		
Jane Doe	34	44	47	49	40	58	Effective	11

Percent of students whose SGP from the model that adjusts for ELL, SWD, and economic disadvantage is above the State median.

MGP for Jane Doe based on SGPs that DO account for ELL, SWD, and economic disadvantage status. On average your students performed better than about 49% of students with a similar academic history and demographic profile.

Upper/lower limit: highest and lowest possible MGP taking statistical confidence into account. Your upper and lower limits of adjusted MGP: 40 and 85.

This section of the teacher report provides information about the teacher's overall MGP (that is, across all applicable grades and subjects taught). Note that a growth rating and a growth score are only provided based upon the **overall adjusted MGP**.

Number of Student Scores: The total number of SGPs included in a teacher's overall MGP.

Percent of Students Above State Median: The percent of students above the State median is the percent of students above the median State growth score in the relevant subject and grade, using the adjusted student SGP. This measure is reported because it is an allowable option for districts to use as a "locally-selected measure."

Unadjusted MGP: Unadjusted MGPs are the mean of the SGPs produced by the State Education Department's (SED) growth model that are based on similar prior achievement scores without taking into consideration ELL status, SWD status, and economic disadvantage student characteristics.

Adjusted MGP: Adjusted MGPs are the mean of the SGPs produced by SED's growth model that are based on similar prior achievement scores and also *include* consideration of ELL status, SWD status, and economic disadvantage student characteristics.

Lower Limit and Upper Limit: Highest and lowest possible MGP within a 95% statistical confidence range.

Growth Rating: Based on an overall MGP for a teacher across grades and subjects, the growth rating describes the teacher's performance category (Highly Effective, Effective, Developing, or Ineffective).

Growth Score: Using scoring bands determined by the Commissioner, a growth score of 0–20 points is assigned to each teacher based on his or her overall MGP.

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Number of student scores for math in Grade 5: 17

Number of student scores for ELA in Grade 5: 17

8 SWD student scores, 24 ELL student scores, 28 economically disadvantaged student scores, 7 high- and 1 low- achieving student scores.

Unadjusted MGPs by subject.

Adjusted MGPs by subject.

	Number of Student Scores	Percent of Students Above State Median	Unadjusted MGP	Adjusted MGP	Adjusted MGP Confidence Range	
					Lower limit	Upper limit
Jane Doe						
All	34	44	47	49	40	58
Math	17	41	42	44	34	53
Math Grade 5	17	41	42	44	34	53
ELA	17	47	53	55	41	68
ELA Grade 5	17	47	53	55	41	68
Students with disabilities	8					
English language learners	24	50	48	52	42	62
Economically disadvantaged	28	43	47	50	40	60
Low achieving	1					
High achieving	7					

Students with Disabilities: These are students who are identified based on district-provided information.

English Language Learners: These are students identified as speaking English as a Second Language or who are receiving services through a Bilingual Program or Two-way Bilingual Education Program, based on district-provided information.

Economically Disadvantaged: These are students whose families participate in economic assistance programs such as the Free- or Reduced-price Lunch Programs, Social Security Insurance, Food Stamps, Foster Care, Refugee Assistance, Earned Income Tax Credit, Home Energy Assistance Program, Safety Net Assistance, Bureau of Indian Affairs, or Temporary Assistance for Needy Families, based on district-provided information.

Low-Achieving: These are scores of students who achieved at Performance Level 1 in either Math or ELA on the prior year assessment. A student could achieve Level 1 in ELA but not Math, and vice versa, and therefore the student would only be identified as low-achieving for ELA.

High-Achieving: These are scores of students who achieved at Performance Level 4 in either Math or ELA on the prior year assessment. A student could achieve Level 4 in ELA but not Math, and vice versa, and therefore the student would only be identified as high-achieving for ELA.

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Questions for Consideration

- How much did my students grow, on average, compared to similar students? Is this higher, lower, or about what I would have expected? Why?

- How does this information about student growth align with information about my instructional practice received through observations or other measures? Why might this be?

- *For teachers with MGPs in both Math and ELA:* How do my MGPs in these subjects compare? Why might they be similar or different?

- *For teachers with MGPs across grade levels:* How do my MGPs compare across grade levels? Why might they be similar or different?

- *For teachers with MGPs reported for subgroups:* How do my MGPs for each reported subgroup (ELL students, SWD, economically disadvantaged students, low- and high-achieving students) compare to each other and to my overall MGPs? Do I see any patterns?

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