

**A Teacher's Guide to Interpreting
State-Provided Growth Scores
for Grades 4–8 in 2013–14**

Understanding the 2013–14 State-Provided Growth Scores for Use in Annual Professional Performance Reviews

The Role of Growth Scores in Annual Performance Reviews

As part of the Annual Professional Performance Review (APPR) process, New York State teachers of mathematics and English language arts (ELA) in Grades 4–8 and their principals and Grades 9–12 principals will receive State-provided growth scores based on 2013–14 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 statewide. State-provided growth scores are just **one** of the **multiple** measures that make up the annual performance reviews and will count for 20 percent of an evaluation score for the 2013–14 school year (see box at right).

New York State law requires that APPRs play a significant factor in employment decisions as well as in the provision of targeted professional development.

Development of Growth Measures

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

Student Growth or Other Comparable Growth Measures (20%)

- Student growth on State assessments (State-provided)
- Student learning objectives

Locally Selected Measures of Student Achievement (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 receive an overall performance rating from one of four rating categories:** Highly Effective, Effective, Developing, and Ineffective (HEDI), and will receive a single composite effectiveness score of up to 100 points for use in their evaluation. The State-provided growth subcomponent reports include a growth rating and a growth score of up to 20 points for school year 2013–14.

WHERE AND WHEN WILL DATA BE AVAILABLE?

State-provided growth scores for 2013–2014 were distributed to districts in August 2014 and are available to authorized users using the secure online Growth Reporting System (GRS) in September 2014. (<http://www.engageny.org/resource/secure-online-growth-reporting-system>)

WHERE CAN I GET MORE INFORMATION?

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://www.engageny.org/resource/appr-planning> for additional information on APPR and a detailed guidance document located here: <http://www.engageny.org/resource/guidance-on-new-york-s-annual-professional-performance-review-law-and-regulations/>

Principals should contact their superintendent or their network team trainers for additional information about APPR or the calculation of State-provided growth scores.

Background

Why Growth?

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

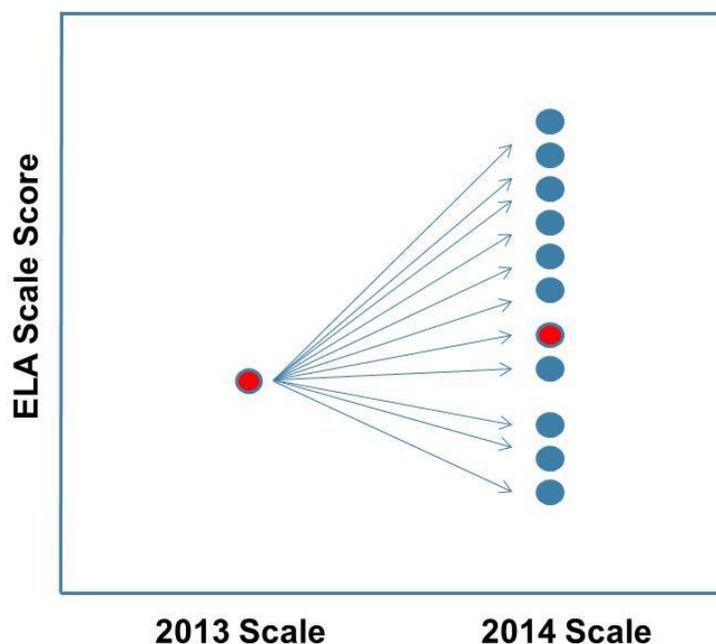
Student Growth Percentile (SGP):

A measure of a student's academic growth compared to similar 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, New York State's tests are not designed to allow for this kind of calculation, nor would this approach account for a student's starting point—it would just determine the amount of growth. Therefore, we take a different approach to measuring growth for the State-provided growth measures. The approach New York State uses compares the current year scores of *similar* students—that is, students who had the same prior test scores and other characteristics (see Figure 2)—in order to measure growth while accounting for students' starting levels of achievement. This method is illustrated in Figure 1, following, which shows Student A with an ELA score of 320 in 2013.¹ Compared to other students who also had a score of 320 in 2013, Student A's 2014 ELA test score hovers in the middle range. We can describe Student A's growth in relative terms as a "student growth percentile" (SGP). In this example, because Student A's SGP is 45, it means that this student performed as well as or better than 45 percent of other similar students (those with the same starting point and characteristics). **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.

Figure 1. Measuring Student Growth Compared to Similar Students



¹ Note that the sample scaled scores are illustrative only.

Factors Used to Define “Similar Students” in the Growth Model for 2013–14

For educator evaluation, we further refine the definition of similar students to include additional factors known to impact student performance, in order to better isolate the impact of a student's teacher on his/her performance. In the State growth model, similar students means not just students with the same academic history but also ones with the same English language learner (ELL), economic disadvantage, or disability (SWD) status. (Specific factors for each of these categories are detailed later in Figure 2.) For example, we account for whether a student is an ELL; we also account for the percentage of ELL students in a student's course. This type of factor is intended to get at “peer effects,” acknowledging that it may be a different thing for a student to be in class or course with many ELL students (and a different job for an educator with many ELL students) than it is to be in a course with fewer ELL students.

Figure 2. Characteristics of Similar Students

Grades 4–8 Teachers	Similar Student Characteristics Used in 2013–14*
Academic History	<ul style="list-style-type: none"> • Up to three years of student State exam scores, same subject • Prior-year test score, different subject • Retained in grade • Average prior achievement and range around average prior score in student's course (same subject) • New to school in a nonarticulation year (e.g., entered a middle school as an eighth grader)
ELL	<ul style="list-style-type: none"> • New York State English as a Second Language Achievement Test (NYSESLAT) scores • Percentage of ELLs in student's course • ELL status (yes/no)
Economic Disadvantage	<ul style="list-style-type: none"> • Percentage of economically disadvantaged students in student's course • Student economic disadvantage status (yes/no)
SWD	<ul style="list-style-type: none"> • SWD spends less than 40 percent of time in general education setting • Percentage of SWDs in student's course • SWD status (yes/no)

*Additional characteristics may be added in the future as available and approved by the Board of Regents.

How Is Student Growth Used for Teacher Evaluation?

A teacher's State-provided growth rating (the “HEDI” rating) and growth points (0–20) are based on the mean growth percentile (MGP), the aggregate measure of his or her students' growth. An MGP is calculated by finding the weighted average of all the SGPs in a teacher's courses based on a State test in Grades 4–8 ELA or mathematics.

Mean Growth Percentile (MGP):

The weighted average of all SGPs linked to a teacher

Each student's SGP is weighted in the teacher's MGP based on the amount of time that the student was enrolled and attended the course (based on teacher-student data linkage [TSDL] data reported to the State by districts, which teachers had an opportunity to verify). Figure 3 illustrates how a weighted MGP is calculated. Students

who are enrolled for less than 60 percent of a course's duration are not included in a teacher's MGP. Students with course enrollment of 60 percent or more are included in a teacher's MGP and are weighted based upon the percentage of time the student is enrolled in and attends the course. SGPs for students who were in a teacher's course for longer periods of time and who attended the class more regularly count more heavily in a teacher's MGP than those who were enrolled and attended for less time.

Figure 3. Example of Calculation of Teacher's MGP Based on Weighted SGPs²

Ms. Smith's Class				
	SGP	Enrollment Duration	Attendance	Enrollment x Attendance
Student A	45	80%	90%	.72
Student B	40	100%	95%	.95
Student C	70	50%	80%	N/A
Student D	60	100%	90%	.90
Student E	40	100%	75%	.75

To measure teacher performance, we find the MGP for her students, which is the weighted average of the SGPs. In this case, the calculations would be as follows:

$$\text{Step 1: } (0.72 \times 45) + (0.95 \times 40) + (0.90 \times 60) + (0.75 \times 40) = 454.4$$

$$\text{Step 2: } 0.72 + 0.95 + 0.90 + 0.75 = 3.32$$

$$\text{Step 3: } 454.4/3.32 = 46.5$$

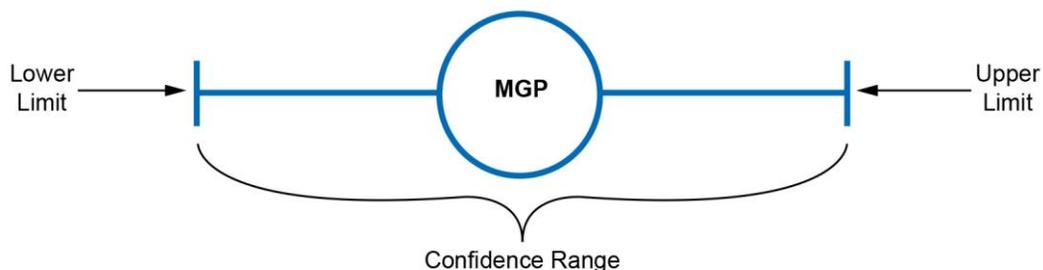
Ms. Smith's MGP is 46.5, meaning on average her students performed as well or better than about 47 percent of similar students.

For the purposes of teacher evaluation, we calculate each teacher's MGP based on the weighted average of all SGPs in our definition of similar students (including academic history, English language proficiency, economic disadvantage, and disability status). We refer to this MGP as the adjusted MGP. **Adjusted MGPs are used to determine growth ratings (HEDI) and scores.** Unadjusted MGPs take into account only students' academic history and are reported for informational purposes only.

MGPs are reported by subject and grade, and then an overall MGP for a teacher is calculated that combines SGPs for all students across grades and subjects (if applicable for the teacher). Teacher MGPs are based only on students who had test scores from the current and immediate prior school year and who met the State's minimum enrollment requirement (enrolled for at least 60 percent of the course duration) in the current school year. **Also, an MGP is only reported if it is based on at least 16 SGPs.**

MGPs are also reported with an upper and a lower limit that represents a 95 percent confidence range (see Figure 4).

Figure 4. MGP and Confidence Range



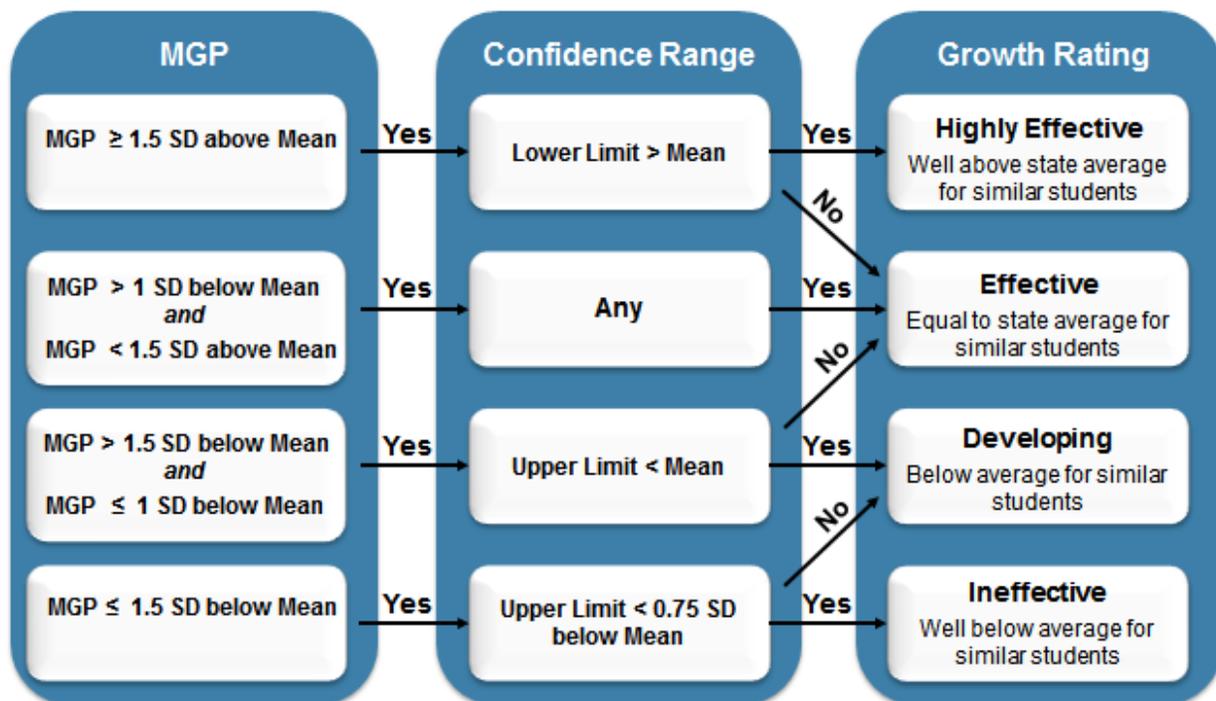
² For purposes of illustration, this example includes fewer than 16 SGPs. MGPs are reported **only when at least 16 SGPs are available.**

All statistical calculations contain some uncertainty. While the reported MGP is the best estimate for any teacher, we can also quantify a range wherein we can expect that the “true” answer lies. The upper and lower limit MGPs define a set of scores wherein we are 95 percent confident an educator’s “true” MGP lies. This is similar to the way we are used to seeing results from other statistical calculations. Take, for example, political polls, where a candidate can be ahead in the polls by six points plus or minus three points. If we polled respondents multiple times, we might not get exactly a six-point lead (as the poll changed who was called on any particular day), but we know we are highly likely to get a number within a range of plus or minus three points around six. It would not make sense to give the same State test again and again under exactly the same conditions to the same students, so we use the confidence range to account for differences that could have occurred in student scores.

We report the upper and lower limit MGPs because we want to be transparent about the data, and we use this information to assign educator ratings based on student growth. The width of the confidence range (i.e., the distance between 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 or in the school, 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 5. Using scoring ranges determined by the commissioner, a growth score of 0–20 points is then assigned to each teacher based on his or her overall MGP within each growth rating category (with higher MGPs receiving more points).

Figure 5. Determining Teacher Growth Ratings



Notes: SD = Standard Deviation
Values are rounded to the nearest whole number.

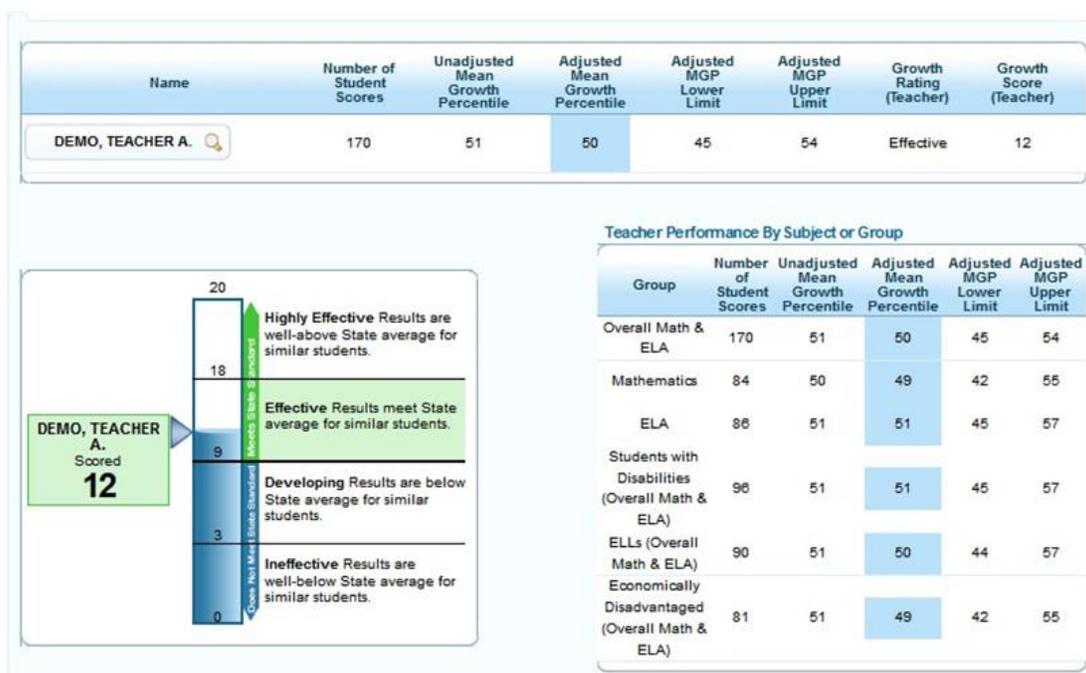
Sample Teacher Report³

Figure 6 shows a sample teacher report from the online Growth Reporting System (GRS). The GRS can be accessed through the Teacher/Leader Effectiveness tab on the EngageNY website (<http://www.engageny.org/resource/secure-online-growth-reporting-system>). This report provides information about the teacher's overall MGP (that is, across all applicable grades and subjects taught) for 2013–14, growth rating, and growth score, as well as MGP information disaggregated by several subgroups (SWD, ELL, economically disadvantaged, low- and high-achieving groups). The number of SGPs included in each MGP is also reported. The *Growth Reporting System User's Guide* (available within the online GRS and on the EngageNY website at <http://www.engageny.org/resource/secure-online-growth-reporting-system>) provides detailed information on how to navigate the GRS.

Figure 6. Sample Teacher Report

Growth Scores and Ratings for DEMO, TEACHER A.

2013-2014



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

Unadjusted MGP: The weighted mean of the SGPs for students who are linked to a teacher that are based on similar prior achievement scores only, without taking into consideration a student's ELL, SWD, or economically disadvantaged status. The weighted mean is calculated based on the amount of time students were enrolled in and attended a course with a teacher.

Adjusted MGP: Adjusted MGP is the weighted mean of the SGPs for students linked to a teacher that are based on similar prior achievement scores and includes consideration of a student's ELL, SWD, and economically disadvantaged status. This MGP is used to determine a teacher's State-provided growth score and growth rating.

Lower Limit and Upper Limit: Highest and lowest MGP for a 95 percent confidence range.

³ Teachers and principals employed by the New York City Department of Education will use a separate distribution process to access their reports. Teachers can find more information at <http://schools.nyc.gov/Offices/advance/> and principals can find more information at <http://schools.nyc.gov/Accountability/tools/review/PPR/>.

Growth Rating: Based on an overall MGP for a teacher across grades and subjects, the growth rating describes the teacher's performance category (HEDI) on the State-provided growth subcomponent.

Growth Score: Using scoring ranges determined by the commissioner, a growth score of 0–20 points is assigned to each teacher based on his or her overall MGP within each growth-rating category.

Percent of Students Above the State Median: Percentage of students above the median State growth score in the relevant subject and grade, using adjusted student SGPs.

SWDs: Students identified as having disabilities based on district-provided information.

ELLs: Students identified as speaking English as a second language or who are receiving services through a bilingual program or a two-way bilingual education program, based on district-provided information.

Economically Disadvantaged: Students whose families participate in economic assistance programs, such as free or reduced-priced lunch programs, Social Security Insurance, food stamps, foster care, refugee assistance, earned income tax credit, the Home Energy Assistance Program, the Safety Net Assistance, the Bureau of Indian Affairs, or Temporary Assistance for Needy Families, based on district-provided information.

Low Achieving: Students who achieved at performance level 1 in either mathematics or ELA on the prior year assessment.

High Achieving: Students who achieved at performance level 4 in either mathematics or ELA on the prior year assessment.

Roster Files

Teacher scores will be directly available to each applicable educator through the State's vendor's online secure GRS (accessible here: <http://www.engageny.org/resource/secure-online-growth-reporting-system>). The GRS will also contain student-level rosters for the most recent prior school year that a teacher can download, which will show them a list of the students who were included in the teacher's MGPs, along with information about each student (see Figure 7). These rosters will also display information about students who were enrolled in a teacher's courses but are not included in the calculation of the teacher's MGPs. For example, if a student was in a teacher's course but did not meet the minimum enrollment requirement of 60 percent of the course duration, the student will be listed on the roster, and in the column labeled "Included in Teacher MGP" the student will be listed as "N" for included in the teacher's MGP; the reason for exclusion will also be listed.

For students who were *included* in your growth score (indicated with a "Y" in the "Included in Teacher MGP" column), you can see the following information:

- Date, which indicates the end of the school year to which the information applies (only the immediate prior year rosters are available in the GRS)
- District, school, and teacher name and ID
- Student name and ID
- Assessment subject and grade (Item Description)
- Enrollment duration (percent)
- SGP weight in teacher MGP [(enrollment duration x attendance (percent))]
- Student background characteristics
 - Disability
 - ELL

- Economic disadvantage
 - SWDs spending less than 40 percent of time in general education settings
 - NYSESLAT form and score
 - New to school
 - Retained in grade
- 2014 State test score and prior-year(s) State test scores
 - SGP (unadjusted and adjusted)

For students who may have been enrolled in a teacher's class or course but who were not included in the calculation of a teacher's growth score (indicated with an "N" in the "Included in Teacher MGP" column), the roster identifies the reason that a student was not included in the growth score calculation (see Figure 7). The following are likely reasons noted in the roster:

- No valid prior test score
- No valid current year test score
- Student does not meet minimum enrollment requirement
- Records indicate student did not attend enrolled class

Figure 7. Excerpt of Roster Output⁴

Student unique ID	Item description	Included in teacher MGP	Reason for exclusion from teacher MGP
1234567812	Grade 4 Math	N	No valid prior test score
1234567896	Grade 5 ELA	Y	NA
1234567896	Grade 5 Math	Y	NA
1234567898	Grade 5 ELA	Y	NA
1234567898	Grade 5 Math	Y	NA
1234567895	Grade 4 ELA	Y	NA
1234567895	Grade 4 Math	Y	NA
1234567897	Grade 4 ELA	Y	NA
1234567897	Grade 4 Math	Y	NA
1234567811	Grade 4 ELA	N	No valid current year test score
1234567810	Grade 4 ELA	N	Does not meet minimum enrollment duration requirement
1234567893	Grade 4 ELA	Y	NA
1234567893	Grade 4 Math	Y	NA
1234567899	Grade 4 ELA	Y	NA
1234567899	Grade 4 Math	Y	NA

⁴ Not all roster fields are displayed in sample excerpt; see previous list for full set of data reported on rosters.

Questions for Consideration

The following are some questions to consider as you review your State-provided growth score report:

- 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 mathematics 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, SWD, economically disadvantaged students, and low- and high-achieving students) compare to each other and to my overall MGPs? Do I see any patterns?

Information or Additional Questions

If you have questions about your data, what the scores are used for, or why you received the score that you did, please contact your school's principal, superintendent, or district data personnel for assistance.

The *Growth Reporting System User's Guide and Tutorial* (available within the online GRS and on the EngageNY website at <http://www.engageny.org/resource/secure-online-growth-reporting-system>) provides detailed information and a walk-through for how to navigate the GRS. Contact educatoreval@mail.nysed.gov with questions related to the online GRS login and navigation or other issues.

Disclaimer

If there are any discrepancies between the language in these materials and the Statute, Regulations, APPR Guidance, or AIR Technical Report, the Statute, Regulations, [APPR Guidance](#), or AIR Technical Report prevail.