

How will EVAAS accommodate the new STAAR Math assessments?

Introduction

EVAAS value-added analyses have been available to educators and policymakers for the past two decades. During that time, there have been many changes in testing regimes in the states that use EVAAS, including the transition from TAKS to STAAR in Texas. From this experience, SAS has developed a statistically robust process to utilize all available testing data from both old and new tests as well as to ensure continuity in reporting. This document provides an overview of how EVAAS accommodates changes in testing regimes, but please note that the actual EVAAS models are more statistically robust than the simplified examples represented here.

How are EVAAS value-added measures typically determined?

As a simplified explanation, the EVAAS value-added measures report the average change in achievement for a group of students with a district, school or teacher. The change is reported in “NCE” units, which stands for Normal Curve Equivalents (more details below). For example, if students in a school entered at the 50th NCE and left at the 55th NCE, then the school value-added measure would be the difference between 55 and 50, or 5 NCEs. If students entered at the 50th NCE and left at the 50th NCE, then their gain would be zero. However, this does not represent zero growth; it simply means that students have maintained their position in the distribution. Typically, zero represents the growth standard or expectation for students.

More specifically, EVAAS value-added measures are calculated using all available student test scores across all grades and subjects for the most recent five years. The multivariate response model (MRM) is a gain-based approach, and it will be used to generate 2015 district, school, and teacher value-added measures for STAAR Reading and Math assessments in grades 4-8. To measure gains from one grade to the next, the student scale scores (or, if not available, then raw scores) are first converted to a Normal Curve Equivalent (NCE) distribution based on the state population for a particular test/subject/grade/year. The NCE distribution matches a percentile distribution at 1, 50, and 99. However, unlike a percentile distribution, the NCE distribution is equal-interval such that the difference between 50 and 60 is the same as the difference between 80 and 90. This is an important distinction for measuring gains to ensure that educators are neither advantaged nor disadvantaged by the entering achievement of their students. See Figure 1 for a graphical representation of student achievement with scores and NCEs.

Again, an average NCE gain is calculated for a district, school, or teacher in a given test/subject/grade/year as a value-added measure. This value is compared to a growth standard of zero, which represents that this group of students, on average, maintained the same relative position in the statewide distribution from one grade to the next in a given subject.

How are EVAAS value-added measures determined in a transition year?

In a transition year, EVAAS will continue to use all available student test scores across all grades and subjects in which the exam is administered consecutively; the MRM (or gain-based) approach can still be used. For example, if measuring gains from 2014 to 2015, the scores from 2014 are used to create a 2014 NCE distribution and the scores from 2015 are used to create a 2015 NCE distribution. The value-added measure for 2015 is based on the change in achievement from the 2014 NCE distribution to the 2015 NCE distribution.

It is important to note that student raw scores can be used for the conversion to NCEs. Because the standard-setting process for the new STAAR Math assessments will continue into the fall of 2015, EVAAS will use raw scores in the analysis so that educators have timely access to value-added reports.

Does the release of new standards affect value-added reporting?

No, the release of new standards or performance levels does not affect value-added for students. Value-added measures are calculated from actual student scores; they make no use of the performance levels. Furthermore, all students taking the STAAR Math assessments during the 2014-15 school year are taking the new assessments. Because of this, the value-added models can continue to measure the extent to which students are maintaining their relative position in the NCE distribution of assessment scores.

Figure 1: Sample State Distribution of Student Achievement with Scores and NCEs

