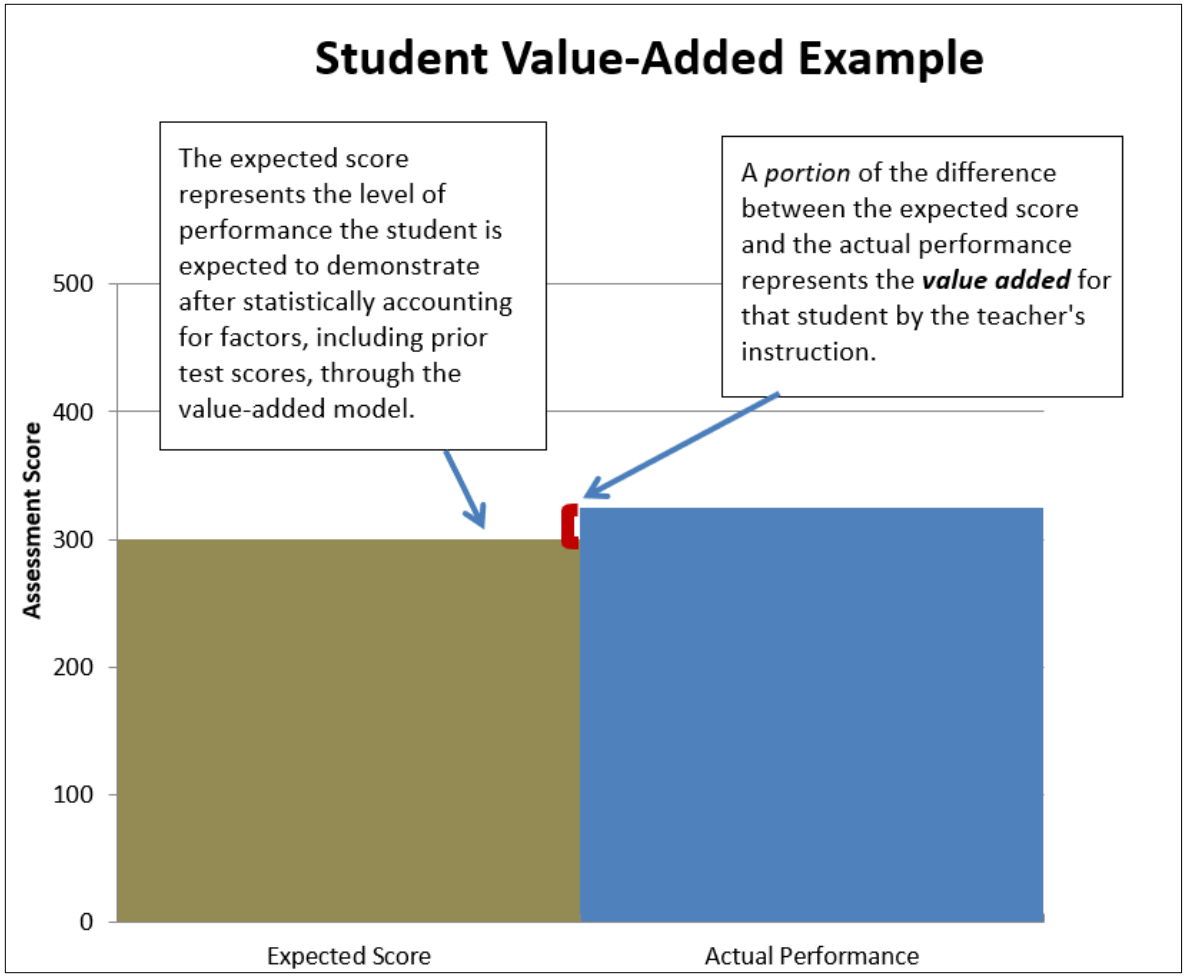
FL VAM

FAQ

What are Florida's value-added models?

Value-added models (VAMs) are used to measure a specific impact or influence on a performance outcome. For example, value-added models are often used in the areas of health care, education, and economics. In Florida, VAMs are used to measure the contribution of a teacher or school to student learning growth. VAMs do this by measuring the difference in each student's actual performance on a statewide assessment from that student's expected performance, which accounts for specific student and classroom factors that impact the learning process.



Conceptually, a portion of the difference between students' actual score on an assessment and the scores they were expected to achieve is the estimated "value" that the teacher added to their students' learning growth with respect to the content tested. A student's expected score is based on the student's prior test score history and measured characteristics as well as how other students in the state performed on the same assessment during the same year.

Because teachers teach classes of students who enter with different levels of proficiency and possibly different student characteristics, it was important to develop a model that could account for these differences mathematically. VAMs "level the playing field" by controlling for differences among students so that schools and teachers do not have advantages or disadvantages reflected in their VAM scores based on the characteristics of the students they are responsible for.

Florida's value-added models for English Language Arts, Mathematics, and Algebra 1 in grades 8 and 9 were developed and recommended by the Student Growth Implementation Committee and approved by the Commissioner of Education. For information on the factors included in the model, visit http://www.fldoe.org/committees/doc/Value-Added-Model-White-Paper.doc.

Why does FLDOE have VAMs?

Florida law (Section 1012.34, Florida Statutes) requires school districts implement personnel evaluations that are based on several criteria, one of which is the performance of each educator's students. The law allows the commissioner to select a statewide model that is based on learning growth, which means educators can be credited with improving student learning regardless of how much the student knows when they first enter a teacher's classroom using a measure that is consistent across districts.

There are a number of ways to measure learning growth. The Student Growth Implementation Committee recommended and the Commissioner of Education approved using a VAM to measure learning growth for purposes of teacher evaluation. This was because of the model's capacity to reflect an individual educator's contribution to that learning growth in the areas of English Language Arts and Mathematics rather than proficiency or achievement. VAM results, along with the other components in districts' personnel evaluation systems, provide a tool for districts to more accurately evaluate teacher and principal performance. Use of VAM data as part of the performance of student's component in a teacher's evaluation is optional and is a local district decision.

Who came up with VAM?

A committee of stakeholders (the Student Growth Implementation Committee –or SGIC) selected the type of model and the characteristics it should account for when measuring student growth. The SGIC included 27 educators and education stakeholders from across the state such as:

- Teachers (across various subjects and grade levels, including exceptional student education)
- School administrators
- District administrators (assessment and HR)
- Postsecondary teacher educators
- Representatives from the business community
- Parents

Florida's VAMs for English Language Arts, Mathematics, and grade 9 Algebra 1 were developed and recommended by the SGIC with support from the American Institutes for Research (AIR) and approved by the Commissioner of Education. The SGIC explored eight different types of student growth models with AIR and selected a specific type of VAM. The SGIC's recommended model was fully adopted by the Commissioner with no additions, deletions, or changes.

For more information about the Student Growth Implementation Committee, visit http://www.fldoe.org/teaching/performance-evaluation/student-growth-implementation-committe.stml.

What is the difference between the Algebra 1 VAM measure and the three-year aggregate?

VAM measures represent the amount the teacher contributed to student learning growth, on average, among the students that they taught. The models control for factors that impact student learning growth.

Algebra 1 VAM measures are not standardized and not aggregated with FAST scores because there are different scales used between the B.E.S.T. Algebra 1 EOC and FAST scores. Algebra 1 VAM measures use the developmental scale of the B.E.S.T. Algebra 1 EOC. Therefore, results are interpreted as the number of points (rather than a percentage) on the assessment above or below the expected score for the student attributed to the teacher's impact. For example, if a teacher's Algebra 1 VAM measure is 10, it means that teacher's students, on average, demonstrated learning growth of 10 points on the developmental scale higher than they were expected to, with those expectations being based on actual performance among similar students throughout the state. A measure of 0 (zero) reflects typical performance where students are, on average, performing as they are expected to.

The three-year aggregate combined VAM measure provides the most information available regarding impact on student learning growth for teachers who teach English Language Arts (ELA) and/or Mathematics courses on the VAM course list. It contains at least one and up to as many as three years of data within the most recent three-year period. Algebra 1 teachers do not receive the three-year combined aggregate score but instead receive a single-year score.

Who receives VAM data?

Currently, VAM measures are produced for teachers of the following grades and subjects:

- English Language Arts (4th–10th)
- Mathematics (4th–8th)
- Algebra 1 (8th and 9th grades only)

No grade 4 FSA Math or ELA measures are available for 2021.

To see the complete Florida VAM course list, go to https://www.flrules.org/gateway/reference.asp?No=Ref-05759

Which students are used in the VAM?

To view a list of all students included in your most recent year of VAM data, select the Student List option tied to the report.

Districts submit data to the staff and student longitudinal data systems several times throughout the year during what are referred to as survey periods. Teacher and student data used for VAM come from the data submitted by districts during Survey 2 (Fall) and Survey 3 (Spring). These submissions contain student demographic information and class assignment data as well as teacher class data that are used to identify those students whose test scores will be used to calculate a teacher's VAM measure. Teachers are entitled by law to have an opportunity to review

and correct their rosters for VAM calculation purposes. Districts can choose to conduct this process internally or use the Roster Verification Tool (RVT) provided by the FLDOE. RVT allows districts, schools, and teachers to verify their roster information and make necessary corrections in order to capture the most accurate and up-to-date data available. The RVT is open for District/School/Teacher verification shortly after the State Survey 2/3 processing period for Fall and Spring. Questions about how your district provides teachers with the opportunity to review and correct their rosters should be directed to your district's primary accountability contact.

What Student Characteristics are used in FLVAM?

There are eight characteristics of a student that are considered when calculating VAM for the FAST and B.E.S.T. Algebra 1 models:

1. Up to two prior years of achievement scores (the strongest predictor of student growth)
2. The number of subject-relevant courses in which the student was enrolled
3. Students with Disabilities (SWD) status
4. English Language Learner (ELL) status
5. Gifted status
6. Daily attendance
7. The number of times the student changed schools during the year
8. The student's age relative to the typical age of students in the same grade (as an indicator of acceleration or retention)

There are two common characteristics of a classroom considered when calculating VAM for the FAST and B.E.S.T. Algebra 1 models:

1. Class size
2. Similarity on prior test scores among students in the class

In addition to these, the B.E.S.T. Algebra 1 model also considers three additional classroom characteristics:

1. Average prior test scores among students in the class
2. Percentage of students in the class that were gifted
3. Percentage of students in the class that were at the typical grade level of students in the class

How are these characteristics used in your VAM measure?

- **Up to two prior years of achievement scores included for each student**: This measure is used to establish a baseline for performance expectations in the following year(s). Typically, the higher the prior year scores are, the higher the expected score on the current assessment will be.
- **The number of subject-relevant courses in which the student is enrolled**: This measure is used to control for the effects related to the amount of instruction in the subject the student received during the year. While some additional instruction might increase a student's expected score slightly, additional courses might indicate remediation efforts to address below proficiency performance, which can lower the student's expected score.
- **A student's disabilities**: This is a series of 14 individual measures used to control for effects related to the specific disabilities, if any, the student has. The presence of one or more of these disabilities tends to lower a student's expected score.

- **A student's English Language Learner (ELL) status**: This measure is used to control for effects related to whether a student has limited English proficiency. This measure typically lowers the expected score from what it would otherwise be, but the amount it lowers the score tends to decrease with the amount of time a student has been an ELL.
- **Gifted status**: This measure is used to control for effects related to whether or not the student is gifted. In general, this measure increases a student's expected score from what it would otherwise be.
- **Student attendance**: This measure is used to control for effects related to student attendance. It is measured using the daily attendance rate, not attendance in specific to individual courses. Typically, as attendance rates increase, so do expected scores.
- **Student mobility**: This measure is used to control for effects related to changing schools during the school year. Typically, changing schools lowers a student's expected score from what it otherwise would have been. The more often the student changes schools, the lower their expected score becomes.
- **Difference from modal age in grade**: This measure is used to control for effects related to differences in a student's age from the most common age for students enrolled in the same grade across the state and is included as an indicator of retention or acceleration. If a student is below the usual age for their grade, then it typically means they are accelerated and increases their expected score from what it would have been otherwise. If a student is above the usual age for their grade, then it could mean they have been retained at some point, which generally decreases their expected score from what it would have been otherwise.
- **Class size**: This measure is used to control for effects related to the number of students in a class. As class size increases, the expected scores for students in that class typically decrease slightly from what they would have been otherwise.
- **Homogeneity of students' entering test scores in the class**: This measure is used to control for the variation in student proficiency within a classroom at the beginning of the year. When students are more similar to one another in proficiency, their expected scores increase from what they would have been otherwise. Conversely, when student in the same class are very different to each other in proficiency, their expected scores generally decrease from what they would have been otherwise.

In addition to the variables listed above, the B.E.S.T. Algebra I EOC models include the following covariates:

- **Mean prior test score**: This measure is used to control for the effect of the overall incoming proficiency level of students in the class. As the incoming level of proficiency among students in the class increases, so do those students' expected scores.
- **Percent gifted**: This measure is used to control for the effect of the overall proportion of the class that is gifted. As the proportion of the students in the class who are gifted increases, so do those students' expected scores.
- **Percent at modal grade in classroom**: This measure is used to control for the possible effects of differences in age among students in the classroom on student learning. Typically, the more diverse the ages of student in a class, the lower the expected scores among those students become.

What are teacher effects and the school component?

A teacher's effectiveness with his or her students can be affected by the school in which he or she teaches (e.g., school resources, leadership). To level the playing field, the statewide value-added model combines two components in the teacher's value-added measure:

- The teacher effect refers to how much the teacher's students on average gained compared to similar students in the same grade and subject within the school.
- The school component refers to how much the school's students on average gained compared to similar students in the same grade and subject across the state.

The Student Growth Implementation Committee (SGIC) recommended that 50% of the school component should be added to the teacher component. Teacher value-added measures from the statewide, standardized assessment models are therefore calculated this way:

Teacher Value-Added Measure = Teacher Effect + .50 * School Component

This formula recognizes that some of the school component is a result of teacher actions within their schools, and therefore, teachers should receive some credit for the typical growth of students in their school in their overall value-added measures.

For the B.E.S.T. Algebra 1 EOC models, the SGIC determined that none of the school component should be attributed back to teachers. The SGIC made this decision because more than one-third of schools in Florida have only one or two Algebra 1 teachers teaching grade 9 students, and more than half of schools have only one or two Algebra 1 teachers teaching grade 8 students. In these situations, it is difficult to distinguish between teacher effects and the school component, and the SGIC decided that attributing the school component back to the teacher in computation of the VAM measure was unnecessary. In Algebra 1, the VAM measure is calculated this way:

Teacher Value-Added Measure = Teacher Effect

How are VAM classifications created?

The classification methodology for the three-year aggregate combined VAM score for English Language Arts, Mathematics, and the grade-level VAM score for Algebra 1 are as follows. These were required to be used beginning in with the 2015-16 School Year by SBE Rule 6A-5.0411 of the Florida Administrative Code.

- **Highly Effective**: A highly effective rating is demonstrated by a value-added score of greater than zero where all the scores contained within the associated 95-percent confidence interval also reside above zero.
- **Effective**: An effective rating is demonstrated by the following:
  - A value-added score of zero.
  - A value-added score of greater than zero where some portion of the range of scores associated with a 95-percent confidence interval reside at or below zero.
  - A value-added score of less than zero where some portion of the range of scores associated with both the 68-percent and the 95-percent confidence interval reside at or above zero.
- **Needs Improvement**: A needs improvement rating is demonstrated by a value-added score that is less than zero where the entire 68-percent confidence interval falls below zero but where a portion of the 95-percent confidence interval reside at or above zero.

- **Unsatisfactory**: An unsatisfactory rating is demonstrated by a value-added score of less than zero where all of the scores contained within 68-percent and the 95-percent confidence interval also reside below zero.

What are confidence intervals?

To better understand confidence intervals, it is helpful to consider their use in another area. In predicting the weather, for example, if a meteorologist reports that there is 95% chance of rain today, it means that it rained 95% of the time under similar conditions. If the probability is only 68%, we might say that there is a moderate likelihood of rain. Either way, we would probably want to take an umbrella with us on our way out of the door that day.

Similarly, confidence intervals can help us interpret VAM results. With VAM measures and their associated confidence intervals, we can answer this question: "How much evidence is there that the VAM result is different from expected growth—are we 68% confident or are we 95% confident?"

When the entire 68% confidence interval is to the left or right of the Standard line, this provides evidence that students' growth is decidedly below or above expected growth. Confidence intervals to the right of the Standard line indicate evidence that the result exceeded the expected growth, whereas confidence intervals to the left of the Standard line indicate evidence that the result fell short of the expected growth. Similarly, when the entire 95% confidence interval is to the left or right of the Standard line, we understand that there is additional evidence that students' growth is decidedly below or above expected growth. When a confidence interval crosses the Standard line, the evidence that the result exceeded or fell short of the expected growth does not meet these standards and we cannot draw the same conclusions described above.

What is an expected score?

In Florida's value-added model, each student receives an expected score. You might have heard this called a predicted score. The terms are interchangeable, but we use the term "expected" instead of "predicted" to avoid confusion. This is because the expected score is actually created as part of the value-added analysis and estimates how a student performed on a test they have already taken and does not predict how a student might score on a future assessment. In order to calculate the expected score, the model determines the relationships between all of the student characteristics, including the students' prior testing histories, and uses that information to estimate or predict the scores students earned on the test they took during the current school year. This estimate, which we call the expected score, is then compared with the actual score for each student, and the differences are used to determine the teacher's contribution to student learning growth that exceeded expectations among all of the students on the teacher's roster.

Why are teachers not told of students' "predicted" scores at the beginning of the year instead of learning the predicted score when FAST scores are released?

Florida's VAM does not "predict" scores in the traditional sense of the word. A better term for what the model does is that it establishes an "expected" score based on the relationships among the data within the model. Once students take an assessment, FLDOE knows what their score was. VAM then takes all the information from the covariates and estimates what the score would have

been had all of the variables within the model been able to explain all of the variation in student achievement. When this expected score is different than the actual score the student received, a portion of that difference, called a residual, forms the basis for the "value-added" by having a specific teacher. The reason predicted scores can't be shared with teachers at the beginning of the year is because they do not exist and cannot be created until after students take the assessment. They are generated based on how similar students performed on the same test during the same year after it has been administered.

How is the expected score calculated?

The expected score for an individual student is computed by the VAM using the student and classroom characteristics. Each model takes all of the students within the state who took the same assessment in the same grade during the current year and, using student and classroom characteristics, determines how much each of these characteristics contribute to student learning by testing and retesting different versions of the model until the one that predicts the scores students actually earned on the assessment most accurately for everyone included is identified. Once this final model has been identified, each characteristic included in it is assigned a relative weight based on how much it helps predict student performance. Once these weights have been determined, each student's characteristics are multiplied by these weights and added together to compute their individual expected score. By doing this, the model sets an expected score for each student based on how other, similar students across the state performed on the same assessment the student took.

Am I at a disadvantage because I teach students who are less proficient, disabled, non-native speakers, etc.?

No. FLDOE uses impact data used to determine whether there was any correlation between key factors such as the percentage of students with disabilities, the percentage of ELL students, the percentage of gifted students, and the mean prior test score of students on a teacher's roster and teacher VAM measures. These correlations are essentially 0, meaning teachers with large proportions of students with a characteristic were not more likely to receive lower VAM measures than teachers with low proportions of students with that characteristic. VAM is not based on raw achievement but rather on how much the average student growth among a given teacher's students differs from the average amount of growth exhibited by similar students statewide. Because prior test scores and other covariates are controlled for in the model, there is no systematic advantage or disadvantage based on the incoming level of proficiency of the students assigned to a teacher.

Where should I direct questions about evaluation scores?

For questions about how your evaluation score was calculated or how VAM data was used by your district, contact your district's Primary Accountability Contact.

For questions about VAM or state laws or rules related to its use in teacher evaluations, click Contact Us on any FL VAM page.

Why did a teacher not receive a VAM report?

In many cases, teachers receive student performance ratings that are solely calculated by the local district; not all teachers receive a VAM measure from the state approved models. In fact, only

about one-third of teachers receive VAM measures based on the state models displayed in the VAM Data Visualization Tool. Only instructors in ELA grades 4-10, Math grades 4 -8, and Algebra 1 grades 8 and 9 receive a VAM measure from the state models. All other student performance metrics for other areas of instruction are determined by your district.

Where can I find more detailed information Teacher VAM reporting and VAM Methodology White Papers

FLDOE has provided detailed information about the purpose and calculations used in developing FLVAM. Here is a link to School Board Rule 6A-5.0411 (https://www.flrules.org/gateway/ruleno.asp?id=6A-5.0411). You will see several documents incorporated by reference into the rule, one of which is the Ref-05725 Florida VAM Methodology (https://www.flrules.org/gateway/reference.asp?No=Ref-05724). This document provides all of the statistical methodology used for calculating the VAM models. Rule 6A-5.0411 provides details about how the measure was transformed into one of four VAM ratings.