Value-Added Growth

Student Performance
Teacher Appraisal & Development System

Essential Questions and Session Objectives

Essential Questions	Participants will be able to
1. What is a value-added measure?	➢ Describe what a value-added measure, specifically an EVAAS score, represents
2. How will EVAAS be used in the Appraisal and Development system for teachers?	➢ Describe how EVAAS will contribute to teacher appraisal ratings
3. How can value-added analysis help teachers improve in the classroom?	➢ Identify EVAAS reports to inform teacher development and data-driven instruction

Five measures of student learning were approved for use in the appraisal and development system.

1. **Value-Added Growth (*e.g.,* EVAAS)**
2. Comparative Growth on district assessments
3. Students' Progress on district-wide or appraiser-approved end-of-year/end-of-course assessments
4. Students' Progress on district-wide or appraiser-approved end-of-year/end-of-course performance tasks or work products
5. Student Attainment on district-wide or appraiser-approved end-of-year/end-of-course assessments

Where will EVAAS be calculated? EVAAS is used in grades and subjects with specific cumulative standardized assessments.

STAAR EOYs	NRT (Iowa/Logoramos)	STAAR EOCs
• Grades 3-8 Reading • Grades 3-8 Math* • Grades 5 & 8 Science • Grades 8 Social Studies	• Grades 3-8 Language • Grades 4, 6, 7 Science • Grades 4-7 Social Studies	• English I and II • Algebra I • Biology • US History

*EVAAS is calculated for 2014-2015 grades 3-8 Math and is used for 2014-2015 **awards** only. EVAAS calculated 2014-2015 grades 3-8 Math *is not used for appraisals.*

What is value-added growth?

What is value-added growth?

Value-added analysis is a statistical methodology that assesses student growth. It identifies the **difference** between the **expected** levels of growth of **groups** of students, **based on past performance**, and their **actual** levels of growth, thus taking into account students' differing starting points.

Educator Value-Added Assessment System (**EVAAS**) is the type of value-added analysis used in HISD. It controls for:

- Students with missing data
- Measurement error on any one given test score
- Assessments on different scales
- Testing systems that change over time
- Mobility of students and teachers*

*Source: http://www.sas.com/resources/product-brief/SAS_EVAAS_for_K-12.pdf.
For more information on SAS® EVAAS® as a statistical model, see
http://www.sas.com/resources/asset/SAS-EVAAS-Statistical-Models.pdf

Calculating Value-Added Scores

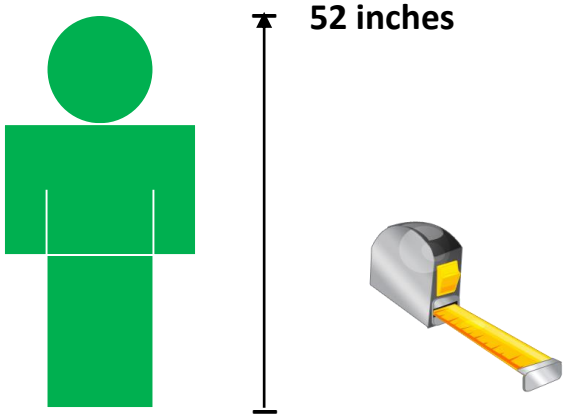
Who calculates Value-Added scores?: Value-Added is calculated at SAS EVAAS in North Carolina. Scores are then sent to the Office of Research and Accountability in HISD.

Who are Value-Added scores calculated for? Teachers who are linked to a minimum of seven effective tested students will have Value-Added as a measure and included in their appraisal. If a student is linked at less than 100% of the instructional time, then more than seven students are needed.

Why is value-added analysis necessary? Measurement Error 101

Measurement error is the difference between a measured or observed value of a quantity and its true value. In statistics, "error" is not a mistake, but refers to the **variability** that is inherent in measuring anything complex, like student performance.

If we were measuring a **student's height**, the process is fairly simple and accurate; there is not much room for error:



But with **student performance**, many "real-world" factors affect test outcomes and may increase measurement error.

Why use value-added analysis to measure student performance? We live in the real world of students and schools.

In a perfect world:	In the real world:
All students would start the year on grade level	All students start the year in different places
All students would progress at the same pace	All students progress at their own pace
All students would have test data for each year/subject	Some students have missing test data
All students would perform at peak levels on test day	May things affect a student's performance on test day; some students underperform that day
Achievement tests would be perfect measures of student performance and would account for progress	Achievement tests measure absolute attainment at one point in time

Value-Added Growth Minimizes the Impact of Measurement Error

- The **relationship between multiple test scores** gives us more information from which to draw conclusions about students' performance and growth than individual test scores do.
- Value-added analysis takes **students' testing histories** into account, using as many **relevant data points** as possible to derive student starting and ending points and to measure growth. This requires a sophisticated statistical model like EVAAS.
- Value-added growth **minimizes the impact of measurement error**, and **allows all teachers an opportunity to show progress** with groups of students over time.

Why and how will value-added growth be used in the A&D System?

Recap: Why use value-added growth in teacher evaluations?

Value-added growth brings fairness, accuracy, and clarity of impact to teacher appraisals. It holds teachers accountable *for what they can control* while accounting for other factors we know impact outcomes. There is widespread agreement in the research community that value-added growth is the most accurate and predictive measure currently available, especially when looking at multi-year scores.

How will value-added growth be used in the appraisal system?

Value-added growth will be assessed using student scores on STAAR and Iowa/Logramos.

Ms. Smith: ASPIRE vs. The Appraisal and Development System

Name: Ms. Smith

Grade Level: 6 (Middle School)

Job Title: Teacher, Reading

ASPIRE

Students take STAAR in reading.

EVAAS on STAAR is used to calculate Ms. Smith's ASPIRE award amount for the Individual Teacher Award.

Ms. Smith's Teacher Gain Index: **-0.5**

This index shows her students made slightly below average growth. Ms. Smith did not receive an ASPIRE award for the Individual Teacher Award.

Appraisal and Development System

Students take STAAR in reading.

EVAAS on STAAR is used as this teacher's first measure, and Comparative Growth on NRT (Iowa/Logramos) reading is used as a second measure.

Ms. Smith's Teacher Gain Index: **-0.5**

This index is in the range for "**Effective**" on EVAAS and is combined with her Comparative Growth score for an overall Student Performance rating. Her Student Performance rating is then combined with her Instructional Practice and Professional Expectations scores for an overall summative appraisal rating.

The A & D system addresses concerns about the use of student performance data in teacher appraisals, including for teachers with many students transitioning to testing in the English language.

Spanish-to-English Language Transition

Concern: Students' scores drop when they transition to English-language testing (i.e. going from STAAR in Spanish to STAAR in English, or APRENDA to Iowa).

Guarantee: Each year, HISD will conduct analysis to ensure that teachers with a large number of transitioning students can show above-average growth. Appropriate adjustments have been made and will continue to be made based on annual review of data.

Example

Issue and Response:

This typically does not happen in many subjects and grades, but does seem to be more prevalent in Grade 4 Reading, Science, and Social Studies. In any applicable grade and subject, EVAAS makes two types of adjustments to the methodology for HISD:

1. The scales for the "Spanish to English" students are adjusted so that their progress is equivalent to that of the "English to English" students.
2. Beginning with 2011 reports, the teacher gain index is adjusted if, after the analyses, there is any effect that cannot be removed by the student level adjustment.

Source: SAS EVAAS memo for HISD on "Adjusting for Spanish to English Transition Teachers." ©2011.

The A & D system addresses concerns about the use of student performance data in teacher appraisals, including for teachers with many high-achieving students.

High-Achieving Students

Concern: Teachers with advanced students cannot show above-average growth.

Guarantee: Each year, HISD will conduct analysis to ensure that teachers with a large number of previously high-achieving students can show above-average growth. Appropriate adjustments have been made and will continue to be made based on annual review of data to ensure sufficient stretch for high-achieving students.

Example

Issue and Response: HISD, in collaboration with SAS EVAAS, identified an issue with the 2011 TAKS exam wherein a small number of teachers may have been negatively affected by a "ceiling effect." This was due to rising HISD student achievement rates (above the state average) and a number of other factors. HISD responded to this issue in two ways:

1. Starting in the 2011-2012 school year, HISD began testing students using STAAR, which allows previously high-achieving students to show above-average growth.
2. For the .8% of teachers (32 teachers total) who may have been adversely affected, HISD recalculated ASPIRE awards.

Source: HISD Human Resources e-mail to principals, "EVAAS Update," January 13, 2012.

Summarizing Value-Added Growth

Complete these sentence frames:

Value-added analysis is a statistical methodology that assesses student _____. It identifies the _____ between a student's _____level of growth based on _____ performance, and his or her _____ level of growth, thus taking into account students' differing _____ points.

Answers to Summarizing Value-Added Growth

Review the answers to the sentence frames.

Value-added analysis is a statistical methodology that assesses student **growth**. It identifies the **difference** between a student's **expected** level of growth based on **past** performance, and his or her **actual** level of growth, thus taking into account students' differing **starting** points.

How can value-added growth support teachers in the classroom?

Benefits of EVAAS Analysis

- Provides teachers with projections of their students' future performance.
- Offers projections of student growth that can be used to identify students at risk of not graduating on time or passing key academic milestones.
- Teachers can access individualized reports and analysis of their own students' progress via the EVAAS site (https://hisd.sas.com).

How can value-added and diagnostic reports support teachers' reflection and practice?

Reflection

1. Accelerator Reports (sample below) provide teachers a method of reviewing students' performance from the prior year.
2. Student Pattern Reports help teachers review individual students' actual performance as compared to their projected performance.

2013 Accelerate I-B
Students who will be enrolled at School-Lnt in Houston Independent School District
Projection: 6th STAAR Mathematics (Level 2)

	Student	Student ID	Sex	Race	Future Enrolled Grade	AR	Bingl	CT	ESL	ELL	FRPL	Gif	Immg	Mgnt	SpED	T1	Achievement Probability
1.	Student-LRVY	0001509598	F	H	7	N	N	N	N	N	Y	N	N	Y	N	Y	25.1
2.	Student-Fvql	0001507191	F	W	7	N	N	N	N	N	Y	N	N	N	N	Y	47.5
3.	Student-FmqY	0001520380	F	AA	7	Y	N	N	N	N	Y	N	N	Y	Y	Y	25.2
4.	Student-FwYG	0001510192	M	H	7	N	N	N	N	N	Y	N	N	N	Y	Y	43.1
5.	Student-GDMQ	0001575124	F	H	7	Y	Y	N	N	Y	Y	N	N	N	N	Y	27.5
6.	Student-FnSY	0001523357	M	H	7	N	N	N	N	N	N	N	N	N	Y	Y	27.9
7.	Student-FyqQ	0001523730	F	H	7	N	N	N	N	N	Y	N	N	N	N	Y	33.1

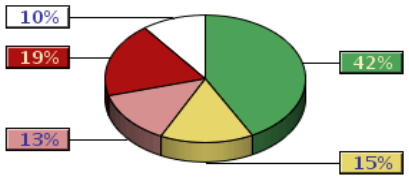
Achievement Probability refers to students' likelihood of reaching projected STAAR scores for the coming year. This projection can support teachers in planning and benchmarking for individual students at the beginning of the school year.

How can value-added growth support teachers' planning?

Report: District (Single Grade) Projection Summary
District: Houston Independent School District
Year: 2013
Grade: 8th Grade
Projection: 7th STAAR Mathematics (Level 2)

Select Subgroups

Future Enrolled 8th Grade Projected to 7th STAAR Mathematics (Level 2)		
Probability of Level 2	Nr of Students	Percentage
Advance: Greater than or equal to 75%	5127	42%
Accelerate II: Between 50% and 75%	1823	15%
Accelerate I-B: Greater than 25% and less than or equal to 50%	1631	13%
Accelerate I-A: Less than or equal to 25%	2300	19%
Students who lack sufficient data	1256	10%



Advance: Students whose probability is greater than or equal to 75%. These students are likely to meet or exceed the target.
Accelerate II: Students whose probability is between 50% and 75%. These students should be considered for academic intervention.
Accelerate I-B: Students whose probability is greater than 25% and less than or equal to 50%. These students should be considered for a multiple year intervention plan.
Accelerate I-A: Students whose probability is less than or equal to 25%. These students should be considered for a multiple year intervention plan.
Students who do not have a projection due to a lack of sufficient data.

Goal Setting

EVAAS Projection Reports help teachers:

1. understand students' past performance patterns
2. determine likelihood of students meeting achievement goals
3. identify appropriate goals for students.

Value-Added Analysis supports Instructional Practice criteria.

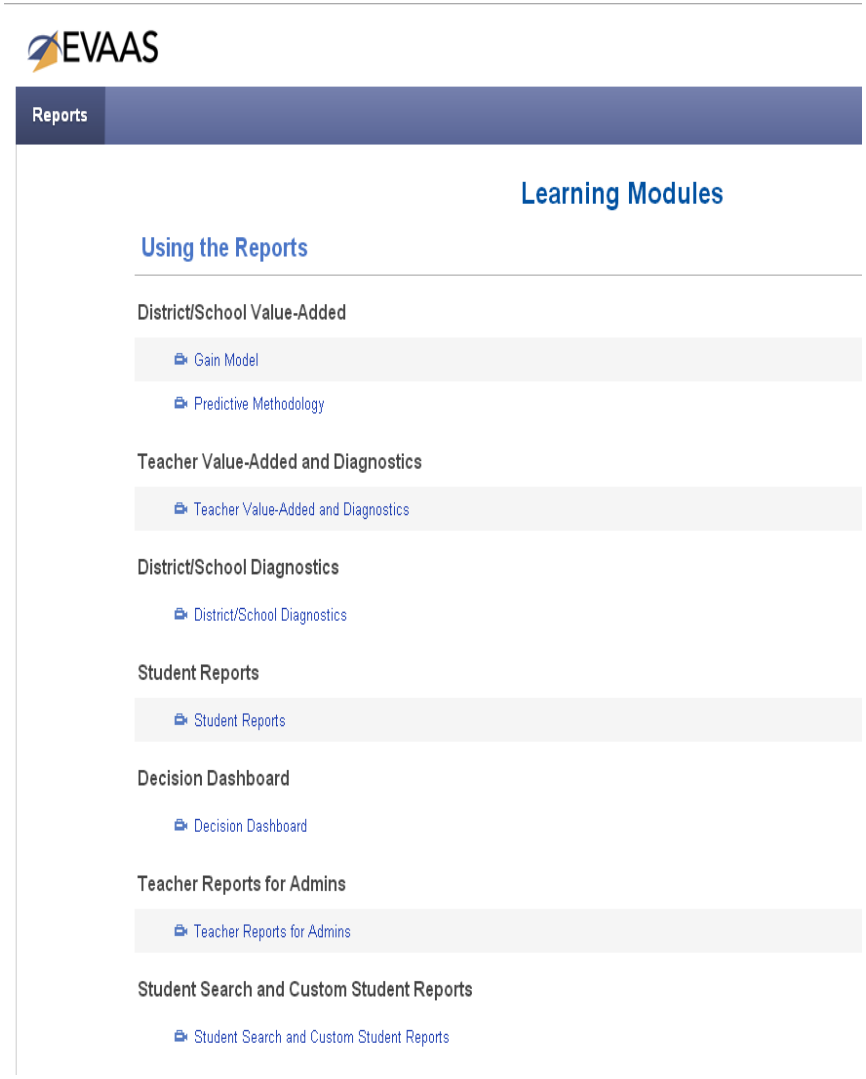
Instructional Practice

PL-1	Develops student learning goals
PL-2	Collects, tracks, and uses student data to drive instruction
I-3	Differentiates instruction for student needs by employing a variety of instructional strategies

Additional Value-Added and EVAAS Training

Through the EVAAS site, all HISD staff have access to several courses and trainings, or "learning modules," built to support knowledge and application of value-added data.

Please click here to log in to the EVAAS site, where you may access the full listing of e-Learning courses.



Review and Preview

In this session, you learned…

- ✓ what value-added analysis is, and what an EVAAS score represents
- ✓ how EVAAS will contribute to teacher appraisal ratings
- ✓ how value-added score reports may assist teachers with data-driven instruction

Questions? Please send an e-mail to effectiveteachers@houstonisd.org.