Department of Research and Evaluation
Austin Independent School District

AISD REACH Program Update, 2012–2013:

Student Learning Objectives

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March 2014
Publication 12.83B

EXECUTIVE SUMMARY

During the 2012–2013 school year, 2,064 educators at 38 AISD REACH schools wrote a total of 4,128 student learning objectives (SLOs) to address the needs of the students they served. Overall, 87% of educators earned a stipend for meeting at least one of their two SLOs. The percentage of teachers who met at least one SLO ranged from 53% to 100% across participating schools, and there were some differences in the percentages of SLOs met by various staff groups. For example, librarians and secondary core area teachers met fewer SLOs than did their peers.

Teachers' attitudes toward SLOs have remained stable since 2009–2010; about two-thirds of teachers agreed or strongly agreed that using SLOs has improved their teaching. However, teachers with more SLO experience expressed more favorable attitudes toward the program and performed better on SLOs than did those with less SLO experience. Although SLO performance was unrelated to teachers' reported data use, reflective teaching, or collaboration, teachers with more SLO experience reported more data use and collaboration than did those with less SLO experience, after controlling for years of teaching experience. In addition, data suggested REACH teachers (i.e., teachers who completed SLOs) may have engaged in more data use than did their peers at similar non-REACH schools.

Within REACH, the school-wide percentage of teachers from subjects and grade levels tested by the State of Texas Assessment of Academic Readiness (STAAR) who met team SLOs was related to school-wide performance on the STAAR. Additionally, although the ability to examine student performance in relation to specific areas was limited, results suggested fourth-grade students improved significantly on STAAR from Spring 2012 to Spring 2013 in the reporting category of Numbers, Operations, and Quantitative Reasoning when their teachers targeted that area with an SLO. Evidence also suggested students whose teachers had targeted specific areas outperformed matched peers at non-REACH schools in 17% of STAAR reporting categories studied, while matched peers outperformed the REACH students in the SLO-targeted areas in only 2% of instances. Improved SLO data collection processes will provide better opportunities to examine the influence of SLOs with more granularity in the future.

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INTRODUCTION

Student Learning Objectives (SLOs) are a central component of the AISD REACH strategic compensation program, which served 38 high-needs schools in Austin Independent School District (AISD) in 2012–2013. SLOs are targets for student growth that are designed to assist teachers in focusing instruction on a particular area of student need and monitoring students' progress to inform adjustments in practice. SLOs are based on the Texas Essential Knowledge and Skills (TEKS) and are established and implemented through a multi-step process, including analyzing student data, collaboration with colleagues, guidance and approval from principals and central administrators, and measuring students' progress. Teachers work toward one individual SLO for their own students and one team SLO for the students served by a group of colleagues (e.g., a grade level team). Teachers whose students meet their SLOs receive a stipend of $1,500 per individual SLO and $2,000 per team SLO met. Teachers who use SLOs as an instructional tool are expected to exhibit increased use of data for instructional planning, increased collaborative behaviors, and an increase in reflective practice (Figure 1). These practices, associated with high-quality teaching, are expected to result in greater student growth, and eventually improved campus academic performance (see Appendix A for the full program model). SLOs are designed to operate in conjunction with campus goals, teacher professional development opportunities (professional development units, or PDUs), and feedback from classroom observations to enhance the quality of teaching and learning at participating schools.

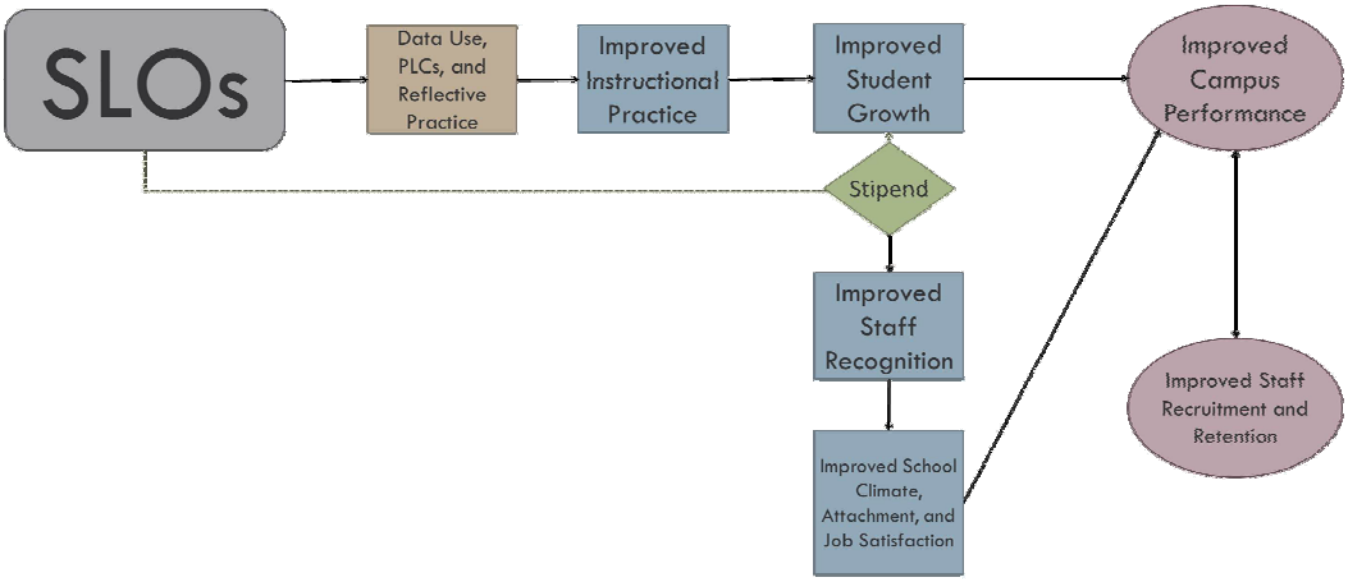
This report describes the SLO results for 2012–2013 and the relationships between SLO performance and various school and teacher characteristics such as campus-specific SLO requirements, school level, and job role. It also describes teachers' perceptions of SLOs and the relationships between SLOs and teachers' data use, reflective teaching, and collaborative behaviors. Finally, the report describes relationships between SLOs and student performance on state assessments. Analyses are presented for metrics measured at the school, teacher, and student levels, and for measures of students' performance (i.e., passing rates) as well as students' growth (i.e., changes in performance over time).

Some data, such as SLO performance metrics, were only available for REACH participants. However, other data (e.g., survey responses and student performance data) were available for teachers and students at both REACH and non-REACH schools. When possible, analyses compare data for REACH

What is AISD REACH?

AISD REACH was designed to advance the district's efforts to recruit, recognize, and retain the best teachers and principals for Austin's schools. Educators at AISD REACH schools, some of the hardest-to-staff in the area, can earn up to $13,000 each year by meeting a variety of performance measures including student learning objectives, professional development units, and rigorous campus goals. In 2011–2012, the average stipend earned was $5,285. For more information about AISD REACH, please visit: http://www.austinisd.org/reach.

Figure 1. Hypothesized Relationships Among Student Learning Objectives (SLOs), Instructional Practice, and Student Achievement



Note. PLCs, or professional learning communities, represent collaborative behaviors with regard to teaching.

participants and non-participants from similar non-REACH schools. These analyses are limited to schools from the first three cohorts of REACH (i.e., those that have been in the program for at least four years) and their comparison schools.

This report represents one in a series of reports about the program elements of REACH. Additional reports describe the findings regarding peer observation, professional development units, novice teacher mentoring, teacher retention, and school-wide performance.

SLO PERFORMANCE IN 2012-2013

In 2012–2013, 2,064 teachers and other educators developed SLOs. Of those, 87% (*n* = 1,794) met at least one SLO and 63% (*n* = 1,301) met both SLOs. Some teachers established two individual SLOs, while most established one individual and one team SLO. In all, 75% of all individual and team SLOs were met (1,675/2,222 and 1,420/1,906, respectively). Results differed by school and staff job role.

SLOs for each School

In 2012–2013, 87% of REACH teachers met at least one SLO, but the rates varied by school. Table 1 lists SLO results for each school. All teachers at 11 schools met at least one SLO; at 10 of those schools, 100% of teachers met their team SLOs. At three schools, all teachers met both SLOs. Overall, the same percentages of individual and team SLOs were met, but the likelihood of meeting individual SLOs, team SLOs, or both varied by school (Table 2).

Table 1. Percentage of Teachers Who Met One or Two Student Learning Objectives (SLOs), by School

Level	School	% of teachers who met			Level	School	% of teachers who met		
		1 SLO	2 SLOs	1 or 2 SLOs			1 SLO	2 SLOs	1 or 2 SLOs
High	Akins	28%	49%	77%	Elementary, continued	Graham	0%	100%	100%
	Eastside	21%	54%	75%		Harris	36%	58%	94%
	Lanier	23%	60%	83%		Hart	10%	90%	100%
	LBJ	33%	55%	88%		Jordan	7%	93%	100%
	Reagan	27%	49%	76%		Metz	25%	66%	91%
	Travis	27%	55%	82%		Norman	14%	68%	82%
Middle	Dobie	24%	75%	98%		Ortega	13%	88%	100%
	Garcia	30%	44%	74%		Overton	35%	47%	82%
	Martin	27%	47%	73%		Pecan Springs	16%	84%	100%
	Pearce	35%	48%	83%		Pickle	25%	75%	100%
	Webb	44%	53%	97%		Pleasant Hill	7%	93%	100%
Elementary	Allison	5%	95%	100%		Rodriguez	29%	66%	95%
	Andrews	33%	54%	87%		Sanchez	48%	8%	55%
	Barrington	20%	65%	85%		Sims	21%	79%	100%
	Blanton	16%	65%	81%		Sunset Valley	33%	52%	86%
	Brooke	18%	76%	94%		Walnut Creek	19%	76%	96%
	Brown	29%	24%	53%		Webb Primary	0%	100%	100%
	Dobie Pre-K	0%	100%	100%		Winn	21%	67%	88%
	Govalle	18%	73%	91%		Zavala	26%	66%	91%

Source. SLO database

Table 2. Percentage of Individual and Team Student Learning Objectives (SLOs) Met, by School

Level	School	% of SLOs met		Level	School	% of SLOs met		Level	School	% of SLOs met	
		Individual	Team			Individual	Team			Individual	Team
High	Akins	65%	61%	Elem., cont.	Barrington	78%	72%	Elem., cont.	Overton	62%	68%
	Eastside	68%	61%		Blanton	75%	71%		Pecan Springs	84%	100%
	LBJ	78%	63%		Brooke	84%	87%		Pickle	91%	83%
	Lanier	71%	71%		Brown	49%	27%		Pleasant Hill	93%	100%
	Reagan	59%	67%		Dobie Pre-K	100%	100%		Rodriguez	92%	69%
	Travis	67%	71%		Govalle	87%	77%		Sanchez	37%	26%
Middle	Dobie	78%	95%		Graham	100%	100%		Sims	81%	100%
	Garcia	68%	49%		Harris	79%	73%		Sunset Valley	75%	63%
	Martin	56%	67%		Hart	90%	100%		Walnut Creek	85%	87%
	Pearce	74%	54%		Jordan	93%	100%		Webb Primary	100%	100%
	Webb	86%	59%		Metz	81%	76%		Winn	80%	74%
Elementary	Allison	96%	100%		Norman	75%	75%		Zavala	68%	91%
	Andrews	60%	80%		Ortega	88%	100%				

Source. SLO database

This was due in part to two factors: the length of time the school had been involved in the program (and therefore teachers' familiarity with the process), and school-level variations in the requirements for meeting SLOs. Elementary and middle schools in the first three cohorts of AISD REACH performed better on SLOs than did their peers at schools in the subsequent three cohorts (Table 3).

Table 3. Percentage of Students who Met Teachers' Individual Student Learning Objectives (SLOs), by REACH Implementation Cohort

Level	Percentage of Teachers' Students Meeting SLOs				
	1st 3 cohorts		2nd 3 cohorts		Difference
	N	Mean	N	Mean	
Elementary	426	84.7%	729	76.7%	8.0**
Middle	122	78.5%	148	67.8%	10.7**
High	292	70.3%	318	71.7%	-1.4

Source. SLO database
**$p < .01$

To receive SLO stipends, REACH required that at least 75% of students achieve a teacher's SLO targets, and that targets reflect at least half the distance between pre-test scores and perfect scores. However, some principals established more rigorous decision rules regarding SLO achievement requirements for stipends. Interestingly, at schools that required that 80% of students meet the SLO target, more students met their teacher's SLOs (81% of students, on average) than did so at schools that required the program standard of 75% (76% of students, on average) (Table 4).

Table 4. Comparison of Percentages of Students Meeting Teachers' Individual Student Learning Objectives (SLOs) for Schools with Different Decision Rules

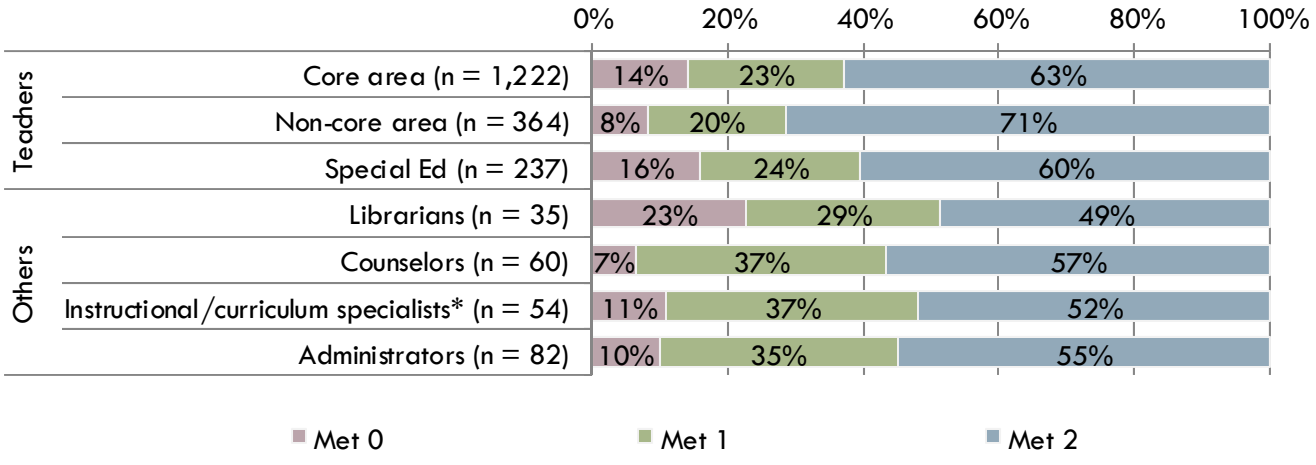
Campus SLO stipend requirement	N	Mean percentage of teachers' students meeting SLOs
At least 75% of students meet target*	1,454	75.5%[ab]
At least 75% of students score 70% or more	174	66.7%[ab]
At least 80% of students meet target	339	81.3%[a]
At least 80% of students score 80% or more	65	86.8%[b]

*Reach program minimum requirement
Source. SLO database
Note. Means sharing the same superscript are significantly different from each other at $p < .05$.

SLOs for each Staff Group

SLOs were completed by classroom teachers and other school staff, including counselors, librarians, and school administrators. In 2012–2013, the rates at which members of these groups met SLOs varied (Figure 2). Among the groups, non-core area teachers had the highest percentage who met both SLOs (71%), and librarians had the lowest percentage who met both SLOs (49%). In addition, librarians had the highest percentage who did not meet either SLO (23%). Focus groups with librarians during the early stages of the AISD REACH pilot revealed that librarians perceived unique challenges to their successful completion of SLOs, such as the amount of time that students were pulled out of library time during testing seasons and variation in the degree of cooperation they were afforded by the teachers with whose students they were working (Schmitt, Cornetto, Lamb, & Imes, 2008).

Figure 2. Percentage of Student Learning Objectives (SLOs) Met, by Staff Group



Source. SLO database; district human resources records
*Staff identified with a teacher job category label including terms "instructional specialist" are included with teachers.

Core area and special education teachers at the secondary level also were less likely than were non-core area teachers to meet SLOs (Table 5).

Table 5. Percentage of Teachers Who Met at Least One Student Learning Objective (SLO), by Staff Group and Level

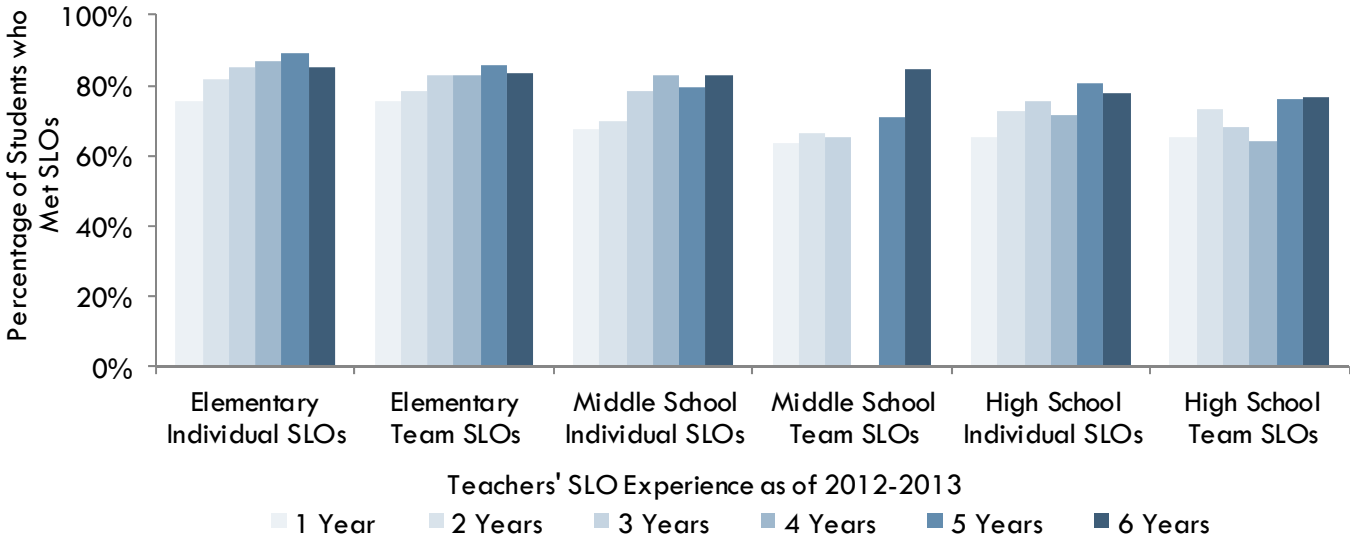
Staff group		Elementary	Middle	High
Teachers	Core area	91%	85%	69%
	Non-core area	98%	95%	89%
	Special Ed	88%	80%	80%
Others	Librarians	76%	100%	67%
	Counselors	100%	77%	95%
	Instructional/curriculum specialist*	86%	100%	100%
	Campus administrators	93%	82%	91%

Source. SLO database; district human resources records
*Staff identified with a teacher job category label including term "instructional specialist" are included with teachers.

Experience with SLOs

We were interested in examining whether teachers with more SLO experience would show better SLO results than those with less SLO experience. Data indicate a significantly higher percentage of students met the SLOs when teachers had more SLO experience than when they had less (Figure 3; Appendix B).

Figure 3. Percentage of Students who Met Teachers' Individual and Team Student Learning Objectives (SLOs) in 2012–2013, by Teachers' Years of SLO Experience and School Level

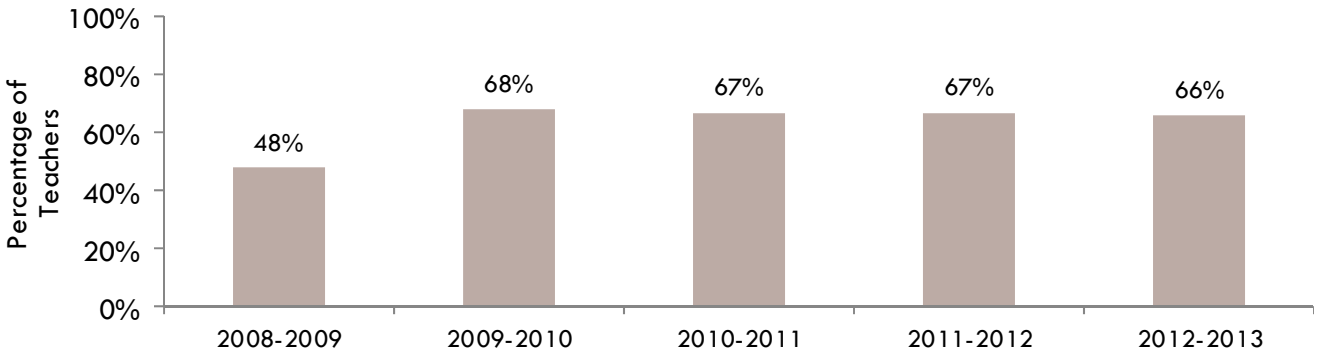


Source. SLO Database

TEACHERS' PERCEPTIONS OF SLOS

Since 2009–2010, most AISD REACH teachers have indicated that the use of SLOs has improved their teaching (Figure 4). A particularly pronounced shift in attitudes occurred in 2009–2010, but attitudes appear to have remained stable since then. However, it is important to note that new schools joined the REACH program each year; thus, the ratings in Figure 4 include teachers who were new to the program as well as those who had participated for multiple years.

Figure 4. Percentage of AISD REACH Teachers Who Agreed or Strongly Agreed that "Using SLOs has improved my teaching," 2008–2009 Through 2012–2013



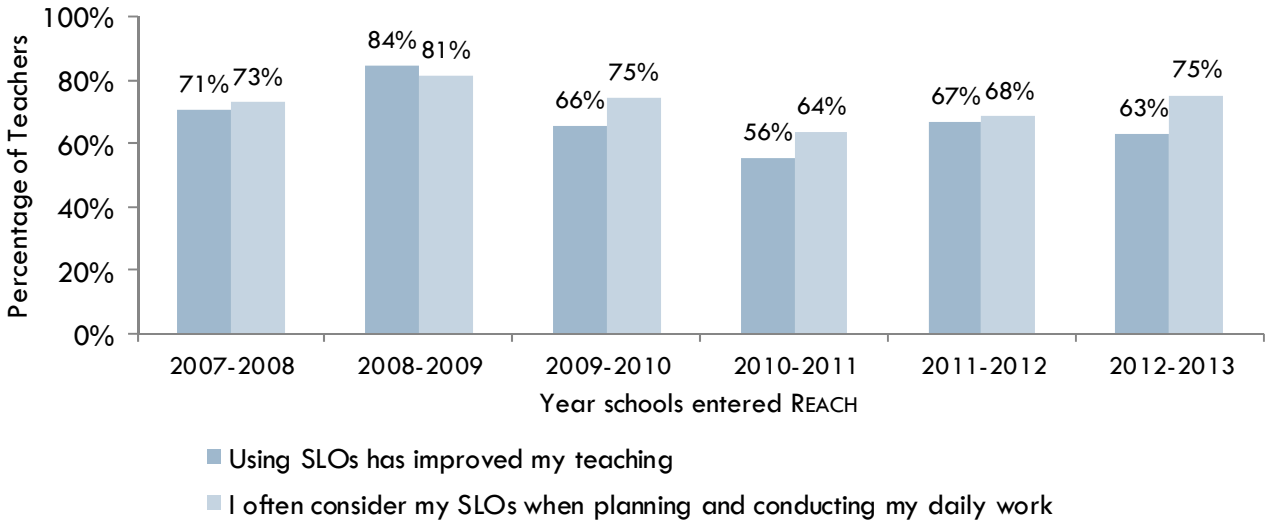
Source. AISD 2009 through 2013 Spring Employee Coordinated Survey

To explore potential differences in attitudes based on program cohort, we examined responses for teachers at schools that implemented the AISD REACH program each year. Teachers' perceptions about the usefulness of SLOs and about the extent to which they are a critical part of teachers' planning processes appear to vary based on when their school entered the program.

Figure 5 on the following page displays results for two SLO questions that AISD REACH teachers responded to in Spring 2013, disaggregated by the year in which their school entered the program. The data suggest that the length of time a school has participated minimally affects teachers' attitudes. In general, teachers working at campuses that have been in the program longer expressed slightly more positive attitudes toward the program than did those at schools that had only recently joined.

Teachers working at campuses that have been in REACH since 2008–2009 were more likely to claim that SLOs had improved their teaching than were teachers working in schools that had only recently joined (Figure 5). However, teachers working in the most recent cohort of schools appeared slightly more favorable than did those from schools in the 2010–2011 and 2011–2012 cohorts. The correlation between teachers' responses and their school's year in the program was small but statistically significant ($r = .10$, $n = 525$, $p < .05$). See Appendix C for a list of schools and mean responses for each program entry year.

Figure 5. Percentage of AISD REACH Teachers Who Agreed or Strongly Agreed in Spring 2013 that "Using SLOs has improved my teaching" and "I often consider my SLOs when planning and conducting my daily work," by Year Schools Entered REACH



Source. AISD 2013 Spring Employee Coordinated Survey

To examine whether individual teachers' years of experience with SLOs influenced their attitudes toward SLOs, we correlated teachers' Spring 2013 survey responses with their years in the program, regardless of school cohort. To address the potential relationship between attitudes toward SLOs and years of teaching experience, we computed partial correlations between number of years in AISD REACH and attitudes toward SLOs, controlling for years of teaching experience. Data suggest elementary teachers with more years in the program were significantly more likely than those with fewer years in the program to agree that using SLOs has improved their teaching and that they often consider their SLOs when planning and conducting their daily work (Table 6). Results were similar for teachers at the middle school level.

Table 6. Partial Correlations Between Number of Student Learning Objectives (SLOs) Teachers Attempted Over Time and Attitudes Toward SLOs Reported in Spring 2013, Controlling for Years Experience

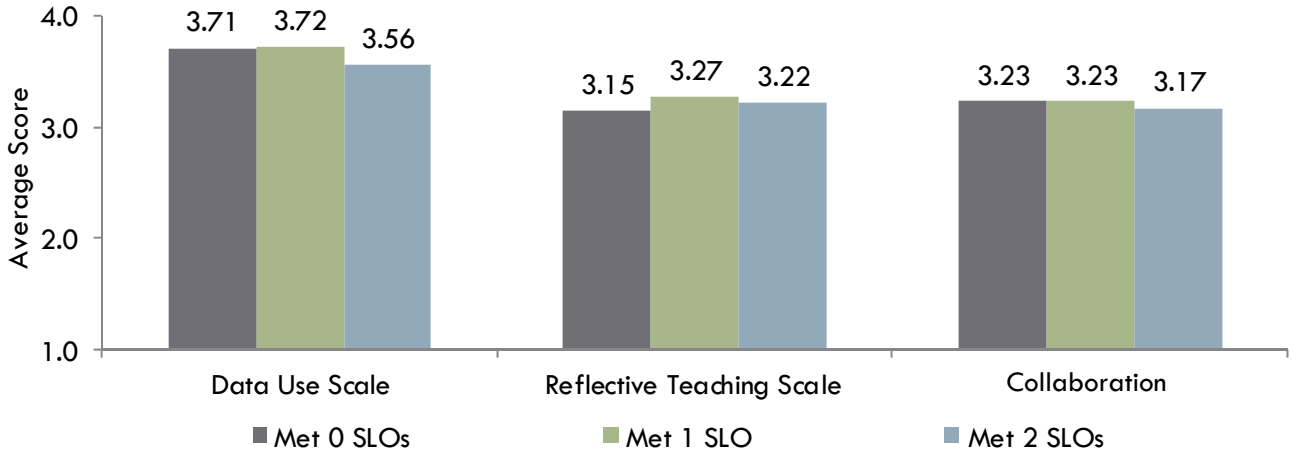
	Level	Using SLOs has improved my teaching.	I often consider my SLOs when planning and conducting my daily work.
Correlation with years in REACH, after removing the influence of years experience	Elementary	.24** (n = 286)	.19** (n = 295)
	Middle	.20 (n = 60)	.25* (n = 60)
	High	.10 (n = 182)	.09 (n = 190)

Source. AISD 2013 Spring Employee Coordinated Survey
*p < .05; **p < .01

SLOs and Data Use, Reflective Teaching, and Collaboration

We hypothesized that engaging in the SLO process would lead to improvements in important elements of instructional practices, such as using data, reflective teaching, and collaboration (Figure 1). Teachers who met SLOs were expected to engage in these practices in more meaningful ways than were those who did not meet their SLOs. Figure 6 displays the reported instructional practices of AISD REACH teachers, disaggregated by whether they met zero, one, or two SLOs. Data suggest no significant differences in these teaching practices for teachers who met 0, 1, or 2 SLOs in 2012–2013. For example, teachers who met 2 SLOs reported no more reflective teaching than those who met 0 SLOs. Likewise, teachers who met more SLOs did not report more collaboration or data use than those who met fewer SLOs. Similarly, no relationship was found between the percentage of a teacher's students making their SLOs and that teacher's reports of using these instructional practices.

Figure 6. Reported Data Use, Collaboration, and Reflective Teaching, by Student Learning Objectives (SLOs) Met



Source. 2013 Spring Employee Coordinated Survey; 2013 TELL AISD Working Conditions Survey

Although SLO performance was not related to teachers' reported data use, reflective teaching, or collaborative behaviors, we tested the hypothesis that the SLO process, itself, is related to instructional practices. To disentangle the relationship between years of teaching experience and years of experience with SLOs, we computed partial correlations between SLOs and instructional behaviors, controlling for years of teaching experience (Table 7). See Appendix C for a list of all survey items. Indeed, there were weak but statistically significant correlations between the collaborative behaviors elementary and high school REACH teachers reported and the number of SLOs they had attempted over time (Table 7). Weak but statistically significant relationships also were found between the number of SLOs teachers had attempted over time (including zero), and the data use teachers reported at all levels.

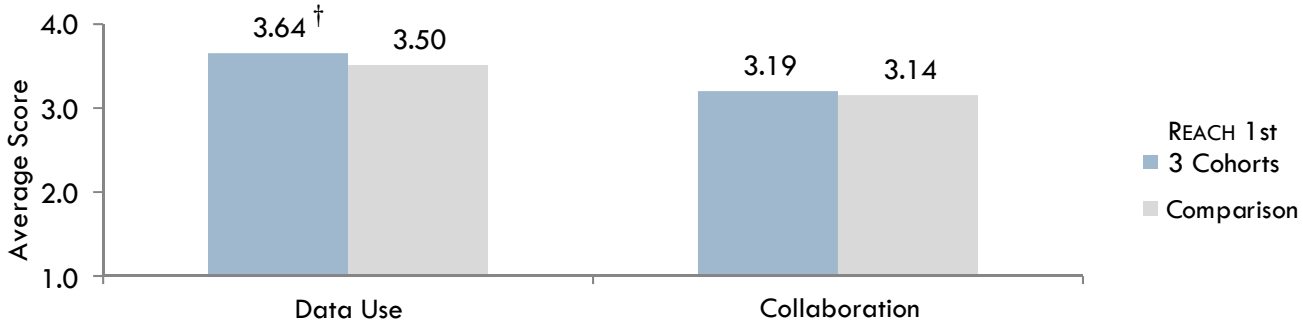
Table 7. Partial Correlations Between Number of Student Learning Objectives (SLOs) Teachers Attempted Over Time and Instructional Practices Reported in Spring 2013, Controlling for Years Experience

	Level	Data use	Reflective teaching practices (REACH only)	Collaboration (REACH only)	Collaboration
Correlation with number of SLOs attempted over time	Elementary	.05** (*n* = 2,992)	.10 (*n* = 289)	.19** (*n* = 287)	.02 (*n* = 3,002)
	Middle	.13** (*n* = 925)	.18 (*n* = 61)	.08 (*n* = 61)	.02 (*n* = 927)
	High	.17** (*n* = 1,111)	.07 (*n* = 185)	.17* (*n* = 181)	.02 (*n* = 1,111)

Source. SLO database, 2013 TELL AISD Working Conditions Survey, 2013 Spring Employee Coordinated Survey
Note. Data use and Collaboration were assessed on the 2013 TELL AISD Working Conditions Survey of all AISD staff; Reflective teaching practices and additional collaborative behaviors were assessed on the 2013 Spring Employee Coordinated Survey of a sample of REACH teachers.
*$p < .05$

Additional analyses indicate a possible relationship between experience with SLOs and instructional practices. Figure 7 shows the reported levels of data use and collaboration of REACH teachers from the first three cohorts of schools compared with the levels of data use and collaboration of teachers at matched similar non-REACH comparison schools. Although it does not meet the strict threshold for statistical significance, data suggest REACH teachers may engage in more data use than do their peers at similar non-REACH schools (t (1158)= 1.92, p = .055).

Figure 7. Reported Data Use and Collaboration for REACH and Matched Comparison Schools From the First Three Cohorts



Source. 2013 TELL AISD Working Conditions Survey
Note. See Appendix D for a list of items and response options. Comparison schools are only available for schools from the first three cohorts of REACH. † $p < .10$

SLOs and Student Performance

SLOs were intended to improve instructional practices, setting the stage for improved student and campus performance. Teachers whose students met SLOs that targeted specific TEKS should have shown greater student growth in those areas on the state assessment than did those whose students did not meet their SLOs, and schools where more teachers met SLOs should have shown better student performance than did schools where fewer teachers met SLOs. These differences should be driven by students' performance in the specific TEKS that were targeted by their teachers' SLOs. The following sections describe the relationships between SLOs and school-wide performance, and between SLOs and students' growth.

SLOs and School Performance on STAAR

Schools where higher percentages of teachers met team SLOs had higher passing rates than did schools where fewer teachers met team SLOs. The percentage of elementary teachers in STAAR-tested grades and subjects who met team SLOs was significantly related to the school's percentage of STAAR tests passed in reading, mathematics (math), and all subjects (Table 8). Additionally, moderate to strong correlations were found between the secondary school's percentage of teachers in STAAR-tested grades and subjects who met team SLOs and the percentage of STAAR tests passed in reading, math, science, and all subjects.

Table 8. Correlations Between School Percentages of Teachers in Tested Areas Meeting SLOs and School-wide Passing Rates on the State of Texas Assessments of Academic Readiness (STAAR), 2012–2013

		% of tests passed				
	Level	All subjects	Reading/ELA	Math	Science	Social studies
% of teachers who met individual SLOs	Elementary (n = 24)	.32	.37	.22	.26	n/a
	Secondary (n = 9)	.33	.17	-.01	.13	.11
% of teachers who met team SLOs	Elementary (n = 24)	.47*	.52*	.43*	.33	n/a
	Secondary (n = 9)	.66	.62	.51	.76*	.38
% of teachers who met both SLOs	Elementary (n = 24)	.43*	.47*	.36	.26	n/a
	Secondary (n = 9)	.84**	.77*	.56	.66	.45

Source. 2013 Index 1 Student Achievement Calculation Report, SLO database, human resources database
Note. Three schools were removed from analyses because they were outliers for SLO or STAAR. See Appendix E for details.
*p < .05; **p < .01

The relationship between SLOs and school passing rates was smaller for individual than for team SLOs in every subject for both elementary and secondary schools. The strongest relationships for secondary schools generally were found between passing rates and the percentage of teachers who met both individual and team SLOs.

SLOs and School Value-added on STAAR

The previous analyses addressed the relationship between SLOs and student passing rates for a single year. To assess the relationship between SLOs and school-wide student growth over time, we examined correlations between a variety of SLO-related metrics and school scores on the Educational Value-

Added Assessment System (EVAAS®), which provided a measure of students' performance gains over time for students in a particular school. EVAAS results were computed using up to five years of longitudinal performance on the state assessments. All EVAAS analyses were limited to teachers in subjects and grades for which growth data were available (i.e., grades 4 through 11).

We examined the relationship between SLOs and school gains by subject area (Table 9). At the secondary level, we examined the relationship between school EVAAS scores and the average percentage of teachers' students who met their individual SLOs. We also examined the relationship between school EVAAS results and the percentage of subject-area teachers who met their individual SLOs. At the elementary level, our aim was to determine whether elementary schools with a high concentration of SLOs in a particular subject area demonstrated high student growth in that area. For each subject, we identified the percentage of teachers in EVAAS grades/subjects (i.e., 4th and 5th grade math, reading, and science) that had established an SLO in that subject area.

No statistically significant relationships were found between subject area SLO metrics and school EVAAS scores at the elementary level (Table 9). However, the relationships between secondary school growth in science and SLO metrics were moderately strong, particularly for the percentage of students who met teachers' science SLOs (r = .71).

Table 9. Correlations Between School EVAAS Scores and Percentage of Elementary Teachers in Grades 4 and 5 with Subject Area SLOs, Percentages of Secondary Subject Area Teachers who Met SLOs, and Percentages of Secondary Students who Met Subject Area Teachers' SLOs, 2012–2013

	Correlation with school EVAAS score			
School SLO metric	Reading/ELA	Math	Science	Social studies
% of 4th and 5th grade teachers with subject area individual SLOs (*n* schools = 25)	.17	-.04	.10	n/a
% of 6th—11th grade teachers who met individual SLOs (*n* schools = 10)	-.09	n/a	.50	.05
% of students who met secondary teachers' individual SLOs (*n* schools = 10)	-.05	n/a	.71*	.14

Source. 2013 EVAAS, SLO database, human resources database
Note. One secondary school was removed from analyses as an outlier for SLO metrics. See Appendix E for details. Math EVAAS score ranges differed for middle and high schools; therefore, secondary analyses for math EVAAS were not possible.
*$p < .05$

SLOs and STAAR Reporting Category

SLOs were designed to provide a framework for teachers to use data to identify a specific area of student need, focus instruction in that area, and demonstrate measurable impact. A single SLO is not intended to cover a broad subject area; rather, SLOs are tightly focused and vary widely in their intended outcomes. For this reason, establishing a link between the use of SLOs and student growth on state assessments or even school-wide improvement is challenging. Simply put, expecting a goal that was focused on a small piece of a test to influence the results of the entire test may be unreasonable.

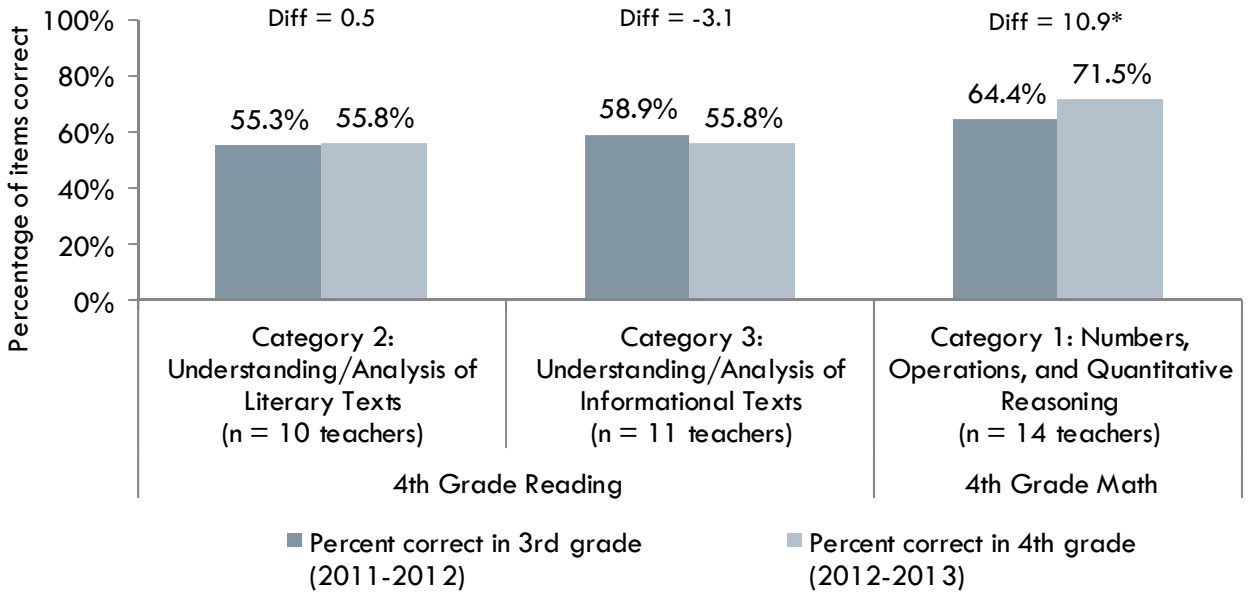
To address the issue of granularity of measurement, in 2009, analysts in the AISD Department of Research and Evaluation examined the TAKS objective-level results together with SLOs. Analyses assessed the relationship between setting an SLO in a particular TAKS objective area and student performance on the test for that objective, controlling for prior student performance. TAKS objectives were smaller subunits of the broader subject area; depending on the subject and grade, a TAKS test might address four to six TAKS objectives. By examining the relationship between SLOs set for a particular TAKS objective and student performance on that objective (rather than looking at the SLO in relationship to the entire test), it was possible to better match the level of specificity at which the teachers were working. The results of these analyses were mixed; in only 24% of comparisons (28/115), students whose teachers established an SLO focused on a particular TAKS objective outperformed students whose teachers did not establish an SLO focused on the particular TAKS objective. No detectable, systematic pattern was observed with respect to which grades, subjects, or objectives benefitted most from SLOs. (For details of these analyses, see Malerba & Herrera, 2009)

In the time since the Malerba and Herrera (2009) report, the state of Texas adopted a new set of state assessments, STAAR, and some significant policy changes were made to SLOs, both centrally and at the campus level. Therefore, the question of the impact of SLOs on students' growth remains critical. To address this, analyses were conducted to determine if students improved in the specific STAAR reporting categories that were targeted in their teachers' SLOs in 2012–2013. STAAR reporting categories were similar in scope to the TAKS objectives that were examined in the 2009 study. We matched the specific TEKS teachers had identified as the focus of their SLOs with the appropriate STAAR reporting category and included data for reporting categories with 10 or more test items in 2011–2012 and 2012–2013.

Analyses at the teacher level. Three reporting categories met the minimum item requirements and were targeted by at least 10 teachers; all were at the 4th grade level. To examine whether the classrooms of fourth grade teachers who targeted specific reporting categories improved in those areas, we computed the average improvement for the students in each teacher's 2012–2013 class. For each student with data from both school years, we determined the percentage of items answered correctly in each reporting category in 2011–2012 and 2012–2013 and computed the difference. For additional information, see Appendices F and G.

In one of the three scenarios that were included in the analyses, results suggested that students' performance improved significantly in the targeted reporting category. Students of 4th grade math teachers who set an SLO focusing on reporting category 1 (Numbers, Operations, and Quantitative Reasoning) achieved a significantly higher percentage of items correct in 2012–2013 (75.3%) than in 2011–2012 (64.4%). Results for reading categories 2 and 3 were not significant (Figure 8).

Figure 8. Percentage Correct and Change in Percentage Correct From 2011–2012 to 2012–2013, by State of Texas Assessments of Academic Readiness (STAAR) Reporting Category



Source. District STAAR records and SLO database
Note. Students' percentage of items correct was averaged at the teacher level.
*$p<.05$

Analyses at the student level. Because teacher level analyses were limited due to small sample sizes, we shifted the focus from teachers to students so sample sizes would allow for analyses of performance gains in more reporting categories and grades. Unlike the previous responses, students' scores were not averaged across teacher; rather, students were identified as belonging to one of three groups: a) students whose teachers had focused an SLO in the reporting category of interest, b) students whose teachers had focused an SLO in a different reporting category, or c) students whose teachers did not complete SLOs because they were at a non-REACH comparison school. Finally, for each reporting category, propensity score analysis (PSA)[2] was used to obtain matched samples of students from each group, based on 2011–2012 reporting category performance. Analyses examined group differences for both the percentage of items correct in 2012–2013 and the change in the percentage of items correct from 2011–2012 to 2012–2013. Analyses were limited to students attending REACH and matched comparison schools participating in the first three cohorts of REACH. Results are displayed for students from groups a, b, and c in Table 10.

Students of REACH teachers who set their SLOs in a specific reporting category outperformed their matched comparison peers in 2012–2013 in three of twelve instances, and exhibited greater change in the percentage of items correct in one of twelve instances (Table 10). Overall, students whose teachers focused on the reporting category outperformed their comparison peers 17% of the time. Similarly, within REACH, students with teachers who focused on a specific reporting category outperformed those whose teachers focused on a different reporting category 17% of the time. Conversely, in one of twenty

-four instances, REACH students whose teachers had focused on a different reporting category outperformed those whose teacher had focused in the reporting category of interest.

Table 10. Percentage Correct and Change From 2011–2012 to 2012–2013, by State of Texas Assessments of Academic Readiness (STAAR) Reporting Category and Student Learning Objective (SLO) Group

STAAR grade and subject	Reporting category	Analysis group	Set SLO	Matched non-REACH comparison students	Did not set SLO
4th grade math	1: Numbers, Operations, and Quantitative Reasoning (n = 29)	% Correct 2012–2013	69.37%	61.26%	72.21%
		Change in % correct from 2011–2012 to 2012-2013	8.91	1.03[a]	13.82[a]
4th grade reading	2: Understanding Across Genres (n = 56)	% Correct 2012–2013	61.11%	59.82%	65.87%
		Change in % correct from 2011–2012 to 2012-2013	0.00	-1.29	2.82
	3: Understanding/Analysis of Informational Texts (n = 42)	% Correct 2012–2013	48.36%	59.90%	54.32%
		Change in % correct from 2011–2012 to 2012-2013	-3.27	-6.10	-0.30
5th grade reading	1: Understanding Across Genres (n = 76)	% Correct 2012–2013	76.32%[a]	68.42%[a]	74.21%
		Change in % correct from 2011–2012 to 2012-2013	9.08	2.24	5.26
	2: Understanding of Literary Texts (n = 63)	% Correct 2012–2013	76.36%[a]	70.18%[a]	72.43
		Change in % correct from 2011–2012 to 2012-2013	6.16	3.69	1.44
	3: Understanding/Analysis of Informational Texts (n = 76)	% Correct 2012–2013	72.21%	68.11%	70.21%
		Change in % correct from 2011–2012 to 2012-2013	8.23	6.02	3.49
6th grade math	1: Numbers, Operations, and Quantitative Reasoning (n = 62)	% Correct 2012–2013	55.44%	63.52%[a]	49.19%[a]
		Change in % correct from 2011–2012 to 2012-2013	-4.32	-1.14[a]	-10.57[a]
7th grade reading	1: Understanding Across Genres (n = 78)	% Correct 2012–2013	59.11%[a,b]	47.05%[a]	45.19%[b]
		Change in % correct from 2011–2012 to 2012-2013	-0.89[a,b]	-11.03[a]	-12.66[b]
	2: Understanding of Literary Texts (n = 86)	% Correct 2012–2013	45.02%[a]	51.38%	54.37%[a]
		Change in % correct from 2011–2012 to 2012-2013	-6.61	-2.80	-6.67
	3: Understanding/Analysis of Informational Texts (n = 89)	% Correct 2012–2013	62.81%[a]	61.92%[b]	50.00%[a,b]
		Change in % correct from 2011–2012 to 2012-2013	13.98[a]	10.98[b]	0.06%[a,b]
8th grade reading	1: Understanding Across Genres (n = 53)	% Correct 2012–2013	51.89%	62.26%[a]	50.00%[a]
		Change in % correct from 2011–2012 to 2012-2013	2.45	5.66	-0.38
8th grade math	1: Numbers, Operations, and Quantitative Reasoning (n = 57)	% Correct 2012–2013	57.42%	57.42%	58.34%
		Change in % correct from 2011–2012 to 2012-2013	6.40	12.07	8.31

Source. District STAAR records and SLO database.
Note. Means that share the same superscript are significantly different from each other within category and analysis group ($p < .05$). Student n counts refer the number of students per teacher group.

Our primary aim was to examine the differences between students whose teachers set SLOs in a specific reporting category and matched samples of students whose teachers did not (whether at REACH or non-REACH schools). In 17% of these analyses (8/48), the SLOs appear to have made a positive difference for students with regard to reporting category performance, while in 2% of these analyses (1/48), students whose teachers set SLOs in the reporting category performed significantly worse than their peers whose teachers had not. All differences were found in the 5th and 7th grade reading reporting categories.

These results also suggest a possible overall disadvantage for REACH students whose teachers did not establish SLOs in the reporting category, though perhaps those students were advantaged in the reporting category in which their teachers *did* focus SLOs. Specifically, analyses revealed several reporting categories (5 out of 24) in which comparison students outperformed the REACH students whose teachers had established an SLO in a *different* reporting category. In only one reporting category, REACH students whose teachers had focused SLOs in a different reporting category outperformed students at comparison schools.

CONCLUSION

Most AISD REACH participants met at least one of their SLOs and received stipends. About 87% of the 2012–2013 AISD REACH educators met at least one SLO, although results varied by school and job categories. Core area and special education teachers at the secondary level were less likely than were non-core area teachers to meet SLOs, and librarians were less likely to meet their SLOs than were other groups. Given the evidence from previous research that suggested specific challenges for librarians in executing SLOs, it would be beneficial for program staff to provide some additional support for librarians. Additionally, the potential inequity between types of secondary teachers should be explored.

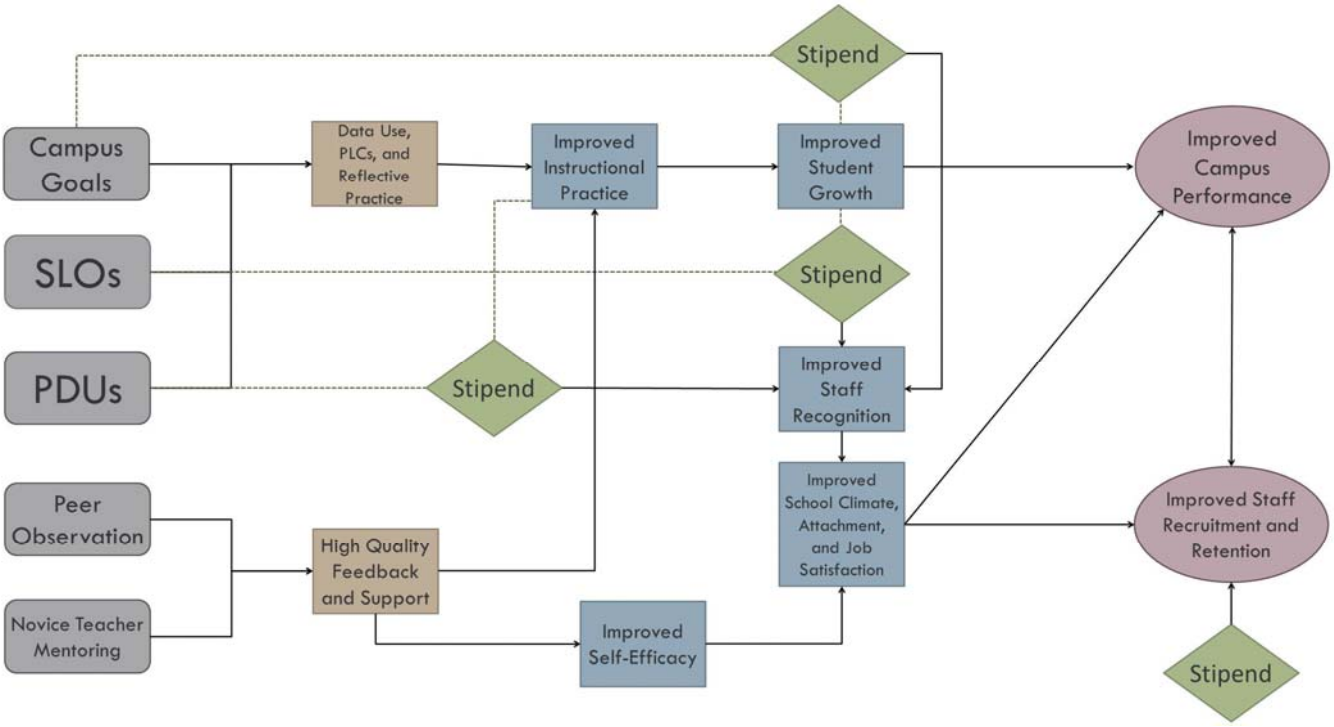
The majority of AISD REACH teachers continued to perceive that SLOs were instructionally valuable and reported that they used them in their day-to-day work, particularly those at schools from the first two cohorts of program implementation. Evidence suggests teachers became better at collaboration and data use, and performed better on SLOs, with more SLO experience. A linkage between the instructional practices we measured and SLO performance could not be established, however. Thus, the tendency for teachers to demonstrate better SLO performance with more SLO experience may reflect many other possible factors. For example, teachers may become more adept at identifying objectives their students can meet, more savvy at selecting reasonable growth targets, or better at writing high-quality assessments. Nevertheless, evidence suggests REACH teachers engaged in data use more frequently than did their peers at similar non-REACH campuses, an indication that the SLO process may indeed facilitate certain intended instructional practices.

Data showed that schools where more teachers met team SLOs had greater passing rates on the STAAR than did schools where fewer teachers met team SLOs. However, identifying relationships between SLOs and other measures of student achievement remains challenging, particularly at the classroom level. The limitations in the data meant that very few reporting categories met both the criteria of having at least 10 questions on the test and at least 10 SLOs set in that category. In the end, for the teacher level analysis, sufficient sample sizes were available only for three reporting categories, all in 4th grade. The results of the reporting category analysis were encouraging for 4th grade math, but are not sufficient for drawing conclusions regarding a link between SLOs and classroom level performance in targeted areas. However, the student-level analysis was more comprehensive. Evidence shows students whose teachers focused SLOs in a specific area significantly outperformed their matched peers in that area more often than the other way around (17% versus 2% of instances), suggesting that SLOs may indeed foster skills that translate to performance on the state assessment. On the other hand, data justify a caution for teachers to ensure that emphasizing one area does not result in the neglect of others.

On the whole, results of the 2012-2013 SLO program evaluation suggest the SLO process is related to some positive outcomes for teachers and students. However, evidence indicates a need for program refinements to address discrepancies in SLO performance by staff role and school.

APPENDIX

Appendix A. Hypothesized Relationships Among AISD Program Elements and Expected Outcomes



Appendix B. Correlations Between Percentages of Students who Met Teachers' Student Learning Objectives (SLOs) and Number of SLOs Teachers Attempted Over Time

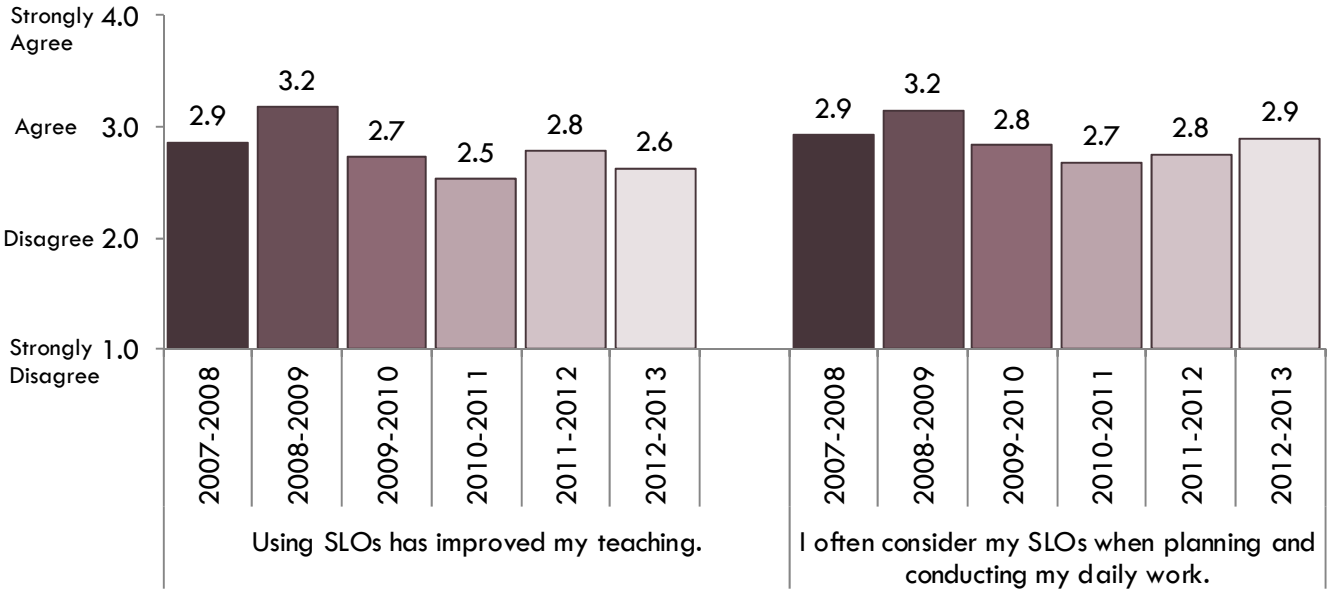
Level	Individual SLO		Team SLO	
	r	*n*	*r*	*n*
Elementary	.20**	1,156	.16**	1,116
Middle	.22**	270	.18**	241
High	.14**	610	.06	545

Source. SLO database
Note. **$p < .01$

Appendix C1. 2012–2013 REACH Schools, by Program Entry Year

2007–2008	2008–2009	2009–2010	2010–2011	2011–2012	2012–2013
Lanier HS	Webb MS	Akins HS	LBJ HS	Eastside HS	Andrews ES
Dobie MS	Jordan ES	Harris ES	Reagan HS	Martin MS	Blanton ES
Hart ES		Norman ES	Travis HS	Pearce MS	Brooke ES
Rodriguez ES		Pickle ES	Garcia MS	Allison ES	Graham ES
Sims ES		Pleasant Hill ES		Barrington ES	Metz ES
Sunset Valley ES				Brown ES	Ortega ES
				Govalle ES	Overton ES
				Pecan Springs ES	Sanchez ES
				Walnut Creek ES	Winn ES
					Zavala ES

Appendix C2. Average AISD REACH Teacher Responses to Student Learning Objective (SLO) Questions, by Year Schools Entered REACH



Source. AISD 2013 Spring Employee Coordinated Survey

Appendix D. Items on the Data Use, Professional Learning Community (PLC), and Reflective Teaching Scales

Scale	Item Stem and Response Options	Item
Data Use (2013 TELL)	How frequently do you use data in the following ways? (Once a year, Once a semester, Once every two months, Once a month, Twice a month, Once a week)	Comparing test scores for your class across academic years (e.g., how 5th grade class as a whole performed in 3rd grade and 4th grade).
		Examining current benchmark scores to create classroom instructional groups.
		Examining data to identify students in need of intervention.
		Collaborating with other educators about data and how it relates to the learning needs of students.
Collaboration (2013 TELL)	Indicate how much you agree or disagree with each statement. I participate with a group of my campus colleagues to: (Strongly agree, Agree, Disagree, Strongly disagree, Don't know)	Analyze student performance data
		Discuss ways to meet objectives for specific students
		Plan lessons and units together
		Develop common student assessments
Collaboration (2013 Employee Coordinated Survey)	How often does your department/team: (Frequently, Often, Sometimes, Rarely, Unsure/N/A)	Discuss your department/team's professional development needs and goals
		Discuss assessment data for individual students
		Set learning goals for groups of students
		Group students across classes based on learning needs
		Provide support for new teachers
		Provide support for struggling teachers
		Share instructional strategies
Reflective Teaching (2013 Employee Coordinated Survey)	Select the best response. (Frequently, Often, Sometimes, Rarely, Unsure/N/A)	How frequently do reflections on your past teaching experiences influence your lesson plans?
		How often do you seek out collaboration with other teachers to improve a lesson plan that did not go well?
		How often do you work with other teachers to improve your teaching even when it is going well?
		How often do you adjust your instructional strategies based on student assessment results?

Appendix E. Data for Correlational Analysis of Secondary School Student Learning Objectives (SLOs) Met and State of Texas Assessments of Academic Readiness (STAAR) Passing Rates

	Percentage of STAAR tests passed					Percentage of teachers in tested grades and subjects who met:	
Secondary School	All subjects	Reading	Math	Science	Social studies	Individual SLO	Team SLO
Garcia	49%	55%	54%	47%	27%	65%	41%
Pearce	50%	58%	47%	54%	36%	63%	44%
Dobie[1]	51%	52%	58%	54%	39%	78%	94%
Martin	55%	61%	60%	65%	31%	52%	62%
Eastside	56%	60%	73%	63%	54%	56%	40%
LBJ	58%	59%	67%	71%	60%	73%	51%
Travis	60%	57%	79%	74%	60%	52%	57%
Reagan	63%	65%	73%	73%	63%	53%	52%
Lanier	67%	67%	80%	81%	65%	61%	68%
Webb	69%	65%	75%	77%	57%	88%	56%
Akins[2]	76%	79%	86%	86%	77%	56%	39%
Elementary School							
Allison	74%	82%	74%	64%	n/a	100%	100%
Andrews	78%	74%	84%	78%	n/a	60%	87%
Barrington	68%	71%	71%	63%	n/a	63%	42%
Blanton	82%	82%	88%	68%	n/a	36%	36%
Brooke	74%	79%	77%	65%	n/a	89%	78%
Brown	58%	57%	63%	51%	n/a	20%	0%
Govalle	64%	65%	64%	53%	n/a	77%	25%
Graham	94%	94%	97%	93%	n/a	100%	100%
Harris	69%	67%	74%	73%	n/a	72%	44%
Hart	81%	80%	86%	80%	n/a	95%	100%
Jordan	63%	65%	63%	64%	n/a	89%	100%
Metz	75%	77%	80%	62%	n/a	58%	33%
Norman	63%	62%	61%	74%	n/a	63%	38%
Ortega	91%	92%	92%	89%	n/a	75%	100%
Overton	65%	66%	70%	62%	n/a	47%	40%
Pecan Springs	66%	65%	73%	57%	n/a	70%	100%
Pickle	68%	74%	70%	48%	n/a	82%	100%
Pleasant Hill	82%	84%	86%	70%	n/a	92%	100%
Rodriguez	62%	64%	66%	64%	n/a	89%	33%
Sanchez[1]	69%	71%	72%	63%	n/a	17%	0%
Sims	70%	83%	70%	71%	n/a	63%	100%
Sunset Valley	75%	82%	78%	75%	n/a	54%	15%
Walnut Creek	70%	72%	74%	65%	n/a	63%	68%
Winn	62%	67%	68%	42%	n/a	67%	67%
Zavala	81%	79%	87%	81%	n/a	70%	100%

[1]Campus was removed from analysis due to extreme individual or team SLO percentage.
[2]Campus was removed from analysis due to SLO minimum requirements resulting in significantly fewer teachers and students meeting SLOs at this school compared with all other schools.

Appendix E. Data for Correlational Analysis of Secondary School Student Learning Objectives (SLOs) Met and EVAAS Growth Index Scores

	EVAAS growth index scores				Percentage of teachers who met individual SLOs				Average percentage of teachers' students who met individual SLOs			
School	Reading	Math	Science	Social studies	Reading	Math	Science	Social studies	Reading	Math	Science	Social studies
Akins[1]	6.8	7.7	2.0	4.4	52%	70%	32%	48%	59%	68%	46%	55%
Dobie	-4.1	-5.2	0.4	-0.3	67%	50%	100%	100%	75%	56%	77%	78%
Eastside	-0.5	3.3	-0.2	-1.2	56%	33%	80%	0%	48%	31%	79%	25%
Garcia	0.2	-3.7	-1.4	-4.2	86%	83%	33%	50%	74%	76%	43%	56%
Lanier	7.3	6.1	0.9	1.4	76%	39%	70%	67%	78%	61%	80%	70%
LBJ	-2.8	-2.7	-0.1	-3.7	100%	58%	67%	57%	89%	70%	70%	67%
Martin	-0.9	-2.6	2.1	-4.2	25%	71%	0%	100%	33%	71%	57%	77%
Pearce	-1.1	-7.1	-3.6	-5.1	83%	80%	0%	67%	81%	72%	35%	61%
Reagan	3.6	1.2	-0.7	-0.5	29%	45%	60%	70%	48%	60%	55%	66%
Travis	-2.4	7.7	1.1	-1.5	64%	76%	54%	11%	70%	76%	69%	34%
Webb	2.2	-5.2	6.1	0.2	91%	91%	100%	100%	82%	80%	84%	92%

[1]Campus was removed from analysis due to SLO minimum requirements resulting in significantly fewer teachers and students meeting SLOs at this school compared with all other schools.

Appendix E. Data for Correlational Analysis of Elementary School Percentage of Teachers Completing Student Learning Objectives (SLOs) in Subject and State of Texas Assessments of Academic Readiness (STAAR) Passing Rates

	EVAAS growth index scores			Percentage of 4th and 5th grade teachers with subject area EVAAS data completing individual SLOs in subject		
School	Reading	Math	Science	Reading	Math	Science
Allison	1.7	-1.8	-1.5	60	100	0
Andrews	1.0	2.7	3.4	75	100	0
Barrington	-3.1	-5.4	0.9	29	80	100
Blanton	-0.4	-1.8	-1.4	0	14	100
Brooke	-0.2	-3.7	-0.5	20	100	0
Brown	-2.9	-3.8	-2.2	33	100	100
Govalle	-1.4	-0.8	-1.9	20	80	33
Graham	1.4	2.6	0.6	13	0	75
Harris	2.0	-0.5	1.6	0	50	0
Hart	-0.6	-0.9	-0.2	0	64	100
Jordan	0.7	-1.6	1.7	0	40	0
Metz	-0.2	-0.1	-2.7	29	14	0
Norman	-0.2	-1.8	0.0	100	0	0
Ortega	0.0	-0.2	-0.5	50	50	0
Overton	-1.5	-6.7	-3.4	60	33	33
Pecan Springs	-0.6	-3.0	-2.2	100	0	0
Pickle	0.3	-2.2	-1.4	44	22	50
Pleasant Hill	1.5	0.2	-1.4	60	100	100
Rodriguez	-2.5	-8.7	-0.1	0	25	100
Sanchez	2.1	-1.2	2.8	17	20	100
Sims	-0.1	-2.9	-1.1	0	0	100
Sunset Valley	1.6	0.4	3.3	100	33	100
Walnut Creek	-1.5	-3.2	-1.1	63	100	0
Winn	1.4	0.5	-0.3	0	0	100
Zavala	2.7	-2.1	-0.2	100	100	100

Source. 2013 EVAAS data

Note. Elementary teachers did not necessarily teach all three subject areas. SLO percentages represent the number of teachers completing an SLO in the subject out of the total number of teachers with EVAAS data attributed to them in the subject area.

Appendix F. Items on the State of Texas Assessments of Academic Readiness (STAAR) and Student Learning Objectives (SLOs) Set, by STAAR Reporting Category and Grade

STAAR grade and subject	Reporting category	Reporting category information	# of items on test	# of SLOs set in reporting category
3rd grade math	1	Numbers, Operations, and Quantitative Reasoning	15	9
	2	Patterns, Relationships, and Algebraic Reasoning	8	7
	3	Geometry and Spatial Reasoning	9	3
	4	Measurement	8	4
	5	Probability and Statistics	6	—
	All	All reporting categories	46	23
3rd grade reading	1	Understanding Across Genres	6	6
	2	Understanding/Analysis of Literary Texts	18	12
	3	Understanding/Analysis of Informational Texts	16	11
	All	All reporting categories	40	1
4th grade math	1	Numbers, Operations, and Quantitative Reasoning	17	18
	2	Patterns, Relationships, and Algebraic Reasoning	6	4
	3	Geometry and Spatial Reasoning	12	3
	4	Measurement	8	—
	5	Probability and Statistics	5	—
	All	All reporting categories	48	6
4th grade reading	1	Understanding Across Genres	10	12
	2	Understanding/Analysis of Literary Texts	18	17
	3	Understanding/Analysis of Informational Texts	16	16
	All	All reporting categories	44	—
4th grade writing	1	Composition	2	5
	2	Revision	9	5
	3	Editing	19	10
	All	All reporting categories	30	—
5th grade math	1	Numbers, Operations, and Quantitative Reasoning	18	16
	2	Patterns, Relationships, and Algebraic Reasoning	6	1
	3	Geometry and Spatial Reasoning	7	1
	4	Measurement	8	1
	5	Probability and Statistics	11	1
	All	All reporting categories	50	5
5th grade reading	1	Understanding Across Genres	10	14
	2	Understanding/Analysis of Literary Texts	19	11
	3	Understanding/Analysis of Informational Texts	17	14
	All	All reporting categories	46	—
5th grade science	1	Matter and Energy	8	—
	2	Force, Motion, and Energy	10	—
	3	Earth and Space	12	21
	4	Organisms and Environments	14	6
	All	All reporting categories	44	—

Appendix F. Items on the State of Texas Assessments of Academic Readiness (STAAR) and Student Learning Objectives (SLOs) Set, by STAAR Reporting Category and Grade (continued)

STAAR grade and subject	Reporting category	Reporting category information	# of items on test	# of SLOs set in reporting category
6th grade math	1	Numbers, Operations, and Quantitative Reasoning	17	7
	2	Patterns, Relationships, and Algebraic Reasoning	12	8
	3	Geometry and Spatial Reasoning	8	—
	4	Measurement	8	1
	5	Probability and Statistics	8	—
	All	All reporting categories	44	4
6th grade reading	1	Understanding Across Genres	10	1
	2	Understanding/Analysis of Literary Texts	20	4
	3	Understanding/Analysis of Informational Texts	18	3
	All	All reporting categories	48	—
7th grade math	1	Numbers, Operations, and Quantitative Reasoning	13	1
	2	Patterns, Relationships, and Algebraic Reasoning	13	1
	3	Geometry and Spatial Reasoning	10	—
	4	Measurement	8	2
	5	Probability and Statistics	10	1
	All	All reporting categories	54	2
7th grade reading	1	Understanding Across Genres	10	6
	2	Understanding/Analysis of Literary Texts	21	10
	3	Understanding/Analysis of Informational Texts	19	5
	All	All reporting categories	50	—
7th grade writing	1	Composition	2	6
	2	Revision	16	1
	3	Editing	24	—
	All	All reporting categories	42	—
8th grade math	1	Numbers, Operations, and Quantitative Reasoning	11	6
	2	Patterns, Relationships, and Algebraic Reasoning	14	7
	3	Geometry and Spatial Reasoning	8	7
	4	Measurement	13	7
	5	Probability and Statistics	10	—
	All	All reporting categories	56	—
8th grade reading	1	Understanding Across Genres	10	4
	2	Understanding/Analysis of Literary Texts	22	2
	3	Understanding/Analysis of Informational Texts	20	1
	All	All reporting categories	52	—
8th grade science	1	Matter and Energy	14	6
	2	Force, Motion, and Energy	12	—
	3	Earth and Space	14	3
	4	Organisms and Environments	14	—
	All	All reporting categories	44	—
8th grade social studies	1	History	20	4
	2	Geography and Culture	12	—
	3	Government and Citizenship	12	3
	4	Economics, Science, Technology, and Society	8	2
	All	All reporting categories	54	—

Appendix G. Items on the State of Texas Assessments of Academic Readiness (STAAR) End of Course Exams and Student Learning Objectives (SLOs) Set, by STAAR Reporting Category and Grade

End of course exam	Reporting category	Reporting category information	# of items on test	# of SLOs set in reporting category
Algebra I	1	Functional Relationships	8	7
	2	Properties and Attributes of Functions	12	3
	3	Linear Functions	15	11
	4	Linear Equations and Inequalities	10	4
	5	Quadratic and Other Nonlinear Functions	9	6
	All	All reporting categories	54	—
Algebra II	1	Properties and Attributes of Functions	8	—
	2	Representational Tools to Solve Problems	8	1
	3	Properties of Quadratic Relations	12	1
	4	Representations of Quadratic Relations	6	2
	5	Properties of Square Root Functions	5	3
	6	Properties of Rational Functions	5	2
	7	Properties of Exponential and Logarithmic Functions	6	—
	All	All reporting categories	50	—
Biology	1	Cell Structure and Function	11	4
	2	Mechanisms of Genetics	11	7
	3	Biological Evolution and Classification	10	1
	4	Biological Process and Systems	11	5
	5	Interdependence with Environmental Systems	11	1
	All	All reporting categories	54	—
Chemistry	1	Matter and Periodic Table	12	1
	2	Atomic Structure and Nuclear Chemistry	9	2
	3	Bonding and Chemical Reactions	14	5
	4	Gases and Thermochemistry	8	—
	5	Solutions	9	2
	All	All reporting categories	52	—
English I	1	Understanding/Analysis Across Genres - Reading	10	7
	2	Understanding/Analysis of Literary Texts - Reading	16	8
	3	Understanding/Analysis of Informational Texts -Reading	14	6
	4	Composition - Writing	2	8
	5	Revision - Writing	15	—
	6	Editing - Writing	15	1
	All	All reporting categories	32	—
English II	1	Understanding/Analysis Across Genres - Reading	10	4
	2	Understanding/Analysis of Literary Texts - Reading	16	1
	3	Understanding/Analysis of Informational Texts -Reading	14	3
	4	Composition - Writing	2	5
	5	Revision - Writing	15	—
	6	Editing - Writing	15	—
	All	All reporting categories	32	—
English III	1	Understanding/Analysis Across Genres - Reading	10	5
	2	Understanding/Analysis of Literary Texts - Reading	16	1
	3	Understanding/Analysis of Informational Texts -Reading	14	—
	4	Composition - Writing	2	7
	5	Revision - Writing	15	2
	6	Editing - Writing	15	6
	All	All reporting categories	32	—

Appendix G. Items on the State of Texas Assessments of Academic Readiness (STAAR) End of Course Exams and Student Learning Objectives (SLOs) Set, by STAAR Reporting Category and Grade (continued)

End of course exam	Reporting category	Reporting category information	# of items on test	# of SLOs set in reporting category
World Geography	1	History, Government, and Citizenship	14	—
	2	Geography	26	1
	3	Culture	14	—
	4	Economics, Science, Technology, and Society	14	—
	All	All reporting categories	68	—
Geometry	1	Geometric Structure	10	—
	2	Geometric Patterns and Representations	8	3
	3	Dimensionality and the Geometry of Location	10	2
	4	Congruence and Geometry of Size	16	6
	5	Similarity and the Geometry of Shape	8	4
	All	All reporting categories	52	—
Physics	1	Force and Motion	14	—
	2	Gravitational, Electrical, Magnetic, and Nuclear Forces	12	—
	3	Momentum and Energy	12	1
	4	Waves and Quantum Phenomena	12	1
	All	All reporting categories	50	—
US History	1	History, Government, and Citizenship	14	—
	2	Geography	12	1
	3	Culture	12	—
	4	Economics, Science, Technology, and Society	12	1
	All	All reporting categories	68	—
World History	1	History 8000 BC to AD 1750	14	4
	2	History 1750 through Present	12	4
	3	Geography and Culture	12	2
	4	Government and Citizenship		—
	5	Economics, Science, Technology, and Society	12	—
	All	All reporting categories	68	—

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Note. This report is an updated version of DPE Publication 12.83, originally published in September 2013.