Using State Assessment Data for Educator Evaluation

MISSOURI DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCATION

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OVERVIEW

How is Growth on State Assessments Measured?

The Missouri Growth Model predicts student academic achievement on the state Mathematics and English Language Arts assessments for grades four (4) through eight (8). When students beat their predicted scores, it means they "grew" more than other academically comparable students. Similarly, when students fall short of their predicted scores, it means they "grew" less than other academically comparable students.

Why Should I Trust the State Model?

State Assessments are Reliable and Valid

The assessments included in the MAP were developed by reputable vendors. Studies provide strong evidence that they measure what they are intended to measure, and that scores on the test really do correspond with what students know and can do.

State-Generated Data Makes Your Job Easier

Personnel with appropriate permissions can access growth data through the **Missouri Comprehensive Data System**. The Missouri Growth Model does many of the things you would normally do anyway: it takes baseline student achievement into account, compares students' final scores to a pre-set target, and calculates the difference for you.

State-Generated Measures are Consistent

The Missouri Growth Model uses the same formula to calculate growth for each student. There are no special rules that make it easier for some students to show above-average growth than others, so using the state model allows you to hold all teachers to the same standard in the state-tested grades and subjects.

When Must State Assessment Data Be Used?

Neither federal nor Missouri law requires local districts to use measures of student growth on state assessments in teacher evaluation for Grades 4 through 8 in Mathematics and English Language Arts. Should a district, in consultation with stakeholders, choose to do so, the Missouri Growth Model provides data that administrators can use. In the next section, you will find guidance to help you decide when a teacher is responsible for their students' performance on the state assessments.

TEACHER of RECORD

Defining Teacher of Record

Growth on state assessments must be considered as a significant factor in the evaluations of teachers who are identified as the "teacher of record" (TOR) for one or more English Language Arts or Mathematics assignments that include students who will be tested at grade levels 4 through 8. The TOR has primary teaching responsibility for a given course. The teacher must award the grade and/or credits earned in the relevant content to be considered a TOR. It is possible for a student to have more than one TOR providing instruction cooperatively.

Attribution

"Attribution" means crediting a teacher for a student's academic growth. It does not mean that the teacher has to claim full responsibility. Sometimes, students test better or worse than anyone would ever expect for reasons that are beyond the teacher's control. Through statistical techniques, the Missouri Growth Model limits the influence of many outside factors, but it cannot account for everything. Thankfully, attribution of student growth just requires the teacher to take as much responsibility as any other teacher who dedicated equal time and provided equally relevant instruction.

That said, administrators should consider setting a threshold that requires teachers to provide instruction for a minimum number of students before using their growth scores in high-stakes evaluations. That way, teachers are much less likely to be adversely impacted by unusual events affecting specific students. It may also be helpful to ask whether the teacher has had enough time with the student to have any meaningful impact. A teacher who has had instructional responsibility for a course for less than 15 percent of the time the course has met might not be an appropriate TOR to hold accountable for student outcomes. Likewise, students who have been present for less than 15 percent of the time the course has met may not be suitable to include in teacher impact calculations.

How to Attribute Student Growth to the TOR

1. Make a List of Teachers Who Provide the Relevant Instruction

Administrators must be able to identify who provides English language arts and mathematics instruction for students in grades 4 through 8. At a minimum, teachers with directly relevant course assignments, such as self-contained classrooms or core content English language arts and mathematics courses, should be listed. Teachers of courses that cover some of the content included in state assessments, or who teach courses with a heavy English language arts or mathematics emphasis, could also be added.

2. Determine Who Assigns Course Grades

Only teachers who have responsibility for assigning course grades can be considered TORs. It is not uncommon for two or more teachers to assign grades together. Remove teachers who do not assign grades from your list. The remaining teachers on your list are TORs.

3. Link Students to One or More TOR

Make a list of students who took a relevant state assessment, and sort them by teacher based on the best class roster information available. It is OK for the same student to appear in multiple rosters. You can delete teacher/roster combinations when the teacher is not a TOR. ***Note that the Department of Elementary and Secondary Education does not maintain class rosters, so you will need to obtain this information locally.***

4. Assign a "Weighting" to Each Student-Teacher Pair

If a student is sorted to more than one teacher, re-sort the data so that you can easily tell which teachers were responsible for his or her instruction. Make a decision for each one that represents how much influence you believe the teacher had on the student's academic growth. Here are some simple rules of thumb to help you make these decisions:

Recommended Student Weight	Decision Rule
25%	The teacher provided some of the relevant instruction in cooperation with one or more additional teachers
50%	Another teacher jointly taught the student
75%	The teacher provided most of the relevant instruction
100%	The teacher is solely responsible for the relevant instruction.

The "student weight" is the percentage of the student's growth that should be attributed to the TOR. When the student has just one TOR, the weight should default at 100 percent. Where there is more than one TOR, you should consider the amount of time the teacher spends with each student, and the extent to which the instruction he or she provides aligns with the content covered by the state assessment to make your decision.

Are there other options for attributing growth?

When there is more than one teacher of record for the relevant content, some administrators would prefer to treat the teachers as a team rather than distributing responsibility for student growth based on the individual contributions of each teacher. In order to accomplish this, sort the shared students to the "teacher team." Then, proceed to the weighting step if there are still more teachers who provided relevant instruction.

PROCESS for MEASURING TEACHER IMPACT

Average Residual Method

A "residual" is the amount of growth the student achieved relative to the amount the student was predicted to grow. The example below explains how to calculate an average residual after making decisions about attribution.

Student ID	Residual (NCE)	Student Weight	Weighted Residual
1110055555	55	75%	55 x 75% = 41.25
2220055555	75	75%	75 x 75% = 56.25
3330055555	30	25%	30 x 25% = 7.5
4440055555	80	75%	80 x 75% = 60
5550055555	25	25%	25 x 25% = 6.25

41.25 +	0.75 +
56.25 +	0.75 +
7.50 +	0.25 +
60.00 +	0.75 +
6.25 +	0.25 +
171.25	2.75

171.25 ÷ 2.75 = 62.27

The average residual, taking into account the weight of each student's growth score, is 62.27. The following rubric is recommended for scoring average residuals:

Scoring	
Insufficient Attainment	The teacher has an average residual (NCE) of 44 or lower based on state assessment data over a minimum of three years **OR** over a minimum of 30 students *(it is recommended that both criteria be met).*
Partial Attainment	The teacher has an average residual (NCE) of 45 to 49 based on state assessment data over a minimum of three years **OR** over a minimum of 30 students *(it is recommended that both criteria be met).*
Acceptable Attainment	The teacher has an average residual (NCE) of 50 to 54 based on state assessment data over a minimum of three years **OR** over a minimum of 30 students *(it is recommended that both criteria be met).*
Exceptional Attainment	The teacher has an average residual (NCE) of 55 or greater based on state assessment data over a minimum of three years **OR** over a minimum of 30 students *(it is recommended that both criteria be met).*

In this example, the teacher has an "Acceptable Attainment" rating on his or her growth measure.

"After-the-Fact" Student Learning Objective (SLO) Method

Student learning objectives, or SLOs, are measurable, long-term goals of student growth that teachers set at the beginning of instruction and aim to reach by the end. Unfortunately, predictions from the Missouri Growth Model cannot be used for setting forward-looking student growth targets, since the predictions are made at the same time that the amount of growth for each student is calculated—after the state assessments are administered.

That said, it is perfectly appropriate to look backward at how students performed and use their predictions as the growth targets that would have been set if the teacher had the information sooner. Since the teacher would also know his or her students' test scores, an "after-the-fact" SLO could be created and then scored.

The following example uses the same student data as the previous example, but applies it to the SLO framework.

Student ID	Student Weight	Target (in NCEs)	Actual Score	Residual	Points for Meeting Target	Overall Results	
1110055555	.75	60	65	55	.75	Weighted # Students Meeting Target	Weighted % Students Meeting Target
2220055555	.75	70	95	75	.75		
3330055555	.25	80	50	30	0	2.25	81.8%
4440055555	.75	90	120	80	.75		
5550055555	.25	95	70	25	0		

Scoring		Score Attained
Insufficient Attainment	Less than 65% of students meet or exceed differentiated growth target	
Partial Attainment	65 - 79% of students meet or exceed differentiated growth target	Acceptable Attainment
Acceptable Attainment	80 - 93% of students meet or exceed differentiated growth target	
Exceptional Attainment	At least 94% of students meet or exceed differentiated growth target	

In this example, "points" are assigned to each student who meets his or her growth target. The number of points is equal to the student's attribution weight (see p. 3). The sum of the points earned can be thought of as the weighted number of students meeting their growth targets. Similarly, the total possible points are the sum of the student weights for all students included in the SLO and can be thought of as the weighted total number of students included in the SLO. Following this logic, the weighted percentage of students meeting their growth target is calculated as the total points earned divided by the total points possible. This percentage signals the teacher's attainment of the SLO, and can be scored according to a rubric, such as the one provided above.

The attainment score for this example is 81.8 percent, and is calculated as follows:

(0.75 + 0.75 + 0.0 + 0.75 + 0.0) ÷ (0.75 + 0.75 + 0.25 + 0.75 + 0.25) =

2.25 ÷ 2.75 = 0.818

= **81.8%**

In the sample scoring rubric, an 81.8 percent attainment score represents "Acceptable Attainment," so that is the rating the teacher would receive for the student growth component of his or her evaluation.

USING STATE ASSESSMENTS IN THE OVERALL EVALUATION

In the Missouri Model. . .

Regardless of the specific system, student growth needs to be a significant factor in teacher evaluations. School districts that have adopted the state's Model Educator Evaluation System can be assured that their evaluations will meet this requirement.

Missouri's **teacher evaluation protocol** uses three components to determine a teacher's overall rating:

(1) General performance on the nine teacher standards;

(2) Specific performance on selected quality indicators; and

(3) Student growth.

Information from these three components is compared to the following rubric:

Overall Teacher Rating

Years in Position		Ineffective	Minimally Effective	Effective	Highly Effective
0-2		Multiple Areas of Concern Or Indicator Rating 0 Or Student Growth Measure Insufficient Attainment	1 Area of Concern Or Indicator Rating 1 Or Student Growth Measure Partial Attainment	No Areas of Concern And Indicator Ratings 2-3 And Student Growth Measure Acceptable Attainment	No Areas of Concern And Indicator Ratings 4-7 And Student Growth Measure Exceptional Attainment
3-5		Multiple Areas of Concern Or Indicator Ratings 0-2 Or Student Growth Measure Insufficient Attainment	1 Area of Concern Or Indicator Rating 3 Or Student Growth Measure Partial Attainment	No Areas of Concern And Indicator Ratings 4-5 And Student Growth Measure Acceptable Attainment	No Areas of Concern And Indicator Ratings 6-7 And Student Growth Measure Exceptional Attainment
6-10		Multiple Areas of Concern Or Indicator Ratings 0-3 Or Student Growth Measure Insufficient Attainment	1 Area of Concern Or Indicator Rating 4 Or Student Growth Measure Partial Attainment	No Areas of Concern And Indicator Ratings 5-6 And Student Growth Measure Acceptable Attainment	No Areas of Concern And Indicator Rating 7 And Student Growth Measure Exceptional Attainment
Over 10		Multiple Areas of Concern Or Indicator Ratings 0-4 Or Student Growth Measure Insufficient Attainment	1 Area of Concern Or Indicator Rating 5 Or Student Growth Measure Partial Attainment	No Areas of Concern And Indicator Rating 6 And Student Growth Measure Acceptable Attainment	No Areas of Concern And Indicator Rating 7 And Student Growth Measure Exceptional Attainment

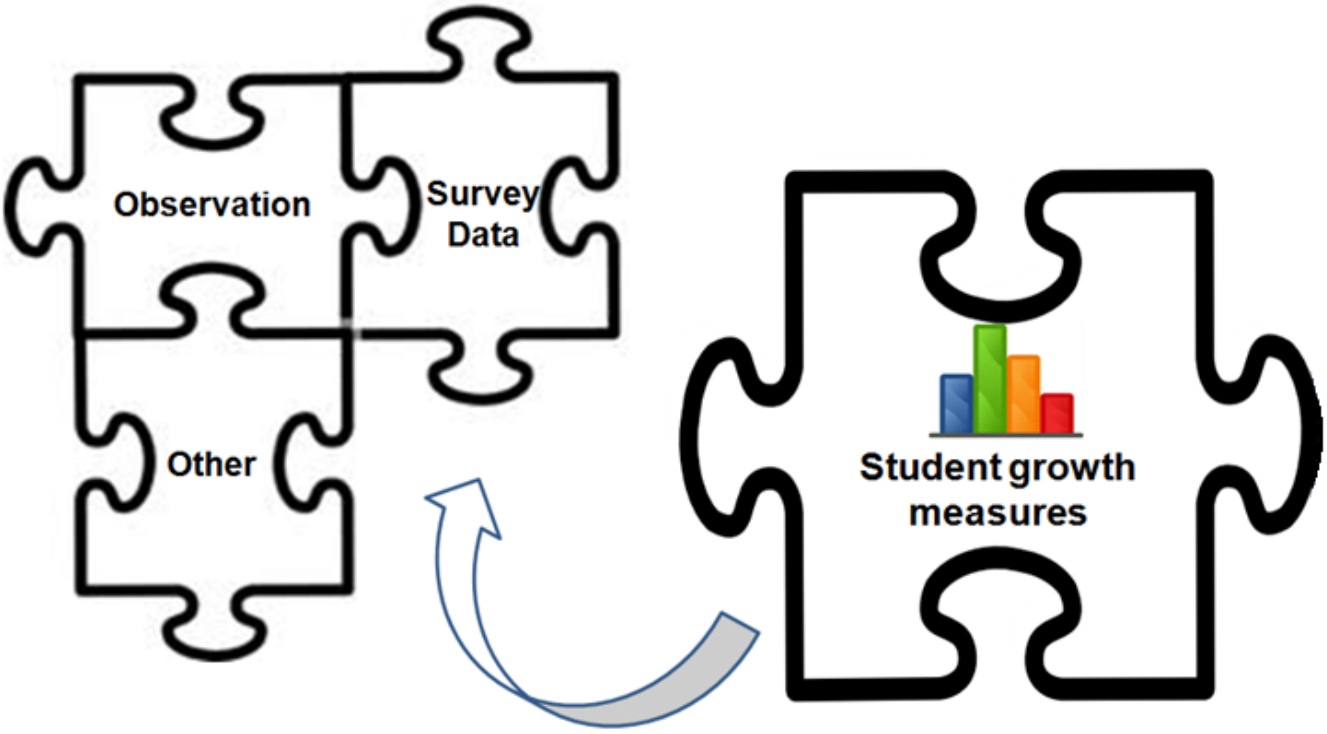
Let's apply this rubric to a hypothetical example: Mr. Smith. Mr. Smith meets expectations for each of the nine teacher standards, with no areas of concern indicated. Additionally, on the three specific quality indicators on which Mr. Smith was focusing his efforts this year, an average rating of "3" has been calculated. Finally, Mr. Smith has "Acceptable Attainment" of his SLO, which counts as his growth measure. *Either example in the prior section would provide this rating, so let's assume that one of them describes his circumstances.*

Mr. Smith is in his second year of teaching, so Principal Doe, his evaluator, locates the cell in the first row of the summative evaluation rubric where the three scoring components are aligned. Accordingly, Principal Doe rates Mr. Smith "Effective."

Please note that detailed information about these components in the overall evaluation can be found in the ***teacher evaluation protocol*** *for the Missouri Model Evaluation System.*

Other Options

For those school systems that opt to use another model, student growth will still need to be included as a significant factor in teacher evaluations. Administrators should use multiple measures to develop a balanced overall performance rating that includes evidence of student growth. Data from the Missouri Growth Model for state assessments can provide this evidence of student growth, which reflects the teacher's impact on student academic outcomes. Administrators are encouraged to adapt the guidance provided in this document as needed to better support alternative evaluation systems.



A Piece of the "Educator Effectiveness" Puzzle

Teacher effectiveness ratings should also consider evidence that either confirms or refutes the student growth evidence, since no single measure is entirely foolproof or comprehensive. Observations, surveys, and professional artifacts should also be considered.