



## FREQUENTLY ASKED QUESTIONS— COMPARATIVE GROWTH

### 1. What is Comparative Growth?

Comparative Growth measures the progress of a teacher's students on a given assessment compared to all other students within the same school district who start at the same test score level. Comparative Growth relies on the use of standardized assessments in certain grades and subjects, and is computed using two consecutive years of students' scores, where applicable.

A Comparative Growth model has been used since 2011–2012 for select grades and subjects where a standardized test and/or TELPAS assessments are administered. From 2011–2012 through 2013–2014, the Stanford and Aprenda Norm Referenced Tests (NRTs) were used. For the 2014–2015 school year, the Iowa and Logramos NRTs were used for Comparative Growth analyses. Beginning in the 2015–2016 school year, Comparative Growth was calculated using the STAAR assessments. Comparative Growth is applied district-wide and produced by HISD's Department of Research and Accountability.

### 2. How will changing the exam used affect Comparative Growth analysis?

The NRT Comparative Growth analysis used Stanford/Aprenda across two years, or used Stanford/Aprenda as the "time 1" score and Iowa/Logramos as the "time 2" score. Beginning in the 2015–2016 school year, the STAAR test was used as both the "time 1" and the "time 2" scores for most grades and subjects for which an analysis is being conducted.

For third grade analyses in 2015–2016, the Iowa/Logramos administration results for second grade were used as the "time 1" score and the STAAR administration results for third grade were used as the "time 2" score. Since students are placed into cohorts from the prior year (in this case, 2014–2015 second grade Iowa/Logramos), all students can be placed into appropriate cohorts based on their second grade Iowa/Logramos scores. Students who were in the same cohort for the prior year are then rank-ordered by their current year's scores (in this case, 2015–2016 third grade STAAR).

Beginning in the 2016–2017 school year, the STAAR test was the only exam used, for both the "time 1" and the "time 2" scores. This means that we were not able to provide Comparative Growth scores or analyses for students or teachers in third grade, as there were no second grade exam scores to be used as a "time 1" score.

### 3. What are the benefits of the Comparative Growth model? Why is it used?

There are many benefits to the Comparative Growth model, including fairness, accuracy, clarity of impact, and accessibility. Additionally, the model is based on research. Specifically, the Comparative Growth model provides:

**Fairness:** Measures growth, not attainment, which takes into consideration where students start and how far teachers help them grow.

**Accuracy:** Relies on two years of data from common, district-wide assessments.

**Clarity of Impact:** Identifies teachers' impact on student learning relative to other teachers with students who performed similarly the previous year.

**Accessibility:** Is straightforward and does not require appraiser time or training to calculate.

**Research-Based:** Is based on the work of Gadi Barlevy and Derek Neal, who influenced the Colorado Growth Model.

**4. Which teachers will receive Comparative Growth as a Student Performance measure in TADS?**

Beginning in the 2016–2017 school year, Comparative Growth will be calculated using TELPAS scale scores in grades 3–8, and using STAAR in tested grades and subjects, as follows:

- Reading/ELA—Grades 4, 5, 6, 7, 8, English I, English II
- Math—Grades 4, 5, 6, 7, 8, Algebra I
- Writing—Grades 4, 7
- Science—Grades 5, 8, Biology
- Social Studies—Grade 8, US History

Teachers will receive separate Comparative Growth scores for each subject where Comparative Growth applies. For example, an elementary teacher who teaches reading, writing, and math will receive separate Comparative Growth scores for each of those subjects. Comparative Growth reports are produced for all teachers teaching the grades and subjects listed above.

Comparative Growth reports are prepared for all subjects and grades for which student-teacher linkages were provided. However, only those subject and grades which were indicated through TADS in the Fall are included in a teacher's SP rating and TADS appraisal. Inclusion for TADS is indicated at the top of each report a teacher receives.

**5. How is Comparative Growth for STAAR calculated?**

Calculating Comparative Growth involves a number of steps and processes, which are described below.

- A.** For each subject and grade level of the assessment, students are grouped by language and version of the tests they took. This grouping process yields multiple groups of students.
- B.** After being placed in groups based on test language and version over two years, students are placed in cohorts based on their prior year's testing performance. For example, all students who took the English version "S" (regular version) of the STAAR in both years and received a scale score of 1900 on the previous year's test will be placed in the same cohort. Prior-year scale score is considered the student's starting point, and students are compared to other students in the district with the same or a similar starting point (depending on the number of students).
- C.** Within cohorts, students are percentile-ranked using the current year's test scores. This Percentile Rank becomes the student's District Percentile Ranking or growth score.
- D.** Finally, teacher Comparative Growth is calculated by taking the Median Growth Score of all students assigned to the teacher for a particular grade and subject. A teacher's performance level is determined using cut scores based on the means and standard deviations of the teacher median scores by subject and grade level.

**6. How will the TELPAS assessment be used to calculate Comparative Growth?**

Comparative Growth will be used as a measure based on the TELPAS reading assessment for English Language Learners (ELLs) in grades 3–8. The process for calculating the TELPAS Comparative Growth score is similar to the calculations for STAAR Comparative Growth. Scale scores are used because they allow teachers to show growth with students within proficiency levels.

District-wide comparison groups are formed based on a prior year scale score. All students with the same or similar scale scores (depending on the number of students) on the previous year's TELPAS reading assessment form one subgroup and are percentile-ranked based on the current year's results. Comparative Growth on TELPAS reading can only be calculated using two consecutive years of TELPAS scores **within the district**. If a student is missing one or both years' scores, the student would not be included in the teacher's Comparative Growth calculation for that year. Students new to the district in the current school year will not be included in the Comparative Growth calculation for TELPAS.

**7. Why might a comparison group include students with slightly different scale scores on the previous year's assessment?**

Comparison groups for both STAAR and TELPAS Comparative Growth are formed using scale scores. If there are enough students (minimum of 25) with the same scale score within a grade level, then only that one scale score will be used to form the group. In instances where there are not at least 25 students with the same scale score to form a group, students with the next highest or lowest scores will be added to the group until it reaches the minimum cohort size of 25. In this way, all students with consecutive years of scores with the same or very similar starting scores and within the same grade level can be included in the measure. This allows us to include many more students in the analyses, including students who took a different test or language version of the STAAR.

**8. How can I get additional information about how Comparative Growth is calculated and reported?**

The AIM portal contains several documents that are designed to help to understand Comparative Growth better. Documents that explain Comparative Growth are available on the "Growth Data" page.

**Comparative Growth Resources:**

- **Comparative Growth Model Overview: STAAR** – includes the detailed steps involved in the calculation for STAAR Comparative Growth.
- **Comparative Growth Model Overview: TELPAS** – includes the detailed steps involved in the calculation for TELPAS Comparative Growth.
- **Comparative Growth Teacher Report Guide: TELPAS** – explains how these reports are organized and explains terminology
- **Comparative Growth Frequently Asked Questions (FAQ's)** – covers both Comparative Growth models.

Documents regarding the NRT Comparative Growth Model can also be found on the "Growth Data" page.

**9. What reports are available for Comparative Growth, and what information do they contain?**

Prior to the 2015–2016 school year, NRT Comparative Growth Teacher Reports and TELPAS Comparative Growth Teacher Reports were produced. Comparative Growth Campus-Level

Reports for both the NRT and TELPAS were also produced. Beginning in the 2015–2016 school year, STAAR Comparative Growth Teacher Reports and TELPAS Comparative Growth Teacher and Campus Reports have been produced. For the 2015–2016 school year only, a composite teacher report was included with the teacher report, which was used for ASPIRE award purposes only. For the 2016–2017 school year, the composite teacher report was included for teachers from TIF 4 campuses only.

**Teacher Report:** This report lists each student on a teacher’s roster for that subject, with student ID, name, previous year’s score on the assessment, current year’s score, and District Percentile Rank for that student within his/her comparison group. It also lists students whose test results were not used in the Comparative Growth calculation. This report will be made available to each teacher and the principal at that teacher’s campus.

**Campus Report:** This report lists each teacher within the campus with the teacher’s Comparative Growth Median Percentiles, by subject and grade. This will be made available to the campus principal.

**10. Why weren’t some of my students used to calculate my Comparative Growth?**

Comparative Growth will not be calculated for students who:

- Are missing one of the two test scores.
- Are linked less than 20 percent to a teacher’s roster.\*
- Fall into comparison groups with **fewer than 25 students**. Groups smaller than 25 are not large enough to have a broad distribution of scores, and percentile rankings are not meaningful. For more information on comparison groups, see FAQ #7.

\*Please note: if you linked a student for at least 20 percent time, that student will show on your report even if they did not test at your campus.

Students are not weighted by percent time and instruction for Comparative Growth analysis; they either meet the threshold for inclusion or do not. This means that if five teachers linked Student A for 20 percent of instruction for the same subject, Student A would appear on *all five teachers’ reports*, and would *count equally for each teacher’s Comparative Growth Median*.

In order for a student to be included in a teacher’s STAAR Comparative Growth analysis, the student must:

- Have two consecutive years of test scores within the district;
- Have expected grade progression (i.e., grade 4 to grade 5, but not grade 4 to grade 4); and
- Fall into a comparison group of at least 25 students.
- Be linked to the teacher for at least 20 percent instruction over the entire school year.

Teachers must be linked to at least seven students per subject and grade level with all of the above data requirements to have a Comparative Growth analysis.

**11. What about students who did not take the STAAR because they had a “substitute assessment?” Will their substitute assessment scores be used for Comparative Growth?**

Comparative Growth on STAAR is calculated using student test scores from the STAAR exam only. Since students who had a substitute assessment did not take STAAR and Comparative Growth is not calculated for students who are missing a prior year or current year STAAR score, students who took a substitute assessment will not be included in Comparative Growth analysis.

**12. Why not use the substitute assessment (i.e., PSAT, SAT, etc.) scores for Comparative Growth analyses?**

- The tests used for substitute assessments are administered at various times of year which means teachers may have had very little time and opportunity to impact student learning. The PSAT, which accounts for the majority of substitute assessments, is administered in October, near the beginning of the school year.
- The SAT, PSAT, ACT, and TSIA are not directly aligned to the curriculum for specific courses.
- Very few students district-wide use a substitute assessment in lieu of the STAAR EOC exam. As such, student cohort groups are not expected to be large enough to have a broad distribution of scores (see FAQ #7 and #10).

**13. Are students being compared to their own growth or compared to other similar students?**

Under this model, the growth an individual student makes from one year to the next is compared to the growth of students who took the same test and had the same/similar score on that test in the previous year. A teacher's Comparative Growth score is the median of all of his/her students' Comparative Growth scores.

**14. What is a "Hazen formula?"**

The Hazen formula is a way of calculating a percentile that takes into consideration the tails of the normal distribution. It is used in the Comparative Growth Model to calculate a student's District Percentile Rank. Percentile calculations can be made from the tails in or from the center out, and the Hazen is a compromise between the two methods. For additional details, [click here](#).

**15. How would the district calculate Comparative Growth for a student who came from another district who did not take the STAAR or TELPAS and does not have results from that assessment the previous year?**

Comparative Growth can only be calculated using two years' worth of TELPAS or STAAR scores **in this district**. If a student is missing one or both years' scores, the student would not be included in the teacher's Comparative Growth score for that year. Even if the student was tested using TELPAS or STAAR in another district, those scores are not transferred to HISD.

**16. Will special education students be grouped with general students' performance for Comparative Growth? If so, where will they be grouped?**

Special education status is not taken into account for Comparative Growth. Therefore, special education students are included with the general population of students in determining student percentile ranks. However, for TELPAS Comparative Growth analysis, if a teacher has more than 40 percent of the students assigned to him/her identified as special education, Comparative Growth will not be calculated for that teacher. For STAAR Comparative Growth analyses, the test version is taken into account when placing students in cohorts. Therefore, students taking the Alternate 2 version of the STAAR would only be compared to other students taking the same test version type.

**17. If there are two median scores for the teacher Comparative Growth score (i.e., teacher's roster has an even number of students), is the average of those two taken?**

Yes. If there is an even number of student scores, the two medians are averaged to generate the teacher's Comparative Growth Median Percentile.

In probability theory and statistics, median is described as the numerical value separating the higher half of a sample, a population, or a probability distribution from the lower half. The median of a finite list of numbers can be found by arranging all of the observations from the lowest value to highest value and picking the middle one. If there is an even number of observations, then

there is no single middle value. The median is then usually defined to be the mean of the two middle values.

**18. Why use the "median" instead of the "mean" for teacher ratings?**

For Comparative Growth, the median is used rather than the mean to control for outliers. The few students who score way above or way below other students may represent an anomaly in the teacher's data. Taking the median rather than the mean reduces the chance of extreme data points swaying the teacher's performance level way up or way down.

**19. How can the median of all of my students be indicative of my performance, especially when they are all coming from different academic starting points?**

A teacher's Comparative Growth Performance Level is not simply the median of all his/her students' scores on the assessment. If it were, the measure would not take into account students' starting points. These starting points, however, are built into the Comparative Growth model. Only students who earned the same score on the previous year's assessment—a proxy for their starting points—are compared to each other. A teacher's performance, as measured by Comparative Growth on a district-wide assessment, is an indicator of how much progress his/her students made individually and collectively, given where they started.

**20. What does a Comparative Growth score mean in terms of teacher impact on student learning? If a teacher receives a Comparative Growth score of 50, does that mean the teacher made average (one year's worth of) growth with students?**

Performance Levels for Comparative Growth indicate the extent to which a teacher had success helping his/her students progress in a particular subject, relative to other teachers in the district with students at similar starting points on the same assessment. A teacher's Median Growth Scores are translated into a performance level using the scale shown in FAQ #5. These levels have been established based on actual STAAR results. Note that performance levels are not quartiles; therefore, a teacher median of 50 does not equate to "average" growth.

**21. Is the Comparative Growth model fair to a teacher who has students with low scores?**

For students who had a low scale score on TELPAS or STAAR, a teacher could make more progress with those students in a particular subject this year, relative to other students in their district-wide comparison group.

**22. My students are high-achieving. How does the Comparative Growth model control for a ceiling effect?**

For teachers with a large number of previously very high-achieving students, there may be concern that teachers may not be able to show sufficient growth with these students.

For TELPAS, this concern about such a "ceiling effect" is addressed by the use of scale scores. The TELPAS scale is very large and Comparative Growth is only calculated for grades 3–8. This ensures there is plenty of room for growth for the district's highest achieving students.

For STAAR, this concern about such a "ceiling effect" is addressed by adjusting top scores to the top percentile rank. Students who scored one of the top three scores on a test for both the prior year and the current year have their percentile rank set at 99.

**23. What is the difference between value-added and Comparative Growth?**

Comparative Growth and value-added (EVAAS®) are both growth-based measures. Despite being less statistically rigorous than EVAAS®, which takes students' entire testing histories into account, Comparative Growth is more accurate than a simple growth measure or an attainment measure. Comparative Growth relies on two consecutive years of data from standardized assessments that are used district-wide. Comparative Growth relates a student's progress on one of these assessments to that of students with similar starting points, and then takes the median of all of the scores of one teacher's students. Value-added growth compares projected student scores utilizing all of a student's available testing history to actual scores earned after a year of instruction with a particular teacher.

**24. How do I raise my Comparative Growth score?**

In order for a teacher to increase his/her Comparative Growth Performance Level, his/her students need to increase their scores. If a teacher's students perform better this year relative to their "academic peers" (to whom they are compared), the teacher's students will receive a higher ranking, and the teacher will receive a higher median percentile. Attention to students at all prior performance levels is what matters, not just attention to those who are near a particular threshold. The median of the students assigned to you could stem from any prior-performance level.

**25. How can using Comparative Growth information help educators improve teaching and learning?**

One of the benefits of Comparative Growth data is that it can support teachers' instructional practice. Specifically, once teachers have the score reports, which they will generally receive in the fall of the following year, teachers can use the Comparative Growth measure to reflect on their own success in helping students progress relative to similarly-performing students the previous year.