COMPARATIVE GROWTH MODEL OVERVIEW:

NORM-REFERENCED TEST (NRT)

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.

A Comparative Growth Model has been in used in HISD starting in the 2011-2012 school year for select grades and subjects where norm-referenced tests (NRTs) and TELPAS assessments are administered. Comparative Growth is applied district-wide and produced by HISD's Department of Research and Accountability. The remainder of this overview describes the Comparative Growth Model for NRTs (Stanford/Aprenda and Iowa/Logramos).

Indicators: Comparative Growth Teacher Median Percentile and Performance Level. Comparative Growth Median Percentiles and Performance Levels are calculated for each of the following grade-subject combinations: Grades 2, 3, 4, 5, 6, 7 and 8 Reading and Math; Grades 5 and 8 Science; Grade 8 Social Studies; and Grade 2 Language Arts.

Summary: Teacher Median Percentile is calculated by taking the median of all of a teacher's students' Comparative Growth scores (District Percentile Ranks). This final score is used to determine the Comparative Growth Performance Level. To be included in the Comparative Growth analysis, students must have a "regular testing history" (expected grade progression), must have been tested **within the district** in the current and previous year, and must have a minimum of 25 students in their cohort group in order to be used for analysis. Teachers must be linked to these students for at least 30 percent of instruction, have at least seven students with Comparative Growth analysis, and have less than 40 percent of their students identified as special education in order to have Median Percentile and Performance Level generated.

Method: Teachers are provided both a Comparative Growth Teacher Median Percentile and a Comparative Growth Performance Level based on students' District Percentile Ranks in each subject for which a qualifying number of students are linked to them. The following steps describe the Comparative Growth model. These steps are conducted separately for each of the grade-subject combinations listed above.

1. Student Iowa/Logramos NCE scores from the current year grade are collected.
2. Student Stanford/Aprenda NCE scores from the prior year grade are collected.
3. Students whose prior-year scores do not follow the expected grade progression are excluded (i.e., students who skip a grade or students who repeat a grade).
4. Students are placed into three groups: 1) Those tested in English (Stanford and Iowa) both years; 2) Those tested in Spanish (Aprenda and Logramos) both years; 3) Those with Spanish (Aprenda) scores in the prior year and English (Iowa) scores in the current year. Students who do not fall into one of these three groups are not used (i.e., Stanford scores in the prior year and Logramos scores in the current year; missing testing history).
5. Cohorts from each of the three groups are identified, based upon all students who scored at the same Normal Curve Equivalent (NCE) in the prior year. These students form a cohort. If a cohort group has less than 25 students, no analysis is conducted for those students.
6. For each cohort meeting the minimum threshold of 25 students, the current year Iowa or Logramos NCE are rank-ordered within the cohort.

7. Rank scores are converted to percentiles using the Hazen formula to construct the percentile ranks. The Hazen formula takes into account extreme differences in the tails when calculating percentile ranks. Percentile ranks are rounded to the nearest whole number.

8. For all students who had an NCE score of 99 for both the previous year and current year results, the final percentile rank was calculated to be in the 99th percentile. In addition, for all students who had an NCE score of 99 for the prior year and an NCE score of 98 for the current year, the percentile was calculated to be in the 98th percentile.

9. Students are linked to teachers during HISD Spring Verification and Linkage on the ASPIRE portal. Only students linked to a teacher for at least 30 percent of instruction (cumulative for the school year) are included. Thus, a student could be used for more than one teacher's Comparative Growth Median Percentile and Performance Level. Likewise, a student could have been linked to a teacher and have been used in calculating an EVAAS score for a teacher, but not have been used for a teacher's Comparative Growth analysis.

10. Teachers who do not have at least seven tested students who fall into one of the three analysis groups described above claimed for at least 30 percent time in a grade and subject are excluded and will not receive a Comparative Growth score for that grade and subject.

11. Teachers who have more than 40 percent of the students used for Comparative Growth identified as special education students are excluded and will not receive a Comparative Growth score or report for that grade and subject.

12. To calculate the Teacher Median Percentile for a grade and subject, all students linked to the teacher who have a calculated percentile rank (see 1-8 above) from all cohort groups are rank-ordered by percentile. The Teacher Median Percentile is calculated and rounded to the nearest whole number. This median serves as the Comparative Growth Teacher Median Percentile for that grade and subject.

13. The Comparative Growth Teacher Median Percentile for each grade and subject taught is converted to a Comparative Growth Performance Level, using the following cut points, depending on the grade level:

Performance Level	Teacher Median Percentile: Elementary School (Grades 2, 3, 4, and 5)	Teacher Median Percentile Middle School (Grades 6, 7, and 8)
1 - Ineffective	< 28	< 33
2 - Needs Improvement	28 to 47	33 to 49
3 - Effective	48 to 68	50 to 64
4 - Highly Effective	> 68	> 64

Additional Resources: The ASPIRE portal contains several documents that are designed to help educators understand Comparative Growth better. The following resources are available via the password-protected section of the ASPIRE portal, under "My Resources" in the "CG Reports" section:

Comparative Growth Resources:
- **Comparative Growth Teacher Report Guide: Norm-Referenced Tests (NRT)** – explains how these reports and organized and explains terminology
- **Comparative Growth Teacher Report Guide: TELPAS** – explains how these reports are organized and explains terminology
- **Comparative Growth Model Overview: Norm-Referenced Tests (NRT)** – includes the detailed steps involved in the calculation for NRT Comparative Growth.

- **Comparative Growth Model Overview: TELPAS** – includes the detailed steps involved in the calculation for TELPAS Comparative Growth.
- **Comparative Growth Frequently Asked Questions (FAQ's): Norm-Referenced Test (NRT) and TELPAS** – covers both Comparative Growth models, and includes questions regarding the new Iowa and Logoramos NRT tests.
- **Comparative Growth Model Analysis** – answers five research questions and explains results of an analysis conducted to evaluate the Comparative Growth model.