

Frequently Asked Questions: Oklahoma's Value-Added Model

Understanding value-added

Q: What is value added?

A: "Value added" is a measure of a teacher's contributions to students' academic growth. It is one of multiple measures included in Oklahoma's Teacher and Leader Effectiveness (TLE) system. To estimate a teacher's value-added result, a value-added model compares two sets of test scores: (1) the average actual scores that the teacher's students earned and (2) the average scores achieved by the students' "typical peers" throughout the state. The difference between these two sets of scores is the teacher's value added. In Oklahoma's value-added model, "typical-peer scores" are estimated by looking at the achievement of students' most similar "peers" in the state. These peers are similar in terms of scores earned on multiple assessments and other background characteristics. It is important to note that the value-added model is designed to isolate a teacher's value added from other factors that might affect a student's scores but that are outside the teacher's control. These factors include students' status as English-language learners, use of individual education plans, and student mobility (between schools) during the year.

Q: Previously, teachers in the state have simply compared their students' pre-test and post-test scores. Isn't this an easier way of assessing student academic growth?

A: The Oklahoma state assessments are not designed to allow direct comparisons of students' scores from grade to grade. But even if they were, the value-added model provides a more accurate reflection of a teacher's performance than a simple comparison of pre- and post-test scores. This is because the value-added model separates each teacher's contribution to student test scores from other factors that may affect the scores. To isolate teachers' contributions, the value-added model accounts for the background characteristics of each student, including his or her prior scores on multiple assessments. Numerous studies have shown that such characteristics are linked to students' academic progress over the year. A simple comparison of student test scores from year to year would not adjust for these characteristics and would therefore reflect factors beyond teachers' control, such as students' status as English-language learners, use of individual education plans, and attendance at school. The Oklahoma value-added model adjusts for these factors by comparing students' actual scores to typical-peer scores.

Q: Can the value-added model show growth for students who start with very high scores?

A: Yes, effective teachers can achieve high value-added results regardless of their students' pre-test scores. This might seem surprising given that students who scored very well on pre-tests have little room to improve on their post-tests. However, value-added models adjust for this issue. Students who score well on one test tend to also do well on the next. However, on average, the students with the highest pre-test scores score slightly lower on the post-test. This means that a student scoring at the top of the pre-test scale will generally have a

typical-peer score below the top of the post-test scale, leaving room for improvement. Thus, an effective teacher with high-scoring students on the pre-test can still have high value-added results if his or her students outperform their typical peers.

Q: Does the value-added model account for learning loss over the summer?

A: Yes, the value-added model automatically adjusts for summer learning loss to the extent that the loss experienced by a teacher's students is similar to the loss experienced by the students used to estimate typical-peer scores. Because the model uses a large number of student characteristics to estimate the typical-peer scores, it allows for a great deal of variation in summer learning loss from one group of students to another.

Q: What research has been done to demonstrate the validity of value-added measures?

A: The Measures of Effective Teaching (MET) Project conducted one of the most comprehensive research studies on teacher effectiveness. Their research highlights some key findings about value-added measures, including measures of the relationship between value-added results and other teacher effectiveness measures, such as observations. Links for recent research on the findings from the MET project are provided below.

- Brief focusing on the multiple measures covered by the MET study:
http://k12education.gatesfoundation.org/wp-content/uploads/2015/05/MET_Feedback-for-Better-Teaching_Principles-Paper.pdf
- Research on the relationships between different measures from the MET study:
 - o <http://files.eric.ed.gov/fulltext/ED540960.pdf> (full paper)
 - o <http://files.eric.ed.gov/fulltext/ED540962.pdf> (brief)

Another significant research study, *Measuring the Impacts of Teachers II: Teacher Value-Added and Student Outcomes in Adulthood*, found that students taught by high value-added teachers were more likely to attend college and earned higher salaries. Indeed, they estimate that, compared to an average teacher, the most effective teachers contribute an additional \$250,000 to the lifetime incomes of the students they teach each year. Below is a link to a *New York Times* article summarizing the results of the study and highlighting key findings. Please note that while the findings are relevant to our work in determining the best value-added approach for Oklahoma, the specific recommendations of the authors about how to use value-added results may not reflect the way they will be incorporated into evaluations in Oklahoma. Value-added results in Oklahoma's TLE system are one of multiple measures of effectiveness that will be used to support continuous improvement.

<http://www.nytimes.com/2012/01/06/education/big-study-links-good-teachers-to-lasting-gain.html>

The Oklahoma value-added model

Q: Which teachers receive value-added results?

A: Teachers of the following courses receive value-added results: math and reading in grades 4 through 8; algebra I, algebra II, geometry, and English III. Teachers must have at least 10 students who are eligible to be included in the value-added model to receive a value-added result. Eligible students must have both a valid post-test score from one of the grades and subjects listed above and a valid pre-test score in the related subject from the previous year. For grades 4 through 8 math, algebra I, algebra II, and geometry, the related pre-test subject is another math assessment. For grades 4 through 8 reading and English III, the related subject is another reading/English language arts assessment.

Q: What are the “pre-test” and “post-test” scores used in the value-added model?

A: Educators may hear the terms “pre-test” and “post-test” used to describe how value-added results are calculated. In this context, the post-test is the state assessment taken by students after they received instruction from the teacher being evaluated. Pre-tests are the tests taken by these same students during the prior school year, usually before they were taught by the teacher being evaluated. When a student takes a test in the same subject multiple times in the prior year, the value-added model uses the student’s most recent score as the pre-test. Although the pre- and post-test scores are important, the value-added model does not directly compare these scores to determine a teacher’s value added. Instead, the model compares a student’s actual post-test score and the estimated typical-peer score on the same test. The typical-peer score is estimated based on pre-tests in multiple subjects and other student characteristics.

Q: What if we don't have a pre-test score for a student (for example, a student who transferred in from another state)?

A: Students without a valid pre-test score from the previous grade and year are excluded from the calculation of a teacher’s value-added result. To be included in the calculation, a student must have (1) a valid post-test score from a grade and subject for which value-added results are estimated and (2) a valid pre-test score in the related subject from the previous year. For math in grades 4 through 8, algebra I, algebra II, and geometry, the related pre-test subject is another math assessment. For reading in grades 4 through 8 and English III, the related pre-test subject is another reading/English language arts assessment. Students’ pre-test scores in the related subject are typically the most important element used to estimate their typical-peer scores.

Q: How does Oklahoma’s value-added model address factors that might affect student scores but are outside a teacher’s control?

A: The value-added model adjusts for a range of student characteristics that are outside a teacher’s control, including prior achievement on multiple assessments, status as an English-language learner, use of individual education plans, mobility across schools during the school year, race/ethnicity, gender, and eligibility for free or reduced-price lunch. As

these characteristics may be associated with factors that influence student test scores, the model separates the effects of these factors from the teacher's contribution.

Q: Why do students' typical-peer scores take into account race/ethnicity and gender?

A: Based on the recommendation of educator working groups, the TLE Commission and Oklahoma State Board of Education determined that the value-added model should account for factors outside a teacher's control, including a variety of student background characteristics, when estimating typical-peer scores. At present, the student characteristics used to determine typical-peer scores for the Oklahoma Value-Added Model include prior achievement; free/reduced lunch status; limited English proficiency (LEP); Individualized Education Plan (IEP); race/ethnicity; gender; and mobility. These factors are important because the average student with a certain background characteristic might make less progress during the year than other students will, even among students who have the same scores on previous assessments. If the value-added model did not account for student background characteristics, teachers of disadvantaged students could receive low value-added results. This approach is designed to enable any teacher to be identified as a high performer, regardless of the baseline achievement levels or background characteristics of the teacher's students. It is a worthy goal for all educators in the state to work collectively to eliminate disparities in the growth achieved by students with different background characteristics. The value-added model recognizes and rewards the progress educators make toward this goal, but does not set an expectation that individual educators single-handedly eliminate long-standing achievement gaps.

Q: Why isn't prior year attendance included in the value-added model?

A: In previous years, Oklahoma's value-added model accounted for student attendance at the school in the prior school year. However, an analysis of the attendance data collected from Oklahoma districts revealed that the state did not receive attendance data for 45 percent of students included in the value-added model. To account for attendance in previous years, the model used schoolwide attendance as a proxy for these students, but this approach may not improve the accuracy of the value-added results compared to simply excluding attendance from the model. Analyses by Mathematica showed that there were only small changes in the value-added results when attendance was excluded. Based on this information, in June, 2015, the TLE Commission determined that the Oklahoma value-added model would exclude attendance until the state receives complete and appropriate data from school districts.

Q: Is it possible to include other factors, such as level of parent involvement or other environmental conditions that might impact a students' academic performance?

A: The value-added model can account for student characteristics that are measured accurately in the state's data system. Some factors that the state's data system does not directly measure may be related to student characteristics that are included in the value-added model. If so, then the typical scores can reflect these factors even though they are not

directly included in the model. For example, parental involvement is likely to be captured in part by including students' prior achievement in the value-added model.

Roster verification

Q: How does roster verification impact value-added results included on the reports?

A: Information from roster verification is used to measure dosage, the amount of instructional time a teacher spends with each student. When the teacher indicates that the student was not in the class full time, less weight is applied to that student in the value-added calculation than to a student who was in the class full time. In calculating value-added results, roster verification helps ensure that teachers receive the appropriate amount of credit for each student's performance.

PARTIAL Student Roster - Math (4-8)				
STUDENT	Please note: Student roster has been truncated to save space on sample report only	% of Year	x	% of Instruction = Dosage
JOE BARKLEY		100%		100%
SUSIE SMITH		50%		50%
JIMMY JONES		100%		100%

Q: I completed roster verification and had more than 10 students on my roster, so why did I not get a value-added result?

A: A teacher must have at least 10 students to receive a value-added result, but it is possible that a teacher with 10 or more students on his or her roster would not receive a value-added result. This is because some students are not eligible to be included in the value-added model, and only eligible students are counted when determining which teachers can receive a value-added result. The most common reason students were ineligible was for not having both a valid post-test score from one of the grades and subjects for which value-added is calculated and a valid pre-test score in the related subject from the previous year. For grades 4 through 8 math, algebra I, algebra II, and geometry, the related pre-test subject is another math assessment. For grades 4 through 8 reading and English III, the related subject is another reading/English language arts assessment.

Q: How is student attendance, including ongoing course-specific absence, accounted for in roster verification?

A: The goal of roster verification is to allow teachers to review and (if needed) edit the roster data the school's student information system (SIS) has captured for the courses they teach. Although daily attendance is captured and reported through the school's SIS, roster verification offers teachers the opportunity to capture nuanced data about attendance that may not be accurately reflected otherwise. For example, if a student repeatedly misses a class due to related service provision and/or other ongoing conflicts, a teacher can use the roster verification process to make sure this repeated absence is reflected in the roster data that will be used to calculate value-added scores.

Q: How does the value-added model address teachers in block scheduling classes?

A: The value-added result will reflect the amount of instructional time a teacher spends with each student during the year. Teachers will have an opportunity to confirm this information during roster verification.

Q: Will students with IEPs be included in the value-added results for the regular classroom teacher or the resource teacher?

A: Students with IEPs who take the regular state assessments will be included in the value-added results for both the regular classroom teacher and the resource teacher. During roster verification both the general education teacher and the special education teacher will indicate their shared responsibility for delivering instruction to these students. The student scores will be weighted to reflect this shared responsibility when calculating the value-added results for both teachers. Students taking an alternate assessment will not be included in any set of value-added results. A teacher must have at least 10 students who are eligible to be included in the value-added model to receive value-added results. Consequently, resource teachers who do not meet this minimum will not receive value-added results

Q: How do we account for extended teacher absence due to circumstances such as illness or maternity leave?

A: Through roster verification, the teachers themselves (or their administrator if the teacher is not present) will report any extended period in which they were not present for instruction. This also includes situations where the teacher is reassigned or changed positions. This data will be used to assign value-added results that accurately reflect the amount of instructional time each student spent with a teacher. Districts may also address extended teacher absence through their local evaluation policies.

Q: How do we account for co-teaching when determining a teacher's value-added?

A: The Oklahoma Value-Added model will address co-teaching using an approach called the Full Roster Method. This approach uses information about the instructional time individual students are with a teacher provided during the roster verification process. For example, when two or more teachers claim the same students during the same term at the same percentage, the Full Roster Method assigns each teacher equal credit for the shared students. Thus, solo-taught and co-taught students who are claimed by the teacher at the same percentage contribute equally to teachers' value-added estimates.

Q: If a teacher is reassigned to a different class within a school or moves to a new school or district during the school year, will they receive a value-added result?

A: This will depend on when the transfer happens during the year and whether or not they transfer to and from tested grades and subjects. Accurate student information system data and roster verification will help to ensure that teachers receive value-added results that correctly reflect their instructional time with students.

Interpreting value-added results

Q: How can we compare students' performance on two different tests and get accurate value-added results for teachers?

A: The Oklahoma state assessments are not designed to allow direct comparisons of students' scores from grade to grade. A teacher's value added therefore cannot be calculated in that way. Instead, we estimate value added by comparing students' scores on a post-test and estimated typical-peer scores on the same test. For example, if a teacher's students scored an average of 800 on a pre-test and 810 on a post-test, the teacher's value-added result would not be 10. Rather, we would compare the average post-test score of 810 with the average typical-peer scores for those students. In a very simple value-added model that estimated typical-peer scores based on only a single pre-test, the model would examine the performance of the students' peers—other students in the state who scored 800 on the pre-test. If the peers' post-test scores averaged, say, 790, the teacher's value-added result would be 20 (810 minus 790).

For additional accuracy, the typical-peer scores are based on multiple prior assessments and additional student characteristics. Incorporating this additional information can lead to more accurate typical-peer scores, based on peers who are very similar to a given teacher's students.

Q: How is it possible that teachers with high-scoring students can receive a value-added result that is below average?

A: Value added is calculated as the difference between the average typical-peer score and the average actual score of a teacher's students. A teacher whose students performed well on the post-test can receive a low value-added result even if the typical-peer scores of his or her students were high. This would occur if a teacher taught students who performed very well on the previous tests used in the value-added model, but then did not make as much progress during the year as other students in the state with similar scores on the pre-tests. Because they compare actual and typical-peer scores, value-added models enable any teacher to be identified as a high performer, regardless of the baseline achievement levels or background characteristics of the teacher's students.

Q: Is it possible for a teacher to receive a negative value-added result?

A: Yes. Since a teacher's overall value-added result represents how their students performed on average compared to similar peers, a negative value-added result simply means that their students performed below the average achievement level of their typical peers. If a teacher's students score at or above the average achievement levels of their typical peers, their value-added result will be at or above zero. Because the average Oklahoma teacher receives a value-added result of zero, half of teachers will receive a value-added result above zero and half below zero. Although the value-added result itself can be a positive or negative number, this is not true of the value-added TLE component score. All value-added results are converted to a TLE component score of 1-5. Therefore, even if their value-added result is

negative, it is not possible for a teacher to receive a value-added TLE component score of less than 1. The average Oklahoma teacher will receive a TLE component score of 3.

Reporting and reporting schedule

Q: When do teachers receive their value-added results?

A: Value-added results will be available to teachers in early spring, during the school year after the tests they are based on.

Q. Is there a way for teachers to calculate their own value-added results to verify accuracy and track progress?

A: Unfortunately this is not possible. Educators would need access to information that is not currently available to them, including the range of background information about students that is used in the value-added model. Also, some calculations require access to value-added results for all teachers. These include adjustments to account for different numbers of students and to make the results comparable between grades.

Q: How do I access the most recent Value-Added Results Reports?

A: Value-Added Results Reports are accessible through the SSO2 portal. Refer to the guidance document “Accessing and Distributing Value-Added Results Reports for Teachers and Administrators” on the TLE webpage of the OSDE website.

Q. Why aren't the value-added reports available immediately after the state test results are reported?

A. Each step in the process of preparing the value-added results includes rigorous quality control. Rushing the process could lead to inaccurate value-added results. This is the most important reason why value-added reports are not available immediately after the state test results are reported. For example, quality control is a critical part of preparing the test score data for use in the calculation of value-added results and then preparing the value-added results for publication in educators' score reports. Value-Added results for a given school year are expected to be available the following winter.

Q. What are some suggestions about how to highlight key information most efficiently regarding value-added reports for teachers and other staff when time is limited?

A: Use the VAM training materials on the TLE website under the [Quantitative Components link](#).

Here are a few to start with:

- The sample Teacher and Administrator Value-Added Results Reports
- The video training modules included in the VAM PAK (Presentation Assistance Kit)
- This FAQ document

Q: How are value-added results converted into a 1-5 scale for TLE? Is there a new conversion each year?

A: A teacher's value-added result will be converted to a TLE score between 1.0 and 5.0 based on a translation table. The method of translation is described in detail in the technical report for the value-added models available on the TLE webpage. As of spring 2016, the same method has been used to convert value-added results to TLE scores in all three years that the Value-Added Model has been produced statewide.