Determining Student Growth Measures as part of an Educator Evaluation System

The following questions can offer guidance in the decision-making process when selecting Student Growth Measures as part of your educator evaluation system:

1. Does the SGM have the potential to offer ***multiple years of comparable student data***?	Yes	No
2. Does the SGM have the potential to ***highlight student growth across two points in time***?	Yes	No
3. Does the SGM have students perform at the ***expected rigor*** for the intended grade level? Does the rigor match the expected learning outcomes for the school year?	Yes	No
4. Does the SGM measure skills and conceptual knowledge which are ***enduring***, those which students must obtain in order to be successful in the following academic year?	Yes	No
5. Does the SGM measure skills and conceptual knowledge which are ***essential for progress to the next level of instruction***?	Yes	No
6. Does the SGM measure standards that, once mastered, ***give a student the ability to use reasoning and thinking skills to learn and understand other curriculum objectives***.	Yes	No

Educator Evaluation System

Manageability Consideration (System-Wide)

School Improvement Goals

District Level-Building Level

*What has been identified as those practices in which **all teachers in our system** will learn deeply, apply and embed in the teaching and learning process?*

Quality Indicator #1

#1 out of 2 focus areas for all teachers to work towards growth

"Common Understanding"

Observation Look For(s):

Teacher Behaviors

Student Behaviors

Sources of Evidence

Quality Indicator #2

#2 out of 2 focus areas for all teachers to work towards growth

Professional Development

What whole-staff professional development experiences will support collective knowledge and skill in these 2 areas?

Documentation of Growth

What sources of evidence can be collected and shared in regards to professional growth in these QI areas?

Documentation of Growth

What sources of evidence can be collected and shared in regards to professional growth in these QI areas?

Educator Evaluation System Training

Module: Student Growth Measures

Student Growth Measures—Components Used to Measure Student Learning	
Identify the assessments or evidence sources that ***could be used as student growth measures*** within your school setting. Use the "Determining Student Growth Measures" guide to assist your thinking.	
Core Instruction	**Non-Core Instruction**

Student Growth Measures—A "Process"			
Think about how your school will begin to ***develop, or refine, a process*** where teachers are setting and monitoring measureable student learning goals.			
What **"process"** will you consider in setting up a way for teachers to identify and monitor student learning goals?	Who will be responsible for **planning and facilitating** such a process?	What might the **steps for facilitating** this new learning for teachers look like?	What **materials** will be needed for teachers to understand and use such a process?
How might this process be ***connected to*** your educator evaluation system?			

Student Growth Measures—Foundational Elements		
Take the time to reflect on your ***current status*** with Curriculum-Instruction-Assessment practices that will be key to successful implementation of Principle #4: Student Growth Measures as part of Educator Evaluation…		
Curriculum	**Instruction**	**Assessment**
Within our school's curriculum, is it clear what standards and specific skills fall within the safety net? 1) endurance 2) essential for progress to next level 3) contributes to the understanding of other standards	Are teachers aware of research-based instructional practices which have a significant influence on student learning? Have they been exposed to training and modeling of these practices?	Are teachers using formative assessment measures to determine student learning of safety net skills? Are these skills assessed throughout the school year in an effort to monitor growth in learning? To what degree do teachers have the opportunity to reflect and collaborate on student learning outcomes?
In Place	**In Place**	**In Place**
Possibilities	**Possibilities**	**Possibilities**

Developing and Selecting Assessments of Student Growth for Use in Teacher Evaluation Systems

Joan L. Herman, Margaret Heritage, and Pete Goldschmidt

Assessment and Accountability Comprehensive Center

AACC • A WestEd and CRESST partnership

AACC: Assessment and Accountability Comprehensive Center: A WestEd and CRESST partnership.
aacompcenter.org

Copyright © 2011 The Regents of the University of California.

The work reported herein was supported by WestEd, grant number 4956 s05-093, as administered by the U.S. Department of Education. The findings and opinions expressed herein are those of the author(s) and do not necessarily reflect the positions or policies of the AACC, CRESST, WestEd, or the U.S. Department of Education.

To cite from this report, please use the following as your APA reference:
Herman, J. L., Heritage, M., & Goldschmidt, P. (2011). *Developing and selecting assessments of student growth for use in teacher evaluation systems*. Los Angeles, CA: University of California, National Center for Research on Evaluation, Standards, and Student Testing (CRESST).

The authors wish to thank the following reviewers who helped to improve and strengthen this policy brief:

Derek Briggs, University of Colorado at Boulder
Michael Gallagher, North Carolina Department of Public Instruction
Neal Gibson, Arkansas Department of Education
Laura Goe, National Comprehensive Center for Teacher Quality
Lynn Holdheide, National Comprehensive Center for Teacher Quality
Scott Marion, Center for Assessment

The authors also thank Tamara Lau and Karisa Peer (CRESST) for design and editorial support.

National Center for Research
on Evaluation, Standards, & Student Testing
UCLA | Graduate School of Education & Information Studies

Developing and Selecting Assessments of Student Growth for Use in Teacher Evaluation Systems[1]

Joan L. Herman, Margaret Heritage, and Pete Goldschmidt

Across the country, states and districts are grappling with how to incorporate assessments of student learning into their teacher evaluation systems. Sophisticated statistical models have been proposed to estimate the relative value individual teachers add to their students' assessment performance (hence the term teacher "value-added" measures). The strengths and limitations of these statistical models, as well as the value-added measures they produce, have been widely debated; yet, little attention has been devoted to the quality of the student assessments that these models use to estimate student growth, which is fundamental to the trustworthiness of any teacher value-added measure.

Assessments that nominally address the subject or grade level that educators teach do not necessarily suffice for the purpose of measuring growth and calculating the value that teachers contribute to that growth. In fact, student growth scores require at least two assessments of student learning - one near the beginning of the school year or the end of the prior year and another at the end of the current school year. Carefully designed and validated assessments are needed in order to provide trustworthy evidence of teacher quality. Herein lies the purpose of this brief: to provide guidance to states and districts as they develop and/or select and refine assessments of student growth so that the assessments can well serve teacher evaluation purposes.

Applicable across content areas and grade levels, the guidance is grounded in a validity framework that:

1. Establishes the basic argument, which justifies the use of assessments to measure student growth as part of teacher evaluation
2. Lays out essential claims within the argument that need to be justified
3. Suggests sources of evidence for substantiating the claims
4. Uses accumulated evidence to evaluate and improve score validity

The framework is purposively comprehensive in laying out a broad set of claims and potential evidence intended to support long-term plans to validate assessments. However, we recognize that states and districts must respond to current policy mandates. Thus, operating under both limited resources and tremendous time pressure, they cannot be expected to address the entire framework. Nevertheless, by understanding the basic requirements the student assessments need to satisfy, and the design features that are central, we believe that our guidance can help states and districts move forward, accumulating important evidence and making improvements in the quality of assessments.

The Basic Argument Justifying Use in Teacher Evaluation

Validity is the overarching concept that defines quality in educational measurement. In essence, validity is the extent to which an assessment measures what it is intended to measure *and* provides sound evidence for specific decision-making purposes. Assessments in and of themselves are neither valid nor invalid. Rather, validation involves evaluating or justifying a specific interpretation(s) or use(s) of the scores.

The process of justifying the use of student growth scores for teacher evaluation takes the form of an evidence-based argument that links student performance on assessments to specific interpretations, conclusions, or decisions that are to be made on the basis of assessment performance. The argument is set out as a series of propositions and attendant claims requiring substantiation with evidence.

Propositions

The general propositions that comprise the argument are:

1. The standards clearly *define* what students are expected to learn.
2. The assessment instruments are *designed* to accurately and fairly address what students are expected to learn.
3. Student assessment scores accurately and fairly *measure* what students have learned.

[1]This brief is a shortened version of *Guidance for Developing and Selecting Student Growth Assessments for Use in Teacher Evaluation.* For those who wish to have more details about the contents herein, please refer to the extended *Guidance*.

4. Student assessment scores accurately and fairly *measure* student growth.
5. Students' growth scores (based on the assessments) can be accurately and fairly attributed to the contributions of individual teachers.

Although the first proposition clearly falls outside of the domain of test development and validation, it is an essential requisite for it. Assessment development and/or selection for purposes of teacher evaluation must be guided by publically available and agreed upon learning expectations and not simply by what is easy or convenient to test.

The second general proposition highlights the importance of sound instrument design, development, and review processes in creating trustworthy measures of student growth; whereas, the third and fourth propositions target psychometric and technical qualities of student scores. The final proposition focuses on the technical quality of the teacher value-added scores, which are generated from the individual student growth scores using complex statistical models. While some would regard this final proposition as beyond the province of test validation, we include it as an essential part of the validity argument and the ultimate link between the test scores to their intended evaluation use.

Figure 1 displays these propositions as a series of if/then statements, which comprise the argument justifying that student assessments can be used to measure student growth for the purpose of evaluating teachers. The sequence of propositions represents the successive issues that states and districts should attend to as they select, develop, and/or refine measures of student growth to evaluate teachers.

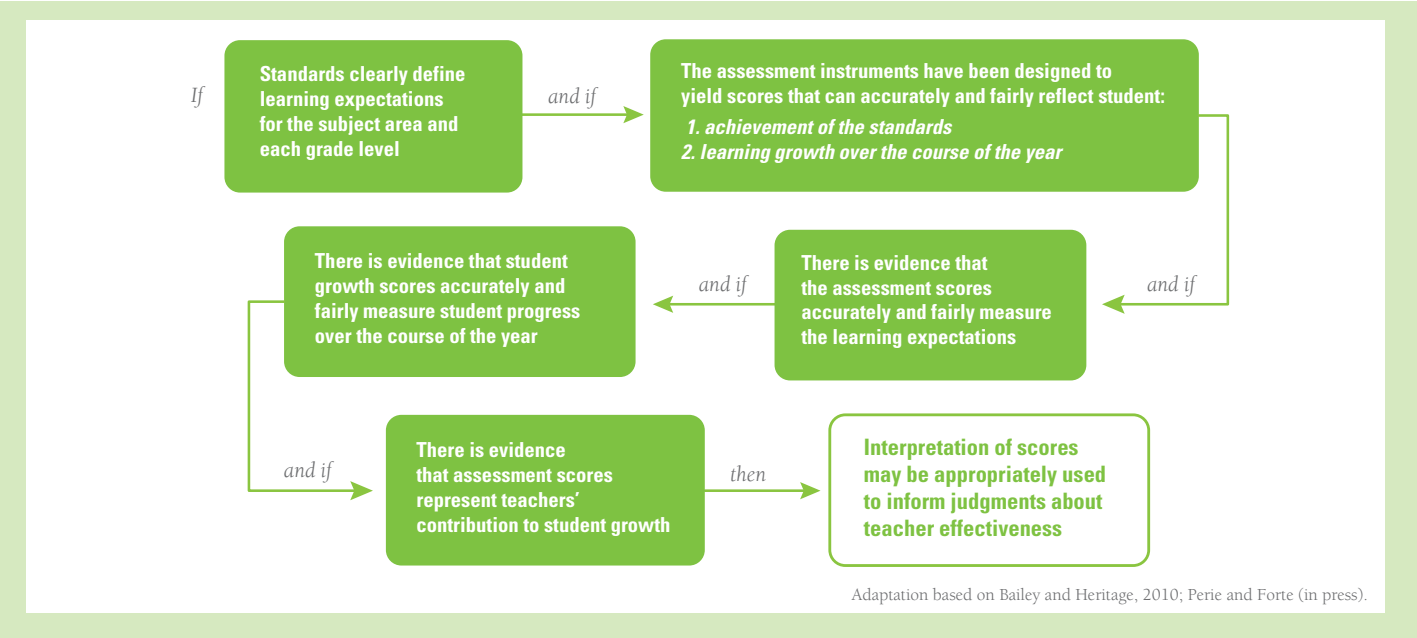


Figure 1. Propositions that justify the use of these measures for evaluating teacher effectiveness.

Essential Claims and Evidence

With the propositions laid out, the next step in validation involves establishing claims and evidence sources that are important for evaluating each proposition (see Table 1). Like the propositions, claims are of two basic types: 1) design claims and 2) psychometric and other technical quality claims.

Design claims. Claims about the attributes and characteristics of the assessment instrument and item design that are likely to yield sound measures. These claims, at least in part, can be examined a priori through evidence produced by rigorous expert review.

Psychometric and other technical quality claims. Claims about the technical quality of the scores and how well they function as measures of student learning and of teachers' contributions to student progress. The evaluation of these claims draws largely on student data from large-scale field tests or, if necessary, from operational administrations of the assessments and on special research studies that can be coordinated with field testing and administration.

Table 1. Propositions and Claims Critical to the Validity Evaluation.

Proposition 1 - Standards clearly define learning expectations for the subject area and each grade level

Design Claims:
- Learning expectations are clear
- Learning expectations are realistic
- Learning expectations reflect a progression (at minimum for the span of a grade level)

Evidence
- Expert reviews

Proposition 2a - The assessment instruments have been designed to yield scores that can accurately and fairly reflect student achievement of the standards

Design Claims:
- Specifications/blueprint for assessment reflect the breadth and depth of learning expectations
- Assessment items and tasks are consistent with the specifications and comprehensively reflect learning expectations
- Assessment design, administration, and scoring procedures are likely to produce reliable results
- Assessment tasks and items are designed to be accessible and fair for all students

Evidence
- Expert reviews of alignment
- Measurement review of administration and scoring procedures
- Sensitivity reviews

Proposition 2b - The assessment instruments have been designed to yield scores that can accurately and fairly reflect student learning growth over the course of the year

Design Claims:
- Assessments are designed to accurately measure the growth of individual students from the start to the end of the school year
- Cut scores for defining proficiency levels and adequate progress, if relevant, are justifiable
- Assessments are designed to be sensitive to instruction

Evidence
- Expert reviews
- Research studies

Proposition 3 - There is evidence that the assessment scores accurately and fairly measure the learning expectations

Psychometric Claims:
- Psychometric analyses are consistent with/confirm the assessment's learning specifications/blueprint
- Scores are sufficiently precise and reliable
- Scores are fair/unbiased

Evidence
- Psychometric analyses
- Content analysis

Proposition 4 - There is evidence that student growth scores accurately and fairly measure student progress over the course of the year

Psychometric Claims:
- Score scale reflects the full distribution of where students may start and end the year
- Growth scores are sufficiently precise and reliable for all students
- Growth scores are fair/relatively free of bias
- Cut points for adequate student progress are justified

Evidence
- Psychometric modeling and fit statistics
- Sensitivity/bias analyses

Proposition 5 - There is evidence that scores represent individual teachers' contribution to student growth

Psychometric Claims:
- Scores are instructionally sensitive
- Scores representing teacher contribution are sufficiently precise and reliable
- Scores representing teachers contributions are relatively free of bias

Evidence
- Research studies on instructional sensitivity
- Precision and stability metrics
- Advanced statistical tests of modeling alternatives and tenabiliity of assumptions

Based on Herman & Choi, 2010

Expert review. Note in Table 1 that expert review is called for in evaluating claims for Propositions 1 and 2. Highly qualified individuals should comprise review panels—including experts in subject matter, instruction and learning, English learners, students with disabilities, culturally diverse students, measurement and assessment, as well as expert teachers. Their reviews do not all have to be conducted serially; instead, expert panels can convene to conduct reviews simultaneously for many of the design claims for each of the propositions.

The expert panel should engage in structured ratings of the claims, such as those devised by Norman Webb and Andrew Porter. The ratings can be analyzed to provide empirical indices of how well the specifications and actual assessments align with target standards, the frequency of potential bias, and sensitivity or reliability problems. Ratings can also be utilized to summarize what is good, bad, and missing in needed rubrics, administration, training, and scoring procedures. Furthermore, it is often useful to examine the extent of expert agreement: high agreement increases confidence in findings; whereas, low agreement may be cause for concern. The expert reviews provide important feedback that can either be used immediately to strengthen identified weaknesses, or if time is limited, be used in future years to improve assessment quality.

Be aware, however, that expert review has its limits. Even for experts, it is difficult to ascertain what an assessment or item measures simply by looking at it. For performance assessments or expensive assessments in particular—time permitting—it is worthwhile to do small scale think-aloud or cognitive lab studies. These studies ask students to think aloud as they respond to select items or tasks. Student responses are then analyzed to determine whether the tasks actually elicit the content and cognitive demands that were intended, and/or whether the tasks include unintended obstacles preventing some students from showing their knowledge and skills.

Psychometric evidence. As attention moves from design claims to psychometric claims, the demands for specialized measurement and statistical knowledge progressively increase.

The sequence of propositions suggests that the psychometric claims first focus on the individual assessments, which will be used to comprise student growth scores (e.g., assessments given at the beginning and at the end of the academic year). Next, the focus moves to the growth scores and to the teacher value-added measures that are derived from the student growth scores.

"Even for experts, it is difficult to ascertain what an assessment or item measures simply by looking at it."

Problems at an early stage portend larger ones subsequently. Required psychometric and statistical models become increasingly complex as one moves through the continuum from evaluating individual assessments to evaluating the accuracy and fairness of teacher value-added scores. It is likely that states and districts will need to consult measurement and statistical experts to conduct the analyses and review the results (e.g., analysis and review of the specific models used, and the meaningfulness and robustness of estimates with regard to reliability, precision, and stability data).

Reciprocal relationships. Although we have differentiated design and psychometric claims (and the evidence on which each is based), it is important to note the reciprocal relationships between them. On the one hand, the design claims provide the foundation for the technical qualities referred to in the psychometric claims. On the other hand, the evidence related to the psychometric and technical quality claims can identify assessment weaknesses that need further refinement or may raise issues for additional study.

At the same time, the two kinds of evidence are frequently used in concert to identify and respond to potential challenges in the meaning and comparability of assessment scores. Fairness, for instance, is always a central concern in assessment. Applying Universal Design principles during the design phase means that assessment development takes the characteristics of all students for whom the assessment is intended to take into account (e.g., English learners, students with disabilities, culturally diverse students) and helps assure that items and tasks will be accessible to as many students as possible. Items and tasks also are routinely subjected to sensitivity reviews prior to field-testing or operation use. Even so,

psychometric analyses may well uncover some items that appear problematic or function differently for students from different subgroups. These items will need to be re-examined by relevant experts to determine whether a bias problem exists and, if so, whether to eliminate or remedy it.

Accumulated Evidence to Evaluate Validity

Validity is a matter of degree (based on the extent to which an evidence-based argument justifies the use of an assessment for a specific purpose). A complete validity argument, supporting the interpretation and use of growth assessments to evaluate teacher effectiveness, would appraise all of the claims and diverse evidence sources listed in Table 1.

Whether based on a full argument or only on selected claims for which data are available, the appraisal is likely to show areas of strength and weakness and suggest areas where assessments may be strengthened to better serve teacher evaluation purposes. The appraisal may also raise issues where additional evidence is needed. Validation, in short, is an iterative process that serves both to build the case for the use of the assessment and support improvements in assessment design, interpretation, analysis, and use.

Conclusion

This brief has identified an extensive set of propositions, claims, and evidence sources that are important to the validity argument and which justify the use of student growth assessments as part of teacher evaluation. As we indicated earlier, the set is aspirational; hence, we expect the validity argument to unfold over time.

Under strong policy mandates, many states and districts had to adopt aggressive timelines for implementing teacher evaluation systems that incorporate student growth as a component for all grades and subjects. This rapid press for implementation means that it is unlikely that the student growth measures used in the early stages of an evaluation system's implementation will meet all (or even many) of the criteria laid out in this brief. Nonetheless, we hope that this guidance will aid states and districts to reflect on the major areas of concern as well as initiate a long-term, systematic process to develop relevant evidence, evaluate strengths and weaknesses, and improve the assessments they adopt.

States and districts can utilize the initial propositions and attendant claims to guide their assessment selection and/ or development processes; moreover, they can use the full set to establish a continuing validation agenda. As the sequence of propositions indicates—states and districts should start by establishing clarity on learning expectations and ensuring, as best they can, that selected or developed assessments are well-aligned with those expectations and do not contain fatal design flaws. If necessary, evidence for evaluating subsequent propositions can be collected and analyzed in concert with the assessments' first and subsequent operational administrations.

For instance, states and districts can use the design claims and evidence from expert reviews—along with any available technical data related to the psychometric claims—to systematically evaluate and select the best available options from existing assessments. They can use this evaluation, especially the strengths and weaknesses it identifies, to refine the assessment. Over time, additional evidence can be collected to evaluate a fuller set of claims and used, if needed, to further improve the measures. Just as educators are expected to use evidence of student learning to improve their practice, so too should we expect states and districts to utilize evidence of validity to improve their use of student growth measures for teacher evaluation.

Finally, we underscore that no assessment, including student growth assessment, is free of error and all are imperfect. *The Standards for Educational and Psychological Testing* (1999) highlights that no important decision should be based on the results of a single assessment because one evaluation cannot adequately capture the multi-faceted domain of teacher effectiveness; therefore, multiple measures are essential. Assessments of student growth must be as good as possible; yet, we must keep in mind that they are only one part of a sound teacher evaluation system.

References

Bailey, A., & Heritage, M. (2010). *Washington state English language proficiency assessment foundations document.* Evaluating the Validity of English Language Proficiency Assessments Project (EVEA; CFDA 84.368).

Herman, J. L., & Choi, K. (2010). *Validation plans for Gates-funded assessments English-language arts and mathematics.* Los Angeles, CA: University of California, National Center for Research on Evaluation, Standards, and Student Testing (CRESST).

Perie, M., & Forte, E. (in press). Developing a validity argument for assessments of students in the margins. In M. Russell (Ed.), Assessing students in the margins: Challenges, strategies, and techniques. Charlotte, NC: Information Age Publishing.

Porter, A.C. (2002). Measuring the content of instruction: Uses in research and practice, *Educational Researcher*, *31* (7), 3–14.

American Educational Research Association (AERA), American Psychological Association (APA), and National Council for Measurement in Education (NCME). (1999). *Standards for educational and psychological testing.* Washington, DC: American Educational Research Association.

Webb, N. L. (1997). *Criteria for alignment of expectations and assessments in mathematics and science education.* (Research Monograph No. 6). Madison, WI: University of Wisconsin-Madison, National Institute for Science Education.

Webb, N. L. (2002, December). *Alignment study in language arts, mathematics, science, and social studies of state standards and assessments for four states*. Washington, DC: Council of Chief State School Officers.

Student Learning Objective				
Population				
MO Learning Standard(s)				
Timeframe				
Assessment Tools/ Data Points				
Baseline Performance				
Target(s) and Scoring *Goal:*	**Highly Effective**	**Effective**	**Developing**	**Ineffective**
Expected Growth				
Action Steps/Strategies				
Connection to Growth Guide(s) *(Standard/QI)*				

OR

SLO Example

Student Learning Objective				
Population	Grade 5-24 Students			
MO Learning Standard(s)	CCSS ELA-Literacy W.5.2 Write informative/explanatory texts to examine a topic and convey ideas and information clearly. (W.5.2a-e)			
Timeframe	2013-2014 School Year			
Assessment Tools/ Data Points	Writing Rubric-Administered Beginning of Year (BOY), Middle of Year (MOY), and End of Year (EOY)			
Baseline Performance	Writing Rubric = 25 Total Points On BOY assessment, 85% of students performed between 10-18 points (50-72% of total points).			
Target(s) and Scoring *Goal:*	**Highly Effective**	**Effective**	**Developing**	**Ineffective**
	86-100% of students demonstrate mastery of 80% of performance indicators.	78-85% of students demonstrate mastery of 80% of performance indicators.	66-77% of students demonstrate mastery of 80% of performance indicators.	65% or less of students demonstrate mastery of 80% of performance indicators.
Expected Growth	On EOY assessment, 85% of students will perform at or above 20 points (80% of total points).			
Action Steps/Strategies	-Use of common informational writing organizer, involving the use of color coding specific components. -Student goal setting, using checkpoints between BOY-MOY and MOY-EOY. -Incorporate multiple strategies to increase the writer's vocabulary across domains. -Small group learning support, using results from BOY-MOY assessments.			
Connection to Growth Guide(s) *(Standard/QI)*	2.2 Student goals 3.3 Instructional goals and differentiated instructional strategies 4.2 Appropriate use of instructional resources to enhance student learning 7.2 Assessment data to improve learning			

OR

Student Learning Objective				
Population	Does the SLO specify the specific population of students who will be involved in the formative assessment process?			
MO Learning Standard(s)	Is it clearly stated which specific learning standards will be measured and monitored throughout this SLO process? Do these skills have 1) endurance, 2) contribute to the understanding of future learning, and 3) essential for progress in the next level of instruction?			
Timeframe	Is the timeframe reasonable to measure student learning of these skills overtime, rather than an isolated event? For example, measuring student learning of one unit can be an isolated event.			
Assessment Tools/ Data Points	Are the assessment tools or data points designed to measure the skills intended?			
Baseline Performance	Does the baseline performance communicate where the average of student achievement lies within the skills identified to be targeted?			
Target(s) and Scoring *Goal:*	**Highly Effective**	**Effective**	**Developing**	**Ineffective**
	What % of students demonstrate mastery of what % of performance indicators.	What % of students demonstrate mastery of what % of performance indicators.	What % of students demonstrate mastery of what % of performance indicators.	What % of students demonstrate mastery of what % of performance indicators.
Expected Growth	Considering the current baseline level of achievement, what will be the expected growth in student achievement? Is this statement measureable and clear?			
Action Steps	Are the action steps specific in nature and in any way linked to what the teacher has outlined on the Educator Growth Plan (document outlining how the teacher will improve performance within a specific Quality Indicator throughout the course of the year)?			
Connection to Growth Guide(s) *(Standard/QI)*	What specific teacher standard and quality indicator most aligns to the action steps the teacher has outlined in order to reach designated goal?			

OR

MO EES Terminology for use with Module 3-Student Growth Measures

Student Learning Objective (SLO) A specific learning outcome over a pre-determined period of time that uses a specific measure to track progress towards that outcome

Educator Growth Plan Documented articulation of Quality Indicators collaboratively identified for new learning and skills to achieve goals for professional growth

Student Growth Measure One of the seven Principles of Effective Evaluation in Missouri's Educator Evaluation System which is a significant factor used to determine an educator's effectiveness
Student Growth Measures: consist of multiple measures including formative and summative assessments; include multiple years of comparable student data; highlight student growth across two points in time; and include the state assessments where available and appropriate plus additional district and school determined assessments.

Formative Assessment Type of assessment "for student learning" which is used to guide a teacher's instructional practice

Summative Assessment Type of assessment "of student learning" which identifies what the student knows and is able to do

Student Growth Percentage (SGP) Statistical model used to calculate a student's growth which shows his/her progress by comparing it to his/her academic peers, or those who performed similarly on previous assessments

Value-Added Model (VAM) Statistical model which predicts the amount of growth a student should have made by calculating the difference between his/her actual results and his/her statistically expected results

Missouri Growth Model A type of VAM which provides a framework for identifying the contributions of districts/LEAs, schools, classrooms and other contexts to student achievement

Normal Curve Equivalent (NCE) The residual or difference between scores used to predict a student's test score(s) based on prior test score(s), student mobility and average prior year student achievement at the school where the student was tested

Data-Based Decision Making Selecting informed choices based on high quality, valid, and reliable information (data) pertinent to the arena in which such choices lead to appropriate action(s)

Score Pairs Two consecutive scores for the same student on a measure of student achievement

EDUCATOR ADVOCATES

ASCD®

Policy Points

June 2013

MULTIPLE MEASURES OF ACCOUNTABILITY

States and districts across the United States are in the process of revising, piloting, and implementing new evaluation systems for students, educators, and schools. States that have received waivers from the prescriptive No Child Left Behind proficiency requirements are busy developing new educator evaluation systems. Still others are moving beyond one-size-fits-all standardized tests as their primary measure of student achievement. Evaluations based on test scores alone are narrow and complex and force schools to prioritize school instruction time toward tested subjects, usually math and English language arts, to the detriment of the whole child. Standardized test scores certainly have their place in a student assessment system, but should never be the sole measure of student achievement or the basis for determining educator effectiveness or school success.

ASCD believes that any comprehensive determination of student proficiency, educator effectiveness, or school quality must be based on more than just standardized test scores and should use a variety of measures appropriate to the individual or entity being measured.

MEASURING STUDENTS

Student test scores alone do not meaningfully track student learning and growth throughout the school year, nor do they provide the information necessary to address nonacademic student needs crucial to student success. A primary goal of measuring students should be to assess their learning progress on an ongoing basis so that instruction can be designed to further enhance their academic performance throughout the school year. Schools should ask not just what students know, but also what they know how to do with what they know.

Student performance can be measured by

- Standardized tests only

OR

- Summative assessments
- Progress on individualized growth objectives
- Student-centered evidence of learning
- Standardized tests
- End-of-course tests
- College-readiness tests
- English language proficiency gains
- Alternative assessments for students with special needs

ASCD Policy Points is an ASCD Educator Advocates resource that spotlights timely education policy issues of importance to all educators. Future editions may illuminate education issues on which you can take action and will include links to useful resources, infographics, and tips for increasing your influence with policymakers and other education stakeholders. **Sign up at www.educatoradvocates.org to receive the *Capitol Connection* e-newsletter and the most up-to-date information on federal education policy.**

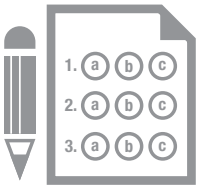
MULTIPLE MEASURES OF ACCOUNTABILITY

MEASURING EDUCATORS

The goal of evaluating educators should be to identify their strengths and weaknesses so that professional development can be targeted appropriately to improve student outcomes. The most effective educator evaluation measures will allow for immediate instructional shifts in the classroom with direct impact on student subject mastery.

Educator effectiveness can be measured by

- Standardized tests only



OR

- Student growth data
- Observations
- Student feedback
- Certifications
- Leadership initiatives
- Parent surveys
- Self-reflection
- Mentor input
- Teacher portfolios

MEASURING SCHOOLS

The goal of assessing schools is to inform teachers, administrators, parents, and the public on whether schools are sufficiently meeting their students' academic, social, and emotional needs and whether schools are providing sufficient adult support and guidance. Increasing schools' capacity for supporting student success is dependent on collecting data that allow for appropriate and differentiated interventions. Student test scores are a single piece of data that do not provide a comprehensive picture of a school nor help inform comprehensive school improvement strategies.

School success can be measured by

- Standardized tests only

OR

- School report cards
- School climate surveys
- A well-rounded curriculum
- Advanced courses and dual enrollment
- Extracurricular activities
- Modern technology
- Graduation rates and postsecondary education enrollment
- Parent and community engagement
- Social and emotional supports

Many of these measures are subjective, each has limitations, and none should be used as the sole measure of students, educators, or schools. Using a variety of measures can alleviate each measure's imperfections and limitations and provide a more comprehensive evaluation. Prior to implementing new evaluation methods, evaluators should be trained in how to use the evaluation measure, including the purposes, benefits, and drawbacks. Information derived from any assessments should be analyzed carefully. School evaluation data should be made public, as should aggregate student test scores, so that parents and the public can evaluate for themselves how well a school is meeting their needs. Each school and district should weigh the measures according to their own goals and requirements.

Targeting Growth

Using Student Learning Objectives as a Measure of Educator Effectiveness

As States and districts implement educator evaluation systems that include measures of student growth, one of the challenges they face is identifying measures for non-tested grades and subjects.

Using student learning objectives (SLOs) is one promising approach to addressing this challenge.

SLOs have their origins in the experience of Denver Public Schools, which in 1999 began using them to link teacher pay to student outcomes. Districts like Austin Independent School District and Charlotte-Mecklenburg Schools, as well as States that won Race to the Top grants—including Rhode Island, Georgia, New York and several others—are building on the experience of Denver Public Schools and developing methods for using SLOs as a tool to incorporate measures of student growth for non-tested grades and subjects (NTGS) in their evaluation systems.

What are SLOs?

At the heart of an SLO is a specific learning goal and a specific measure of student learning used to track progress toward that goal. There are many options for student growth measures. It is possible to use large scale standardized tests, even State standards tests for SLOs. However, it is also possible to use other methods for assessing learning, such as end of course exams in secondary courses, student performance demonstrations in electives like art or music, and diagnostic pre- and post-tests in primary grades or other relevant settings.

Teachers, principals and other administrators and their supervisors can set SLOs for any subject, grade or group of students. Groups of teachers in the same subject or grade or in the same school or district can set them as well. With their supervisors, principals can set objectives focused on school-wide learning goals, and district-level administrators can develop SLOs with district goals in mind.

Although many early adopters of SLOs expect them to be set collaboratively by teachers and their evaluators, there is no hard and fast rule for their development. Georgia, for instance, is piloting a process through which SLOs are developed at the district level and then approved by the State.

SLOs show potential as an evaluation method to incorporate student growth measures in the evaluation process, but they are also an important method for improving instructional practice. Research on Denver's use of SLOs found that rigorous and high-quality growth objectives were associated with higher student achievement.[1] Like well-constructed SLOs, good instruction includes gathering data, setting goals based on that data, and then assessing whether the goals have been met.

> "If properly implemented, student learning objectives help teachers bring more science to their art, strengthen instructional support to the classrooms, and improve the quality of the outcome."
>
> William J. Slotnik
> Founder and Executive Director
> Community Training and Assistance Center

SLO: All the Basic Elements

Population	Spanish II Class; all 30 students			
Learning Content	New York State Learning Standards for Language Other Than English (LOTE)			
Interval	SY 2012-13 (1 year)			
Evidence	1.Spanish I summative assessment results from students in 2011-12. 2.District-wide pre-assessment administered at the beginning of the school year. 3.District-wide summative assessment administered at the end of the school year.			
Baseline	1.All students had 2011-12 Spanish I results that demonstrated scores of proficient or higher in all basic vocabulary and grammar. 2.Scores ranged from 6% - 43% on the Spanish II District-wide diagnostic assessment.			
	1.80% of students will demonstrate mastery of at least 75% of the Spanish II performance indicators, as measured by the district's summative assessment in May 2012.			
Target(s) and Scoring	Highly Effective (18-20 points)	Effective (9-17 points)	Developing (3-8 points)	Ineffective (0-2 points)
	86 - 100% of students demonstrate mastery of 75% of the Spanish II performance indicators.	78 - 85% of students demonstrate mastery of 75% of the Spanish II performance indicators.	66 - 77% of students demonstrate mastery of 75% of the Spanish II performance indicators.	65% or less of students demonstrate mastery of 75% of the Spanish II performance indicators.
Rationale	Previous work in Spanish I focused on working with basic vocabulary and grammar, and building preliminary oral skills. The diagnostic assessment is heavily focused on more advanced writing and reading skills, which are essential components of the Spanish curriculum. Spanish II requires students to build on their learning from Spanish I in order to acquire mastery in these areas and to be prepared for Spanish III. Since all students completed Spanish I having achieved basic proficiency levels, I am confident they will achieve 80% mastery or above on at least 75% of the Spanish II materials.			

Source: New York State Education Department, *Guidance on the New York State District-Wide Growth Goal-Setting Process: Student Learning Objectives*, Revised March 2012 (with changes from enactment of Chapter 21 of the Laws of 2012), http://engageny.org/wp-content/uploads/2012/03/slo-guidance.pdf.

A rigorous and high-quality SLO has a number of key elements:[2]

1. Clear identification of the student population. SLO examples featured in this publication clearly identify specific populations: "all 30 students," "84 seventh grade students" and "32 third grade students." These examples also have an important indicator of high-quality SLOs—the extent to which they apply to all of a teacher's students. At least one SLO developed by a teacher ought to include every student in that teacher's class. This helps ensure that teachers are accountable for the academic progress of all of their students. There may be instances, however, when additional SLOs may be written for subgroups of students, such as those performing at particularly high or low levels.

2. Specific time period. A high-quality SLO identifies a clear timeline within which students will reach an academic goal. Typically, SLOs are goals set for what a teacher can accomplish with his/her students during the one full school year that the students are within the teacher's charge. However,

1. Community Training and Assistance Center. *Catalyst for Change: Pay for Performance in Denver Final Report* (2004). See http:www.ctacusa.com/PDFs/Rpt-CatalystChangeFull-2004.pdf.

2. See Slotnik, William J. and Maribeth D. Smith. *Tying Earning to Learning: The Link Between Teacher Compensation and Student Learning Objectives*. Community Training and Assistance Center (April 2008). See also the Charlotte-Mecklenburg Schools *SLO Guide* retrieved at http://www.ctacusa.com/PDFs/CMSSLOGuide-2008.pdf.

SLO Example: Social Studies

SLO: Social Studies, secondary level, individual teacher goal.

Population: 84 seventh grade students.

Timeframe: 12 weeks.

Assessment: Denver End of Course Exam.

Assessment Baseline: 100 percent of the students scored a "one" on the district seventh grade world history pretest

Expected Student Growth: 80 percent of the students who attend 85 percent of classes or more will score a "three or better" on the district seventh grade world history post test.

Strategies: Experiential exercises; Cornell Notes; Writing, Inquiry, Collaboration, and Reading (WICR); Modified Document Based Questions; Philosophical Chairs; Commentary Writing; R.A.F.T.S. Graphic Organizers and Reciprocal Teaching.

Source: Denver Public Schools, Student Growth Objectives, at: http://sgoinfo.dpsk12.org.

SLOs are flexible. Teachers who have a class of students for only one semester can write an SLO for that unit of time. SLOs can also take into consideration students who might not have attended a school or been exposed to a teacher for the full time period identified by an SLO. To reflect this consideration, some SLOs include language that only those students who attend a specific period of time (often 80-85 percent) will be expected to reach the goal.

3. Assessment(s) of student progress. At the core of the SLO is an assessment used to measure student progress toward that objective. A quality assessment connects teacher, student and expectations. The best guidance for implementing SLOs includes information on the attributes of high-quality assessments and tools to create them.[3]

4. Rigorous yet realistic expected student growth or achievement target to be met by the students. Setting achievement targets requires teachers and their principals to understand assessment data, identify baseline student performance, and set

SLOs Step-by-Step: A School-based Approach

1. Teachers review current student data before the school year begins.
2. Individual teachers or teams of teachers (by grade or subject area) develop one or more SLOs, based on their initial data analysis—focused targets that are ambitious but appropriate and achievable.
3. Principals or designated teacher evaluators review, provide feedback and approve objectives and targets.
4. Teachers and/or evaluators may do mid-course checks on teacher progress on SLO targets, as part of observations or conferences, for example.
5. Evaluator conducts a final review of teacher progress on SLO targets as part of annual teacher performance review.
6. SLO results are included with other measures in summative ratings for teacher performance.
7. Teacher and evaluator discuss progress and next steps, including setting new SLOs or adjusting SLOs for the following year.

3. Guidance documents describing the SLO process often use the terms "valid and reliable" to describe the kind of assessments to be used. Without definition, the phrase is problematic because it has different meanings in different contexts. In the context of measuring student learning, an assessment described as "valid" measures what it intends to measure—a math test measures the student's proficiency in math and not another field of study, such as reading or science. In a word, it is credible. An assessment described as "reliable" yields consistent results—students with similar knowledge and skills will get similar scores. In a word, it is consistent. No assessment is perfectly valid and reliable. Many large scale assessments use psychometric methods to demonstrate they are relatively valid and reliable. Many SLOs for non-tested grades and subjects, however, will not be informed by assessments that have psychometric underpinnings. This does not rule out the use of an assessment for SLO purposes, however, even when designed for a single classroom by a single teacher. To create consistency, States or districts publish guidance for quality assessment. To ensure rigor, States or districts compare results on SLOs with other measures of student and teacher performance, looking for patterns of alignment that predict improved student results.

challenging, realistic learning expectations for all of their students.

5. Strong rationale for the expected student growth. Teachers and their supervisors need to be able to provide an explicit rationale for the expected student growth target, including how and why the target is appropriate, rigorous, and uses the best available student assessment data to demonstrate attainment of the target. Some States and districts ask teachers and principals to articulate the specific State standards that an SLO is designed to measure and to which it is aligned.

6. Strategies for achieving SLOs. For an SLO to be an instrument of good instructional practice, not simply an evaluative tool, teachers need to be able to identify the specific approaches they will use in the classroom to meet the expectations set for student growth. Denver's SLO guidelines ask that teachers identify "observable or documentable strategies that are appropriate for learning content and skill level observed in assessment data produced throughout the year." Teachers are expected to continually examine and adjust those strategies based on data about student progress and student needs.

Why Consider SLOs as a Teacher Evaluation Strategy?

There are a number of advantages to using SLOs for teacher evaluations:

- SLOs are good instructional practice. SLOs are more than just a solution for measuring student performance in the context of teacher evaluation. Solid instruction begins with the analysis of student data followed by the development of targeted learning goals and instructional practices aimed at achieving them. SLOs provide schools and districts with a way to make this best practice a common expectation for the whole workforce of teachers and principals.

- SLOs are adaptable. SLOs are flexible and can be adjusted or revisited based on changes in standards, curriculum or assessments or shifts in student population and student needs.

- SLOs may help educators buy in to State and district evaluation systems. SLOs are usually grounded in the work done by teachers with their students in the classroom. Because SLOs are most often developed through principal-teacher collaboration, they may reinforce the credibility of the evaluation process and build ownership for student results among teachers and principals.

- SLOs can be used not only in the case of individual teachers, but also with groups of teachers or the whole faculty. A group of teachers all in the same subject area, grade or even district can use the same SLO. Entire school faculties can pursue the same objective, individually or collectively, setting expectations for student achievement that all teachers and school personnel share.

SLO Example: Music

SLO: Third grade music, individual teacher goal.

Population: 32 third grade students.

Timeframe: SY 2011–2012.

Assessment: District-developed written exam requiring reading and writing notes on a treble staff.

Assessment baseline: No students met or nearly met expectations on the pre-test. 80 percent of students earned a 2 out of 5 and 20 percent earned a 1 out of 5.

Expected student growth: 80 percent of the students will earn a 4 out of 5 (Meets Expectations) or better and 20 percent will score 3 out of 5 (Nearly Meets Expectations).

Strategies: Whole and small group instruction, peer-to-peer teaching using fourth-graders, one-on-ones, progress-monitoring, application of skill by teaching students to play the xylophone and recorder.

Adapted from Rhode Island Department of Education at: http://www.ride.ri.gov/EducatorQuality/EducatorEvaluation/SLO_Exemplars/gr.3-4_music_mastery_11.07.pdf. Other examples of SLOs from Rhode Island can be found at: http://www.ride.ri.gov/educatorquality/educatorevaluation/Docs/RIModelGuide.pdf.

What Challenges Occur When Implementing SLOs and How Can States and Districts Address Them?

SLOs can be a high payoff instructional practice regardless of the stakes attached to them. It is fortunate, therefore, that they can be used to measure student learning in State and district efforts to measure teacher effectiveness. When using them in their evaluation systems, however, States and districts will have to address the challenges that attend them.

CHALLENGE:

Developing and monitoring SLOs is time-consuming and difficult. For many teachers and administrators, SLO development and monitoring as well as assessment development will be new practices that require much support.

SLOs help focus that work in a new, results-oriented way that is grounded in the classroom experience. To support teachers and principals in SLO implementation, States and school districts must help them overcome these challenges by providing time-saving tools and efficient processes, as well as well-aligned materials and professional development.

SOLUTION: Develop an online library of SLO resources.

Certain districts and States, including Denver Public Schools and the Rhode Island Department of Education, provide online guidance on how to develop and implement SLOs. On these websites, interested parties can find subject-specific samples of SLOs, forms and timelines to support the process, checklists outlining key features of SLOs and rubrics to assess SLO quality. See **http://sgoinfo.dpsk12.org and http://www.ride.ri.gov/EducatorQuality/EducatorEvaluation/SLO.aspx**.

To help districts implement SLOs, New York has developed what it calls a "roadmap," available at www.engageny.org. Rhode Island provides evaluation guidance and handbooks for teachers and administrators as well as training videos (Georgia is currently producing training videos as well) and an accompanying PowerPoint that evaluators can use to guide teachers through the process of setting SLOs and evaluating their quality. Additional useful resources include frequently asked questions, online contact support and calendars that identify important deadlines for teachers and principals. See **http://www.ride.ri.gov/EducatorQuality/EducatorEvaluation/SLO.aspx**.

SOLUTION: Provide teachers and evaluators with thorough and rigorous professional development.

As with the implementation of any new practice, professional development will be critical to the success of SLOs. When using SLOs as a measure of student growth in the educator evaluation processes, States and districts may want to consider several areas for professional development:

- **Creating a coherent theory of action on how SLOs are intended to support instructional practice, student learning and school and district missions.** Professional development can include how SLOs reflect best instructional practice and how they should align to district, school, grade-level and team goals as well as college- and career-ready standards.
- **Choosing or developing and administering assessments.** Professional development can include how to identify and develop high-quality assessments that measure student progress in a particular discipline and how to link specific objectives to specific assessments.
- **Analyzing student data.** Teachers and principals need information about what data is available to them and how to interpret it, including how to identify achievement trends and the performance of specific subgroups of students, such as English language learners and students with disabilities. They also need to know how to use that data to develop appropriate individual, team, group or school-wide SLOs.

- **Writing high-quality SLOs.** Teachers and principals will need professional development on the basic components of SLOs and how to set appropriate but ambitious growth targets.
- **Connecting SLOs to other major initiatives.** Districts should integrate SLO professional development into their other instructional initiatives, such as the implementation of college- and career-ready standards. New York, for instance, is using Race to the Top-funded Network Teams to deliver SLO professional development as a way to articulate the pedagogical and academic expectations of the Common Core State Standards, data-driven instruction and turning around low-performing schools.
- **Preparing evaluators.** In States and districts where SLOs are developed collaboratively by teachers and principals, principals will play a critical role in ensuring their consistency and rigor. To that end, principals and other leaders supporting the development of SLOs need clear guidance on how to assess SLOs. Professional development should give evaluators opportunities to practice using a rubric to determine SLO quality and to learn how to provide teachers with the support and resources they need to develop high-quality objectives.
- **Providing ongoing professional development for everyone involved in the process.** Districts that have been implementing SLOs have shown that teachers and principals get better at the practice of setting them over time. Those districts offer continuing professional development, even to experienced practitioners. Ongoing professional development is informed by review of the previous year's SLOs and emphasizes continuous support and improvement.

Finally, SLO and assessment development training can begin in teacher and principal preparation programs. As appropriate, State departments of education and higher education can begin discussions with colleges, universities and alternative route programs about including SLO and assessment development in their curriculums.

CHALLENGE: It is hard to ensure the quality of SLOs and the assessments used to measure student learning.

Without question, it will be difficult to ensure consistency across classrooms, let alone school districts. In addition, since SLO attainment will be part of a teacher's summative rating, there may be an incentive to set low expectations. As a result of these challenges, the perception, if not the reality, will be that teachers of tested grades and subjects are held to a much higher standard.

SOLUTION: Regularly analyze and compare data from SLOs with teacher-level value-added data, teacher observation ratings and other measures that predict future student success.

This will develop alignment and encourage the improvement of all performance measures over time.

If the expectations for teachers of non-tested grades and subjects are or appear to be lower than those for teachers for whom value-added or other growth measure data is available, then the evaluation system will be perceived as unfair. Once States get their evaluation systems up and running, they and their local education agencies must review how teachers with SLOs in non-tested grades and subjects fare on performance evaluations compared to teachers subject to a student growth model or value-added measure of performance. Cross-referencing data can help States and districts identify anomalies worth investigating and raise red flags on schools, districts, teachers in certain subject areas, or grades where patterns of SLO attainment rates in general, or in comparison with student growth rates, are unexpected, or appear too high or too low. States and districts should work to ensure that the success rates for teachers in non-tested grades and subjects are comparable to the success rates of those in tested grades and subjects. While this alignment may never be perfected, States should constantly pursue it as part of continuous improvement efforts.

SOLUTION: Provide support for evaluator calibration sessions.

Once SLOs are in place and principals begin to assign teacher evaluation ratings using SLO targets, States and districts can provide quality assurance by supporting calibration sessions to ensure that SLO quality and rigor is consistent across grade levels, subjects, schools and districts. Calibration sessions are forums that provide teachers and principals, including those who are in the role of evaluator, with opportunities to examine SLOs and make informed judgments about their comparability around their quality, including rigor. Building calibration sessions into a State or district SLO process can help instill confidence and promote consistency among principals/evaluators and promote peer accountability for rigor among school leaders.

SOLUTION: Set requirements or provide guidance for how to choose and develop high-quality assessments.

States and districts can provide guidance and/or requirements for choosing high-quality assessments to use in measuring SLO attainment. Some States are working on developing assessment item banks, and collecting assessment exemplars, particularly for non-tested grades and subjects, from schools and districts in the State, from third parties, and even from other States. Georgia requires that at least three educators participate in the development of assessments used to measure the attainment of SLOs, a process that is supported by an SLO Technical Criteria Table the State designed to help teachers and administrators create valid and reliable assessments and to revise them after they have been administered.

Rhode Island uses an assessment audit and approval process for any objective that will be measured using a school-based assessment, i.e., one that is not used by any teachers outside of a particular school. New York provides a list of State-approved assessments for use by school districts as local measures in teacher and principal evaluations.

SOLUTION: Spot check SLOs.

States and districts rarely have the capacity to review all SLOs unless they are limiting the number that can be created. The same tools used to provide teachers, principals and district personnel with guidance on how to develop high-quality SLOs can be used by States and districts to spot-check for their quality. States or districts can randomly select and review SLOs, and give feedback to improve them. They can also examine patterns of SLO attainment, including disproportionate SLO attainment by certain schools or in certain subject areas, to flag objectives that ought to undergo a thorough quality review.

SOLUTION: Hold administrators accountable for SLO quality.

Although the development of SLOs is typically a collaborative process, States and districts must set policies for who has final approval of an SLO and will be held accountable for its quality. In Rhode Island, administrators must certify SLOs, attesting to their quality. In Georgia, the Department of Education must approve all SLOs. Finally, the quality of SLOs developed by teachers in a school can be included as a performance measure in principal evaluations.

Quality Control

As they go forward, States and local education agencies will develop additional innovations to ensure quality control of the SLO process. New York's evaluation regulations specify that assessments used as evidence for SLO attainment may not be scored by teachers and principals with a vested interest in the outcome of those assessments. Further, New York and Georgia are experimenting with district-developed and even State-approved SLOs as a way to promote quality—when most early adopters of SLOs develop and approve them at the school level. Continued innovations in States and districts should lead to new and better ways to ensure high-quality SLOs across the board.

Where Can I Find Practical Resources on SLOs?

For more information about SLOs, including resources that can help your State or district implement them, see:

Denver Public Schools

http://sgoinfo.dpsk12.org

This site includes sample student growth objectives, a rubric for assessing the quality of student growth objectives, a video for teachers on developing objectives, handbooks on student growth objectives for teachers and school service professionals, and worksheets to help teachers examine data and write objectives.

New York State Department of Education

www.engageny.org

This site's section on "teacher/leader effectiveness" includes district and teacher "roadmaps" for implementing SLOs, State-approved teacher and principal practice rubrics, and a webinar series on SLOs. Included are detailed formulas for how SLOs are to be integrated into a teacher's overall evaluation rating. A list of State-approved assessments for local evaluation measures can be found at: **http://usny.nysed.gov/rttt/teachers-leaders/assessments/home.html**.

Rhode Island Department of Education

http://www.ride.ri.gov/EducatorQuality/EducatorEvaluation/SLO.aspx

The Rhode Island Department of Education provides a wealth of practical information and resources on SLOs. The site includes subject- and grade-specific examples of SLOs, resources for SLO professional development, model SLO forms for teachers and principals, frequently asked questions, webinars and detailed policy and resource manuals for teachers and administrators.

Educator Evaluation System Training
Module: STUDENT GROWTH MEASURES

Refresher	**Trainer Notes**
Senate Bill 291 Stakeholder Involvement Teacher Standards* Quality Indicators NCLB Waiver 7 Essential Principles Pilot Project EES Website Training Roadmap (All Modules)*	
Today's Roadmap	**Trainer Notes**
Principle #4 Principal #4 Critical Components Intended Outcomes Terminology*	
Student Growth Measures *as part of* **Educator Evaluation System**	**Trainer Notes**
Why Student Growth Measures Professional Frames—Current Reality Principal #4 Critical Components **breaking down each component* Current Practices Missouri Model—Where does this fit?	

Determining Student Growth Measures	**Trainer Notes**
Brainstorming Possible SGMs 3 Considerations (Endurance, Essential, Contributes to…) “Multiple Measures” Examples Reflecting on Rigor and Comparability Action Plan*	
Missouri Growth Model (VAM)	**Trainer Notes**
Purpose and Non-Purpose of this Section Oak Tree Analogy Purpose/Benefits of MGM Sample Reporting How to Access Reporting	
Student Learning Objectives	**Trainer Notes**
The “Why” Behind SLO/Purpose Article—Defines SLO* Understanding the Sample Template*	
SLO Practice	**Trainer Notes**
Creation of SLO in Teams Guiding Questions (Template)* Gallery Walk Action Plan*	
Getting Started	**Trainer Notes**
Steps Considerations Resources	