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Implementing Student Learning Objectives
Core Elements for Sustainability

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Acknowledgments

Implementing Student Learning Objectives
Core Elements for Sustainability

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Introduction

AIR is committed to supporting states and districts as they design systems of educator evaluation and compensation that incorporate multiple measures of performance and, in particular, measures of student growth such as student learning objectives (SLOs).

In our first publication, *Student Learning Objectives as Measures of Educator Effectiveness: The Basics*, we provide an introduction to SLOs and the SLO process, examples of how they can be used to measure teachers' contributions to student growth, and innovative approaches to the challenges of SLO implementation. This document takes the SLO process a step further to assist states and districts in the implementation of SLOs by providing practical steps for building a sustainable system.

> Student learning objectives are a set of goals that measure educators' progress in achieving student growth targets.[1]

To support SLO implementation and sustainability, states and districts can provide resources for teachers, evaluators, and SLO leaders that improve the quality of SLOs, rigor of assessments, and consistency of scoring. This paper outlines the importance of these resources while considering the variety of implementation supports that can be offered and the trade-offs for states and districts that have limited resources. Appendix A provides a series of resource examples developed by leading states and districts.

The following implementation elements support the rigor, comparability, and sustainability of the SLO process. Each element is described in greater detail in the following pages.

Assess the Culture Change—Recognize that SLOs may be a shift in educator practice. To build a sustainable culture of SLO use, consider the obstacles that lie ahead, develop teacher confidence in the SLO process, and create a coherent vision of the value of the SLO process.

Provide Supporting Materials—Effective SLO implementation requires resources that promote rigor, consistency, and clarity across schools and/or districts.

Offer Training and Rater Calibration—Offer ongoing training to assure rigor and consistency throughout schools and districts.

Provide a Structure and Process for Scoring SLOs—Foster consistent and fair ratings across teachers and evaluators, while also producing scores than can be easily combined with other measures to create a final summative rating.

Monitor and Evaluate SLO Implementation—Monitor, triangulate data, and research the SLO process to promote the rigor, discussion, and reflection that lead to insightful revisions to the system.

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[1] SLOs can be developed by individual teachers, teacher teams, principals, and principal teams. When possible, we use educators to encompass all possibilities.

Assess the Culture Change

Any large-scale implementation effort requires thoughtful planning and strategic preparation. While some districts and schools will have many elements of the SLO process already in place, others will require additional supports for successful implementation.

States and districts can assess their contexts for:

- Levels of stakeholder engagement in general reform efforts and in educator evaluation reforms.
- The degree of commitment to the shared vision.
- The quality of student and assessment data available to teachers and leaders (the foundation for quality SLOs).
- The general infrastructure and mechanisms for implementing, monitoring, and improving procedures over time.

Districts will want to assess school readiness by exploring teacher and administrator skill in the analysis of student data and the development of high-quality assessments. SLOs are only as good as the baseline and assessment data upon which they are built. Teachers and administrators need to have access to and confidence in the review and analysis of student data and in the selection and development of quality assessments. Without these resources and skills, SLOs will become an overwhelming process. Along with these resources and skills, districts should be examining schools for their readiness to provide support systems for teachers as they design, monitor, and meet SLO targets.

The district and school readiness continua in Appendix A (pp. 21–24) can be used in early discussions with districts and schools to gauge their readiness for SLO implementation. The information gathered using these indicators can support the development of targeted resources and training for more sustainable implementation.

Develop a Vision of Sustainability

Teachers, evaluators, and SLO leaders need a coherent vision that shows how SLOs fit into and support the overall education vision for the district or state. To create a sustainable culture of SLO use, states and districts can prepare guidance and resources that assess educator understanding of SLOs and accurately communicate the SLO process. In addition, the district or state can stagger implementation to avoid overwhelming those charged with implementation and organize supports to reduce the time commitment burden on teachers and evaluators.

To successfully implement SLOs for educator evaluation, states and districts can provide the following critical elements:

- **Standardized forms, timelines, and guidance to assure consistency**

- **Resources to help teachers estimate growth expectations with student trends, formative assessments, and summative assessments**

- **Guidance for the use of appropriate assessments, which may include lists of required, vetted, and/or approved assessments, and/or direction on how teachers can develop their own assessments**

- **Training for teachers, evaluators, and SLO leaders**

- **When needed, timely student assessment results for both the development and review of SLOs**

- **Processes for improving test security and reducing unintended incentives**

The following resources and strategies have been used successfully in leading states and districts through this process.

Taking the Pulse. Because teachers and evaluators (most often principals and other building administrators) are the main actors in the SLO process, their understanding of SLOs ensures that they will be able to set ambitious yet attainable objectives to measure student learning. Prior to implementation, knowledge building may be required. These activities may include:

- Collecting data on teachers', principals', and evaluators' understanding of SLOs.
- Assessing teachers' and evaluators' data analysis and assessment literacy skills.
- Taking an inventory of available assessments used in the district/state.
- Gathering feedback from teachers and evaluators on SLO implementation and addressing their questions.
- Examining evaluation timeline policies and procedures, and determining ways to integrate the SLO process into standing events that foster teacher collaboration and teacher/evaluator communication.
- Using the aforementioned information in developing the SLO process and needed supports.

By regularly taking the pulse of those charged with implementation, districts and schools may be better positioned to know what supports and resources are needed in the field, anticipate and address challenges, and communicate effectively with all stakeholders. These efforts require planning and time prior to implementation. Done well, they can help inform long-term planning and sustainable implementation. (See Appendix A [p. 24] for example Initial Steps for SLO Implementation.)

Providing Communication Materials. Communication materials are another important, and often overlooked, element of successful SLO implementation. Research suggests that expectations for teachers and administrators need to be clear from the very beginning of implementation (Lamb & Schmitt, 2012). A good starting point is to create documents that identify the key messages of SLO implementation. Sharing how SLOs fit into the larger evaluation system provides context for the work and helps to ensure that all stakeholders are receiving the same information around expectations and content. If possible, in-person communication on the basics of SLOs and details of the timeline and process is a solid next step. As with most evaluation communication, regularly updated frequently asked questions and easily accessible "libraries" of resources are useful mechanisms for communication. Additional materials that support communication efforts are noted below under Provide Supporting Materials.

Implementing Feedback Loops. Focus groups, in-person meetings, and other venues for collecting teacher and principal feedback on the implementation of the SLO process are critical for making important refinements during early and ongoing implementation. Districts and states that have done this work well often cite "communication,

communication, communication" as their mantra for sustainability. Feedback loops can help district and state leaders dispel myths and promote accurate information about implementation, while also collecting important information about what is and is not working on the ground. Analysis of this feedback can be important in illustrating stakeholder buy-in and needed system refinements. **Austin Independent School District** provides an annual report on participant feedback that articulates lessons learned while bolstering support for ongoing improvements.

Staggering Implementation. Another way to facilitate the culture change is to establish strategic implementation timelines that phase in different components over time. There are a variety of ways to stagger implementation as follows:

Piloting without stakes: When Rhode Island piloted SLOs, they did not attach human capital decisions to results in their first year of implementation. This format enabled teachers and evaluators to gain experience with the process in a low-stakes environment.

Sample piloting: Another approach is to stagger implementation of SLOs in subsets of grades or schools based on the needs of staff and students. In many states and districts, Teacher Incentive Fund (TIF) and School Improvement Grant (SIG) schools are implementing SLOs while others in their state or district are not. This structure allows trainers to target their supports to the new adopters before implementing SLOs district- or state-wide. Another option is to select a set of schools that is likely to implement SLOs successfully. By first implementing SLOs in a "best case" scenario, states and districts can determine which challenges need to be addressed prior to full-scale implementation and possibly which best practices should be replicated across the district.

Responsive implementation: A third approach is to refine the SLO process over time based on district information and needs. For example, In Austin, Texas, educators in nine schools began implementing SLOs by creating individual SLOs. Over the course of three years, implementation expanded to 15 schools. After recognizing that teachers already were collaborating and acting as teams informally, and in response to principal requests for more shared accountability, Austin shifted to requiring one individual SLO that can be targeted and one team SLO that must include all students in a course. A responsive approach to implementation can reassure stakeholders that the district values their input and ultimately improves the implementation of the SLO process.

Allocating Teacher and Principal Time. Providing teachers and evaluators with adequate time to fully engage in the SLO process is important, especially during early years of implementation.[2] Teachers need time to write SLOs, and evaluators need time to support teachers, assess the SLOs, and develop confidence in the scoring process. States and districts should consider developing processes that capitalize on

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[2] Teachers participating in the Indiana Department of Education's RISE pilot reported that working on SLOs can take between four to six and a half hours (TNTP, 2012).

available noninstructional time, including preexisting teacher collaboration time, staff meetings, teacher–principal conferences, professional development, induction, and leadership team meetings. Strategically looking for ways to integrate SLOs with other activities can help maximize teacher and principal time while demonstrating connections across initiatives.

Utilizing formal or informal professional learning communities among teachers to develop group SLOs may reduce the burden on teachers and evaluators. For example, in Georgia, state-led teacher teams developed SLOs at the district level, reducing the time burden at the school level. In addition, providing adequate time for teachers to work on SLOs may increase their satisfaction with the new evaluation system. A recent evaluation of Indiana's pilot of a new evaluation system found that teachers who had enough time to work with peers on the SLO process were significantly more likely to agree that the new evaluation system encouraged data-driven instruction in their school and was good for student learning (TNTP, 2012).

Provide Supporting Materials

In order for SLOs to be a credible and meaningful measure of student growth, districts and states need to develop a consistent, rigorous process to ensure that SLOs are of high quality. Supporting documents and resources (e.g., templates, checklists, videos, and examples) provide teachers and evaluators with resources that communicate consistent expectations across schools and offer support for implementation.

SLO Template and Forms. An SLO template provides a consistent document format for all teachers to use. Common elements included in SLO templates include writing space for the following:

- Summary of baseline data
- Interval of instruction
- Content and standards the SLO will address
- Assessment(s) that will be used to assess student progress
- Growth target
- Rationale for the SLO

Some states and districts also provide space for teachers to list instructional strategies used to attain growth targets and/or professional development goals or plans to support the achievement of the SLO. Some states and districts offer additional forms to ensure that teachers and evaluators document parts of the SLO process. Sample forms include documentation of midcourse and end-of-year conferences and worksheets demonstrating the appropriateness of assessments. In many cases, these forms are available electronically or built into existing electronic evaluation platforms.

SLO Checklists and Rigor Rubrics. Checklists and rubrics help teachers and evaluators ensure that SLOs are complete and rigorous. These documents usually highlight the key information that must be included in the SLO and provide guidance where the template does not. Teachers use checklists and rubrics as guides when writing SLOs, while evaluators use checklists to guide the SLO review and approval process.

SLO Timelines. The SLO cycle is generally a multistep, yearlong endeavor. Timelines are often a valued resource as they provide teachers and administrators with clear expectations for where they should be in the process throughout the year. Timelines are often the resource that makes the SLO cycle "click" for teachers and principals: Visualizing the SLO cycle through a timeline that is integrated with their school calendar makes what can seem a complicated process feel more doable. Key dates should include initial submission date, final date for revision, deadlines for holding midcourse and end-of-year conferences, and scoring and reflection dates.

SLO Exemplars. Providing high-quality SLO examples during the training process will help educators establish a good vision for SLO development. Examples should highlight, and descriptions should articulate, how the specific components make a high-quality SLO. This process will help educators identify these characteristics in their own SLOs and develop a deeper understanding of SLO expectations. Exemplars are needed for a variety of subjects and grades, although too many may lead to educator dependence on samples instead of fostering teacher reflection and thoughtful planning when writing SLOs.

SLO Example Sets. In addition to exemplars, providing a set of SLO examples—an SLO in need of revision, the same SLO with comments from an evaluator, and the revised SLO—can illustrate the difference between low-quality and high-quality SLOs and support teachers in establishing anchors for SLO development. These examples can also be useful for training purposes to discuss parts of SLOs and help evaluators calibrate their expectations for SLOs.

SLO Vignettes. To illustrate the abstract concept of SLOs to educators, districts and states should consider providing illustrations or vignettes of teachers completing the steps of the SLO process: (1) an example review of data highlighting critical features, and the development and approval of an SLO; (2) the development of unit or lesson plans based on an SLO; (3) the use of formative data for midcourse corrections; and (4) the evaluation conversation where summative data are used to examine whether or not the objective was met. This illustration can turn the SLO process into a tangible example.

SLO Assessment Guidance. Selecting assessments for the SLO is a critical but challenging step for teachers. In many schools and districts, teachers and administrators have little background and confidence in their own assessment literacy. This can be problematic because SLOs are only as good as the baseline and assessment data upon which they

are built. Without solid baseline data and assessments that are aligned to instruction, SLOs are little more than shifting targets. Teachers and administrators need confidence in their understanding and abilities to collectively create quality assessments when standardized assessments are unavailable.

State and district plans will vary depending on the level of teacher and administrator skill in analyzing student data and selecting or developing quality assessments. Some states, such as New York, require tests for teachers in specific grades and subjects. Other states, such as Indiana, have lists of approved or recommended assessments while still others, such as Ohio, offer tools for evaluating assessments. In some states, such as Georgia, assessment literacy trainings support teacher teams to develop assessments that target the standards and content that teachers agree are the most important elements of their instruction. Teachers develop item analyses and map their SLOs to their newly developed assessments. In other states, such as Ohio, guidance on how to select rigorous and appropriate assessments provides a starting point for teachers. In many ways, the potential of SLO implementation rests on the assessment literacy of teachers and administrators. While locally developed tests are not meant to take the place of standardized tests, higher quality teacher team or district-developed tests are necessary for assuring that SLOs are successfully implemented with some level of validity and reliability. For more details on assessments, see Appendix A.

In summary, assessment guidance should outline what makes an assessment valid, reliable, rigorous, and aligned to standards, and offer suggestions for locating such assessments.

SLO Scoring Guidance and Rubrics. For SLOs to be a fair and comparable measure of student growth, administrators and teachers need a clear understanding of the scoring process. Scoring can take multiple forms. From a holistic scoring approach to a more detailed analytic or benchmarking approach, states and districts should clearly articulate the scoring process through guidance and/or rubrics that will help evaluators score SLOs consistently. For more details on scoring, see Appendix D.

SLO Videos. Creating videos can be time-consuming and costly, but they can help increase buy-in and provide on-demand training options. Videos of teachers and administrators talking about the benefits of the SLO process can help to bring educators on board. Training videos can provide on-demand, easily accessible information to teachers and administrators. Topics of videos could include an overview of the SLO process, the selection of assessments for SLOs, and the SLO review and scoring processes, including modeling of conversations between a teacher and an evaluator. Another low-cost solution can be narrated slide presentations with screenshots of important SLO resources. While videos may not be as effective as seeing an actual person narrating, they can be useful for communicating information consistently to a wide audience.

Guidebooks and Supplementary Materials. Guidebooks or manuals are usually a compilation of forms and procedures. Such documents typically include an introduction to how SLOs fit into the overall evaluation system, guidance for each step of the SLO process, and copies of forms and documents the teacher will need to create an SLO. Additional useful materials might include frequently asked questions, lists of key messages, glossaries, and reference guides. Unique guidebooks can be developed for teachers, principals (where principal SLOs are used), and evaluators.

SLO Hotline. Effective training lays the foundation for successful implementation. Yet even with the best training, questions will arise once educators are back in their schools and trying to implement SLOs. An e-mail or a phone hotline staffed by SLO experts provides educators access to information when they need it. Online "office hours" have also been used in some states to offer stakeholders chatroom times during which questions will be answered by SLO leaders. Sharing information through a centralized source assures that educators are receiving accurate and up-to-date information that is consistent with state or district guidelines.

Transition Plans. Transition plans can be helpful at two critical junctures of implementation. First, transition plans can provide a roadmap for how a district or state will shift from an old evaluation system to a new evaluation system that includes SLOs. Second, transitioning expertise from administrative staff or consultants to those individuals in schools charged with implementation requires planning early on. Whereas during early implementation consultants may play a large role in developing materials and providing training, such support is often unsustainable. Districts and states will need to determine how districts will ultimately take ownership of the SLO process. Articulating how districts will build sufficient expertise—and allocating resources to support implementation, such as time and materials for SLO trainers and staff to assist in implementation—should not be an afterthought.

Offer Training and Rater Calibration

As with any new reform or practice, training and rater calibration are critical components in the successful implementation of a reliable evaluation system. Delivery of in-person training at multiple sites requires significant scheduling, time, and resources; however, video modules and webinars are alternate options (e.g., Indiana has conducted multiple webinars and offers video training modules on its website).

Training. The formal use of SLOs as a valid measure requires training on multiple topics to multiple audiences. All stakeholders need a basic overview of SLOs and an introduction on how SLOs align with the overall evaluation system (Table 1). District staff, particularly principals and other evaluators, will need training to both understand the SLO process as well as lead the approval and final scoring of the SLOs during the academic year (Table 2).

Teachers will need training around setting quality SLOs and, in some cases, how to turn an SLO goal into actionable instruction (Table 3). In many cases, states are opting for a train-the-trainer approach to implementing SLOs. Trainers will require training in the above topics, as well as resources and skills development around facilitating adult learning.

Utilizing a train-the-trainer delivery model can help build local implementation capacity and maximize limited resources by reducing travel and training costs. That being said, a poorly implemented train-the-trainer model can often resemble a game of telephone in that the information that teachers receive is ultimately inaccurate and substantially different than that communicated to training facilitators. Therefore, the quality of this training is essential. For example, in 2010 Austin Independent School District (AISD) trained both principals and SLO facilitators to provide support at the campus level. In a review with focus group participants, the district found that some SLO facilitators and principals often could not answer questions or provided conflicting or inaccurate information about the program (Lamb & Schmitt, 2012). Changes to the AISD training were made as a result of these findings and aimed to improve the quality of facilitator and principal knowledge around SLOs.

Effective train-the-trainer workshops and turnkey presentations can help ensure that trainers have the knowledge and tools needed to present information. These trainings cover not only the SLO cycle but help presenters build confidence in their training abilities. Additional support in the form of supplemental online modules, documents, and ongoing troubleshooting can ensure that educators receive accurate information when they need it.

Table 1. General Stakeholder Training

Title	Content

Aligning SLOs With the Overall Evaluation System	When introducing SLOs to staff through training, it is important to start by illustrating how SLOs fit into the overall evaluation system. Further, it is critical to illustrate how SLOs are intended to support practice toward greater student learning that can facilitate stakeholder support of the evaluation system and assure staff that creating SLOs is not another task that must be completed without any benefit to the teacher. During this training, evaluators, teachers, and other stakeholders can:
	
	■ Learn how SLOs fit into the overall evaluation system and align to district, school, and team goals.
	
	■ Acknowledge the benefits and challenges of using SLOs as a measure of student growth.
	
	■ Learn about the SLO cycle and the steps for SLO development.
	
	■ Develop strategies for embedding SLOs in the professional culture, such as by:
	  • Introducing SLOs in teacher preparation programs and student teaching experiences.
	  • Using SLOs in mentoring and induction programs.
	  • Providing professional development that addresses teacher needs to monitor SLO progress and achieve growth targets for all students.

Table 2. Evaluator Training

Title	Content

Guidance on Selecting and Developing Assessments	Comparability relies on the assessments used. Training evaluators how to approve assessments can help develop a common understanding of what makes an assessment appropriate. During this training, evaluators might:
	
	■ Develop their skills in identifying whether assessments are:
	  ● Valid.
	  ● Reliable.
	  ● Aligned with both content standards and the content of the SLO.
	  ● Developmentally appropriate.
	■ Practice reviewing assessments for appropriateness.
	■ Become familiar with common assessments used for formative and summative use.
	■ Receive training on available resources and tools.
	■ Develop strategies for improving teachers' assessment literacy skills.

Assessing the Rigor of SLOs	In most districts, principals or specialized SLO evaluators will judge and approve the quality and rigor of SLOs. Qualitative research suggests that principals or evaluators often find providing feedback on the rigor of SLOs to be the most challenging aspect of implementation (TNTP, 2012). Thus, clear guidance to assure consistency in this role is required. During this training, evaluators might: ■ Review the parts of the SLO. ■ Learn how to use available resources (e.g., checklists, rubrics) to assess the rigor of the SLO. ■ Build capacity to train teachers to write rigorous SLOs. ■ Practice gauging teacher understanding of the process and measure this understanding through conversation. ■ Learn strategies for building teacher capacity to set rigorous SLOs. ■ Develop strategies for managing the volume of SLOs. ■ Develop strategies to cope with and resolve implementation issues. ■ Articulate expectations for supporting, monitoring, and evaluating SLOs.
Scoring SLOs	Successful implementation of SLOs relies on a credible, consistent scoring process. Training evaluators in the scoring process helps them develop a common understanding of scoring procedures. During this training, administrators and evaluators might: ■ Develop an understanding of the scoring process. ■ Discuss unique circumstances that may impact a teacher's scores. ■ Practice scoring SLOs. ■ Learn how to combine SLOs to calculate a final SLO score. ■ Integrate SLOs with other measures of the evaluation. To improve the success of such training, rater calibration sessions are also recommended (see below).

Title	Content
Training Refresher in the SLO Process	States and districts will want to ensure that evaluators continue to implement SLO best practices. This assurance will require the retraining of teachers and evaluators over time. Refresher training should be informed by results of ongoing monitoring and evaluation.

Table 3. Educator Training

Title	Content
Analyzing Baseline Student Data	Many teachers are insufficiently trained to use student achievement data in a meaningful way. In particular, teachers in nontested grades and subjects may need support in locating potential sources of baseline data and determining how data from past students can inform targets for current students. During this training, teachers might: ■ Identify sources of data. ■ Improve their data analysis skills. ■ Practice reviewing, interpreting, and analyzing data. ■ Practice identifying trends in data. ■ Develop ways to ensure that all students are covered by at least one SLO. ■ Consider how to use data to inform classroom practices.
Guidance on Selecting Assessments	The assessment is a critical part of the SLO, so instructing teachers how to select assessments is important. During this training, teachers might: ■ Distinguish among different types of assessments. ■ Learn what makes an assessment valid, reliable, aligned, and developmentally appropriate. ■ Practice using available guidance and tools to determine the appropriateness of an assessment. ■ Learn how to locate additional resources or assessments.
Developing Teacher-Designed Assessments	In some cases, teachers may not have readily available assessments and thus must create their own assessments. During training on developing assessments, teachers might work together to: ■ Learn about the different types of assessments: their strengths, weaknesses, and potential uses. ■ Practice designing assessment blueprints and/or item analyses. ■ Learn strategies for ensuring that teacher-designed assessments are appropriate. ■ Develop skills in item writing and assessment design.

Title	Content
Developing Rigorous and Realistic SLOs	A common challenge is determining whether an SLO is rigorous yet realistic. During training on this step, teachers might: ■ Learn how to determine appropriate growth targets for students, including general education, special education, and English language learner (ELL) students. ■ Practice identifying high- and low-quality SLOs and engage in conversations about why they are high or low quality.
Turning SLOs Into Actionable Instruction	An SLO is nothing more than an aspirational goal if educators do not know what concrete steps to take to help students meet their growth targets. Some educators may need additional guidance on the actions they can take to help ensure their growth targets are met. During this optional training, teachers might: ■ Locate potential sources of instructional support in the building. ■ Practice using data to monitor student progress. ■ Discuss ways in which the professional learning community (PLC) may be a source of support. ■ Develop strategies for using feedback from coaches and evaluators to inform instruction. ■ Develop action plans for students who are struggling in class. ■ Practice talking with parents and students about goals for the student.
Training Refresher in the SLO Process	States will want to ensure that evaluators continue to implement SLO best practices. This assurance will require the retraining of teachers and evaluators over time. Refresher training should be informed by results of ongoing monitoring and evaluation.

Evaluator Calibration Sessions. Calibration sessions, used frequently in sectors outside of education, can be a crucial step in maintaining SLO comparability and rigor. Districts and schools will likely bear the primary responsibility for these sessions; however, state guidance will assure structure and support. Calibration sessions are intended to provide a medium for discussion among five to eight evaluators who evaluate 15–35 teachers each (the size will vary depending on the size of the school). Calibration sessions can take on a variety of formats (focused on SLO approval or scoring), but all essentially require that evaluators review multiple shared SLOs to see how their ratings align. Some calibration sessions start with evaluators writing reviews of their teachers' SLOs prior to the meeting. During the session, a group of evaluators within a district meet and post the SLO ratings they are planning on giving their teachers. They are responsible for explaining the rationale behind their rating and also reviewing the ratings proposed by other evaluators. As the evaluators share their rationales with each other, they are allowed to adjust their ratings, to improve their alignment with colleagues. In some cases, an evaluator may have been too lenient or set the bar too high. No matter the format, calibration sessions can promote consistency among evaluators, serve as a way to retrain evaluators after their initial training, hold evaluators accountable by their peers, and promote rigor and fairness of evaluator approval and scoring.

Resolving Conflicts Between Teachers and Evaluators. Ideally, teachers and evaluators will agree on the final scoring of their SLO(s). However, districts and evaluators need to be prepared to resolve differences when they occur. Establishing a fair appeals process adds credibility to the SLO process. In Rhode Island, the state has established district review committees that will serve as independent review boards for teachers who have disagreements with their evaluation scores, including disagreements on the teacher SLOs. Evaluators and members of review boards in many states are required to participate in trainings that support coaching around student data analysis; review, selection, and development of assessments; goal-setting and professional development planning; and scoring and rating procedures.

Provide a Structure and Process for Scoring SLOs

At the end of the year, evaluators must score SLOs based on the extent to which students reached their growth targets. The scoring methodology should be simple, transparent, and fair, as well as connected to improvements in teacher practice and student growth. Teachers and administrators should share a common understanding of how SLOs are scored. In addition, the process should foster consistent and fair ratings across teachers and evaluators, and produce scores than can be easily combined with other measures to create a final summative rating. (See Appendix D for examples of scoring approaches.) Three scoring approaches are currently used in practice: holistic, analytic, and benchmark scoring.

The first scoring approach produces a *holistic* evaluation of the SLO. For example, in Rhode Island's pilot year, the teacher met with the evaluator to compare results to the original targets. Based on the evidence, the evaluator determined whether the target was reached. In scoring the SLO, the evaluator may have taken into account mitigating factors that impacted student achievement. Using a holistic approach, the evaluator determined if the teacher did not meet, nearly met, met, or exceeded expectations of the growth target. This approach puts trust in the professional judgment of the evaluator to make a fair and reasoned determination. That being said, comparability across SLOs is difficult to achieve using this method. Training is paramount to ensure that evaluators determine scores in a consistent and fair way.

The *analytic* scoring approach uses percentages to determine the final score or rating. In Indiana, teachers set and evaluators approve expectations for how many students must meet their target for each performance level. For example, an SLO might specify that:

- At least 23 of 24 students must reach their target in order for the SLO to receive a rating of four.
- At least 20 of 24 students must meet their target in order for the SLO to receive a rating of three.
- At least 16 students must reach their target in order for the SLO to receive a two.
- Fewer than 16 students must reach their target in order for the SLO to receive a one.

This approach gives teachers a significant voice in how they will be evaluated and allows them to customize their targets based on the baseline performance of their students. Because of the flexibility given to teachers, comparability across SLOs is more difficult to achieve than in other approaches.

A third and similar approach, *benchmark* scoring, is used in New York. As in Indiana, the New York Department of Education permits the use of percentages in determining the final score. However, rather than allowing teachers to set the acceptable percentage ranges, New York encourages the use of a district-determined rating scale. This approach allows for greater standardization of scoring procedures across teachers and schools, but may limit the extent to which evaluators can take unique situations into account when scoring.

Combining SLO Scores. After each SLO is scored, evaluators must calculate a final SLO score. Some states, such as Indiana, average the scores to calculate the final score. In New York, evaluators weigh the SLOs based on the number of students covered under each SLO. Another option is to use a table similar to what Rhode Island currently uses, in which evaluators plug individual SLO scores into a matrix that determines the teacher's final SLO score.

Combining SLO Scores With Other Effectiveness Measures. Finally, the overall SLO score must be combined with other measures to create a final summative rating. Using consistent performance ratings across measures can help ensure easy calculation of the final summative rating. Another option is to use a matrix to convert a final SLO score into a rating that fits in the evaluation calculations. Regardless of the method used, districts and states should clearly articulate the process so that all teachers understand how their evaluations are determined. For more information on combining measures for a final effectiveness rating, see *Creating Summative Educator Effectiveness Scores: Approaches to Combining Measures* by Sheri Leo and Lisa Lachlan-Haché.

Monitor and Evaluate SLO Implementation

During early implementation, states and districts may need to adjust implementation to ensure that the SLO process reflects best practices, is being implemented with fidelity, and results in a valid measure of student growth. Ongoing monitoring and evaluation of SLO implementation provide districts and states with necessary information that can be used to inform changes to SLO implementation.

Monitor SLOs for Rigor and Comparability. Monitoring refers to the process of supervising the development, approval, and implementation of SLOs. This review of SLOs helps states and districts gauge the quality of approved SLOs, highlights common mistakes, and indicates additional training needs. Monitoring can also instill a sense of fairness. For example, Austin Independent School District reads all submitted SLOs to ensure they meet quality standards at the beginning of the year. At the end of the year, the district conducts a random audit to verify results.

Student learning outcomes should also be monitored to assure that SLOs are valid. SLO outcomes should also be monitored for differentiation. Differentiation in SLO scores is an outcome of a rigorously designed system. If very few teachers meet their SLOs or if all or nearly all teachers consistently meet all SLOs, it is likely that the SLO process has not been implemented successfully, and, in turn, authentic improvements in teacher effectiveness and student progress are unlikely. While differentiation alone does not assure rigor or validity, it does convey an essential principle of evaluation by providing clear direction for growth in the varying degrees of effectiveness. Austin Independent School District issues an annual research brief that informs stakeholders of the key findings of their monitoring efforts and addresses some research questions, such as: Who met their SLOs? Did setting and/or meeting individual SLOs correspond to better Texas Assessment of Knowledge and Skills (TAKS) growth? Did meeting team SLOs correspond to better TAKS growth?

Triangulate Data to Promote Discussion and Reflection. Districts can also monitor SLO implementation by triangulating SLO data with other effectiveness measures, such as classroom observation, student surveys, or other measures of student growth (classroom or school level). Triangulating data can draw attention to instances of misalignment among schools or evaluators that consistently demonstrate high SLO ratings but low scores on the other measures (or vice versa). Results should not be used to make quick judgments about schools or evaluators, as data are not causal. However, such results can indicate that the school's teachers and leaders need additional training on setting rigorous and realistic growth targets, better aligned assessments, or improved scoring methods. Triangulation may also call into question the validity of other effectiveness measures. In results from early implementing districts and states, classroom observation scores were inflated or inconsistent, resulting in a push for ongoing evaluator training to reduce positive "drift" in classroom observation scores (Sartain et al., 2011; State Collaborative on

Reforming Education, 2012). A variety of interpretations is possible; therefore, triangulation should be used as a mechanism to promote discussion, supporting school leaders to address differences and improve practices. Guiding questions to promote evaluator discussion and reflection are a valued resource and should focus the conversation on solutions for building validity across all effectiveness measures.

Research and Evaluate Implementation. To assure maximum learning and refinement results from early SLO implementation efforts, research into the characteristics and outcomes of SLO implementation is necessary. Data should be collected during the pilot phase to help districts learn from implementation, and revise and improve their systems to support teacher learning and student growth. A variety of research plans can lead this effort. A series of research questions is offered in Appendix E.

It may be cost- and resource-effective for districts and states to collaborate on such research to examine common themes. Furthermore, districts and states would do well to consider partnering with regional educational laboratories and other research organizations to streamline research efforts and take advantage of large sample sizes.

Conclusion

As many states and districts design and implement unique SLO systems that fit the context of their region, the field should be mindful of the innovations and opportunities for collaboration and efficiency. SLOs have strong potential for changing the face of education but, implemented poorly, they can be a false promise couched in a complex reform agenda. To reach their potential, SLOs must be used within a system of trust, focused on teacher development and professional growth. SLOs often require a shift in culture, specific structures, and detailed training to assure rigor and comparability. Devoting sufficient time to training, monitoring, and research can lead to critical improvements in teacher effectiveness and student growth.

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Appendix A

States and Districts Assessing the Culture Change

Austin, Texas; Denver, Colorado; and the state education departments of Indiana and Rhode Island use SLOs as part of their measures of teacher effectiveness. Indiana and Rhode Island developed their statewide teacher and leader evaluation systems around the use of SLOs. Austin and Denver are transitioning to the use of SLOs in their teacher evaluation systems, where summative evaluation results are used to make decisions about tenure, promotion, certification, compensation, or contracts. Although these systems are leading the discussion on how to effectively integrate SLOs, each system has its strengths and limitations. All four agencies continue to train, evaluate, and adjust their systems to maximize the validity and rigor of their SLOs. Below are some examples of their practices in communication, implementation, and making wise use of limited teacher and principal time.

	Austin Independent School District (AISD)	Denver Public School District	Indiana Department of Education	Rhode Island Department of Education
Assess the Culture Change				
Communication	In an effort to be proactive and provide continued support to teachers after trainings, Austin has created a website that houses guidebooks and videos for educator use. The district also sends e-mail blasts to taff periodically to ensure that everyone is aware of program requirements and upcoming deadlines. Austin also analyzes participant feedback through annual program updates regarding the SLO process, including the adequacy of support and program elements and their impact.	Denver Public School District provides guidebooks, videos, and SLO examples for teachers and evaluators to further enhance their understanding of SLOs.	Indiana offers a detailed handbook that highlights how SLOs fit into the evaluation system, how to develop SLOs, and a timeline and multiple forms to complete the SLO process. The guidance document also contains 11 SLO examples from kindergarten through high school. The Indiana RISE website (http://www.riseindiana.org/) is a one-stop shop for teachers and principals in need of information and support.	Rhode Island has created a series of guidebooks and slide presentations to explain SLOs and their role in the state's educator evaluation system. Rhode Island offers a training video and accompanying slide presentation for evaluators. These resources identify the components of Student Learning, articulate the relationship between schoolwide and teacher SLOs, guide teachers through the process of setting SLOs, evaluate the criteria of SLOs, and communicate the benefits of setting SLOs.

	Austin Independent School District (AISD)	Denver Public School District	Indiana Department of Education	Rhode Island Department of Education
Phased-In Implementation	Austin began its work at nine schools as part of a strategic compensation initiative and has since expanded to 36 schools. Over time, the district has refined its SLO process to include individual and team goal setting. In 2011–12, Austin piloted SLOs as part of a teacher evaluation in three schools and has expanded this practice to 12 schools.	Denver has been using SLOs for many years and has worked to strategically embed SLOs in district culture. SLOs are created by all school personnel to foster a sense of accountability within all staff.	or the first year of implementation, teachers were required to create two SLOs for one class (or a set of similar classes), collaboratively when possible.	Rhode Island recognizes that the new system is a significant departure from the old system. In an effort to support educators with this change, Rhode Island is phasing in SLOs over two academic years. The first year will require teachers to develop SLOs but will not tie any decisions to their outcomes. In the second year, when teachers are more comfortable with the entire SLO process, the state will attach evaluation decisions to the outcomes.
Teacher and Principal Time	Austin offers teachers and principals an SLO spreadsheet that streamlines the analysis of student data by allowing for the input of student information, pre- and post- test data, and a formula for calculating whether or not the growth target was achieved.	To streamline the SLO process, Denver has developed an online student growth objective application that allows teachers and evaluators to input SLO data directly into an online tool and interact with one another through the approval, monitoring, and scoring process. Access to the tool is restricted to Denver staff, but information is available through videos.	For time efficiency, Indiana recommends that all SLO conferences, when possible, are scheduled in conjunction with observation conferences.	Rhode Island is working with districts to integrate staff trainings into their schedules, specifically how teachers can learn to develop SLOs during staff meetings, preparation time, and other preexisting release time.

District Readiness Continuum for SLO Implementation

The district readiness continuum is a self-assessment tool intended to help district leaders determine where additional efforts may be needed before their district is ready to implement SLOs. Carefully think about which of the three statements in each row best describes your district. Afterwards, think about next steps for how your district can ready itself for SLO implementation.

Not Yet Ready to Implement	Building Towards Readiness	Ready to Implement SLOs
Stakeholder Engagement		
☐ Educators exhibit limited awareness of and interest in student growth measures.	☐ Educators discuss student growth measures, often in their own circles and not participating in a larger discussion.	☐ Educators engage in ongoing discussions about student growth measures. Discussions dispel myths and misunderstandings while demonstrating educator interest in improving growth measures.
☐ The district offers few if any opportunities for educators to participate in setting district policies around compensation/evaluation.	☐ The district provides a few teachers and leaders opportunities to serve on committees or offer input through focus groups or similar mechanisms focused on compensation/evaluation.	☐ The district engages nearly all educators in opportunities to discuss and shape district policies regarding compensation/evaluation through multiple feedback mechanisms on an ongoing basis.
Shared Vision		
☐ The district articulates broad goals for improving educator effectiveness and student achievement.	☐ Educators, parents, and the community are aware of goals for improving educator effectiveness and student achievement, but district initiatives and programs are not aligned to the goals.	☐ Educators, parents, and the community exhibit a shared commitment to increasing educator effectiveness and student achievement as well as developing district initiatives and programs aligned to the goals.
☐ A limited number of district staff understand the benefits and challenges of implementing SLOs.	☐ District staff make limited efforts to communicate the benefits and challenges of implementing SLOs to the community.	☐ District staff and educators share a common understanding of what implementing SLOs will entail and demonstrate a shared commitment to implementing the SLO process with fidelity.

Not Yet Ready to Implement	Building Towards Readiness	Ready to Implement SLOs
Culture of Data-Driven Planning		
☐ Teachers and administrators have limited access to student data.	☐ The district is working to develop systems to provide teachers and administrators with greater access to data.	☐ The district has fully developed data systems that provide teachers and administrators opportunities to access and analyze current data and data trends for the development of growth targets.
☐ Teachers and administrators have little or no experience with the analysis of student data.	☐ Teachers and administrators have some experience with the analysis of student data.	☐ Teachers and administrators have experience with and common planning time devoted to the analysis of student data.
☐ The district has a limited number of high-quality assessments available.	☐ The district is working to develop more high-quality preassessments, postassessments, and formative assessments.	☐ The district has high-quality common preassessments, postassessments, and formative assessments available for all grades and subjects.
☐ The district lacks sufficient resources to support the development of educators' use of assessments and data to inform instruction.	☐ Educators have some experience using data to inform instruction. The district offers some opportunities through professional development to further educators' use of assessments and data.	☐ Educators have strong foundations in assessment literacy. Job-embedded professional development opportunities exist at all schools to help teachers augment their assessment and data literacy skills.
Infrastructure		
☐ The district has limited feedback mechanisms and procedures for overseeing the SLO process at the district level.	☐ The district monitors the SLO process through audits and gathers occasional feedback.	☐ The district monitors and revises the SLO process on an ongoing basis through regular communication channels, in which schools provide feedback and suggested revisions.
☐ The district has limited plans to improve implementation over time.	☐ The district has the capacity to evaluate implementation on a yearly basis and adjust the process as necessary.	☐ The district evaluates implementation on an ongoing basis and adjusts implementation as needed.
☐ The district has no formal plans for research around the implementation of SLOs.	☐ The district has considered conducting or participating in research around SLOs.	☐ The district recognizes the importance of research around the implementation of SLOs and is conducting or participating in related research.

School Readiness Continuum for SLO Implementation

Recognizing that each school has its own unique context within a larger district, AIR has also created a school readiness continuum for SLO implementation. Principals or other leaders familiar with the school context should consider which of the three indicators in each row best describes the school. District leaders can use this information to define areas of need within schools, while school leaders and teachers can also target the aspects of preparedness that need improvement before implementing SLOs.

Not Yet Ready to Implement	Building Towards Readiness	Ready to Implement SLOs
Teacher Knowledge and Skill		
☐ Teachers struggle to analyze student data; using data to inform instruction is not common practice.	☐ Teachers analyze student data with support and use data to inform long-term planning but not in everyday instruction.	☐ Using student data to inform instruction is common practice; teachers consistently use student data to adjust planning, improve instructional practice, and seek professional development.
☐ Teachers implement mandatory district and state assessments, but rarely use other forms of assessment.	☐ Teachers use a variety of formative and summative assessments of varying quality.	☐ Teachers apply assessment literacy skills to select or collectively develop high-quality formative and summative assessments that align with standards and provide useful information about student mastery and growth.
☐ Teachers rely on student files and prior-year report cards as sources of information about their students.	☐ Teachers rely on student files and prior-year report cards as sources of information about their students and attempt to seek out additional information, but do not always know where to look.	☐ Teachers gather and use a variety of information about the needs and strengths of their students from student files, prior-year teachers, report cards, surveys, assessments, and discussions with family members.

Not Yet Ready to Implement	Building Towards Readiness	Ready to Implement SLOs
Support Systems		
☐ Teachers often work in isolation and have limited opportunities to engage with peers.	☐ Teachers participate in professional learning communities (PLCs), share a common planning time, or work in student data analysis teams.	☐ Teachers productively use time allocated for collaborative activities to plan instruction, engage in reflection, analyze data, and share best practices.
☐ The school lacks an organizational structure that can facilitate reviews of SLOs and provide feedback and support.	☐ The school has a building-level team responsible for overseeing the SLO process, but team members lack sufficient training, time, or commitment to provide feedback and support.	☐ The school has a building-level team that possesses sufficient expertise, time, and commitment to approve SLOs and provide valuable feedback and support to teachers.

Initial Steps for SLO Implementation

1. SLO Readiness and Communication

Based on your placement on the readiness continuum, are districts and schools ready for SLO implementation?

How will SLOs be clearly communicated and explained to stakeholders, such as teachers, school leaders, students, and parents?

What can states and districts do to engage stakeholders in the development, implementation, and revision of the SLO process?

What venues of communication are already available for SLO implementation? What venues need to be created?

2. SLO Process

What types of teachers will be creating SLOs?

Are teacher team SLOs required or acceptable?

How many SLOs are required?

Will targeted or tiered SLOs be acceptable or required?

What types of assessment will be acceptable for use in SLOs (e.g., teacher team-developed, district-developed, district-purchased, state-standardized)?

Who will review and approve SLOs?

What guidance and training will the state education agency and/or local education agency provide?

3. Evaluation Alignment

How does the implementation of SLOs align with the goals and purposes of the teacher and school leader evaluation system?

How does this work support other elements of the evaluation system and its implementation?

4. Scoring SLOs

How will SLOs be weighted (e.g., equally, based on number of students included in the SLO)?

How will SLOs be scored (e.g., holistically, analytically, with benchmarks)?

How will data from SLOs be combined with other measures to assess teacher and school leader practice?

5. Monitoring and Evaluating

How will SLOs be monitored in districts or schools?

What other teacher effectiveness measures could be useful for triangulation?

What research questions will best support the improvement and revision of the SLO system?

What avenues of collaboration will support SLO implementation and improvement?

Appendix B

Provide Supporting Materials—Sample Supporting Documents From States and Districts

SLO Guidebooks and Materials		
Austin	*SLO Manual*	http://archive.austinisd.org/inside/initiatives/compensation/docs/SCI_SLO_Manual.pdf
Rhode Island	*Guide for Educators: Writing Student Learning Objectives*	http://www.ride.ri.gov/educatorquality/educatorevaluation/Docs/Guide_For_Teachers_Writing_Student_Learning_Objectives.pdf
Indiana	*RISE Evaluation and Development System Student Learning Objectives Handbook*	http://www.riseindiana.org/sites/default/files/files/Student%20Learning/Student%20Learning%20Objectives%20Handbook%201%200%20FINAL.pdf
SLO Assessment Guidance and Forms		
Rhode Island	*Determine Appropriateness: Interim and Summative Assessment Prompts*	http://www.ride.ri.gov/Assessment/DOCS/CAS/CAS_Appendix_B.pdf
Indiana	*Step 1—Pre-Approval for School Based Assessments*	http://www.riseindiana.org/sites/default/files/files/Student%20Learning/Step%201%20Forms%201_0.docx
	Step 2—Depth of Knowledge (DOK) Levels	http://www.riseindiana.org/sites/default/files/files/DOK_Chart.pdf
New York	*Assessment Options for SLOs: Reference Guide*	http://engageny.org/wp-content/uploads/2012/03/Assessment-Options-for-SLOs.pdf
SLO Scoring Guidance and Rubrics		
Rhode Island	*Measures of Student Learning*	http://www.ride.ri.gov/educatorquality/educatorevaluation/Docs/Measures_of_Student_Learning_GB-Edition_II.pdf
Indiana	*Optional End-of-Year Summative Rating Form*	http://www.riseindiana.org/sites/default/files/files/Student%20Learning/Summative%20Rating%20Form%201_0.docx
SLO Videos and Training Materials		
Rhode Island	*Introduction to Student Learning: Training for Personnel Evaluating Teachers*	http://www.ride.ri.gov/EducatorQuality/EducatorEvaluation/Docs/Student_Learning-only-teacher_evaluator_training.pdf
Indiana	*RISE Student Learning Objectives*	http://media.doe.in.gov/rise/2012-05-15-rise10.html
	RISE Student Learning Objectives (Step 1)	http://media.doe.in.gov/rise/2012-05-15-rise11.html
New York	*Student Learning Objectives: Webinar I*	http://engageny.org/resource/student-learning-objectives-webinar-i/

Appendix C

Offer Training, Rater Calibration, and Specific Guidance Around SLO Assessments

Beyond offering interesting teacher evaluation and compensation systems, Austin, Indiana, Ohio, and Rhode Island offer training and resources to build consistency among evaluators and educators. These often include role-specific guidance documents and trainings as well as videos and guidance to support evaluators and educators in their selection or development of quality SLO assessments.

	Austin Independent School District (AISD)	Indiana Department of Education	Ohio Department of Education	Rhode Island Department of Education
Training	Teachers and evaluators need consistent training and recalibration on how to develop high-quality SLOs. Austin regularly trains teachers, evaluators, and other school staff, and **provides examples of SLOs** for teachers.	Indiana has **multiple videos** that support teachers and principals in implementing and writing SLOs. These include an introduction to SLOs, four videos on the steps of writing an SLO, and two videos on locating state data for determining students' starting points.	Ohio began training districts through a pilot program where 25 district consortia developed SLOs and began considering SLO implementation. After hosting a calibration session with early adopter districts, Ohio has contracted with American Institutes for Research to implement 50 regional SLO trainings that will introduce district teams to SLO development and the SLO cycle. The train-the-trainer sessions will be supported with multiple online modules, webinars, and a 24-hour e-mail hotline developed to answer district questions with expert solutions and resources.	Rhode Island will conduct trainings focused on participant engagement for principals and district staff. These trainings will be capped at 25 participants as a way to ensure all participants have a chance to substantially engage in the training. In addition to training, Rhode Island has developed teacher- and principal-specific guidance documents and examples of SLOs for: ■ **Administrators** ■ **Elementary school teachers** ■ **Middle school teachers** ■ **High school teachers**

	Austin Independent School District (AISD)	Indiana Department of Education	Ohio Department of Education	Rhode Island Department of Education
SLO Assessment Guidance	Austin provides guidelines around the use of assessments for specific subjects and grades (p. 17) and created a quality assurance rubric for principals and campuses to use for rating SLOs. Austin also provides a checklist for principals.	Indiana ranks assessment types based on the amount of confidence one can have in their alignment, rigor, and format, as well as the extent to which they are common across teachers of the same grades and courses. Guidance on choosing an assessment can be found on page 8 of the RISE Handbook. Indiana also offers a list of assessment options for teachers in subjects that are generally not tested by standardized assessments.	Ohio has developed a *Guidance on Selecting Assessments* document that includes set criteria that every high-quality assessment should contain, such as frequently asked questions and an assessment checklist.	Rhode Island has produced Appendix B: Comprehensive Assessment System Criteria & Guidance that provides guidance to teachers and principals on how to decide which assessments are appropriate to use with SLOs.

Appendix D

Provide a Structure and Process for Scoring SLOs–
Brief Examples of Scoring SLOs

1. Holistic Scoring: Using Rater Judgment to Evaluate Individual SLOs

In Rhode Island, the scoring process consists of a comparison of submitted evidence to the original SLO growth target(s). Based on the available evidence, the evaluator decides whether the score should be Exceeded, Met, Nearly Met, or Not Met according to the definitions provided below. This approach requires the evaluator to use his or her judgment to determine the score. For example, the evaluator must determine what constitutes "a few points," "many students," and "a substantial portion of students."

Individual Student Learning Objective Scoring Guidance

Exceeded	This category applies when all or almost all students met the target(s) and many students exceeded the target(s). For example, exceeding the target(s) by a few points, a few percentage pints, or a few students would not qualify a Student Learning Objective for this category. This category should only be selected when a substantial number of students surpassed the overall level of attainment established by the target(s).
Met	This category applies when all or almost all students met the target(s). Results within a few points, a few percentage points, or a few students on either side of the target(s) should be considered "Met." The bar for this category should be high and it should only be selected when it is clear that the students met the overall level of attainment established by the target(s).
Nearly Met	This category applies when many students met the target(s), but the target(s) was missed by more than a few points, a few percentage points, or a few students. This category should be selected when it is clear that students fell just short of the level of attainment established by the target(s).
Not Met	This category applies when the results do not fit the description of what it means to have "Nearly Met." If a substantial proportion of students did not meet the target(s), the Student Learning Objective was not met. This category also applies when results are missing, incomplete, or unreliable.

Source: Rhode Island Board of Regents for Elementary and Secondary Education, 2012, p. 46.

2. Analytic Scoring: Using Percentages to Evaluate Individual SLOs

In Indiana, the class SLO specifies exactly what teachers must achieve in order to attain each performance level. These expectations can be articulated as a proportion (i.e., 21 out of 23 students) or a percentage (i.e., 96 percent of students). At the end of the year, the evaluator compares the actual student achievement to the SLO and determines the teacher's SLO score.

Highly Effective (4)	Effective (3)	Improvement Necessary (2)	Ineffective (1)
Exceptional number of students achieve content mastery	Significant number of students achieve content mastery	Less than significant number of students achieve content mastery	Few students achieve content mastery
At least 21 out of 23 students achieve a Pass or Pass+ on the Social Studies ISTEP+ Assessment.	At least 19 out of 23 students achieve a Pass or Pass+ on the Social Studies ISTEP+ Assessment.	At least 12 out of 23 students achieve a Pass or Pass+ on the Social Studies ISTEP+ Assessment.	Fewer than 12 out of 23 students achieve a Pass or Pass+ on the Social Studies ISTEP+ Assessment.

Source: Indiana Department of Education, 2012, p. 2.

3. Benchmark Scoring: Using a District-Determined Rating Scale to Evaluate Individual SLOs: Sample Rating Scale Modeled Off of New York

New York provides some districts flexibility in how they will structure and grade SLOs, but the state recommends that districts create rating scales to evaluate SLOs. These scales help standardize the process across schools while recognizing that achievement targets may differ based on the assessment used and the grade level of students. For example, a rating rubric might be used by all teachers of ninth grade mathematics with a district-specified assessment.

Rating	Highly Effective (18–20 points)	Effective (9–17 points)	Developing (3–8 points)	Ineffective (0–2 points)
Percentage of students who meet their growth target	80%+	55–79%	30–54%	0–29%

4. Combining SLOs With Holistic Scoring: Using a Table to Determine Final SLO Score: Sample Table From Rhode Island

After rating each individual SLO, the evaluator uses a matrix to determine an overall SLO rating. Possible overall ratings are Exceptional Attainment, Full Attainment, Partial Attainment, and Minimal Attainment. The chart below is to be used when a teacher has three SLOs; similar matrixes for teachers with two, four, and five SLOs are available in *Rhode Island's Measures of Student Learning Evaluator's Guidebook* (starting on page 24).

Student Learning Objective 1	Student Learning Objective 2	Student Learning Objective 3	Final
Exceeded	Exceeded	Exceeded	Exceptional Attainment
Exceeded	Exceeded	Met	Exceptional Attainment
Exceeded	Exceeded	Not Met	Full Attainment
Exceeded	Exceeded	Not Met	Partial Attainment
Exceeded	Met	Met	Full Attainment
Exceeded	Met	Nearly Met	Full Attainment
Exceeded	Met	Not Met	Partial Attainment
Exceeded	Nearly Met	Nearly Met	Partial Attainment
Exceeded	Nearly Met	Not Met	Partial Attainment
Exceeded	Not Met	Not Met	Minimal Attainment
Met	Met	Met	Full Attainment
Met	Met	Nearly Met	Partial Attainment
Met	Met	Not Met	Partial Attainment
Met	Nearly Met	Nearly Met	Partial Attainment
Met	Nearly Met	Not Met	Partial Attainment
Met	Not Met	Not Met	Minimal Attainment
Nearly Met	Nearly Met	Nearly Met	Partial Attainment
Nearly Met	Nearly Met	Not Met	Partial Attainment
Nearly Met	Not Met	Not Met	Minimal Attainment
Not Met	Not Met	Not Met	Minimal Attainment

Source: Rhode Island Board of Regents for Elementary and Secondary Education, 2012, p. 72.

5. Combining SLO Scores Using Analytic Scoring With Weights: Sample Calculation of Weighted SLO Scores Based on New York's Scoring Process

All of New York's SLOs are rated using a uniform scale of 20 points. Based on the number of points awarded, teachers can receive one of four ratings: Highly Effective, Effective, Developing, or Ineffective. An evaluator then calculates a weighted average score based on the number of students covered under the SLO. In the example below, SLO 1 counts for more than SLO 2 because SLO 1 covers four fifths of the teacher's students. The final overall growth component score uses the same scale as individual SLOs—the greatest possible score is 20 and the highest rating is Highly Effective.

	SLO 1	SLO 2
Step 1: Assess results of each SLO separately	13 points Effective	19 points Highly Effective
Step 2: Weight each SLO proportionately	80/100 students = 80% of total	20/100 students = 20% of total
Step 3: Calculate proportional points for each SLO	13 points x 80% = 10.4 points	19 points x 20% = 3.8 points
Overall Growth Component Score		14 points Effective

6. Combining Teacher Effectiveness Measures to Calculate a Final Effectiveness Rating: Sample Matrix Modeled Off of Rhode Island's Scoring Process

Rhode Island uses a matrix to calculate a final effectiveness rating. The student learning score (which currently includes just SLO scores, but will include growth model scores in 2013–14) is combined with the professional practice and foundation score to determine the final rating.

Professional Practice and Foundation Score	Student Learning Score (SLO)			
	4	3	2	1
4	Highly Effective	Effective	Developing	Developing
3	Highly Effective	Effective	Developing	Developing
2	Effective	Effective	Developing	Ineffective
1	Developing	Developing	Ineffective	Ineffective

For more information on combining measures for a final effectiveness rating, see *Creating Summative Educator Effectiveness Scores: Approaches to Combining Measures* by Sheri Leo and Lisa Lachlan-Haché.

Appendix E

Monitor and Evaluate SLO Implementation—
Research Questions, Resources, and Examples

Ongoing monitoring and evaluation of SLO implementation provide districts and states with necessary information that can be used to inform needed revisions to SLO implementation. Within this section is a set of research questions that expand upon the earlier thinking in this paper while examining the validity and reliability of SLO implementation. Following the research questions is a table of examples that highlights how Austin, Denver, Indiana, and Ohio have monitored and evaluated SLO implementation in their contexts (or in some cases, how they plan to).

1. **Level, Quality, and Relevance of Program Implementation.** Research questions in this domain can serve a formative function, addressing whether the program is being implemented with fidelity and whether key stakeholders (e.g., teachers, evaluators) perceive implementation as being effective. Research in this domain may also examine the quality of SLOs relative to variations in the depth of training and calibration for evaluators and teachers. Research that examines such variations may help states and districts better assess what level of training is necessary for quality implementation while considering time and budget constraints.

2. **Intermediary Outcomes.** This domain consists of research questions that determine whether the implementation of SLOs is associated with outcomes that facilitate student achievement gains, such as improved school climate or working conditions; educator engagement in professional development; or increased collaboration to develop assessments, review data, or develop lessons.

3. **Student Outcomes.** This domain examines the overall impact of SLO implementation on student achievement. For example, research teams can examine how rigorous and realistic SLO growth targets relate to student achievement gains. Researchers can also examine the effect of implementing the SLO process on closing the achievement gap as the process often targets instruction to improve the scores of low-performing students.

4. **Mechanisms.** This domain may be one of the most critical in understanding the particular dimensions of SLO implementation. Research questions in this domain seek to understand which components of SLO implementation are more strongly related to specific outcomes. For example, research questions can examine the number of SLOs required of teachers as they relate to the quality of growth targets, the quality of baseline data as they relate to the quality of growth targets, the use of standardized versus teacher-created assessments as they relate to student growth targets and achievement scores, different scoring methods as they relate to teacher

scores on SLO targets, the quality of assessments and their relationship to the rigor or achievement of SLOs, or the quality of SLO assessments as they align to standards and the enacted curriculum. Generally, these questions examine the association among program implementation, building-based programmatic decisions, and critical outcomes such as educator engagement and student achievement.

5. **Correlation to Other Metrics.** Ideally, SLO scores will correlate with other metrics used in the evaluation system. High correlation is not necessarily a requirement as metrics often examine different variables. For example, SLOs measure student growth on specific student standards, while teacher observation measures specific teaching standards as evidenced by teacher practice. Regardless, some correlation is desirable and therefore research questions that compare teacher observation scores and SLO scores are useful. In addition, some scholars suggest that SLO growth targets will be more easily achieved by teachers than high value-added modeling (VAM) scores (Milanowski, 2012). Further examination of SLOs and VAM scores, where both are available in common subjects and grades, is warranted. Reviewing scores for correlations will also contribute to a greater understanding of student growth, particularly for understanding the rigor of teacher-developed SLOs.

	Austin Independent School District (AISD)	Denver Public School District	Indiana Department of Education	Ohio Department of Education
Monitoring and Evaluation	In an effort to monitor the quality and rigor of SLOs, Austin established a central office monitoring committee. This committee was particularly important when the district first began using SLOs. The district reviews every submitted SLO for quality purposes at the beginning of the year and then conducts random audits at the end of the year. It also offers annual reports of its monitoring and research efforts.	The Community Training and Assistance Center of Boston, Massachusetts, conducted a study on Denver ProComp's implementation of SLOs and found that the highest quality objectives (as measured on a four-point rubric) were linked to their attainment by the teachers' own measure(s) as well as by student achievement measured by independent, standardized state and national assessments.	In July 2012, Indiana released a Summer Report of its evaluation implementation efforts, including some analysis of the implementation of SLOs in districts. Highlights include time spent on reviewing and approving SLOs (a median of 30 minutes) and teacher and evaluator feedback. Teachers thought every step of the SLO process was challenging, but obtaining prior-year student data to consider student staring points was very challenging. Evaluators thought that providing feedback on the rigor of SLOs was most challenging.	In 2013, Ohio will conduct random audits of the SLOs developed by educators and educator teams to ensure that they maintain rigor over time, accurately represent the content covered in a class, and include a representative and proportional population of the educator's schedule.

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The AIR Performance Management Advantage, which falls under the larger umbrella of AIR's Educator Talent Management services and resources, is a service line built on a six-step process designed to support a district or state in designing, developing, implementing, and assessing its educator evaluation system.

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