Department of Research and Evaluation
Austin Independent School District

AISD REACH Program Update, 2011 – 2012 Professional Development Units

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EXECUTIVE SUMMARY

In 2010–2011, the AISD REACH strategic compensation program implemented a new program element, professional development units (PDUs), which seeks to accomplish staff and student growth through improving instructional practice. Participants are encouraged to form groups with colleagues, based on specific professional development needs, and to participate in a collaborative job-embedded research study of teaching practice that is scored by a panel at the end of the school year.

In 2011–2012, 17% of all REACH elementary teachers and 8% of all REACH secondary teachers participated in a PDU. PDU participation among secondary schools was greatest at schools where teachers reported better instructional support, access to instructional materials and technology, training to use technology, access to professional support personnel, professional learning communities (PLCs), and data to make informed decisions. Participants differed from their non-participating peers with regard to years of experience, student growth scores for mathematics the previous year, previous attitudes toward REACH program elements, previously reported instructional practices such as data use and participation in PLCs, and previous administrator ratings on the district's Professional Development and Appraisal System (PDAS). PDU participation rates decreased from 2010–2011 to 2011–2012; however, a higher percentage of teachers in 2011–2012 than in 2010–2011 met the criteria for receiving a stipend.

Participants and non-participants also differed on a variety of Spring 2012 outcome measures. In 2011–2012, elementary school PDU teachers had, on average, significantly greater reading/English language arts (ELA) student growth than did non-participants, and evidence suggested greater student growth in reading/ELA at the middle school level and in mathematics at the high school level for participants than for non-participants. At the end of 2011–2012, participants reported more favorable attitudes toward the goal-setting program elements of REACH, and reported more engagement in PLCs and data use than did non-participants. Additionally, participants received higher ratings in Spring 2012 on PDAS than did their non-participating peers.

To account for the previously existing differences between participants and non-participants when examining outcome measures, propensity score matching analyses were used to obtain groups of elementary school participants and non-participants that were matched on all known characteristics other than PDU participation status. Although no differences were found between groups for data use or PDAS, PDU participants did demonstrate greater student achievement of SLOs than did non-participants.

Change from 2010–2011 to 2011–2012 in reported instructional practice behaviors, data use, attitudes toward REACH, and student growth (math or reading) was not significantly different for participants and non-participants as a whole. However, results revealed that 2011–2012 PDU

participants who had reported engaging the least in data use in 2010–2011 (i.e., were previously in the bottom quartile of data use behaviors) had improved significantly more by Spring 2012 than had the non-participants who were in the bottom quartile.

A survey of former PDU participants provides strong evidence that they found the experience valuable and that the program, itself, improved in 2011–2012. In general, compared with 2010–2011 participants, 2011–2012 participants reported more PDU impact on their teaching, new skill development, and more desire to engage in professional development activities and collaborate with other teachers in the future. Former participants rated the 2011–2012 PDU experience higher than the 2010–2011 experience, suggesting the programmatic changes in 2011–2012 improved the PDU program.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

What are Professional Development Units (PDUs)?

About PDUs. In 2010–2011, the AISD REACH strategic compensation program implemented a new program element, professional development units (PDUs). PDUs seek to accomplish staff and student growth through improving instructional practice. Teachers are encouraged to form groups with colleagues, based on specific professional development needs, and to participate in a collaborative job-embedded research study of teaching practice throughout the school year. PDU teams must present their year-long work to a panel that scores them on the following dimensions: team collaboration, PDU implementation/instruction, and impact on student learning. Final scores are calculated by averaging each panel member's overall rating. Participants on teams that receive a score of at least 27 out of 32 points receive a $1,500 stipend.

The PDU process. To complete a PDU and earn a $1,500 stipend teachers:

1. Form a team of at least three and submit a proposal specifying an area of focus which can be pre-developed,[1] team developed, or *Take One*! certification.

2. Identify a key professional development need, based on student data and within the chosen area of focus. Develop a set of materials, resources, and readings to study, discuss, and implement (for pre-developed areas of focus, materials are provided).

3. Identify three to five new strategies to implement in the classroom and design a plan for data collection that will show the effectiveness of the selected strategies. This plan must include a pre and post- test demonstrating student growth.

4. Prepare a team E-binder that includes a description of the PDU materials and proof of student growth.

5. Present an overview of the PDU results and findings to a panel consisting of REACH program staff and the campus principal.

For more information on PDUs visit http://www.austinisd.org/reach/development-units

How did we examine whether PDUs improved teacher performance?

The chief purpose of this report is to examine differences between PDU participants and non-participants to determine the impact of participating in a PDU on instructional practices, data use behaviors, attitudes toward REACH, and student achievement. This report also examines the effects of PDU participation and meeting student learning objectives (SLOs) on those same measures.

To account for differences between the self-selected group of participants and their non-participating peers, analyses were conducted with matched samples of participants and non-participants, where possible.

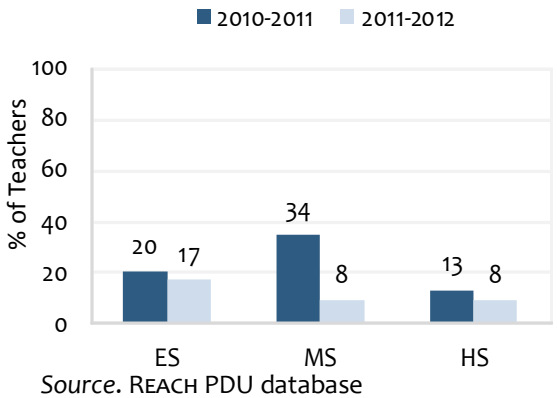
[1]Pre-developed topics include: reaching English Language Learners, using metacognitive strategies in math, integrating technology in the classroom.

To understand the longitudinal effects of PDU participation, we analyzed change from 2010–2011 to 2011–2012 for different groups of teachers: (a) 2 year PDU participants, (b) participants in 2010–2011 only, (c) participants in 2011–2012 only, and (d) non-participants in both years. When data permitted, we then examined whether the rate of change from 2010–2011 to 2011–2012 was different for participants and non-participants who had scored in the bottom 25%, middle 50%, and top 25% in 2010–2011. Finally, to achieve a more comprehensive view of the PDU experience, we analyzed results from a PDU impact survey that was administered in Fall 2012 to all former PDU participants.

How many participated in PDUs, and how many earned stipends?

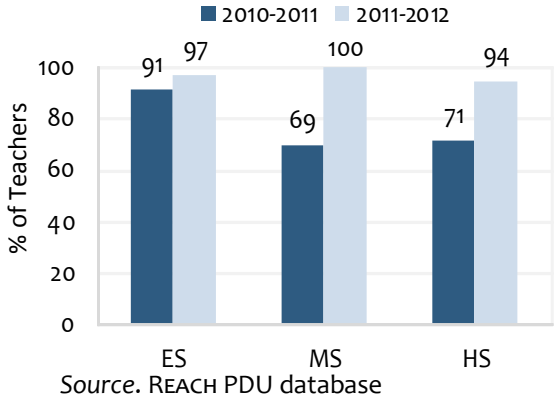
Of all 2011–2012 REACH teachers, 17% of elementary teachers (*n* = 117), and 8% of middle (*n* = 20) and high school teachers (*n* = 44) participated in a PDU. Teacher participation rates decreased from 2010 –2011 to 2011–2012 , especially in middle schools where participation dropped by 26 percentage points (Figure 1). Of all 2011–2012 PDU participants, 33% (*n* = 59) had participated the previous year. Teachers who participated in a PDU were more likely to receive a passing score in 2011–2012 than in 2010–2011 (Figure 2).

Figure 1. Professional Development Unit (PDU) Participation Rates 2010–2011 and 2011–2012.



Source. REACH PDU database

Figure 2. Percentage of Participating Teachers who Achieved a Professional Development Unit (PDU) in 2010–2011 and 2011–2012.

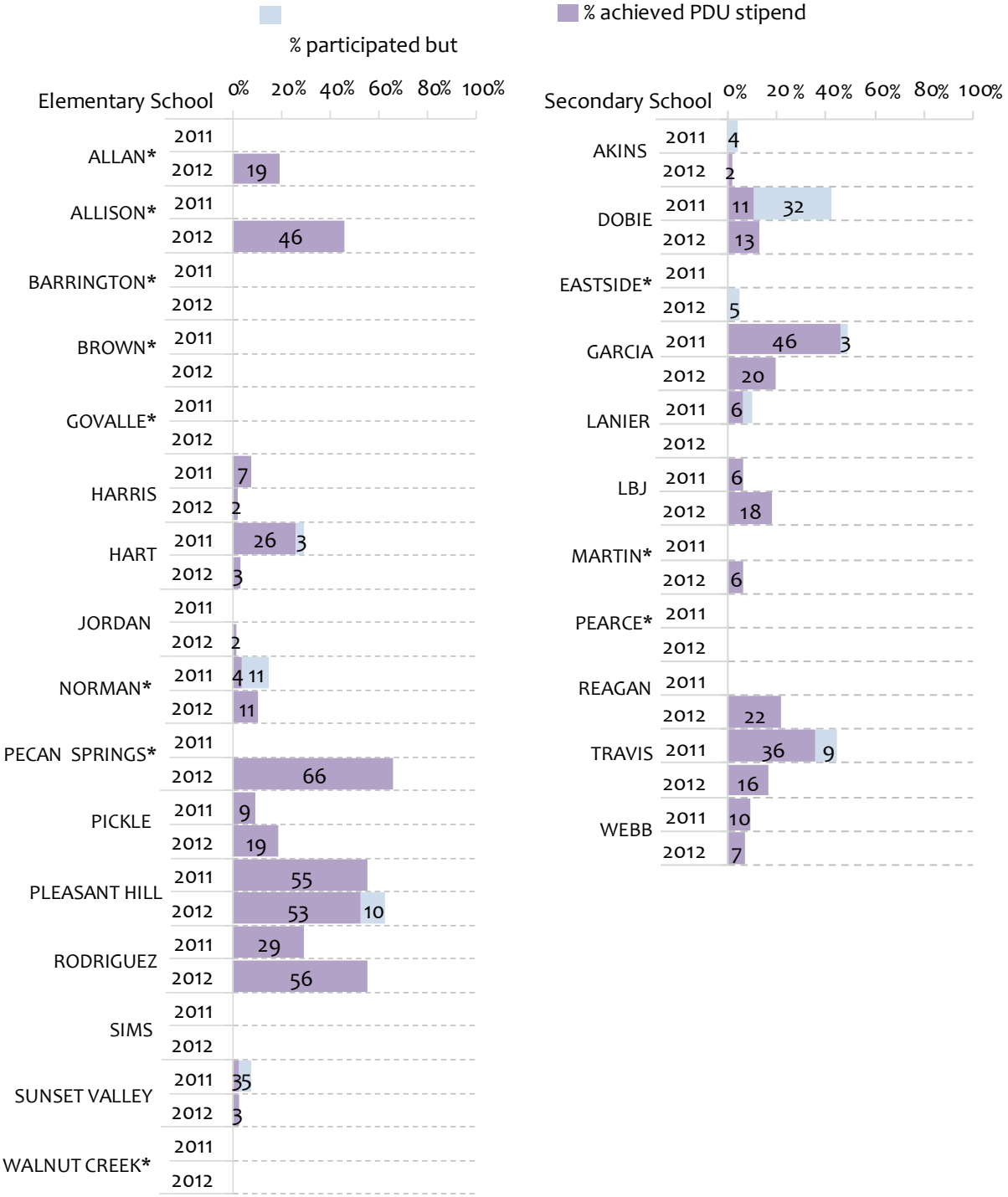


Source. REACH PDU database

Teacher PDU participation varied across schools in 2010–2011 and 2011–2012. Figure 3 illustrates the campus percentages of PDU participants, disaggregated by the percentage of teachers who achieved a PDU and who did not achieve a PDU. A larger percentage of REACH schools had zero participation in 2011–2012 than did so in 2010–2011 (Figure 3); most of these were new to the REACH program. Elementary PDU participation was highest at Pleasant Hill in 2010–2011 and at Pecan Springs in 2011–2012. Secondary participation was the highest at Garcia MS both years, though participation rates decreased across all secondary schools in 2011–2012. In 2011–2012, at the secondary level, the campus PDU participation rate was positively correlated with staff's perceptions of their campus's facilities and resources ($r = 0.62$, $p < .05$, $n = 11$) and instructional practice and support ($r = 0.53$, $p < 0.1$, $n = 11$). Secondary schools had greater participation when

teachers reported better instructional support, access to instructional materials and technology, training to use technology, access to professional support personnel, professional learning communities (PLCs) and data to make informed decisions.

Figure 3. Percentage of All REACH Teachers who Participated and Achieved, or Participated but Did Not Achieve a Professional Development Unit Stipend in 2010–2011 and 2011–2012, by Campus.



Source. REACH PDU database
Note. * indicates campuses new to REACH in 2011–2012

What subjects did 2011–2012 PDU participants study?

High school participants (34%) were most likely to study Advancement Via Individual Determination (AVID), followed by general teaching methods (20%) (Table 1). More than one third (36%) of middle school participants studied topics related to integrating technology in the classroom, and one-quarter of elementary school participants studied topics related to culturally responsive teaching. Fewer teachers studied topics related to English language learners/dual language in 2011–2012 than in 2010–2011.

Table 1. Percentage of Participants in Professional Development Unit (PDU) Subjects, 2010–2011 and 2011–2012.

PDU subject	Elementary		Middle		High	
	2010–2011	2011–2012	2010–2011	2011–2012	2010–2011	2011–2012
AVID					7%	34%
Art	3%	3%			3%	
Core: Early literacy	18%					
Core: Math	5%	15%				9%
Core: Reading/English language arts	7%	7%	9%	18%		
Core: Science	10%				8%	
Core: Writing	4%	9%			10%	
Culturally Responsive Teaching	8%	25%		14%		11%
Data use	2%					
Discipline•		19%				
English language learners/Dual language	30%	7%	45%	18%	61%	11%
General Teaching Methods	3%	12%	40%	14%		20%
Health•						7%
Integrating technology	5%		5%	36%	11%	7%
Music•		4%				
Special education	5%					

Source. REACH PDU database
Note. •indicates a new subject of study in 2011–2012

How did participants and non-participants differ prior to 2011–2012?

In 2011–2012, middle school participants had, on average, significantly more experience than did non-participants, and high school participants had significantly less experience than did non-participants (Table 2). Furthermore, elementary school participants with EVAAS value-added data had significantly greater student growth in mathematics, and middle school participants had significantly greater PDAS ratings the previous year (2010–2011) than did their non-participating peers. Teachers who chose to participate in PDUs in 2011–2012 had also reported different instructional behaviors and attitudes toward REACH the previous year than those who did not participate. Overall, participants had reported more data use and more favorable attitudes toward SLOs than had non-participants. However, results differed by level. Specifically, elementary school participants had reported greater data use and PLC participation, middle school participants had reported greater PLC participation but less reflective teaching and less favorable attitudes toward SLOs and the REACH basket of measures, and high school participants had reported more favorable attitudes toward SLOs but less reflective teaching in the previous year than had those who did not participate in PDUs. Box 1 displays the items on each of these Spring 2011 survey subscales.

Box 1. Spring 2011 Survey Subscales

Attitudes toward SLOs

- Using SLOs has improved my teaching.
- I often consider my SLOs when planning and conducting my daily work.
- The individual SLO stipends are worth the amount of work involved.
- The team SLO stipends are worth the amount of work involved.
- The results of using an individual SLO are worth the extra work.
- The results of using a team SLO are worth the extra work.

Attitudes toward Basket of Measures

- The campus "basket of measures" is a fair measure of schoolwide growth.
- The possibility of earning a schoolwide growth award has been an incentive for my colleagues to work together more.
- Staff have a clear understanding of what they have to do in order to earn the REACH schoolwide growth stipend.
- My principal involved the staff in developing the basket of measures.
- My campus basket of measures is rigorous.

Reflective Teaching

How frequently do:

- Reflections on past teaching experiences influence your lesson plans
- You seek out collaboration with other teachers to improve a lesson plan that did not go well
- You work with other teachers to improve your teaching even when it is going well
- You adjust your instructional strategies based on students assessment results

Data Use

How frequently do you use data to:

- Compare test scores for your class across academic years
- Examine current year benchmark scores to create classroom instructional groups
- Identify students in need of intervention
- Collaborate with other educators about data and how it relates to the learning needs of students

Professional Learning Community Behaviors

How often does your department/team:

- Discuss your department/team's professional development needs and goals
- Discuss assessment data for individual students
- Set learning goals for groups of students
- Groups students across classes based on learning needs
- Provide support for new teachers
- Provide support for struggling teachers
- Share instructional strategies

Table 2. 2011–2012 Professional Development Unit (PDU) Participants' and Non-Participants' Years of Experience and Spring 2011 EVAAS Student Growth Scores, Attitudes Toward REACH, and Instructional Behaviors

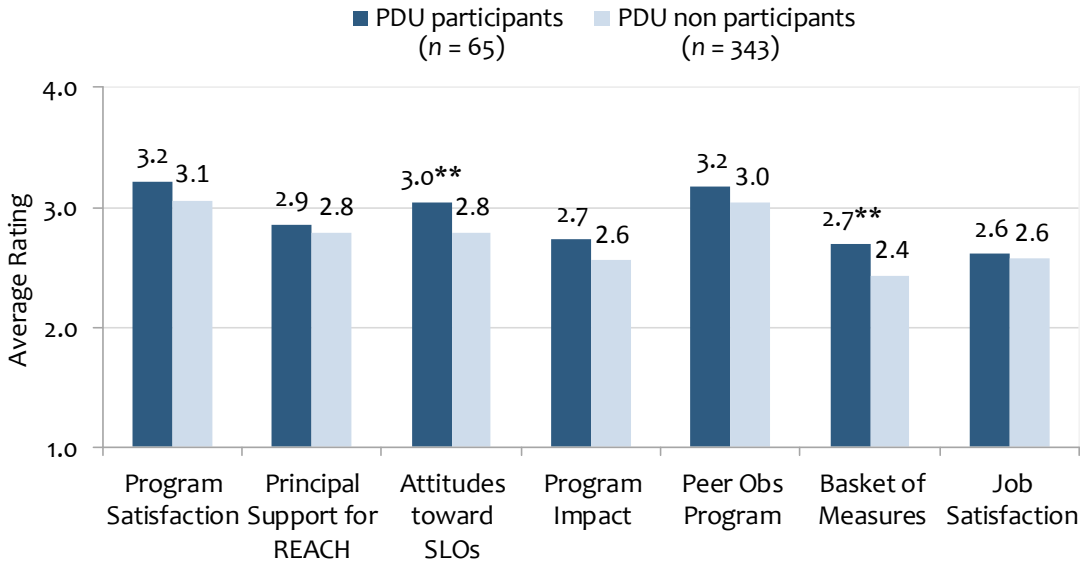
	Elementary		Middle		High		All	
	Participants	Non-participants	Participants	Non-participants	Participants	Non-participants	Participants	Non-participants
Years teaching experience	10.2 (*n* = 113)	10.6 (*n* = 541)	10.5 *† (*n* = 20)	8.6 (*n* = 194)	6.5** (*n* = 44)	10.4 (*n* = 484)	8.2* (*n* = 119)	9.7 (*n* = 763)
2011 Rdg/ELA EVAAS score	.03 (*n* = 16)	.01 (*n* = 71)	—	-.26 (*n* = 23)	n/a	n/a	.03 (*n* = 20)	-.04 (*n* = 95)
2011 Math EVAAS score	.93† (*n* = 18)	.26 (*n* = 65)	—	.03 (*n* = 30)	n/a	n/a	.76† (*n* = 20)	.16 (*n* = 96)
2011 attitudes toward SLOs	3.10 (*n* = 35)	3.09 (*n* = 130)	2.77† (*n* = 9)	3.08 (*n* = 48)	2.87† (*n* = 17)	2.47 (*n* = 194)	2.99** (*n* = 61)	2.77 (*n* = 372)
2011 attitudes toward REACH basket of measures	2.90 (*n* = 44)	3.05 (*n* = 177)	2.66†† (*n* = 7)	2.94 (*n* = 44)	2.67 (*n* = 23)	2.64 (*n* = 147)	2.81 (*n* = 74)	2.84 (*n* = 308)
2011 data use	4.22* (*n* = 31)	3.76 (*n* = 112)	3.78 (*n* = 8)	3.61 (*n* = 44)	2.94 (*n* = 13)	3.15 (*n* = 162)	3.83** (*n* = 52)	3.42 (*n* = 318)
2011 reflective teaching	3.62 (*n* = 32)	3.51 (*n* = 115)	3.38† (*n* = 8)	3.55 (*n* = 44)	3.13† (*n* = 13)	3.32 (*n* = 169)	3.46 (*n* = 53)	3.42 (*n* = 328)
2011 professional learning community (PLC) behaviors	3.63† (*n* = 29)	3.53 (*n* = 109)	3.63†† (*n* = 8)	3.21 (*n* = 44)	3.14 (*n* = 12)	3.23 (*n* = 145)	3.51 (*n* = 49)	3.34 (*n* = 298)
2011 Professional Development and Appraisal System (PDAS) total	202.72 (*n* = 25)	200.24 (*n* = 144)	211.00*†† (*n* = 12)	190.26 (*n* = 76)	175.52 (*n* = 29)	175.12 (*n* = 221)	192.27 (*n* = 66)	185.93 (*n* = 441)

**p* <.05 , ***p* < .01
†medium effect size (*d* = .20 to .49), ††large effect size (*d* ≥ .50)
— *n*≤5.
Source. REACH PDU database, AISD human resources database, AISD Education Value Added Assessment (EVAAS) files, 2011 Employee Coordinated Survey, 2010–2011 Professional Development and Appraisal System (PDAS)
Note. EVAAS results include teachers in grades 4–8 and indicate the number of standard deviations away from the mean student growth in Texas.
Effect sizes were calculated only for groups where *n* < 30. Effect size indicates the magnitude of the relationship between two variables, and in combination with tests of statistical significance can provide additional information about differences between groups.
Math = mathematics
ELA = English language arts

Did PDU participants have more favorable attitudes toward REACH, greater job satisfaction, or better instructional practice in Spring 2012 than did non-participants?

Figure 4 illustrates participants' and non-participants' reported attitudes toward REACH and job satisfaction in 2011–2012. At the end of the school year, participants had more favorable attitudes toward the goal-setting components of REACH (i.e., student learning objectives (SLOs) and the Basket of Measures[2]) than did non-participants. However, recall that those who elected to participate in PDUs already differed from non-participants on these elements (Table 2).

Figure 4. Professional Development Unit (PDU) Participants' and Non-participants' Attitudes Toward REACH and Job Satisfaction, Spring 2012.



** $p<.01$

Source. 2012 Employee Coordinated Survey, PDU database

Note. Response options ranged from 1 through 4 for all measures (strongly agree - strongly disagree).

The 2010–2011 PDU participants had reported higher ratings on measures of instructional practice after participation than had non-participants (Schmitt, 2011); thus, we were interested in examining if this trend was the same for PDU participants in 2011–2012 (Figure 5). We also were interested in whether teachers' evaluation scores on the Professional Development and Appraisal System (PDAS) were different for PDU participants and non-participants (see Figure 6). Indeed, 2011–2012 PDU participants reported significantly more engagement in Professional Learning Communities (PLCs) and more data use than did non-participants. Additionally, teachers who participated in a PDU were rated significantly higher on PDAS than their non-participating peers.

[2]See Appendix A for items on each subscale.

Figure 5. Professional Development Unit (PDU) Participants' and Non-participants' Instructional Practice Ratings, 2011–2012.

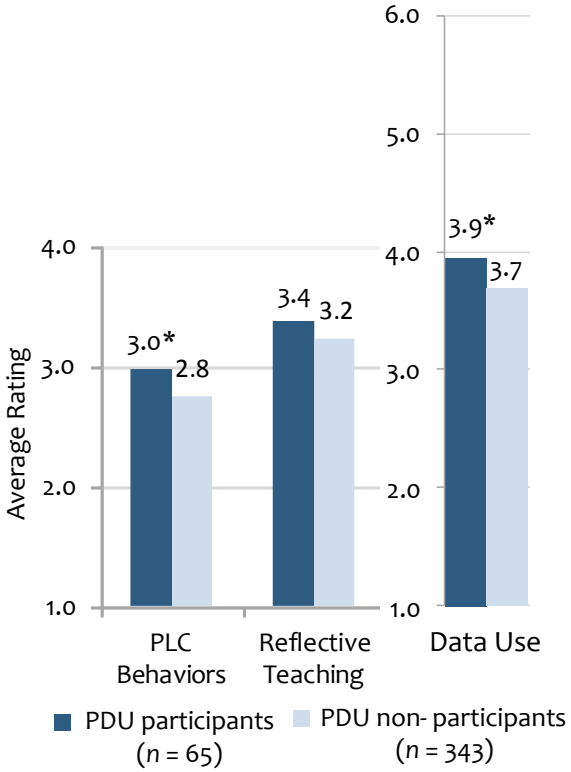
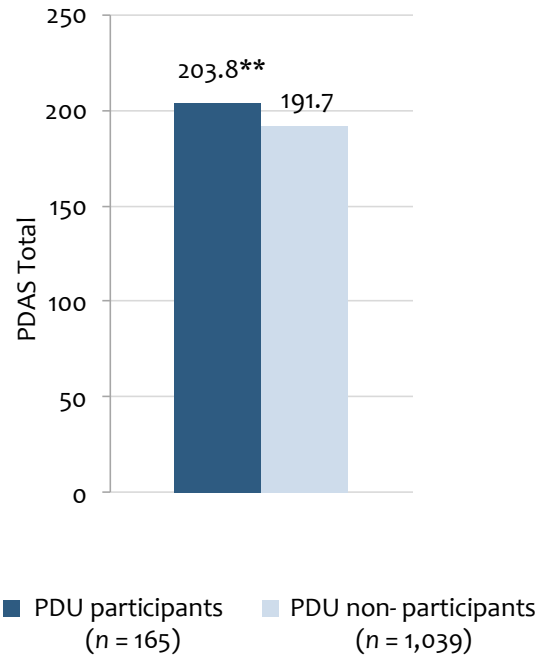


Figure 6. Professional Development Unit (PDU) Participants' and Non-participants' Total Scores in the Professional Development and Appraisal System (PDAS), 2011–2012.



** $p<.01$, * $p<.05$

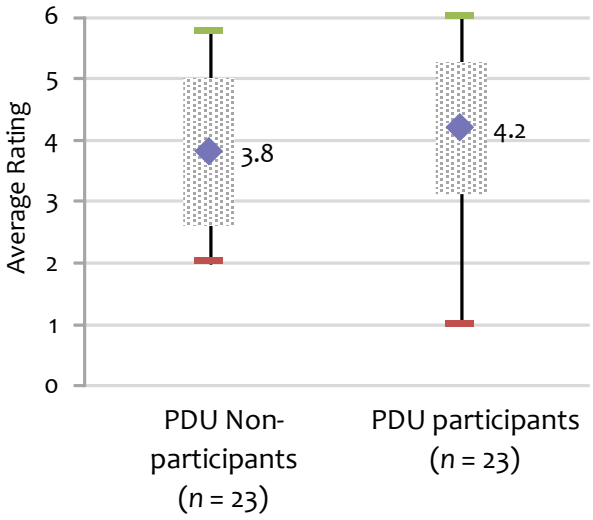
Source. 2012 Employee Coordinated Survey, 2012 TELL survey, PDU database, 2011–2012 Professional Development and Appraisal System (PDAS)

Note. Response options ranged from 1 through 4 (strongly agree — strongly disagree) for PLC behaviors and Reflective Teaching; Data Use options ranged from 1 through 6 (once/yr— once/week).

Although 2011–2012 PDU participants reported more favorable attitudes toward some REACH program elements, more data use and PLC behaviors, and were rated significantly higher on PDAS than non-participants, the self-selected sample of teachers who participated in PDUs differed already from those who chose not to participate. Because participants and non-participants differed prior to participation on characteristics such as years of experience, previously reported data use, and PDAS, a propensity score matching (PSM) analysis was performed to obtain matched samples of PDU participants and non-participants. PSM analysis is a statistical technique that permits researchers to infer causal treatment effects in non-randomized settings by selecting control group individuals who are most similar to treatment group individuals based on the distribution of their characteristics (i.e., covariates) (D'Agostino, 1998).

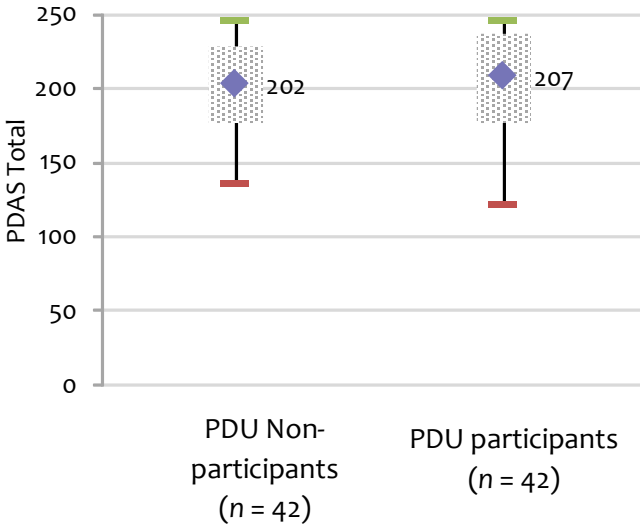
PSM was possible only at the elementary school level due to the small number of PDU participants in middle and high schools. Furthermore, group comparisons could only be performed for the instructional practice measures of data use and PDAS ratings due to insufficient outcome data for PLC and reflective teaching. Figures 7 and 8 illustrate results of a matched sample of elementary school PDU participants' and non-participants' reported data use behaviors and PDAS scores.

Figure 7. Elementary School Matched Professional Development Unit (PDU) Participants' and Non-participants' Data Use Ratings, 2011–2012.



Source. 2012 TELL survey

Figure 8. Elementary School Matched Professional Development Unit (PDU) Participants' and Non-participants' Total Scores on the Professional Development and Appraisal System (PDAS), 2011–2012.



Source. 2011–2012 Professional Development and Appraisal System (PDAS)

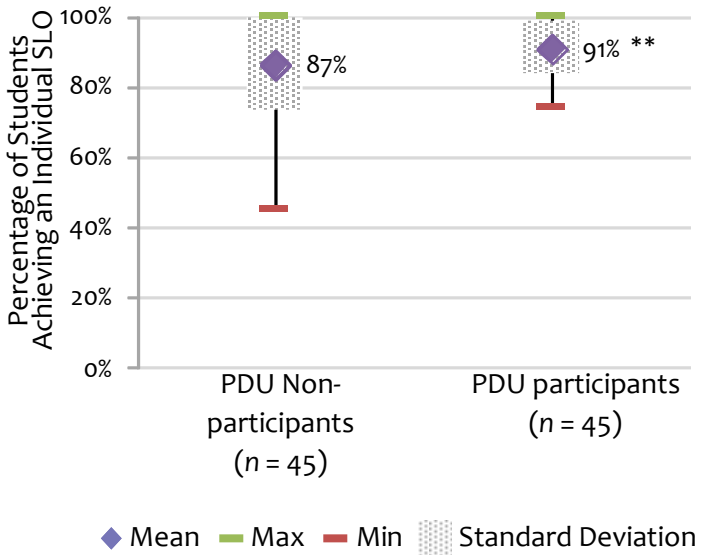
◆Mean —Max —Min Standard Deviation

Although no significant differences were found between PDU participants and non-participants at the elementary level after performing PSM, this method allows us to be more confident that our comparison is unbiased.

Did PDU participants have greater student growth in 2011–2012 than did non-participants?

Elementary PDU participants had significantly higher reading 2012 EVAAS student growth scores than did non-participants ($t = 2.75$, $p < .01$), and secondary participants showed a tendency toward higher EVAAS scores in math and reading/ELA than their non-participating peers.[3] Due to the small number of teachers with EVAAS scores, PSM analysis using teachers' value-added data were not possible. However, student growth for participants and non-participants was examined using their students' performance on SLOs. PSM analyses were performed to examine whether PDU participants had a greater percentage of students achieving their SLOs than did non-participants. In 2011–2012, elementary school level PDU participants did indeed have significantly more students achieving their SLOs than did non-participants (Figure 9). Analyses could not be performed at the middle and high school levels due to small number of secondary school PDU participants.

Figure 9. Percentage of Elementary School Matched Professional Development Unit (PDU) Participants' and Non-participants' Students Achieving Their Individual SLOs, 2011–2012.



Source. PDU database, SLO database

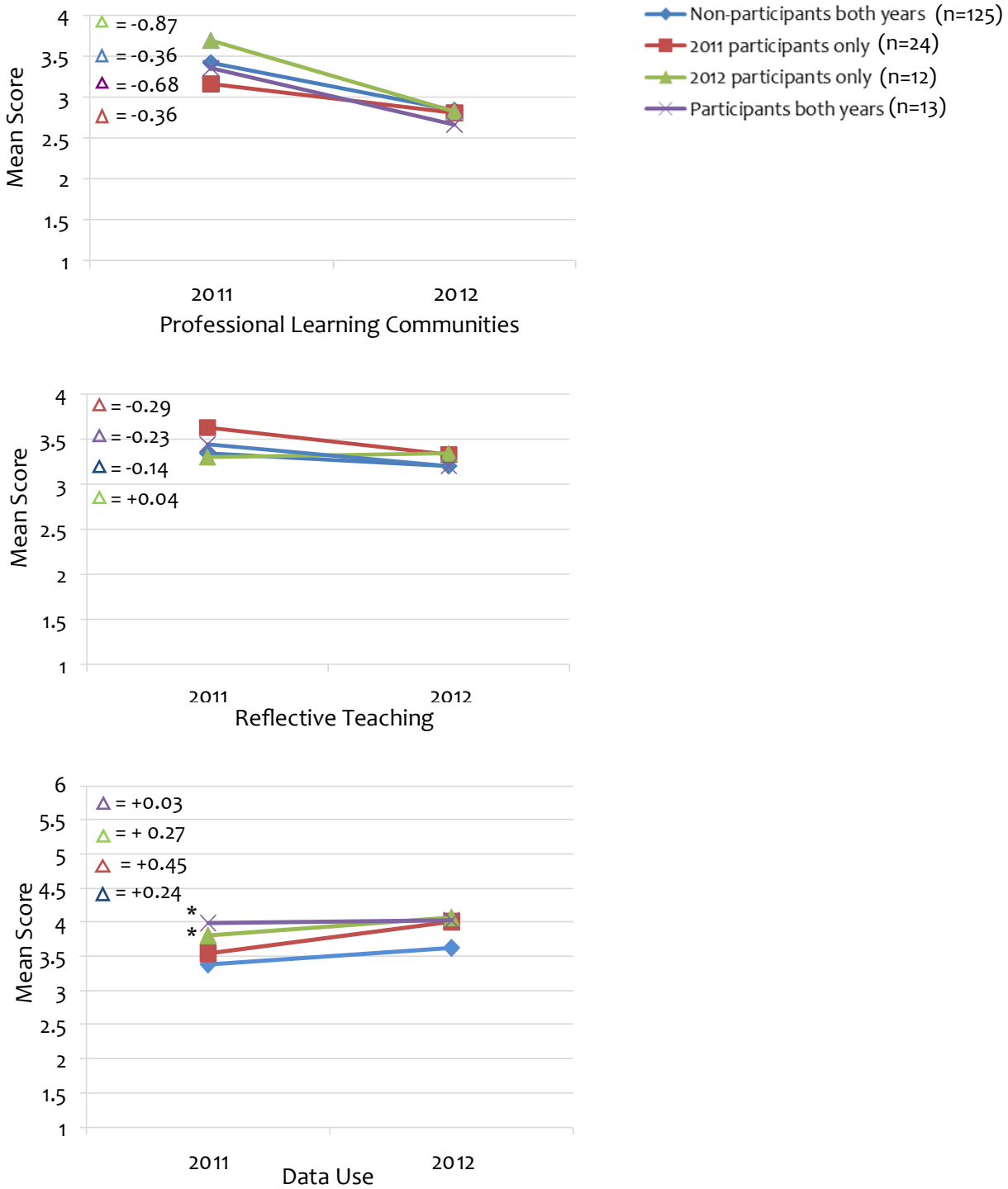
Do years of PDU participation influence change in instructional practice?

To understand the effects of 2 year PDU participation versus 1 year only or no participation, we compared the change in reported PLC, reflective teaching, and data use behaviors. Figure 10 illustrates the means in 2010–2011 and 2011–2012 for each group; the slope of the line represents change (Δ). Figure 10 illustrates that teachers who participated in a PDU in 2011–2012 (either in 2011–2012 only or both years) had significantly higher average ratings in Spring 2011 for data use than did teachers who did not participate in 2011–2012. However, differences in change across groups were not statistically significant.

[3]A medium effect size ($d = .25$) for middle school reading and a large effect size ($d = .59$) for high school math were found for the differences between participants and non-participants. There were not enough participants ($n < 5$) to compute effect sizes for middle school math or high school English language arts.

Reported PLC behaviors declined for all groups, and reported reflective teaching practices declined for most groups. However, reported data use increased for all groups, especially for 2010–2011 only participants (Δ =+0.45).

Figure 10. Mean Scores and 2010–2011 to 2011–2012 Change in Professional Learning Communities (PLC), Reflective Teaching, and Data Use

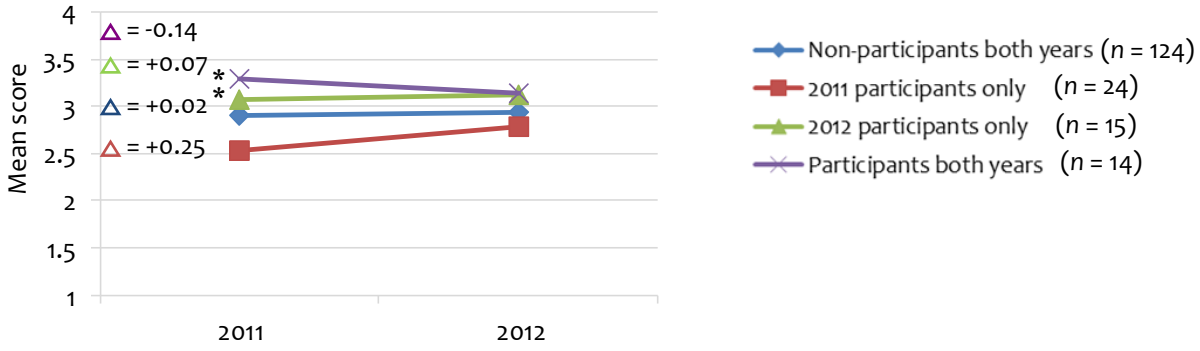


Source. REACH PDU data base, 2011 and 2012 Employee Coordinated Survey, 2011 and 2012 TELL survey.
Note. Δ indicates change, *indicates means of participant groups are significantly different (p<.05) from non-participants.

Do years of PDU participation influence change in attitudes toward REACH?

To understand whether participating in a PDU for 2 consecutive years influenced attitudes toward REACH, we calculated change from 2010–2011 to 2011–2012 for all groups and compared results (Figure 11). The change for all groups, except for those who participated both years, was positive. Similar to data use results, 2011–2012 PDU participants were, on average, significantly more positive about REACH prior to participating in a PDU than were 2011–2012 non-participants. Differences in change across groups were not statistically significant.

Figure 11. Mean Scores and 2010–2011 to 2010–2011 Change in Attitudes Toward REACH



Participating in REACH has been a positive experience for me

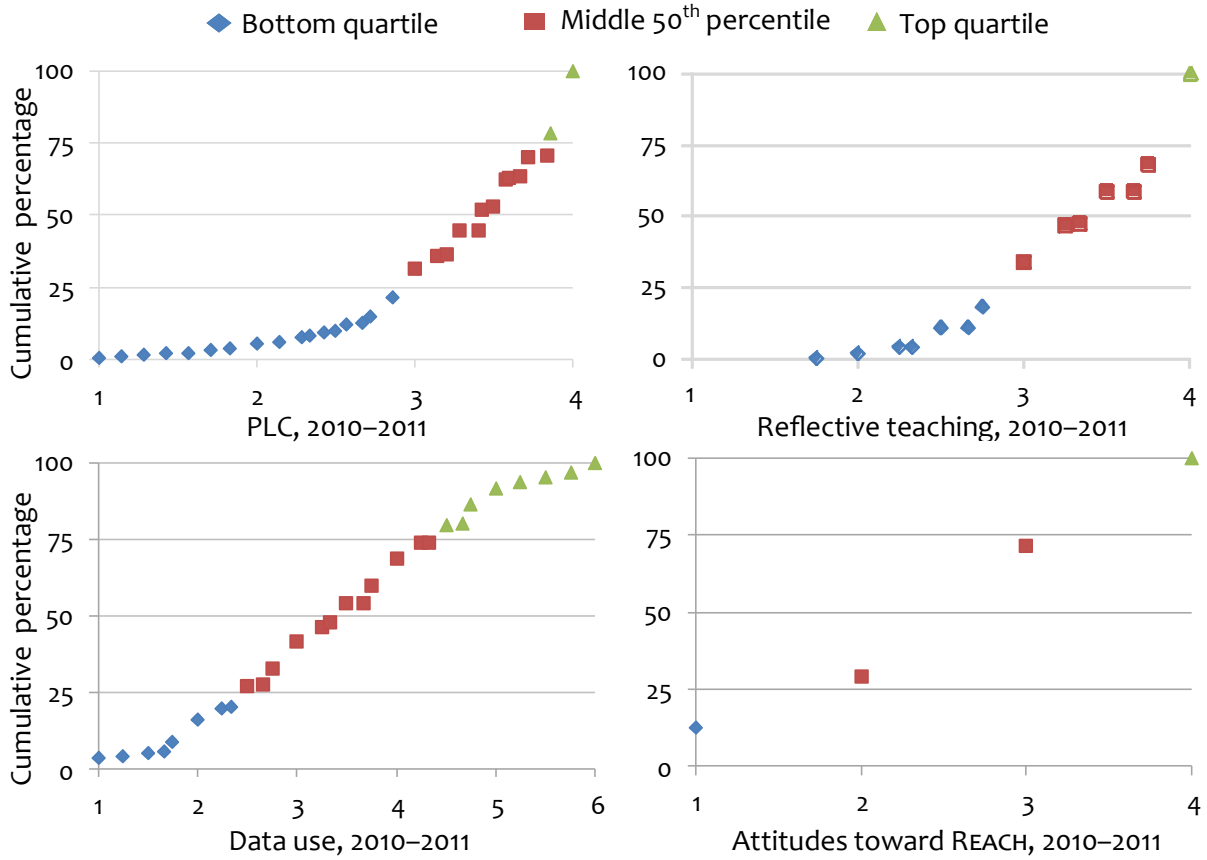
Source. PDU database, 2011 and 2012 Employee Coordinated Survey
Note. *indicates means of groups are significantly different ($p<.05$) from non-participants.
Scale ranges from 1 (*strongly disagree*) to 4 (*strongly agree*).

Did 2011–2012 PDU participants with the lowest ratings in 2010–2011 change more than non-participants' with the same characteristics?

Because 2011–2012 PDU participants had higher average ratings on data use and attitudes toward REACH than did non-participants in 2010–2011, we might not expect to find greater change among participants than non-participants. To determine whether participation in a PDU influenced those who needed the most improvement, we categorized teachers into three groups based on their 2010–2011 results: teachers in the bottom 25%, middle 50%, and top 25% (Figure 12). We then examined whether PDU participants who were in the bottom group in 2010–2011, represented by the blue markers in Figure 12, attained greater change than did non-participants who also were in the bottom group.

Results revealed that PDU participants who had been in the bottom 25% on data use behaviors in 2010–2011 achieved significantly greater change in data use than did their non-participant peers (Table 3). Due to the small number of participants in each group, effect sizes were computed as well. Effect size analysis suggested a meaningful difference in 2011–2012 data use behaviors and attitudes toward REACH between participants and non-participants from the bottom quartile in 2010–2011.

Figure 12. Cumulative Distribution of Teachers' Self-Reported Professional Learning Communities (PLC), Reflective Teaching, Data Use, and Attitudes Toward REACH Ratings in 2010–2011.



Note. Response options ranged from 1 through 4 for all measures except for data use, which ranged from 1 through 6. Higher scores indicate more positive ratings.

Table 3. Change in Self-Reported Professional Learning Communities (PLC), Reflective Teaching, Data Use, and Attitudes Toward REACH for 2011–2012 Professional Development Unit (PDU) Participants and Non-Participants who Scored in the Bottom Quartile in 2010–2011.

	Participants (Δ)	Non-participants (Δ)
Professional learning community	—	-0.37 (*n* = 38)
Reflective teaching	0.19 (*n* = 9)	0.07 (*n* = 49)
Data use	1.75*†† (*n* = 8)	0.95 (*n* = 78)
Attitudes toward REACH	1.0† (*n* = 6)	0.67 (*n* = 45)

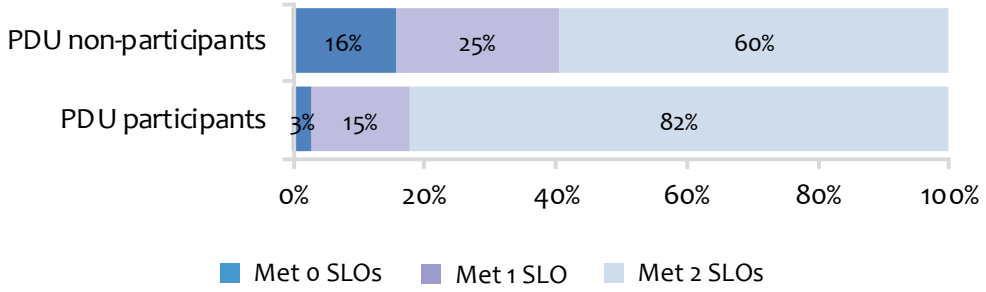
Source. REACH PDU database, 2010–2011 and 2011–2012 Employee Coordinated Survey, 2010–2011 and 2010–2011 TELL survey

Note. * indicates a statistically significant difference at $p < .10$; †indicates a medium effect size ($d = .20$ to $.49$) and †† indicates a large effect size ($d \geq .50$) for the difference between groups. — indicates n≤5.

Do PDUs and SLOs work together?

SLOs are primarily designed to increase student growth[3], and they should do so by improving teachers' instructional practice, PLC behaviors, and data use. Because PDUs also should enhance teachers' practice in these ways, we were interested in the possible relationship between PDUs and SLO performance, and their possible combined influence on teachers' practice and attitudes toward REACH. Indeed, the distribution of the percentages of campus staff who met zero, one, or two SLOs was different for PDU participants and non-participants. In 2011–2012 , a greater percentage of PDU participants than non-participants met two SLOs (Figure 13).

Figure 13. Percentages of Professional Development Unit (PDU) Participants and Non-participants who Met Zero, One, or Two Student Learning Objectives (SLOs), in 2011–2012.



Source. PDU database, 2011 and 2012 Employee Coordinated Survey

The combination of PDU participation and meeting two SLOs corresponded with teachers' reported instructional practice. PDU participants who met two SLOs reported significantly more reflective teaching and data use behaviors than did non-participants who met two SLOs (Table 4).

Table 4. Differences in Professional Learning Community (PLC) Behaviors, Reflective Teaching, Data Use, and Attitudes Toward Student Learning Objectives (SLOs) for Professional Development Unit (PDU) Participants and Non-Participants who Met Zero, One, or Two SLOs, in 2011–2012.

	Non-participants met 0 SLOs (*n* = 8)	Participants met 0 SLOs (*n* = 2)	Non-participants met 1 SLO (*n* = 87)	Participants met 1 SLO (*n* = 8)	Non-participants met 2 SLOs (*n* = 202)	Participants met 2 SLOs (*n* = 54)
Professional learning com-	2.7	—	2.7	2.5	2.8	3.0
Reflective teaching	3.4	—	3.2	3.2	3.2	3.4*
Data use	3.9	—	3.8	3.9	3.6	3.9*
Attitudes toward REACH	2.6	—	2.8	2.8	3.1	3.3

Source. 2012 Employee Coordinated Survey, TELL campus staff climate survey, PDU database, SLO database
Note. Response options ranged from 1 through 4 for all measures except for data use, which ranged from 1 through 6. Higher scores indicate more positive ratings. *indicates significant at $p < .05$. — indicates $n \leq 5$

[3]For more information about SLOs visit: http://www.austinisd.org/reach/learning-objectives

What did PDU participants think of their PDU experience?

To further understand the impact of PDUs on instruction and teacher collaboration, as well as the program's strengths and areas for improvement, a survey was administered in Fall 2012 to all 2010–2011 and 2011–2012 PDU participants. Twenty-six percent (*n* = 31) of 2010–2011 PDU participants and 34% (*n* = 42) of 2011–2012 participants responded, while 41% (*n* = 24) of 2 year PDU participants responded. Overall, the 2012 PDU experience received higher grades than the 2010–2011 experience (Figures 14 and 15).

On average, elementary school participants rated the 2010–2011 PDU experience higher than did secondary participants. The highest ratings came from elementary teachers who participated both years. Teachers who participated in both years and 2011–2012 participants rated the 2011–2012 PDU experience similarly across all levels.

Figure 14. What grade would you give the experience of participating in a professional development unit (PDU) in 2010–2011?

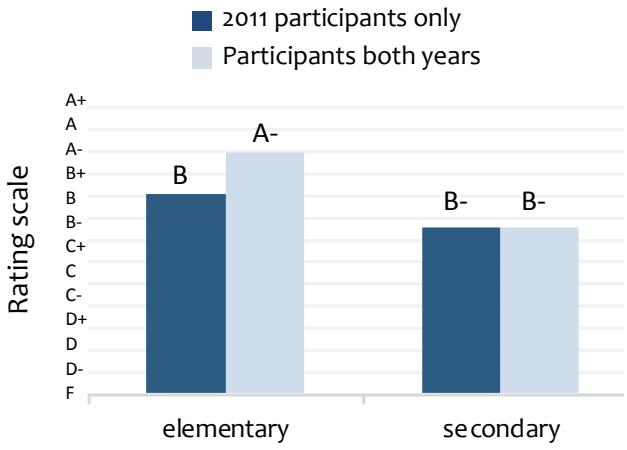
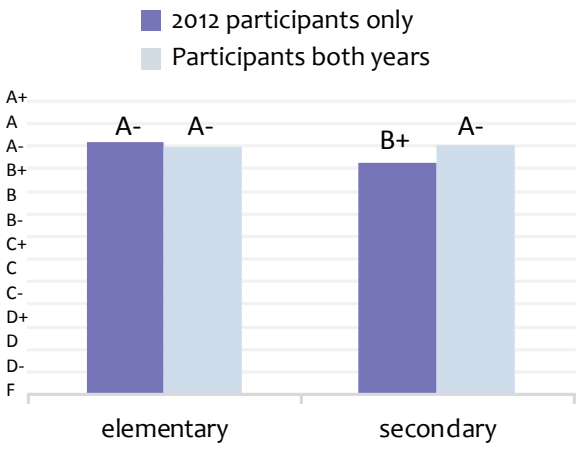


Figure 15. What grade would you give the experience of participating in a professional development unit (PDU) in 2011–2012?



Source. 2011-2012 PDU Impact Survey Results
Note. Survey respondents were asked to choose a grade on a sliding scale that ranged from F to A+.

The 2011–2012 and 2-year PDU participants also reported more PDU impact in their teaching, new skill development, and desire to engage in professional development opportunities and collaborate with other teachers in the future than did teachers who only participated in 2010–2011 (Table 5).

Table 5. Elementary and Secondary Professional Development Unit (PDU) Participants' Average Ratings of Their PDU Experience

	Elementary			Secondary		
	2010–2011 participants only	2011–2012 participants only	Participants both years	2010–2011 participants only	2011–2012 participants only	Participants both years
PDU Impact	3.0 (*n* = 8)	3.5†† (*n* = 30)	3.6¥ (*n* = 14)	2.8 (*n* = 23)	3.3†† (*n* = 12)	3.8¥¥ (*n* = 10)
New Skill Development	2.9 (*n* = 8)	3.2† (*n* = 30)	3.5¥¥ (*n* = 14)	2.7 (*n* = 23)	3.1†† (*n* = 12)	3.2 (*n* = 10)
Future PD and Collaboration	2.6 (*n* = 8)	3.0†† (*n* = 30)	3.4¥¥ (*n* = 14)	2.3 (*n* = 23)	3.0†† (*n* = 12)	3.4¥¥ (*n* = 10)

†medium effect size (*d* = .20 to .49), ††large effect size (*d* ≥ .50) between 2010–2011 and 2011–2012 participants;
¥medium effect size (*d* = .20 to .49), ¥¥large effect size (*d* ≥ .50) between 2011–2012 and both year participants

PDU participants were asked to respond to a series of open-ended items, as well. Table 6 illustrates the main themes that emerged from each item and a brief description of each theme.

Table 6. Themes That Emerged From the Open-Ended Items in the 2011–2012 Professional Development Unit (PDU) Impact Survey

Survey Item	Themes
1. If you participated in a PDU in 2010–2011 only, please tell us why you chose not to participate again in 2011–2012 ?	1.1 No time and the money is not worth it 1.2 Administrative problems 1.3 Lack of motivation due to failing previously
2. If you participated in a PDU in 2010–2011 , please tell us why you chose to participate again in 2011–2012 ?	2.1 Great professional development and collaboration opportunity 2.2 Flexibility to choose own professional development topic 2.3 Student growth
3. How were your experiences different in 2010–2011 than in 2011–2012, and were there any program requirements or supports that made a difference?	3.1 Administrative differences 3.2 Individual differences
4. What did you find most valuable about the PDU experience last year?	4.1 Collaboration 4.2 Professional development opportunity and learning new instructional strategies 4.3 Student impact
5. Why are you unlikely to participate in a PDU in 2012–2013?*	5.1 Time constraints 5.2 Dissatisfied with previous experience
6. What suggestions do you have for improving the PDU experience?	6.1 Administrative

*item was administered only to respondents who reported being *very unlikely* and *unlikely* to participate in a PDU in 2012–2013.

Reasons for not Participating in a PDU Again in 2011–2012. The most recurring reason for not participating in a PDU in 2011-12 was lack of time. One respondent also stated that it was a "low stipend for very large volume of work." Other respondents reported having experienced difficulties and frustrations with all the changes in requirements and a lack of responsiveness from central office personnel. A former participant stated that "there was frustration in dealing with REACH personnel and how they kept changing some of the requirements." Lastly, some respondents were not willing to participate in a PDU again due to failing previously.

Reasons for Participating in a PDU Again in 2011–2012. The most prevalent reason for re-enrolling in a PDU was the opportunity to learn new instructional strategies and discuss them with an "interdisciplinary" group of teachers. A veteran teacher states that "PDUs have helped me stay excited about my own growth professionally, they have helped me focus on what I want to learn more about and give me a path to keep it real." Impact on student growth was another common theme among 2 year PDU participants. A respondent shared the following successful experience: "I took the challenge to demonstrate that pre-K [prekindergarten] students are able to lean math methods. My PDU was rigorous but successful and students demonstrated great growth."

Differences in 2010–2011 and 2011–2012 Experiences. In general, respondents referred to two main differences in their experiences: administrative and individual. Teachers who discussed administrative differences reported higher levels of satisfaction with their experience in 2011–2012 than in 2010–2011 and mentioned that communication with REACH staff was better, the process was more structured, and instructions were clearer. However, one teacher pointed out that "eliminating the campus facilitator position created confusion and ended up leaving a great deal of uncompensated extra work on the plate of the lead teacher of the group." Respondents who commented on individual differences implied that the second year was more enjoyable because they knew what was expected. A teacher reported that "in 2010–2011 we were new to the program and missed the grade by 3 points. In 2011–2012, we attacked the PDU with focus and stamina."

Most Valuable Aspects of the 2011–2012 PDU Experience. The most valuable aspects of the 2011–2012 PDU experience overlapped with the reasons for participating in a PDU again in 2011–2012. Most respondents referred to collaboration as the most valuable asset followed by the opportunity to participate in professional development activities and impact on students. This overlap suggests that the 2011–2012 PDU experience met the expectations of teachers who participated for 2 years in a PDU.

Reasons for Being Unlikely to Participate in a PDU in 2012–2013. Only respondents who reported being unlikely to participate in a PDU in 2012–2013 responded to this item. Of all respondents, those who reported being most unlikely to participate in a PDU in 2012–2013 were 2011–2012 PDU participants. Time constraint was the most common reason for not participating in 2012–2013, as a teacher noted "I am not confident that I can commit to the time that participation in a PDU would require." High levels of dissatisfaction with team mates, final PDU scores, and requirements were some reasons for not participating in 2012–2013, as well. One teacher stated, "I didn't like the format we had to report on," and other stated, "The electronic binder was very labor intensive and complicated."

Suggestions for Improving the PDU Experience. Participants shared numerous administrative suggestions for improving the PDU experience; most were related to changes in the rubric and grading. A teacher commented "I don't think it is appropriate for a principal to be a rater," and another teacher requested that "those who are doing the judging [be] familiar with the rubric." Other comments were tied to the PDU presentation and the binder. Several participants expressed a need for feedback after the presentation and more time. Clearer expectations and no changes to the requirement were suggested by a teacher who requested not to "change criteria and expectations in mid stream." Finally, a participant called for establishing a facilitator because that would "help the groups with organization."

Conclusion

PDU participants' characteristics. Results revealed less teacher PDU participation in 2011–2012 than in 2010–2011 , especially in middle schools. Data suggested that teachers who participated in PDUs were already different in several ways from those who did not participate. In 2011–2012, high school participants had, on average, 1.6 fewer years of teaching experience than did 2010–2011 participants, and middle school participants had, on average, 3.6 more years of experience than did 2010–2011 participants. Participants also differed from non-participants with regard to previous student performance, appraisal ratings, instructional behaviors, and attitudes toward the REACH program elements.

Findings from an analysis comparing 2011–2012 participants and non-participants suggested that participants had significantly greater student growth in reading/ELA and math, more positive attitudes toward SLOs and the Basket of Measures, engaged significantly more in PLCs and data use, and had higher appraisal scores than did non-participants. However, participants already were different from non-participants.

Differences between PDU participants and a matched group of non-participants. Data were not sufficient for propensity score matching analyses with middle and high school teachers. However, propensity score analyses were used to create matched groups of elementary school PDU participants and non-participants. A comparison of matched groups revealed no significant differences between elementary school PDU participants' and non-participants' 2011–2012 PDAS scores or data use ratings. Results for student performance, however, were favorable. Although there were too few teachers with EVAAS results to perform a PSM analysis with EVAAS, results showed elementary participants had a significantly greater percentage of students who met their student learning objectives than did a matched sample of non-participants.

Instructional practice behaviors, attitudes toward REACH and student growth by years of PDU participation. Because 2011–2012 was the second year of PDUs in the REACH program, we were interested in understanding whether instructional practice behaviors (i.e., PLCs, reflective teaching, data use); attitudes toward REACH; and student growth scores in math and reading/ELA changed at a different rate for 1 or 2 year participants and non-participants. Results did not indicate significant differences in change between these groups; that is, attitudes toward REACH, instructional practice behaviors, data use, and student growth did not change at a different rate for 1 or 2 year participants and non-participants. However, findings revealed that 2011–2012 participants had higher ratings than did non-participants of data use and attitudes toward REACH in 2010–2011. Teachers who participated in a PDU in 2011–2012 were more positive than 2011-2012 non-participants to begin with. Thus, we might not expect to see greater change among those whose scores were already high.

Change in instructional practice behaviors and attitudes toward REACH ratings for PDU participants and non-participants who scored in the bottom quartile in 2010–2011. Although positive change between years is desirable for all teachers, it is even more so for those who are in the bottom range. Therefore, we examined whether 2011–2012 PDU participants who were in the bottom 25% range based on their 2010–2011 PLC, reflective teaching, data use, and attitudes toward REACH scores changed at a different rate than did non-participants who were in the bottom 25%, as well. Results indicated that participants in the lower 25% range in data use attained significantly more positive change than their non-participant peers. Effect size computations also revealed a meaningful difference in change of attitudes toward REACH for PDU participants and non-participants in the bottom 25% range. This analysis was not performed with math and reading/ELA student growth scores due to the small number of participants and non-participants in each group.

PDUs and SLOs. In 2011–2012 PDU participants were more likely to meet either one or two SLOs than were non-participants. Furthermore, participants who met two SLOs reported more reflective teaching and greater data use than did non-participants who met two SLOs. Evidence suggests teachers who meet both SLOs and also participate in a PDU report more desirable instructional practices than those who meet both SLOs without participating in a PDU.

PDU impact survey results. In general, respondents gave higher ratings to the 2011–2012 PDU experience than to the 2010–2011 experience. Furthermore, 2011–2012 participants and 2 year participants reported acquiring more new skills from PDUs and more desire to participate in professional development and collaborate with other teachers than did 2010–2011 participants. Results also indicated that teachers who participated in 2011–2012 are more likely than 2010–2011 participants to participate in a PDU in 2012–2013. The most prevalent reasons 2010–2011 participants sited for not participating in a PDU again in 2011–2012 were time constraints and dissatisfaction with their previous experience.

References

D'Agostino, R.B. (1998). Propensity Score Methods for Bias Reduction in the Comparison of a Treatment to a Non-randomized Control Group, *Statistics in Medicine,* 17, 2265-2281.

Schmitt, L. (2011). *AISD REACH Program Update, 2010-2011 Professional Development Units* (Publication No. 10.87 RB). Austin, TX: Austin Independent School District.

Appendix

A1. Employee Coordinated Survey Items

Program Satisfaction (*Scale: strongly agree, agree, disagree, strongly disagree*)

A) I am satisfied with the support I receive from the central office AISD REACH staff.
B) Participating in REACH has been a positive experience for me.
C) If given the choice, I would choose to continue in the REACH program.
D) I am satisfied with the support I receive from the peer observer on my campus.
E) I am satisfied with the support I receive from my REACH mentor (if applicable).

Principal Support for REACH (*Scale: strongly agree, agree, disagree, strongly disagree*)

A) My principal integrates REACH into our daily routine.
B) My principal's expectations for our SLOs are similar to the expectations of Reach staff.

Attitudes toward SLOs (*Scale: strongly agree, agree, disagree, strongly disagree*)

A) Using Student Learning Objectives (SLOs) has improved my teaching.
B) I often consider my SLOs when planning and conducting my daily work.
C) The individual SLO stipends are worth the amount of work involved.
D) The team SLO stipends are worth the amount of work involved.
E) The student achievement results of using an individual SLO are worth the extra work.
F) The student achievement results of using a team SLO are worth the extra work.
G) My individual and team SLO are aligned in the same subject.

Program Impact (*Scale: strongly agree, agree, disagree, strongly disagree*)

A) I feel that my work is more valued than it was before we started the REACH program.
B) The conversations that I have with my principal about my teaching are more valuable than they were before REACH.
C) Participation in AISD REACH has helped me to make better use of student data.
D) My job satisfaction has improved as a result of the AISD REACH program.
E) AISD REACH is a major incentive to remain at this school next year.

Peer Observation Program (*Scale: strongly agree, agree, disagree, strongly disagree*)

A) I am confident in the accuracy of the peer observer's ratings.
B) Peer observations are a good idea.
C) The pre-conference made me feel comfortable with my peer observer.
D) I received valuable feedback from my peer observer during the post-observation conferences.
E) The feedback that I received during my post-observation conferences has improved my teaching.
F) I often consider the feedback that I received during my post-observation conferences when planning and conducting my daily work.
G) My students have benefited from the feedback that I received during my post-observation conferences.
H) I think that the requirements that are needed to obtain a stipend that are based on my peer observation rating are fair.

Basket of Measures (*Scale: strongly agree, agree, disagree, strongly disagree*)

A) I can list all four metrics included in my campus' Basket of Measures.
B) My principal involved campus staff in developing our Basket of Measures.
C) My work contributes to the attainment of our Basket of Measures.
D) The campus Basket of Measures is a fair measure of school-wide growth.
E) The Basket of Measures award has been an incentive for my colleagues to work together more.
F) I have a clear understanding of what I can do to earn the campus Basket of Measures award.
G) My campus Basket of Measures is attainable.

Appendix

Professional learning community *(Scale: frequently, often, sometimes, rarely)*
How often does your department/team:

A) Discuss your department/team's professional development needs and goals
B) Discuss assessment data for individual students
C) Set learning goals for groups of students
D) Group students across classes based on learning needs
E) Provide support for new teachers
F) Provide support for struggling teachers
G) Share instructional strategies

Job Satisfaction *(Scale: very satisfied, satisfied, dissatisfied, very dissatisfied)*
How satisfied are you with your:

A) Salary
B) Ability to influence the school's policies and practices
C) Amount of autonomy and control I have over my classroom
D) Opportunities for collaboration with other teachers
E) Opportunities for professional advancement (promotion) offered to teachers at this school
F) Opportunity to make a difference and contribute to the overall success of my school
G) School's system for rewarding and recognizing outstanding teachers

Reflective teaching *(Scale: frequently, often, sometimes, rarely)*
How frequently do:

A) Reflections on past teaching experiences influence your lesson plans
B) You seek out collaboration with other teachers to improve a lesson plan that did not go well
C) You work with other teachers to improve your teaching even when it is going well
D) You adjust your instructional strategies based on student assessment results

A2. AISD TELL Campus Climate Survey Items

Facilities and Resources (*Scale: strongly agree, agree, disagree, strongly disagree*)

A) Teachers have sufficient access to appropriate instructional materials.
B) Teachers have sufficient access to instructional technology, including computers, printers, software, and internet access.
C) Teachers have sufficient training and support to fully utilize the available instructional technology.
D) Teachers have sufficient access to office equipment and supplies such as copy machines, paper, pens, etc.
E) Teachers have sufficient access to a broad range of professional support personnel.
F) The school environment is clean and well maintained.
G) Teachers have adequate space to work productively.
H) The physical environment of classrooms in this school supports teaching and learning.
I) My school is provided sufficient data and information to make informed decisions.

Instructional practice and support (*Scale: strongly agree, agree, disagree, strongly disagree*)

A) State and local assessment data are available in time to impact instructional practices.
B) Teachers in this school use assessment data to inform their instruction.
C) Teachers work in professional learning communities to develop and align instructional practices.
D) Provided supports translate to improvements in instructional practices by teachers.
E) Teachers are encouraged to try new things to improve instruction.
F) Teachers at my school are assigned classes that maximize their likelihood of success with students.
G) Teachers have autonomy to make decisions about instructional delivery.

Data use (*Scale:* once/yr, once/semester, once every 2 mo., once/mo., twice/mo., once/wk)
How frequently do you use data to:

A) Compare test scores for your class across academic years.
B) Examine current year benchmark scores to create classroom instructional groups.
C) Identify students in need of intervention.
D) Collaborate with other educators about data and how it relates to the learning needs of students.

A3. PDU Impact Survey Items

PDU Impact (*Scale: strongly agree, agree, disagree, strongly disagree*)

A) Participating in a PDU has encouraged me to collaborate with other teachers to improve my teaching more than I did before.
B) Participating in a PDU has encouraged me to discuss new instructional strategies with teachers on my campus more than I did before.
C) Participating in a PDU has encouraged me to share instructional resources with other teachers on my campus more than I did before.
D) I learned strategies through my PDU that have helped me refine my teaching.
E) I have seen direct benefits to my students from my participation in a PDU.

New Skill Development (*Scale: 1-4*)
Please rate how the PDU experience has helped you develop the following skills:

A) New methods to assess my students' growth
B) New analytic skills to target struggling students
C) New methods to assess my students' needs
D) New intervention strategies for students in need
E) Participating in a PDU has helped me analyze my own instructional practices in new ways.

Future PD and Collaboration (*Scale: strongly agree, agree, disagree, strongly disagree*)

A) My PDU group continues to collaborate on topics related to our PDU.
B) My PDU group continues to meet about new topics that we didn't address in our PDU.
C) Because of my PDU, I am more likely to engage in professional development opportunities in the future.
D) Because of my PDU, I am more interested in searching for research studies that will inform my instructional practice.