

Introduction

Purpose. In the 2010-2011 school year, the AISD REACH strategic compensation program staff implemented a new program element, Professional Development Units (PDUs). PDUs provide educators the opportunity to participate with a group of colleagues in a job-embedded research study of teaching practice, and to experience the student performance that results from enhanced instructional strategies. The following sections describe analyses conducted to examine the influence of PDUs with regard to students' academic growth and teachers' behaviors.

Methodology. We examined initial differences between REACH teachers who participated in PDUs and those who did not, and reasons some started but did not complete the PDU process. We also examined self-reported attitudes and behaviors related to data use, team collaboration, and reflective teaching in 2010-2011 for PDU participants and non-participants, and 2011 Texas Assessment of Knowledge and Skills (TAKS) data in mathematics (math) and reading/English language arts (ELA) for those with associated student TAKS data. Finally, we identified common themes in feedback PDU participants provided about their experiences.

Key findings. PDU participation was greatest at the middle school level and lowest at the high school level (34% and 13%, respectively). Secondary participants were less experienced and generally had higher performing students in 2010 than did non-participants, while elementary participants were similar to their non-participating peers. Across all levels, those who chose to complete PDUs had reported more positive attitudes toward and experiences with REACH in Spring 2010.

The majority of PDUs focused on English language learners (ELLs); however, many elementary PDUs addressed core content, while middle school PDUs addressed general teaching methods. TAKS performance was more favorable for elementary and high school participants than for their non-participating peers; however, the reverse was found for middle school participants. This may reflect the lack of alignment between PDU topics and core content, particularly at the middle school level.

Participants generally reported great satisfaction with their experiences, especially with the collaboration, immediate reflection on practice, and student outcomes that resulted. Findings indeed suggest favorable outcomes for participants with regard to frequency of data use, professional learning communities (PLCs), and reflective teaching behaviors.



What are PDUs and how do they work? A PDU is the sustained study of a topic that expands beyond a single conference session or seminar, is developed by small teacher teams to meet their identified needs, and enhances instructional strategies implemented in the classroom. Principals approve team composition and PDU topics, and teachers work together to identify, study, and implement best practice strategies, then demonstrate students' growth in the area of focus. Participants prepare a reflection paper and present findings to a scoring panel including their principal and staff from Educator Quality. Those who achieve a passing score receive a stipend of \$1500. In 2010-2011, 226 teachers participated in PDUs, and 79% achieved a passing score.¹

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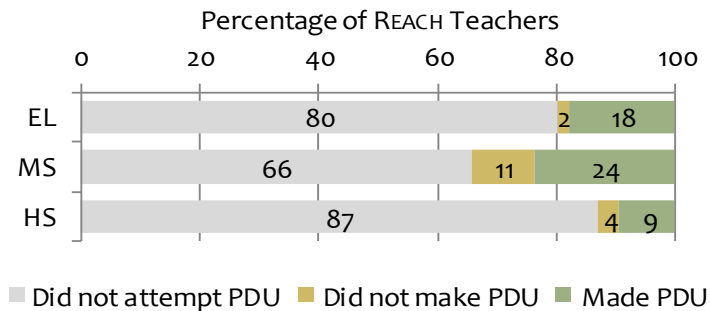
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¹ For more information about PDUs, see <http://archive.austinisd.org/inside/initiatives/compensation/pdus.phtml>

Who participated in Professional Development Units (PDUs)?

Of the 1,209 teachers at REACH campuses, 19% (n = 226) attempted a PDU in 2010-2011 (Figure 1). The majority of those who participated (79%) earned a passing score, accompanied by a \$1,500 stipend.

Figure 1. PDU participation rates differed by level. The percentage of participants attempting PDUs differed slightly by level, with the greatest participation at the middle school level. Elementary teachers who participated in PDUs were more likely to earn their PDU stipends than were middle and high school teachers.



Source. REACH PDU database

To understand whether differences existed between teachers who opted to participate in PDUs and those who did not, we examined some characteristics of participants and non-participants, including years of teaching experience and student achievement the previous year. Analyses show that teachers who chose to participate in PDUs differed significantly from their peers, in some cases, with respect to prior student performance and years of teaching experience. (Table 1). Additionally, participants and non-participants had reported different attitudes toward strategic compensation and experiences in the program in Spring 2010 (Figure 2).

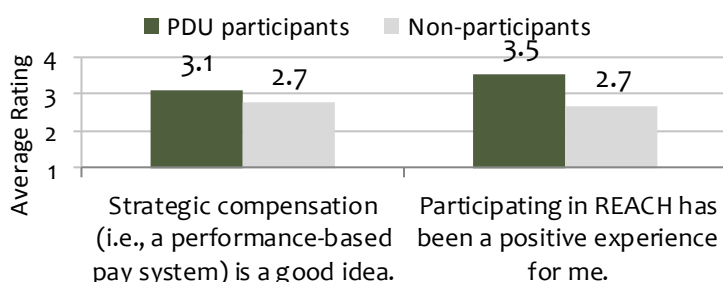
Table 1. Years of experience and student performance differed in 2010 for PDU participants and non-participants. Middle and high school teachers who participated in PDUs in 2011 had fewer years of teaching experience, on average, than did those who chose not to participate. Secondary teachers who participated generally had better student performance on TAKS in Spring 2010 than did their peers who did not participate in PDUs.

	Elementary		Middle		High	
	PDU participants	Non-participants	PDU participants	Non-participants	PDU participants	Non-participants
Years of teaching experience	10.3 yrs	10.6 yrs	6.9 yrs	9.7 yrs*	8.1 yrs	10.0 yrs*
Net growth reading/ELA, 2010	-15.7	-5.8 [†]	10.8 ^{††}	-3.4	-12.6 [†]	-16.4
% met standard reading/ELA, 2010	81%	81%	61%	66% [†]	83%*	76%
Net growth math, 2010	-4.3	-3.9	0 [†]	-6.8	-2.5 ^{††}	-9.9
% met standard math, 2010	80%	80%	65% [†]	59%	60%	59%

Source. REACH PDU database, AISD human resources database, and AISD TAKS files

Note. Math and reading/English language arts (ELA) results were only examined for teachers in a TAKS tested grade with students assigned for the subject. See Appendix for n counts by subject and level for participants and non-participants. [†]indicates a medium effect size (d = .20 to .49) and ^{††}indicates a large effect size (d ≥ .50) for the difference between groups; * indicates both a medium/large effect size and a significant difference between groups (p < .10).

Figure 2. Attitudes were different for PDU participants and non-participants during the prior year.



Source. 2010 Employee Coordinated Survey

Participants were significantly more likely than were non-participants to have reported believing strategic compensation is a good idea and to have reported a positive experience with REACH in 2009-2010.

Why did some participants begin, then discontinue, working on PDUs?

In late Spring 2011, evaluation staff distributed a survey to everyone who had expressed interest in the PDU process in Fall 2010. A total of 193 responses were received from many who had (a) begun the process without completing or (b) completed a PDU. Several respondents also had been their campus PDU facilitator, even if they themselves had not participated in a PDU. See Table 2 for a description of respondents. Of the respondents who had discontinued participation in PDUs, most identified scheduling conflicts as a reason for not completing the process (Table 3), although nearly half also identified reasons other than those on the list.

Table 2. Nearly three-quarters of survey respondents had completed the PDU process. Of the 226 teachers who completed a PDU, more than half ($n = 138$) responded to the Spring PDU survey.

Respondent type	Number of respondents	Percentage of respondents
Completed the PDU process but did not facilitate	119	62%
Completed the PDU process and also facilitated	19	10%
Facilitated the PDU process but did not complete a PDU	4	2%
Began participating in PDUs but did not complete the process	51	26%
Total	193	100%

Source. REACH Spring 2011 PDU survey

Most open-ended comments about why teachers discontinued participation reflected frustration with the lack of clarity in the expectations for PDUs and that others in the PDU group had discontinued their participation, causing them to be without a group.

Table 3. Non-completers reported a variety of reasons for their decision not to complete a PDU. Few respondents indicated the level of support or topic of study were reasons they discontinued participation, and less than a quarter reported the stipend was too low for the work or the program was not what they had expected. Almost half provided other reasons for not completing the PDU they began.

Reason	Number of non-completers	Percentage of non-completers
Could not fit activities into my schedule	30	60%
Program was not what I expected	10	20%
Stipend was not worth the work	10	20%
Not enough support from campus facilitator	7	14%
Could not decide on a topic of study	1	2%
Other	24	48%

Source. REACH Spring 2011 PDU survey

“As a team we felt that the information that was given to us did not allow enough time to collect data and present the material efficiently. We did not get all of the requirements until February and everything was due in April/May.”

“Others on [the] team could not meet at specific dates due to tutoring.”

“Others in PDU could not fit activities into their schedule.”

“It seemed like every week the expectations changed—too disorganized! 8-10 page paper is too much for each individual. It was presented as an 8-10 page paper for the team, which we were all excited to collaborate on and in fact had collected data on the goals we came up with. When it kept changing, then became a paper for each participant the fun was lost.”

What topics did PDU participants study?

The majority of PDU participants studied topics pertaining to English language learners (ELLs), particularly at the secondary level (61% of high school participants and 45% of middle school participants). See Table 4.

Elementary participants were most likely to study instructional strategies for core content areas (44% combined), while a small percentage (13%) selected topics pertaining to economically disadvantaged students and students with disabilities. Middle school participants opted to study more general teaching methods (40%) rather than core content area instruction (9% combined), and high school participants who did not focus on ELL instruction most commonly selected topics related to technology integration (11%), writing (10%), and science (8%).

Table 4. At each level, the most frequently studied PDU topic was ELL/Dual Language instruction. At the elementary level, literacy and reading also were commonly studied, and at the middle school level, general teaching methods were commonly studied.

PDU subject	Percentage of participants studying topic		
	Elementary	Middle	High
Art	3		3
AVID			7
Core - Early literacy	18		
Core - Math	5		
Core - Reading	7	9	
Core - Science	10		8
Core - Writing	4		10
Data use	2		
Economic disadvantage	8		
ELL/Dual language	30	45	61
General teaching methods	3	40	
Integrating technology	5	5	11
Special education	5		

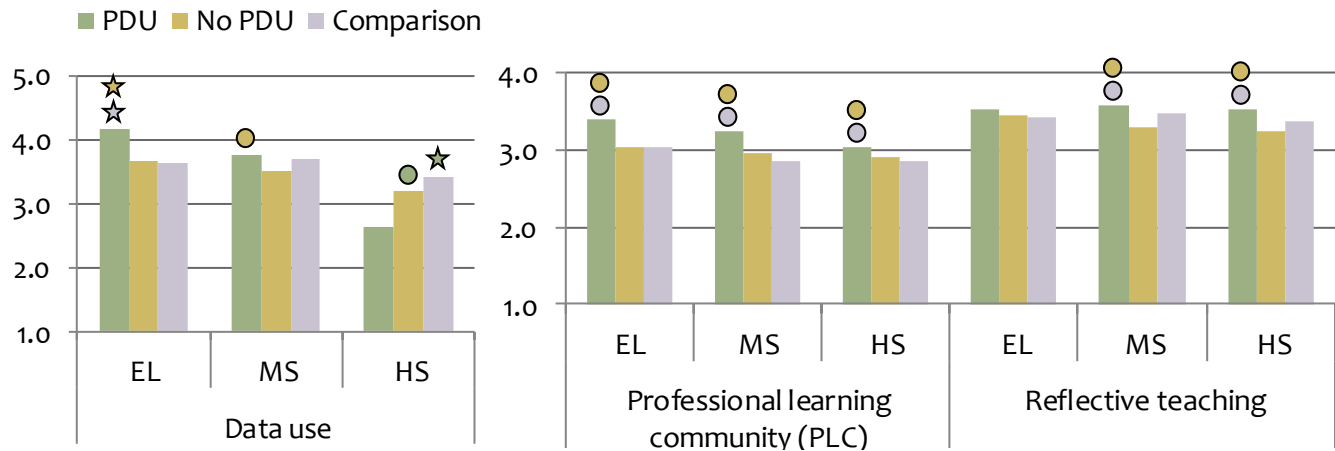
Source. REACH PDU database

Were PDUs related to teachers' instructional behaviors in 2010-2011?

In Spring 2011, REACH participants and teachers from comparison schools were asked to rate the frequency with which they engaged in certain data use behaviors, PLC activities, and reflective teaching practices. The results revealed some differences between teachers who completed PDUs and their peers who did not at REACH and comparison schools (Figure 3). See Appendix for items on each subscale.

The results revealed some favorable findings for PDU participants. PDU participants at each level reported more activities related to PLCs than did non-participants at REACH and comparison schools. Additionally, elementary and middle school PDU participants reported more data use than did their REACH peers who did not participate, and middle and high school PDU participants reported a tendency toward more reflective teaching behaviors than did REACH non-participants and teachers at comparison schools. However, high school PDU participants reported using data less frequently than did their peers who did not participate and peers at comparison schools.

Figure 3. Data use, professional learning community (PLC), and reflective teaching were more commonly reported among PDU participants than among non-participants in some cases. However, high school non-participants reported more data use than did their participating peers.



Note. ○ indicates an effect size of $d \geq .20$ (at least medium) for the difference between two groups, indicated by the color of the circle; ☆ indicates both an effect size of $d \geq .20$ and a statistically significant difference from another group ($p < .10$), indicated by the color of the star.

Source. REACH PDU database, 2011 Employee Coordinated Survey, 2011 TELL AISD campus staff climate survey

Were PDUs related to students' performance in math and reading/ELA?

To examine the influence of PDUs on students' performance, we examined the 2011 math and/or reading/ELA TAKS performance data for teachers, depending on whether they had or had not completed a PDU and whether they were at a REACH school or a similar non-REACH comparison school (Table 5). At the elementary level, PDU participants showed a tendency for greater math net growth and passing rates than did their REACH peers who did not complete PDUs, and for greater net growth in reading than did their peers who did not complete PDUs and those at comparison schools. High school math teachers who completed PDUs also had significantly greater net growth than did their REACH peers who did not complete PDUs and those at comparison schools. High school ELA teachers who completed PDUs showed a tendency for greater passing rates than did their peers. However, middle school math and reading/ELA teachers who completed PDUs showed lower net growth and passing rates in their subjects than did their REACH peers who did not participate and teachers at comparison schools.

Table 5. PDU participants outperformed their peers in some instances at the elementary and high school levels, but not at the middle school level. Despite favorable results for high school math teachers, high school reading/ELA PDU participants tended to have lower net growth than did their REACH peers who did not participate.

	Elementary			Middle			High		
	PDU	No PDU	Comparison	PDU	No PDU	Comparison	PDU	No PDU	Comparison
Net growth math, 2011	8.4 ^{††}	-3.4 ^{††}	6.9	-14.3 ^{*†}	6.0 [*]	-10.4 [†]	5.9 [*]	-6.5 [*]	-6.5 [*]
% met std. math, 2011	88% ^{††}	82% ^{††}	86%	55% [*]	72% [*]	64% [*]	65%	63%	62%
Net growth rdg/ELA, 2011	13.8 ^{††}	1.6 ^{††}	2.1 ^{††}	-14.5 ^{††}	-4.3 [*]	-9.0 ^{††}	-15.4 [†]	-12.1 [†]	-16.3
% met std rdg/ELA, 2011	84%	82%	86%	57% ^{††}	68% ^{††}	64% [†]	81% [†]	76% [†]	75% [†]

Source. REACH PDU database and AISD TAKS files

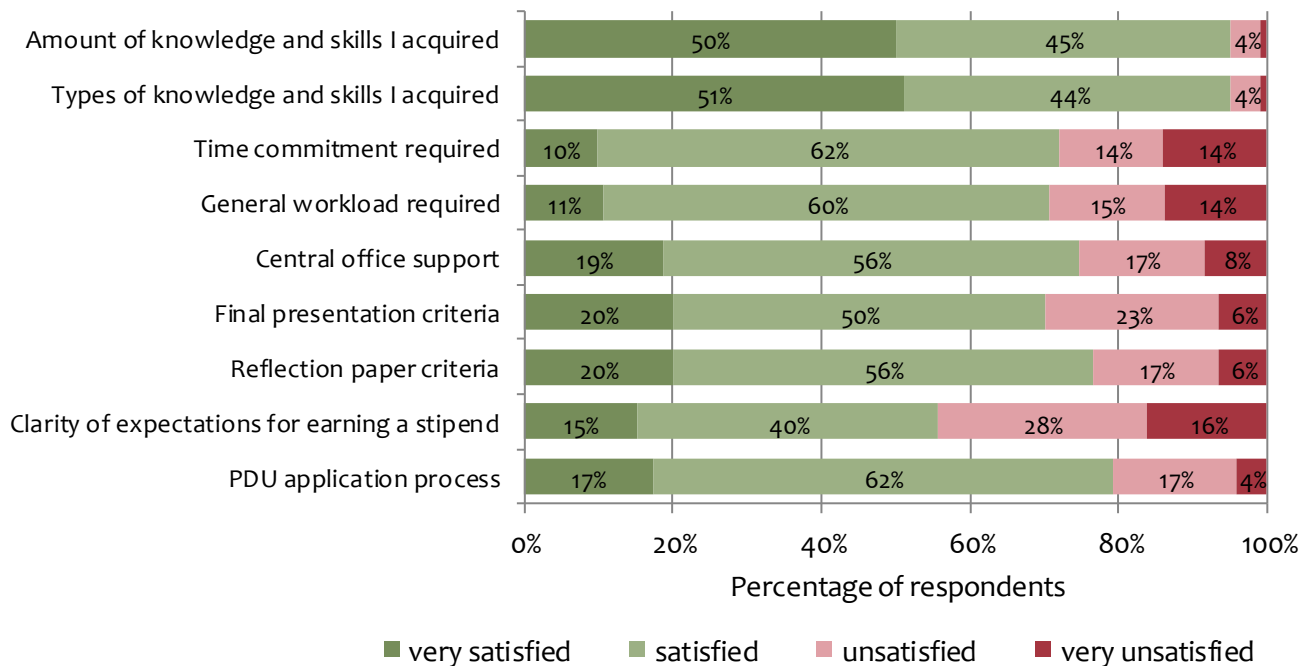
Note. Math and reading/ELA results were only examined for teachers in a TAKS-tested grade with students assigned for the subject. See Appendix for n counts by subject and level for participants and non-participants.

[†]indicates a medium effect size ($d = .20-.49$) and ^{††}indicates a large effect size ($d \geq .50$) for the difference between groups; * indicates both a large effect size and a significant difference between groups ($p < .10$)

What did PDU participants say about their experience?

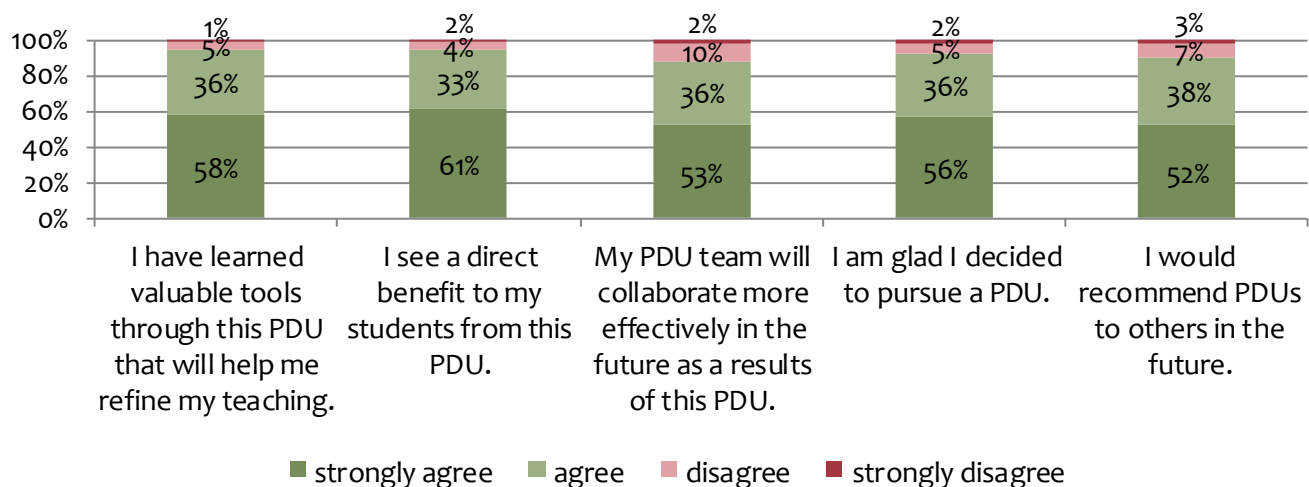
A good experience. Participants who responded to the Spring 2011 PDU Survey reported overwhelming support for the PDU process. More than half were satisfied or very satisfied with each aspect of the PDU program (Figure 4). Participants indicated they learned valuable teaching strategies, they saw a direct benefit to students, and their PDU team will collaborate more effectively in the future as a result of participation in the PDU (Figure 5). In short, most were glad they decided to pursue a PDU and would recommend PDUs to others in the future.

Figure 4. The majority of participants were satisfied with the program, and 95% were satisfied with the types of and amount of knowledge and skills they acquired. Participants were most likely to report strong dissatisfaction with the clarity of expectations, general workload, and time commitment.



Source. REACH Spring 2011 PDU survey

Figure 5. Most participants were glad they pursued a PDU and would recommend PDUs to others. Almost all participants reported learning valuable tools and seeing a direct benefit to their students.



Source. REACH Spring 2011 PDU survey

The most valuable part. When asked what they found most valuable about the PDU experience, participants clearly valued the collaboration with peers. The collaboration provided a welcome opportunity for them to discuss instructional strategies with colleagues, many of whom they otherwise might not have joined due to different teaching assignments. Many participants also reported the new skills they learned were the most valuable aspect of PDUs, and many enjoyed seeing a direct benefit to their students.

Collaboration	Immediate implementation and reflection on teaching strategies	Student growth
<p><i>"It was a great opportunity to collaborate with teachers from other grade levels and contents with whom I wouldn't normally have the chance to work."</i></p>	<p><i>"Participating in the PDU forced me to really try many strategies and I learned new teaching ideas that I will continue in the future."</i></p>	<p><i>"Working closely with a group of professionals. Seeing my students grow in one specific area."</i></p>
<p><i>"I learned a lot by working collaboratively with other teachers through vertical team planning. I found the research and professional development trainings we targeted beneficial. I do believe they improved my teaching."</i></p>	<p><i>"The most valuable aspect of the PDU was to immediately apply the knowledge and strategies learned through our research. Typical professional development activities are somewhat disconnected from the actual classroom experience. But, the PDU allowed us to focus on areas relevant to our own classrooms and immediately implement strategies and then modify them as needed."</i></p>	<p><i>"Seeing how my students comprehend information best and working with my colleague."</i></p>
<p><i>"Sharing resources with my colleagues and the discussions generated."</i></p>	<p><i>"How to incorporate ideas of improvement throughout the school year to the point that it does not feel overwhelming."</i></p>	<p><i>"I have always looked at the growth of my students as a whole, but the PDU made me look even closer at my students who entered my class that was considered low and it really made me look at the growth that each has actually made."</i></p>
<p><i>"One of the most valuable aspects of the PDU process was the collaboration amongst my teams. I can see that the teachers really learned from one another and gained insights as a group. I also found it rewarding to hear from the students and see what they learned this year from the strategies and tools we developed. As a facilitator, I enjoyed working with various groups of teachers who I don't always get to interact with."</i></p>	<p><i>"The way that it increased our awareness of our practice and increased our communication about our practice."</i></p>	<p><i>"The research did help my students' comprehension skills."</i></p>
<p><i>"Collaboration with peers, new insights gained"</i></p>	<p><i>"The PDU process allowed me to focus my teaching and reflect upon what was working and not working in the classroom using data."</i></p>	<p><i>"Collaborating with my colleagues improved an already highly functional team, and I believe my students benefitted significantly from the tools we implemented."</i></p>
		<p><i>"How it opened up so much more than I expected for me as a teacher to look at and enjoy trying with my students."</i></p>

What could improve. When asked what they would suggest to improve the program, most participants wanted more clarity at the beginning of the process regarding expectations for completing a PDU, including exemplars for their review. Many also requested a method for holding facilitators and team members accountable for their work, and some believed the process should begin and end earlier than it did in 2010-2011. A few participants offered suggestions to streamline the application process, and some provided comments about the reflection paper. Feelings about the paper were mixed, however; some felt the paper should be lengthened and the presentation should be eliminated, while others felt the presentation should be lengthened and the paper should be eliminated.

What has changed for 2011-2012?

Based on feedback about the PDU process in 2010-2011, REACH staff implemented several program changes for 2011-2012. Most notably, all expectations were provided to prospective PDU participants at the beginning of the school year. Because the program element was new and under development throughout the Fall semester of 2010-2011, some of the documentation (e.g., rubrics, exemplars) was not yet available to prospective participants as they began the PDU process. Clear information about program expectations was provided up front in 2011-2012.

In addition, some of the program requirements were revised. For example, the scoring rubric was streamlined to reduce areas of perceived redundancy and to clarify expectations, the reflection paper was changed from 10 pages to one page, and the notebook of evidence became an e-notebook that is maintained online. Perhaps the most significant change to the program for 2011-2012 was the elimination of campus PDU facilitators.

PDU facilitators remain for one specific type of PDU (i.e., the National Board of Professional Teaching Standards *Take One!* program), but other PDU groups now communicate directly with central office REACH staff regarding program issues, and are responsible for their own progress monitoring throughout the process.

“Clearer expectations are needed in order to complete the PDU process with accurate data from the beginning. Many expectations, including the rubrics for the paper and presentation, were not available in the fall and left us scrambling to meet the requirements..”

“Make sure participants are provided with examples of presentations and presentation binders, of varying quality, so that it is quite clear to the participants what is expected.”

“Allow participants to ‘drop out’ of the program only up to a certain date, then disallow dropping. This will eliminate the last-minute drop-outs that add extra loads to the ones remaining in the groups.”

“Some accountability for coaches—perhaps a sign in sheet/log that’s signed by the teacher. There should also be accountability to the group such as a percentage of attending PDU meetings. Disappointed two participants showed up only at the first and the last few meetings—but pleased everyone presented together at the end.”

“The student part is excellent. The adult part—reflection paper, binder, application process—was cumbersome. A fellow teacher told me that no one had read our reflection papers, so we felt we’d wasted time writing it for an audience that didn’t exist.”

Conclusion

Results suggest that teachers who chose to complete PDUs were those who already had a positive experience in REACH, were less experienced, and generally performed higher at the secondary level than did their peers. The low participation rate among high school teachers may reflect the newness of many high school teachers to the REACH program in 2010-2011.

Findings were modest for TAKS performance, but indicate that PDU participants generally outperformed their peers in math and reading/ELA at the elementary and high school levels. However, middle school participants had lower student performance than did their non-participating peers. The lack of PDUs targeting reading and/or math suggests that TAKS performance in those areas may not adequately reflect the influences PDUs have on classroom instruction. Survey results indicate that PDU participants may indeed engage in more PLC activities with their colleagues (e.g., analyzing student performance data, discussing ways to meet objectives for specific students, planning lessons together, developing common assessments, and knowing the content covered and instructional methods used by other teachers at their schools) than do non-participants. They also may engage in more frequent data use and reflective teaching than do their peers who did not complete PDUs. However, differences between groups for reflective teaching were modest, and results for data use were inconsistent across levels. Longitudinal data will prove valuable in determining whether these differences also pre-exist between teachers who choose to participate in PDUs in the future.

The lack of core content PDUs at the secondary level suggests that secondary teachers perceived a greater need for professional development opportunities pertaining to instructional strategies than for content knowledge. The large percentage of PDUs aimed at instruction for ELLs indicates both a districtwide need for professional development opportunities in this area and a need to further examine the influence of PDUs using performance of ELL students specifically, either in terms of TAKS performance or an alternative measure of ELL progress.

Feedback from those who completed PDUs depicts an experience with many rewards, despite some challenges associated with the program's implementation. Although many participants cited frustration with the application process and what appeared to be changing and/or ambiguous requirements along the way, nearly all participants reported satisfaction with the types of knowledge and skills they acquired, were glad they decided to pursue a PDU, and would recommend PDUs to others in the future. The program refinements in place for 2011-2012 should alleviate the frustrations noted by participants in 2010-2011, and additional longitudinal data will allow for additional evaluation of PDUs. Together, the qualitative feedback and modestly favorable results for 2010-2011 suggest a promising future for PDUs.

Appendix

A1. Number of participants and non-participants included in analyses, by level

	Elementary		Middle		High	
	PDU participants	Non-participants	PDU participants	Non-participants	PDU participants	Non-participants
Years of teaching experience	100	402	55	105	71	476
Net growth reading/ELA, 2010	9	65	14	11	12	47
% met standard reading/ELA, 2010	20	103	13	13	14	56
Net growth math, 2010	7	39	9	12	7	54
% met standard math, 2010	21	93	9	14	8	64
Data use	58	141	27	45	27	174
PLCs	14	80	14	24	14	82
Reflective teaching	59	145	27	46	23	160
Net growth reading/ELA, 2011	6	41	12	13	12	47
% met standard, reading/ELA, 2011	24	99	15	17	16	63
Net growth math, 2011	9	37	11	11	8	58
% met standard math, 2011	24	96	14	12	8	70

A2. Survey items for data use, professional learning community, and reflective teaching subscales

Data use	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 Scale: once/yr, once/semester, once every 2 mo., once/mo., twice/mo., once/wk
Professional learning community	I participate with a group of my campus colleagues to: a) analyze student performance data, b) discuss ways to meet objectives for specific students, c) plan lessons and units together, d) develop common student assessments. I have detailed knowledge of the content covered and instructional methods used by other teachers at this school. Scale: strongly agree, agree, disagree, strongly disagree
Reflective teaching	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. Scale: frequently, often, sometimes, rarely

About this report. This is the fifth report in a series of research briefs containing results for REACH in 2010-2011. Previous reports included implementation survey results, Student Learning Objective (SLO) results, teacher retention results, and a summary of themes from end-of-year focus groups. Subsequent reports will address such topics as program cost effectiveness and schoolwide growth.

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