Department of Research and Evaluation
AUSTIN INDEPENDENT SCHOOL DISTRICT

AISD REACH Program Update: Student Learning Objective Assessments

Introduction

The Austin Independent School District (AISD) implemented student learning objectives (SLOs) in 2007–2008 as part of the AISD REACH strategic compensation initiative. Each participating teacher wrote two SLOs[1] and determined the appropriate assessment that would be used to measure whether each student attained the growth target. REACH required students to achieve minimum growth of half the distance between the pretest score and a perfect score, but some principals extended the growth expectation (e.g., all students must score ≥70%, regardless of pretest score). Teachers could select from a list of preapproved assessments or could create their own assessments to be approved by their principal and central office program staff (see Appendix A for details).

The freedom with which teachers were allowed to construct assessments and even to select objectives was dependent upon the home campus, however (Courtemanche, Orr, & Schmitt, 2014). Although many teachers were granted extensive latitude, others played a smaller role in the decision-making process. Administrators at a few campuses directed the focus of SLOs for the year, and some required teachers to choose assessments from the preapproved list. Consequently, SLO topics were sometimes determined by what was available on the preapproved list of assessments. It was important to understand the implications of assessment choice for teachers' SLO success.

Previous research indicates the rates at which teachers met SLO targets varied due to factors such as school level, teaching assignment, and school SLO requirements (Schmitt, 2011; Schmitt, Cornetto, Malerba, Ware, Bush-Richards, & Imes, 2009; Schmitt, Lamb, Cornetto, & Courtemanche, 2014). Discussions with teachers and program staff also suggest assessment-related issues such as the timing, format, and source of assessments may contribute to teachers' likelihood of SLO success (Courtemanche et al., 2014). This report addresses the extent to which assessment characteristics were related to teachers' success with SLOs in 2013–2014.

REACH Preapproved Assessments

During the summers of 2012 through 2014, teachers were invited to attend assessment writing workshops, during which participants honed assessment development techniques and created standards-based assessments for topic areas identified as most common areas of need. Assessments that met the program standard for rigor (Appendix B) were approved for use and were made available to teachers. In 2013–2014, the list of preapproved assessments grew to include more than 100 assessments across grade levels, covering a multitude of topic areas.

Preapproved assessments included multiple choice assessments; rubric or performance assessments (e.g., writing, art, musical performance, keyboarding); and assessments with a combination of multiple choice and performance tasks, including essay, short answer, and manipulation of objects.

[1] Most teachers wrote one SLO for their own class (i.e., individual SLO) and one SLO with a team of colleagues (i.e., team SLO). Some teachers for whom team SLOs were not feasible established two individual SLOs (e.g., foreign language, art).

DRE Report # 13.89 RB
November 2014
Lisa Schmitt, Ph.D.

Methodology

Teachers' success with SLOs was defined in two ways: (a) whether the teacher met his or her target for a specified percentage of students to accomplish a specified amount of growth and (b) the percentage of the teacher's students who accomplished the specified amount of growth, regardless of whether the target was met. Differences according to teacher characteristic (i.e., school level and teacher type) and assessment characteristic (i.e., assessment source and assessment format) were examined using analysis of variance (ANOVA) or *t*-tests when sample sizes provided sufficient power and balance to appropriately and adequately detect statistical significance. When group sample sizes were small, differences were described with Cohen's *d* to provide an indicator for the magnitude of the effect size.

SLO Success, by Teacher Characteristic

In 2013–2014, 82.5% of REACH teachers met their targets for student growth on their primary individual SLO. As in previous years, elementary teachers were significantly more likely to meet their individual SLO targets than were middle or high school teachers (Table 1). Similarly, on average, a greater percentage of elementary students than of middle or high school students met their teachers' individual and team SLO growth targets.

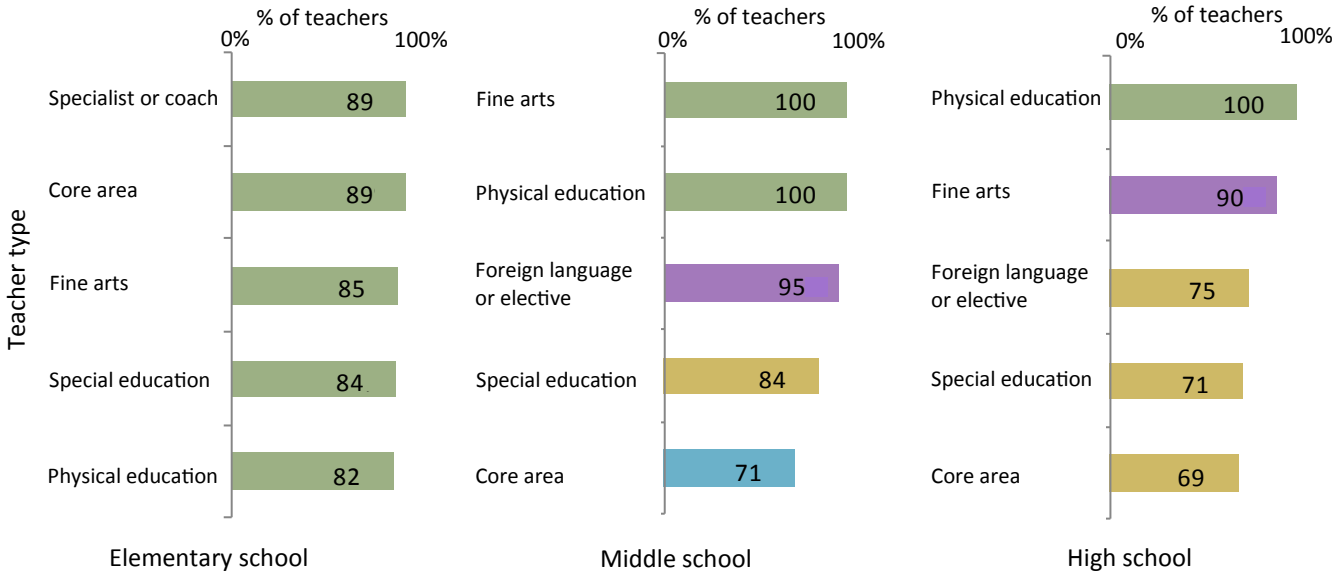
Table 1. Percentages of Teachers who Met Student Learning Objective (SLO) Growth Targets and Students who Met Teachers' SLO Growth Targets in 2013–2014, by Level

		% of teachers who met SLO targets			% of students who met teachers' SLO targets		
SLO type		Elementary	Middle	High	Elementary	Middle	High
Individual SLO 1		87.7[ab]	79.6[a]	74.3[b]	82.7[ab]	77.2[a]	73.3[b]
	n	986	221	544	986	221	544
Individual SLO 2		86.0	71.4	72.4	80.4	75.8	73.8
	n	50	35	76	50	35	76
Team SLO		87.4	83.3	84.4	82.0[ab]	74.0[a]	76.8[b]
	n	936	186	468	936	186	468

Source. SLO database
Note. Results are based on analysis of variance (ANOVA).
Within variable and SLO type, percentages sharing the same superscript are significantly different at $p < .05$.

Although elementary teachers were more likely than secondary teachers to meet their SLO targets, the percentage of elementary teachers who met SLO growth targets did not vary by teacher type in 2013–2014 (Figure 1). However, differences in SLO success were moderate to strong between most teacher types at the middle and high school levels. Middle and high school fine arts and physical education teachers were particularly more likely to meet their SLO growth targets than were other teacher types at the secondary level.

Figure 1. Percentage of Teachers who Met Student Learning Objective (SLO) Growth Targets in 2013–2014, by Level and Teacher Type



Source. SLO database
Note. Results are based on Cohen's *d*. Group *n* counts are displayed in parentheses within each bar. Within level, teacher types with different colors indicate differences between groups with effect sizes $d > .30$.

SLO Success, by Assessment Characteristic

In 2013–2014, 596 REACH teachers (34.1%) used a preapproved assessment and 1,154 REACH teachers (65.9%) developed their own assessments to measure student growth on their primary individual SLO. Middle and high school teachers were more likely to develop their own assessments than were elementary teachers. However, no significant differences were found between the percentages of students who met SLO targets using preapproved assessments and of students who met SLO targets using teacher-made assessments (Table 2). In other words, the student performance on preapproved and teacher-made assessments did not appear to differ.

Table 2. Assessment Source and Mean Percentage of Teachers' Students who Met Individual Student Learning Objective (SLO) Growth Targets, by Level

	Assessment source				Mean % of students who met target	
	Preapproved assessment		Teacher-made assessment			
School level	*n* teachers	% of teachers	*n* teachers	% of teachers	Preapproved assessment	Teacher-made assessment
Elementary	502	51%	484	49%	82.6	82.9
Middle	39	18%	182	82%	75.5	77.6
High	55	10%	488	90%	78.3	72.7

Source. SLO database
Note. Results are based on independent samples *t*-tests. No significant differences were found between teachers who used preapproved or teacher made assessments.

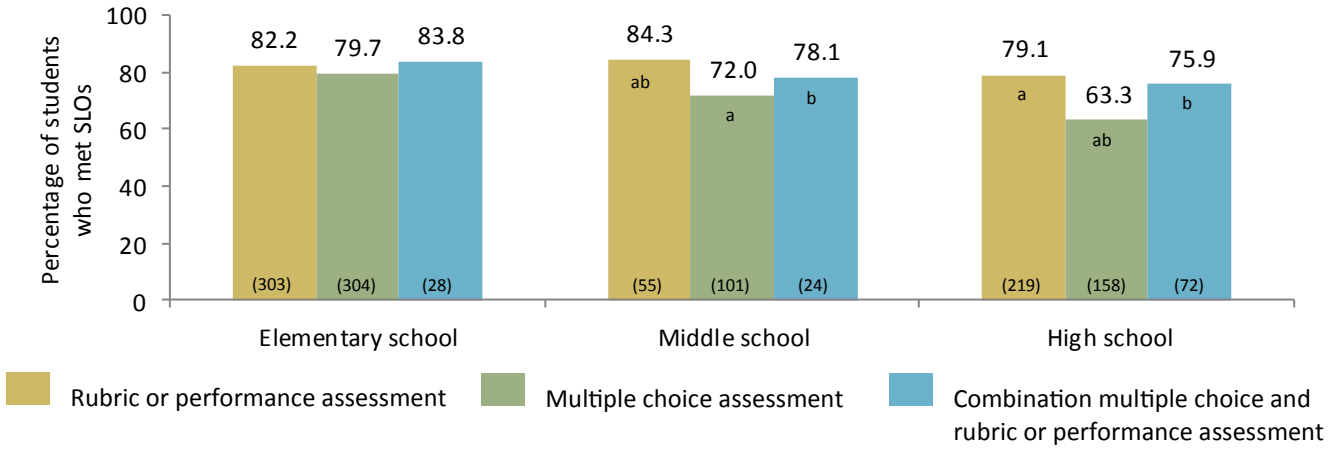
Assessment format was not specified in the SLO database for all assessments. However, descriptions were sufficient to categorize more than 70% of assessments as rubric or performance assessments, multiple choice assessments, or assessments with a combination of multiple choice and rubric or performance-based items (Table 3). An effect was found for assessment format. In general, students were more likely to meet teachers' growth targets when teachers used rubric or performance assessments than when they used multiple choice assessments (Figure 2). Results were similar regardless of assessment source (Table 4).

Table 3. Number of Individual Student Learning Objectives (SLOs) Using Assessment Format, by Level and Teacher Type

		Assessment Format								
		Rubric or performance		Multiple choice		Multiple choice and rubric or performance		Unspecified		Total
School level	Teacher type	*n*	%	*n*	%	*n*	%	*n*	%	(ALL)
Elementary	Core area	193	26	253	34	18	2	279	38	743
	Fine arts	48	81	-	-	4	7	7	12	59
	Physical education	27	96	-	-	1	4	-	-	28
	Special education	23	21	30	27	5	5	53	48	111
	Specialist or coach	12	27	21	47	-	-	12	27	45
Middle	Core area	9	7	82	62	14	11	28	21	133
	Fine arts	18	82	.	.	2	9	2	9	22
	Foreign language and electives	13	65	3	15	2	10	2	10	20
	Physical education	8	100	-	-	-	-	-	-	8
	Special education	4	13	15	47	4	13	9	28	32
High	Core area	66	28	92	39	39	17	37	16	234
	Fine arts	41	85	.	.	2	4	5	10	48
	Foreign language and electives	64	45	42	29	18	13	19	13	143
	Physical education	21	95	-	-	-	-	1	5	22
	Special education	25	30	22	27	10	12	26	31	83

Source. SLO database

Figure 2. Percentage of Students who Met Teachers' Primary Individual Student Learning Objective (SLO) Growth Targets, by Level and Assessment Format



Source. SLO database

Note. Group *n* counts are displayed in parentheses within each bar. Results are based on Cohen's *d.* Within school level, percentages sharing the same superscript obtained an effect size of $d > .30$, indicating an effect for assessment format.

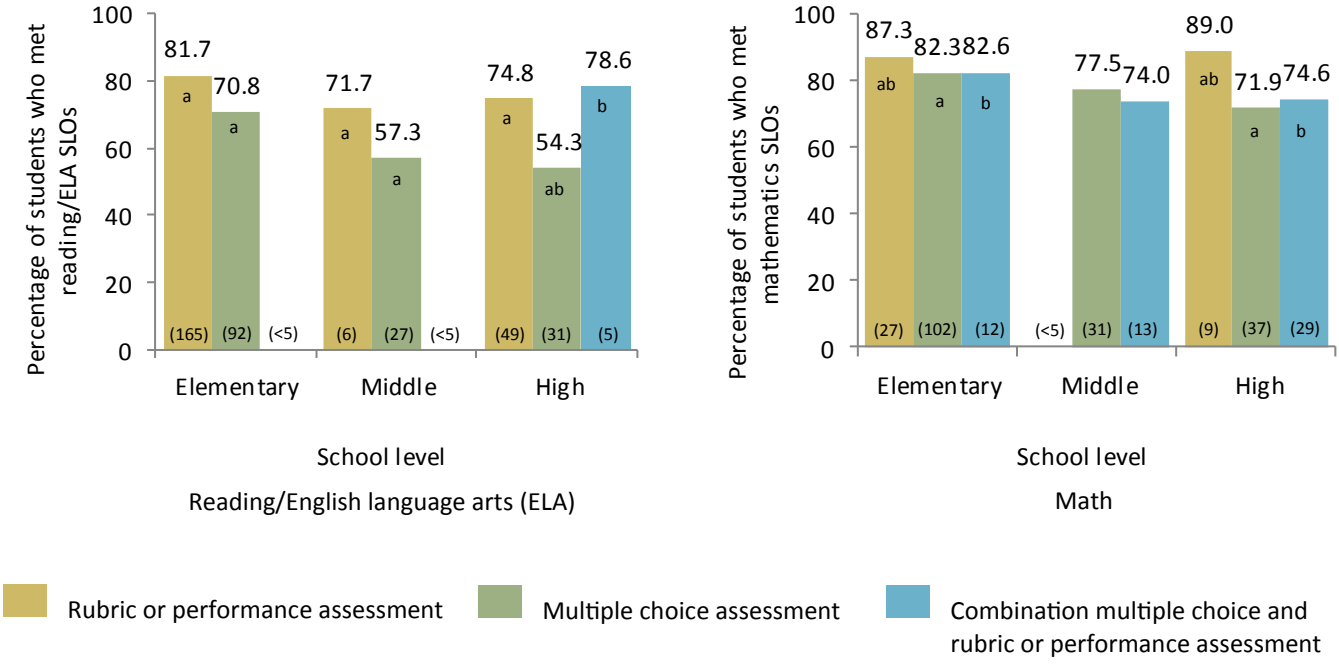
Table 4. Percentage of Students who Met Teachers' Primary Individual Student Learning Objective (SLO) Growth Targets, by Level, Assessment Source, and Assessment Format

		Preapproved assessment			Teacher-made assessment		
School level		Rubric or performance	Multiple choice	Multiple choice and rubric or performance	Rubric or performance	Multiple choice	Multiple choice and rubric or performance
Elementary	mean % of students	84.4[a]	77.5[a]	81.0	80.5[a]	82.3[b]	90.6[ab]
	n	129	165	20	174	139	8
Middle	mean % of students	79.3[a]	73.3[a]	-	85.7[a]	71.6[a]	78.0[a]
	n	12	19	-	43	82	22
High	mean % of students	86.8[ab]	70.8[a]	67.4[b]	78.2[a]	62.2[ab]	76.5[b]
	n	23	20	5	196	138	67

Source. SLO database
Note. Results are based on Cohen's *d.* Within assessment source and school level, percentages sharing the same superscript obtained an effect size of $d > .30$, indicating an effect for assessment format.

Sample sizes were not sufficient to examine differences in SLO success according to assessment format within all subject areas. However, data were sufficient to examine whether assessment format was related to success with reading/English language arts (ELA) and mathematics (math) SLOs. Students were more likely to meet reading/ELA and math SLOs when their teachers used rubric or performance-based assessments than when their teachers used multiple choice assessments to measure their growth (Figure 3).

Figure 3. Percentage of Students who Met Teachers' Primary Individual Student Learning Objective (SLO) Growth Targets for Reading/English Language Arts and Mathematics SLOs, by Level and Assessment Format



Source. SLO database
Note. Group n counts are displayed in parentheses within each bar. Results are based on Cohen's *d.* Within subject and school level, percentages sharing the same superscript obtained an effect size of $d > .30$, indicating an effect for assessment format.

Conclusion

In 2013–2014, the majority of REACH teachers met their targets for student growth on their SLOs. As in previous years, elementary teachers were more likely to meet their targets than were middle or high school teachers, and core area middle and high school teachers were least likely of all teacher types to meet their SLO targets. Previous studies have not identified the reason for these disparities, though assessment characteristics seem a plausible cause. Thus, it was important to describe the differences in SLO success according to assessment characteristics. Indeed, some differences were found in teachers' SLO success, based on characteristics of the assessments they used.

Middle and high school teachers were more likely to have developed their own assessments than to have selected from the list of preapproved assessments, likely because the selection of secondary preapproved assessments did not address the diverse course offerings at the secondary level. However, evidence showed the source of assessment was not important. The student performance on preapproved and teacher-made assessments did not differ. Thus, the selection of preapproved versus teacher-made assessments was unrelated to teachers' success with SLOs. The format of assessment used, however, was related to SLO success. Students were more likely to meet teachers' growth targets when teachers used a rubric or performance assessment than when they used a multiple choice assessment to measure students' growth on the SLO during the year.

Several reasons could explain the tendency for students to more frequently meet growth targets when measured with a rubric or performance assessment than when measured with a multiple choice assessment. First, performance-based assessments provide opportunities for teachers to give partial credit for students' work. Conversely, multiple choice assessments provide credit only for correct answers. For this reason, performance-based assessments may allow for more nuanced measurement of students' knowledge and skills than do multiple choice assessments. Also, at the secondary level, students exercise more choice over their course selections in a variety of subject areas than is possible for their course selections in core area subjects. The rubric or performance-based assessment format may align better with the subjects students select and find most engaging (e.g., fine arts and physical education), confounding growth that occurs due to student motivation with growth measured best with a specific assessment format. In other words, perhaps students simply demonstrate more growth in subject areas that are more engaging than in subject areas that are less engaging, regardless of assessment format. Additionally, it is possible that the minimum growth the REACH program requires on multiple choice assessments is more difficult for students to attain than the minimum growth required on rubric or performance assessments. Finally, it is unclear whether the variability in schools' minimum growth requirements influenced the relationship found between SLO performance and assessment format.

In Spring 2014, a sample of teachers who used multiple choice SLO assessments indicated they did so to prepare students for the format of the state assessments, to reduce the amount of work involved, and to avoid the potential subjectivity of rubric or performance assessments (Courtemanche et al., 2014). Teachers who selected performance-based assessments indicated they were more conducive and authentic to some non-core

areas. These considerations reflect valid concerns for teachers in different subject areas. However, in practical terms, if core area teachers at the middle and high school levels continue to use multiple choice assessments more than they use rubric or performance assessments, they are likely to meet SLO targets less frequently than their peers in other teaching roles unless minimum growth targets are adjusted to reflect differences associated with assessment format. Future studies should examine the threshold for growth on a rubric or performance assessment that results in a comparable percentage of teachers who meet their SLO targets. Future studies also should examine whether teachers who used multiple choice assessments were differentially affected by the more rigorous growth requirements.[2]

[2] Although the REACH program allowed principals to extend the growth requirements for teachers to earn stipends for SLO performance, SLO growth requirements for teachers participating in the new teacher appraisal system did not differ by school.

Appendix

Appendix A. Student Learning Objective Assessment Process (Excerpt from REACH SLO Manual)

Guidelines

- Teacher developed assessment must be created through collaboration, not in isolation.
- All questions and test content must be aligned with the identified learning objective and grade level state or national standards.
- All content in your learning objective must be covered in the assessment (STAAR reporting categories must be covered in their entirety).
- Assessments must measure individual student performance, not a group's performance.
- Individual test items must vary in levels of difficulty (25% from Level 1—remembering, 50% from Level 2—application, 25% from Level 3—analysis).
- TEKS/SEs and level of question must be identified and labeled for each question on test. An assessment map must be attached for all multiple choice tests.
- Learning objectives can be as narrow as three student expectations from TEKS but no broader than a single entire STAAR reporting category.
- Assessments must meet at least one of the following requirements for length.
    - Multiple Choice: Minimum 10 questions for Pre-K, 15 questions for 1st and 20 questions for grades 2-12
    - Multiple Choice: Must contain at least 4 answer choices
    - Short Answer: Minimum 5 questions
    - Essay: Responses must be at least 1 page in length and graded using a rubric
- Rubrics must clearly define the criteria for achieving a specific number of points in multiple related skills at multiple levels of proficiency. All descriptors must be specific. The highest level of attainment must allow students to exceed grade level expectations.
- When using a rubric, students must receive an independent score for each skill being assessed, which can be totaled or averaged into a final score.
- Teachers who give the same assessment (e.g., team SLOs) must give the same assessment in the same way (procedure/protocol) at the same time (Follow STAAR testing protocol and guidelines).
- Requirements for ensuring test integrity:
    - Give students the test only one time per administration (pre and post).
    - Tests should be administered to all students on the same day. Absent students should make the test up ASAP.
    - Do not review questions or answers with students at anytime throughout the year.
    - Students should not grade the assessments
    - Do not send tests home with students.
    - Make assurances against cheating (students may not take the test in groups).
    - Monitor students and do not alter their answers.
    - Teachers may not complete answer documents for students unless required by the student's IEP.
    - Pre-tests must show effort. Incomplete essays and multiple choice tests with excessive blanks will not be considered complete and will therefore count as a "no," regardless of the post-assessment score. We suggest monitoring students during test administration as the test cannot be give again at a later date.
    - Hints, helping tools, detailed instructions, etc., are not allowed. If they are an integral part of your test, they must be clearly identified in your SLO entry, approved by your principal and given on both the pre and post-assessments.
- Approved district assessments are: TPRI/Tejas LEE, DRA/EDL, DIBELS/IDEL, Flynt Cooter, Fignessgram and NOVANET BASI
- True/False questions may not be used.

Subject Specific Requirements

Language Arts

- Fluency may not be used alone. It may only be combined with comprehension and/or other more thorough measurements
- High frequency word lists may not be tested in isolation.

Primary Elementary

- Assessments must give students room to exceed expectations
- Growth targets must be based on grade level standards
- Pre-K and Kindergarten growth targets must reach an attainment level of 70%

Fine Arts and CTE

- One assessment must be performance based (project or performance)

Keyboarding

- Must include both speed and accuracy
- Must be documented in Microtype with official report provided verifying date of administration

Foreign Language

- Neither conjugation nor vocabulary may be tested in isolation

Physical Education

- One SLO must be on cardiovascular fitness (Either Fitnessgram Pacer or a more comprehensive measurement).

Guiding Questions

- What style assessment will best measure student performance and growth in my learning objective?
- What resources are available to create or find tests in my subject area?
- Will my students be exposed to any of these questions again throughout the year?
- Does my assessment measure depth of understanding, and are there questions that would challenge even my most knowledgeable students?

Directions

- Check with your SLO Facilitators and department chair to determine campus expectations related to assessments/approval.
- Using the guidelines above, find or create an assessment to be used for your SLO. There are approved Reach common assessments available in the SLO database.
- Modify according to student's IEP, 504 and/or ELL status.
- Get approval for your test per campus directions.
- Administer assessment to students (make a plan to ensure that absent and newly enrolled students who enter on or before January 20 are given the pre-assessment.

Materials/Resources

- REACH approved SLO assessments
- Suggested resources for building SLO assessments: All assessments created using these (or any other resources) are not preapproved and must meet the guidelines above.
    - District assessments
    - Department chair and colleagues
    - STAAR and TAKS released tests
    - Study guides
    - Test creators from textbooks
    - Schoolnet item bank

Appendix B. Student Learning Objective Rigor Rubric (Replication of REACH Student Learning Objective Rigor Rubric)

	4 Exemplary	3 Proficient	2 Progressing	1 Does not meet standard
Assessment	• Variety of levels of questions (beginning, progressing, proficient, advanced) • At least one very challenging question • Sufficient number of items • Grade level appropriate • Extends and deepens knowledge • Measures what is needed	• Variety of levels of questions (beginning, progressing, proficient, advanced) • Sufficient number of items • Grade level appropriate • Measures what is intended	• Addresses 2 or 3 levels of questions • Spread of questions is insufficient • Grade level appropriate • Mostly measures what is intended	• Addresses only 1 level of question • Insufficient number of questions • Not grade level appropriate • Does not measure what is intended
Objective	• Reflects a high need • Yearlong objective • Grade level appropriate • Deepens and extends knowledge for all students	• Reflects a significant need • Yearlong objective • Grade level appropriate	• Addresses a need • Yearlong objective • Grade level appropriate	• Does not address a need • Not a yearlong objective • Not grade level appropriate
Growth Target	• Addresses more than 75% of students • Substantial growth expected (2 or more years) • Students and teachers exceeding expectations	• Addresses 75% of students (exceptions for sped, small classes, etc.) • Significant individual growth (at least one year) • Pushes students and teachers to exceed typical expectations	• Addresses fewer than 75% of students • Moderate individual growth (less than one year) • Students and teachers barely meet expectations	• Does not address 75% of students • Minor individual student growth (less than 1/2 year) • Students and teachers do not meet expectations

References

Courtemanche, M., Orr, A., & Schmitt, L. (2014). *AISD Reach program update: 2013–2014 participant feedback* (DRE Publication No. 13.39). Austin, TX: Austin Independent School District.

Schmitt, L. N. T. (2011). *AISD Reach program update, 2010–2011: Texas Assessment of Knowledge and Skills growth and student learning objectives* (DRE Publication No. 10.84 RB). Austin, TX: Austin Independent School District.

Schmitt, L. N. T., Cornetto, K. M., Malerba, C., Ware, A., Bush-Richards, A., & Imes, A. (2009). *Strategic compensation initiative Reach pilot: 2007–2008 evaluation report* (DRE Publication No. 07.86). Austin, TX: Austin Independent School District.

Schmitt, L. N. T., Lamb, L. M., Cornetto, K. M., & Courtemanche, M. (2014). *AISD Reach program update, 2012–2013: Student learning objectives* (DRE Publication No. 12.83b). Austin, TX: Austin Independent School District.