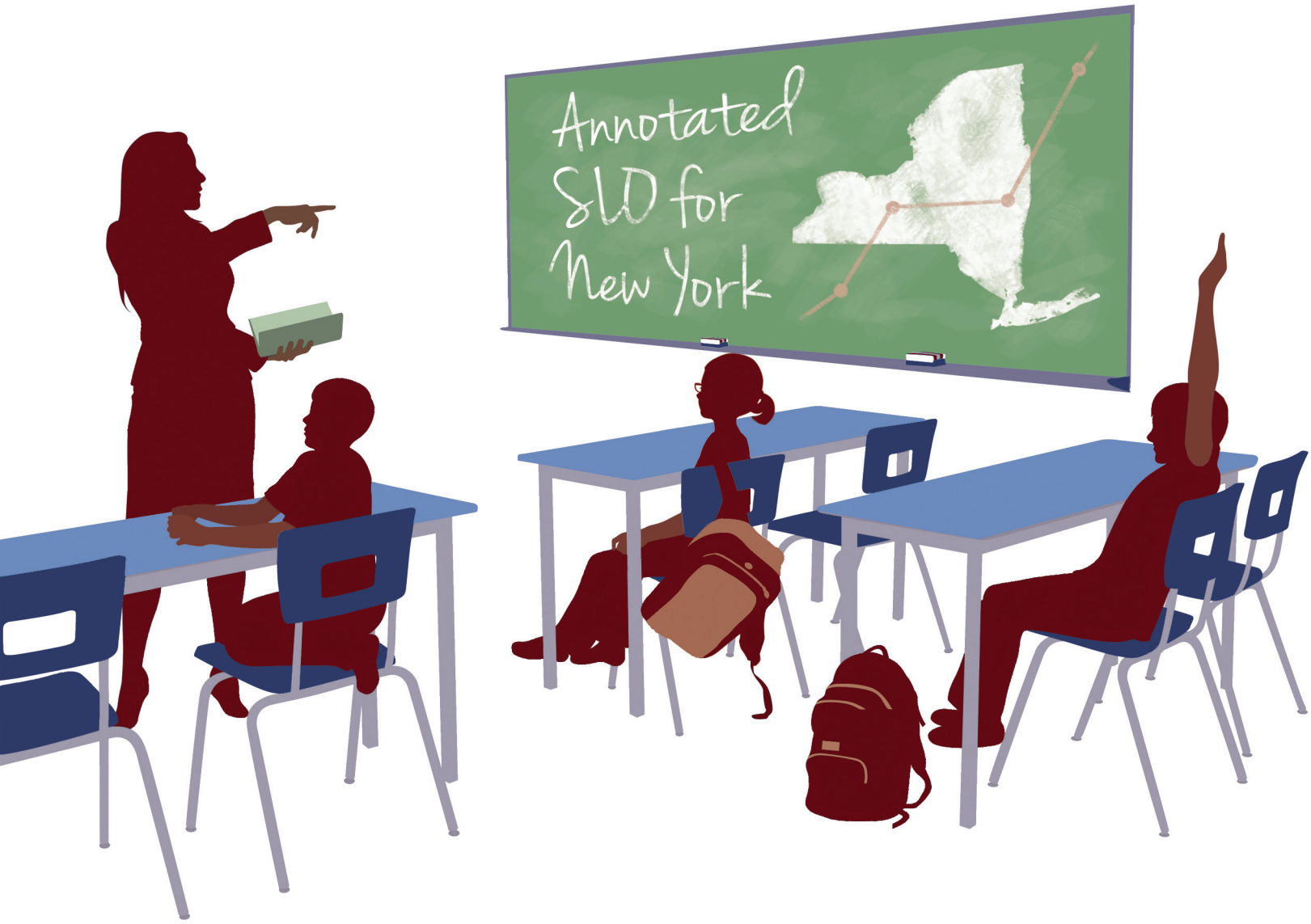
Reform Support Network



New York Student Learning Objective

Pre-Calculus (Grades 10-11)

May 2013

Table of Contents

Introduction

What is an SLO?

As States and school 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. The use of student learning objectives (SLOs) is one promising approach to addressing this challenge. Structurally, an SLO consists of several "elements" that describe a specific learning objective for a particular student population as well as a specific, systematic process for how an educator can identify and implement strategies to track progress toward that goal and achieve it.

What is an Annotated SLO?

The Reform Support Network (RSN) has developed a series of annotated SLOs to orient readers around their structure, provide analysis and suggest specific actions to strengthen the SLO's quality. Each annotated SLO, such as the one in this document, provides analysis and suggestions for improvement for each individual element within the SLO as well as the SLO as a whole. States, school districts, colleges, universities and others can use the RSN's collection of annotated SLOs, the "SLO Library," to prepare teachers and administrators to develop high-quality SLOs or to improve SLOs that they have already developed.

The SLO Library is not a collection of exemplary SLOs. The RSN designed the library as a teaching tool, so most of the jurisdictions intentionally provided the library with SLOs that vary in quality. They also vary in their subject areas and grade levels. Each SLO review identifies and discusses both strengths and areas for improvement. It is up to the reader, then, not to mimic the SLOs found in the library but to extrapolate lessons learned from them to produce new, original and high quality SLOs.

How to Use This Document

The RSN intends for the SLO Library to support any stakeholder actively engaged in learning about or implementing SLOs: State departments of education, school districts and schools, teachers implementing SLOs, administrators leading an SLO process and colleges of education interested in adding SLO coursework to their teacher or administrator preparation programs.

Each annotated SLO begins with contextual information for the jurisdiction that produced the SLO and then presents each element of the SLO in sequence. Each element begins with the jurisdiction's actual description of it, which is followed by the text of "an author" from the jurisdiction. Think of the author as the teacher(s) or school district administrator(s) who actually wrote the SLO. The language from the jurisdiction's description comes from the jurisdiction's SLO template or other guidance materials. The author's text comes from the SLO provided by the jurisdiction. Both sections are unedited.

The subsequent section, "Review of the Author's Text and Potential Improvements," is the focus of the library and should be of greatest interest to the reader. This section analyzes the text written by the author from the jurisdiction and provides considerations for improving the quality of the individual element.

An overall summary of the entire SLO follows the presentation of the elements and concludes the review of the SLO.

The appendix contains what the RSN calls an "element comparison tool," which links the name of the element used by this jurisdiction to the standardized term used in the SLO Library. The comparison table intends to provide readers with the means to compare elements across SLOs, even if they are called by different names.

New York Contextual Information

SLO Implementation Timeline	
School year the jurisdiction piloted or plans to pilot SLOs without stakes for teachers[1]	2011–2012
School year the jurisdiction piloted or plans to pilot SLOs with stakes for teachers[2]	N/A
School year began or plans to begin large scale implementation	2012–2013
SLO Development and Approval	
Who develops SLOs?	Individual teachers, grade- or content-level teams of teachers, school administrators and district administrators do. Given State regulations and framework, district decisions and school decisions, teachers propose SLOs and targets in consultation with lead evaluator; obtain data on students for baselines, reflect on results and use these to plan future practice.
Are collectively developed SLOs permitted (for example, by teams of teachers and administrators)?	Yes
Who approves SLOs?	District or school administrators
SLO Use in Evaluation	
Are SLOs required or optional for use in evaluating educators?	Required
Are SLOs the sole measure of student growth in the evaluation system? If not, what other measure(s) does the jurisdiction use?	No, New York uses its own growth measure for those to whom it applies.
Does the jurisdiction use SLOs to determine educator compensation?	No
What weight does the SLO carry in determining the summative rating for teachers in the jurisdiction's evaluation system?	It carries up to 20 percent for those teachers who do not receive State-provided growth measures. These teachers may also have an additional 20 percent of their evaluation based on SLOs, depending on locally negotiated decisions.
What weight does the SLO carry in determining the summative rating for administrators in the jurisdiction's evaluation system?	It carries up to 20 percent for principals who do not receive State-provided growth measures. These principals may also have an additional 20 percent of their evaluation based on SLOs, depending on locally negotiated decisions.
SLO Implementation	
How many SLOs are required for most teachers?	Enough to cover more than 50 percent of students across the courses and sections taught
How many SLOs are required for most school administrators?	Enough to cover more than 30 percent of students in the school building
Which teachers and administrators are required to use SLOs?	Teachers and administrators who do not have State-provided growth scores
SLO Assessment	
Who selects which assessments are used for SLOs?	District and State administrators
Are there standards or required development processes for assessments created by teachers, schools, or districts? If so, what are they?	The State uses a request for quotation (RFQ) process to approve third-party assessments for use in evaluating SLOs. The school district, regions and the Boards of Cooperative Educational Services (BOCES) may develop assessments for which the district or BOCES verifies comparability and rigor, based on standards of educational and psychological testing. New York also requires educators to use a State-developed SLO template for use with their SLOs.
What types of assessments are permitted?	District, regional, or BOCES-developed, State-approved third-party, and State and Regents assessments
Are performance or portfolio-based assessments permitted for SLOs?	Yes
Are commercially available assessments permitted for SLOs?	Yes

[1] SLOs will not be used in educator evaluations
[2] SLOs may be used in educator evaluations

Student Learning Objective: Pre-Calculus (Grades 10-11)

Element List

Student Population

Standardized Name

Student Population

JURISDICTION'S DESCRIPTION OF THE ELEMENT

These are the students assigned to the course section(s) in this SLO - all students who are assigned to the course section(s) must be included in the SLO. (Full class rosters of all students must be provided for all included course sections.)

AUTHOR'S TEXT FOR THE ELEMENT

44 Honors Pre-Calculus students (43 juniors, 1 sophomore)

REVIEW OF AUTHOR'S TEXT AND POTENTIAL IMPROVEMENTS

The author indicates the number of students included in the SLO and breaks them down by grade level. There is no roster of students, which is required by the State.

While New York does not require this, the author might consider describing the students in terms of their needs and strengths. This demonstrates knowledge of students and can help pinpoint specific areas of focus.

Learning Content

Standardized Name

Learning Content

JURISDICTION'S DESCRIPTION OF THE ELEMENT

What is being taught over the instructional period covered? Common Core/National/State standards? Will this goal apply to all standards applicable to a course or just to specific priority standards?

AUTHOR'S TEXT FOR THE ELEMENT

All aspects of derivatives, basic integration, exponential growth and decay, projectile motion using derivatives, trigonometric functions/equations, and logarithms.

REVIEW OF AUTHOR'S TEXT AND POTENTIAL IMPROVEMENTS

The author selects specific topics, though it is unclear to which standards the topics align. The topics reflect important course content.

To strengthen this element, the author might consider indicating specific standards to which the selected topics align. Doing so promotes a standards-based approach, which is the intent of the State. Furthermore, an effective SLO aligns content, instructional strategies and the assessments so that instruction supports learning of the content and assessment diagnoses the extent to which students master the content.

Interval of Instructional Time

Standardized Name

Interval of Instruction

JURISDICTION'S DESCRIPTION OF THE ELEMENT

What is the instructional period covered (if not a year, rationale for semester/quarter/etc.)?

AUTHOR'S TEXT FOR THE ELEMENT

Instructional period will be from September through June.

REVIEW OF AUTHOR'S TEXT AND POTENTIAL IMPROVEMENTS

The instructional period is the full academic year, which is consistent with the State guidance.

To strengthen this element, the author might consider including specific start and end dates to clarify when instruction will begin and end for the SLO.

Evidence

Standardized Name

Assessments

JURISDICTION'S DESCRIPTION OF THE ELEMENT

What specific assessment(s) will be used to measure this goal? The assessment must align to the learning content of the course.

AUTHOR'S TEXT FOR THE ELEMENT

Student performance on final exam.

REVIEW OF AUTHOR'S TEXT AND POTENTIAL IMPROVEMENTS

The author lists the final exam as the evidence, though he or she cites no pre-assessment. The type, format and developer of the assessment are unclear. The actual final exam is not available.

The pre-assessment (or historical data used as baseline) and the summative assessment need to be specified. If a pre-assessment is used, both it and the summative assessment should be included as part of the SLO, where permissible. Identifying and describing these assessments helps clarify the basis for student growth. This also makes it possible to determine the extent to which assessments align to the learning content and are rigorous.

Baseline

Standardized Name

Baseline

JURISDICTION'S DESCRIPTION OF THE ELEMENT

What is the starting level of students' knowledge of the learning content at the beginning of the instructional period?

AUTHOR'S TEXT FOR THE ELEMENT

100%-35%	25%-34%	15%-24%	0%-14%
0	9	31	4

REVIEW OF AUTHOR'S TEXT AND POTENTIAL IMPROVEMENTS

The author identifies four categories of percentages. While it appears these reflect student baseline score categories, labeling the two rows would add clarity.

Including additional data sources describing student abilities and needs would strengthen this SLO. Performance in other math courses is relevant, and could provide a fuller portrait of the starting points for these students.

Target(s)

Standardized Name

Student Growth Targets

JURISDICTION'S DESCRIPTION OF THE ELEMENT

What is the expected outcome (target) of students' level of knowledge of the learning content at the end of the instructional period?

AUTHOR'S TEXT FOR THE ELEMENT

75% - 85% of students will score 80% or higher on final exam.

REVIEW OF AUTHOR'S TEXT AND POTENTIAL IMPROVEMENTS

The stated goal is for 75–85 percent of students to score 80 percent or above on the final exam, reflecting a "growth to mastery" approach (for example, all students must grow to a certain level of mastery, such as 80 percent). This represents a significant amount of growth, considering the range of baseline scores provided.

The author might consider justifying why the targets represent rigorous yet attainable growth. Given three categories of student performance on the pre-assessment, consider setting student targets in a tiered or individualized approach, to account for differences in their initial levels of learning.

HEDI Scoring

Standardized Name
Scoring

JURISDICTION'S DESCRIPTION OF THE ELEMENT

How will evaluators determine what range of student performance "meets" the goal (effective) versus "well-below" (ineffective), "below" (developing), and "well-above" (highly effective)?

AUTHOR'S TEXT FOR THE ELEMENT

Highly Effective (18-20 points)	Effective (9-17 points)	Developing (3-8 points)	Ineffective 0-2 points)
85%-100% of students demonstrate mastery (80%) on final exam	75%-84% of students demonstrate mastery (80%) on final exam	65%-74% of students demonstrate mastery (80%) on final exam	<65% of students demonstrate mastery (80%) on final exam

REVIEW OF AUTHOR'S TEXT AND POTENTIAL IMPROVEMENTS

The author provides a range of percentages for each of the four categorized levels. Three-fourths of students must meet targets for the teacher to earn "effective," which reflects high expectations.

To strengthen this element, the author might include specific percentages of students required to meet targets for each point value in the scoring system. For example, he or she might indicate what specific percentage would yield 9 points, 10 points, 11 points and so on.

Rationale

Standardized Name
Rationale

JURISDICTION'S DESCRIPTION OF THE ELEMENT

Describe the reasoning behind the choices regarding learning content, evidence, and target and how they will be used together to prepare students for future growth and development in subsequent grades/courses, as well as college and career readiness.

AUTHOR'S TEXT FOR THE ELEMENT

Mastery rates on final exam will be used to aid in determining proper placement in AB or BC Calculus. Also, final exam scores are an effective predictor of student performances in AP Calculus in general.

REVIEW OF AUTHOR'S TEXT AND POTENTIAL IMPROVEMENTS

This element indicates mastery rates help determine future course placement and can predict performance in future courses. Noting that the final exam informs and predicts future course performance helps to substantiate the selection of the evidence.

Providing the justification for the learning content and targets would improve the quality of the SLO, as would explaining how mastery rates will inform future class placement.

Overview of New York Pre-Calculus (Grades 10-11)

This Pre-Calculus SLO addresses significant topics for the course, but needs to identify the specific standards from the approved set of course standards. Historical data or a pre-assessment used as baseline needs identification. If a pre-assessment is used, both it and the summative assessment (final exam) need to be included, where permissible, to help clarify the degree of rigor and alignment in the SLO. If these assessments are not available for this purpose, then the assessments or historical data would benefit from greater detail in their description. While baseline scores are present, an interpretation of what the results mean in light of the selected content would enrich the presentation of the data. The author uses a growth-to-mastery approach, which may be appropriate depending on the rationale for the targets. However, justifying the selection of the learning content would strengthen this SLO.

Appendix: Tool for Comparing SLO Elements Across Jurisdictions

New York Element Name	Standardized Name
Student Population	Student Population
Learning Content	Learning Content
Interval of Instructional Time	Interval of Instruction
Evidence	Assessments
Baseline	Baseline
Target(s)	Student Growth Targets
HEDI Scoring	Scoring
Rationale	Rationale

An earlier version of this document was developed under the auspices of the Reform Support Network, with funding from the U.S. Department of Education under contract #GS-23F-8182H. This publication features information from public and private organizations and links to additional information created by those organizations. Inclusion of this information does not constitute an endorsement by the U.S. Department of Education of any products or services offered or views expressed, nor does the Department of Education control its accuracy, relevance, timeliness or completeness.