Denver ProComp Evaluation Report: 2010-2012

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Executive Summary

There were two focal areas in this evaluation. First, to what extent is there evidence that ProComp is having an impact on student achievement? This question is examined with respect to student performance on state administered achievement tests, and with respect to trends in the attainment of SGOs incentives by ProComp participants. Second, to what extent is there evidence that ProComp is having an impact on teachers' professional practices? This question was initially explored by conducting a series of eight focus group interviews with DPS teachers. The results of these focus groups led to additional exploratory analyses that examined how teachers perceive their year-to-year salary changes.

Descriptive Overview of ProComp Incentive Attainment and Trends

The focus of this report is on trends over the three-year period from the 2009-10 to 2011-12 school years. One exception to this is the SGO analysis, which is based on five years of data from 2007-08 to 2011-12. Table 1 below summarizes trends in ProComp incentive attainment averaged across all participants from 2009-10 to 2011-12.

Table 1. ProComp Incentive Attainment

		2009-10	2010-11	2011-12
Student Growth	Top Performing	39%	50%	48%
	High Growth	50%	53%	54%
	Exceeds Expectations	15%	13%	11%
	Met 1 or 2 SGOs*	95%	93%	93%
Knowledge and Skills	PDUs	42%	54%	56%
	Adv. Degree	N/A	11%	13%
	Tuition Reimbursement	N/A	N/A	N/A
Comprehensive Professional Evaluation	CPEs	69%	68%	57%
Market Incentives	Hard To Serve	46%	53%	56%
	Hard To Staff	30%	31%	32%
Total ProComp Participants		3,270	3,364	3,606
Participants Submitting SGOs		2,485	2,893	3,029

Note: * Calculated as a percentage of ProComp participants who submitted SGOs.

During this time period, the number of ProComp participants has increased steadily from 3,270 to 3,606. There have been notable increases in the percentage of teachers attaining incentives for being in a Top Performing school (from 39 to 48), completing PDUs (from 42 to 56) and working in a Hard to Serve school (from 46 to 56). Although not all ProComp participants submit SGOs, among those that do, between 93% and 95% complete at least one SGO (thus earning at least a one-time bonus), making it the most easily attainable of ProComp incentives. Over 80% of participants who submit SGOs attain both SGOs.

Focus Area 1: Impact of ProComp on Student Growth

Impact on Student Achievement on State Achievement Tests

A key question is whether students educated under the ProComp system on average have better outcomes than students educated under the traditional system, all else being equal. The lack of a randomized experimental design limits prospects for a decisive answer to this question. However, some relevant evidence can nonetheless be gleaned by treating the implementation of ProComp as a quasi-experimental situation. Throughout the three years for which all relevant data were available ('09-'10, '10-'11, and '11-'12), there are teachers in the sample who (a) were in ProComp for all three years, (b) were not in ProComp at all, and (c) were initially not in ProComp but then opted in after one year. Thus, at the student level, the "treatment" condition is receiving instruction from a teacher enrolled in ProComp, while the "control" condition is receiving instruction from a teacher not enrolled in ProComp.

We take two different approaches to estimate a ProComp effect on student achievement. In the first approach we make a "between" teacher comparison by contrasting, for focal years 2010-11 and 2011-12, the achievement of students with teachers who have or have not opted into ProComp. In making this comparison we statistically adjust (using a hierarchical linear model) for factors such as teacher age, teacher length of tenure in Denver Public Schools, prior year test performance, student FRL status, student race/ethnicity, and the average FRL status of all students in each school. In the second approach we make a "within" teacher comparison by contrasting student achievement among the subset of teachers that were not participating in ProComp as of 2010-11, but that had opted into ProComp as of 2011-12.

Our estimates of the ProComp effect using the between teacher comparison (expressed as a fraction of test score's standard deviation) is 0.05 in math, -0.04 in reading, and -0.04 in writing. All of these estimates were statistically significant ($p < .05$). Our estimates for the within teacher ProComp effect are uniformly smaller and not statistically significant. Overall then, there is some evidence that ProComp has had a very small positive effect on student achievement in math, and very small negative effects in reading and writing. However, none of these effects are large enough to be considered of much practical significance. We also examined the between teacher effect by school level. When disaggregated in this manner only two effects are statistically significant, and both of these effects are calculated for teachers at the high school level. Here we find a negative effect of -0.04 for reading and -0.08 for writing. Again, these effects are quite small, with only the effect for writing appearing large enough to possibly merit further investigation.

Trends in SGO Attainment, SGO Quality, and their Relationship with Growth on TCAP

For this section of the report we focused on SGOs for all DPS teachers, including a small percentage who submitted SGOs even though they did not participate in ProComp. Several comparisons were of interest:

- Is SGO attainment associated with ProComp participation? Yes, between 2010 and 2012 the average percent of ProComp participants attaining both SGOs ranged from 11 to 14 points higher than non-ProComp participants.
- Is SGO attainment associated with how the student outcome measure was designed? Yes, when using teacher-made assessments, the percent of teachers meeting both SGOs was almost 10 points higher than that found when using a district-made assessment.
- Is SGO attainment associated with having an advanced education degree? There is no significant difference in SGO attainment for teachers with and without advanced education degrees.

Although the overall percent of teachers attaining two SGOs overall is quite high and stable over time, the standard deviation across schools is about 16%. Consistent with feedback we

received during our focus group interviews, it seems clear that school leadership can play a significant role in the ease or difficulty of SGO attainment.

A key question of interest is whether SGO attainment is associated with student growth as measured by the TCAP achievement tests. Our analyses indicate that the association between SGO attainment and a teacher's median student growth percentile (MGP) is very weak. Expressed as a Spearman rank correlation coefficient, the associations across years and subjects (12 in total) range from a low of 0.03 to a high of 0.12 (see Table 2).

Table 2. Correlations between SGO outcomes and MGPs by subject and year

Content Area	Year	Correlations with SGO objectives met
Reading	2010	.03
Writing	2010	.04
Math	2010	.06
Reading	2011	.09
Writing	2011	.03
Math	2011	.12
Reading	2012	.09
Writing	2012	.10
Math	2012	.12

A final area of inquiry was into the quality of SGOs being submitted. In 2012, out of 1,328 SGOs that were rated using a DPS rubric, 75% were rated as Acceptable or Excellent. As a validation exercise, two content experts from the National Center for the Improvement of Educational Assessment (NCIEA) used the same rubric to rate a random sample of 30 SGOs that had previously been given an "Excellent" rating by SGO approvers. The experts concluded that none of the 30 SGOs merited an Excellent rating and that at least 20 should have been given a "needs improvement" or "does not meet" rating.

Based on their experiences using DPS' rubric to rate the SGOs, the two reviewers strongly recommended that the criteria in the rubric be revised to establish clearer expectations of quality in each of the scoring categories, and that the scoring procedures be revised to help approvers derive a final quality rating on an SGO across the seven categories. Additionally, they recommended that more training and/or guidance, including high-quality exemplars, need to be provided to ensure that approvers:

- Understand and apply the rubric criteria consistently;
- Are provided with clear examples of exemplary SGOs to serve as models of what high quality SGOs look like; and,
- Check that teacher-made assessments are reflective of high quality standards.

Focus Area 2: Enhance Teaching Practice Skills

Focus Group Results

In the spring and summer of 2013, our team conducted eight focus groups with DPS teachers in an effort to determine their primary areas of concern regarding the ProComp system. These focus groups included a total of 47 participants in small groups of four to seven teachers. We made an attempt to include a sample of teachers that would represent a variety of schools, subjects, and grade levels taught. We also made an effort to ensure that the focus groups included both veteran teachers and relative newcomers to the district, as well as a handful of teachers who had chosen not to opt into ProComp. The focus groups also included counselors, librarians, therapists, intervention teachers, and nurses, all of whom are eligible to earn ProComp incentives. We grouped responses from these participants into the following major themes: impact on teaching practice, impact on recruitment and retention, confusion and mistrust, fairness of award distribution, and desire for changes to incentive structures. A summary of key findings by theme is shown in Table 3.

Table 3. Summary of Focus Group Themes

Theme	Prevailing Sentiment
Impact on Teaching Practice	A majority of the 47 focus group participants (64%) made comments to the effect that ProComp has had minimal influence on their teaching practices. "It would never be in my mind to say, if I just work a little bit harder I'm going to get $2300." 11% said that the incentives for completing SGOs and PDUs improved their teaching, and 21% felt that feedback from recent LEAP evaluations was helpful.
Teacher Recruitment and Retention	Despite the strong opinions that teachers voiced about certain ProComp incentives, 77% of focus group participants stated that ProComp had no impact on their decision to come to DPS or to remain at DPS. A small handful of teachers (11%) did, however, say that ProComp impacted their decision to come to DPS or stay at DPS.
Confusion and Mistrust	Another prominent theme in the focus groups was that the ProComp system is too complicated: 40% of participants made explicit statements to the effect that ProComp was difficult to understand, and 45% said that they struggled to obtain accurate, up-to-date information about ProComp. Teachers often remarked that they felt "lost" or "overwhelmed" when they first tried to learn about the ProComp system.
Fairness of Award Distribution	Many teachers expressed concern over the distribution of ProComp incentives, and 77% of focus group participants agreed that ProComp awards were unfairly allocated, since not all teachers are eligible for all bonuses. A sizeable minority of participants (32%) felt that many of the ProComp awards are "manipulable" or "cheatable," and this perception contributes to the sense of mistrust felt by focus group participants.
Desire for Changes to Incentive Structures	"Return everything to salary building, rather than just bonuses. It could be used as a tool to attract a tremendous amount of talented people." Other teachers suggested that base-building opportunities would add stability to teacher salaries: "If everyone had a more stable, predictable path, with base-building things, it would be more fair."

A number of strong themes emerged from the focus groups. Teachers feel frustrated by the perceived inequities in certain ProComp incentives, and they overwhelmingly—and unsurprisingly—support increases in the sizes of incentives, as well as a switch from bonuses to base-building incentives. Despite these criticisms, only a small minority of focus group participants felt that ProComp has had a negative impact on teacher recruitment and retention. Some teachers clearly have strong opinions—both negative and positive—about the effectiveness of LEAP evaluations, PDUs, and SGOs, but most participants agreed that ProComp has had only minor impacts on teaching practice in DPS, although some teachers expressed concerns that ProComp has a negative impact on teacher collaboration and collegiality.

A more troubling issue is teachers' lack of understanding of the ProComp system. Participants routinely expressed their struggles to understand the intricacies of their paychecks, and they also held a wide range of misconceptions about specific ProComp incentives. There seems to be a clear need for improved communication about ProComp, and teachers suggested a number of ways to improve their understanding of the system, including annual trainings for existing staff, improvements to the ProComp website, and imbedded experts in selected schools.

Emergent Topic 1: Teacher Perceptions of Salary Changes

One result from our focus groups struck us as especially puzzling: participants did not seem to uniformly perceive that their salaries under ProComp were significantly higher than they would have been under the traditional salary schedule. To illustrate the source of confusion, Table 4 summarizes descriptive statistics for the cumulative salary increase for 2,430 ProComp teachers who remained in DPS from 2010 through 2012. By 2012, the average teacher earned roughly $8,000 in one-time bonuses and base-building bonuses. This marginal increase is far greater than all but a few teachers would have earned over a three-year period under the traditional salary schedule. Yet teachers in our focus groups did not voice the perception that they had greater opportunities to increase their salaries under ProComp. Why?

Table 4. Three-Year Money Gain Above 2009-10 Base, Excluding ProComp Teachers Who Came to or Left DPS During 2010-2012

Year	Teachers	Mean	SD	Min	25%	Median	75%	Max
2010	2,430	$5,338	$2,716	$0	$3,530	$5,558	$7,060	$13,519
2011	2,430	$6,919	$2,865	$0	$5,033	$6,685	$8,712	$16,899
2012	2,430	$7,779	$3,001	$0	$5,785	$7,812	$9,670	$18,026

The answer to this appears to be rooted in the fact that teachers to do not have an absolute base reference point for their salaries either prior to ProComp or in their first year in ProComp. Instead, some teachers may well adjust their reference point each year to their past year's salary, which already incorporates all previous ProComp incentives they have earned. If this is the case, then any time the total incentives earned in a new year results in a salary increase that is less than it was in the previous year, it would be perceived as a loss. Table 5 illustrates this by presenting the descriptive statistics for salary changes relative only to the salary increase that had already been earned in the prior year. So salary increases for 2011 are compared relative to the bonuses that had been earned in 2010. Notice that while the mean increase in 2011 and 2012 is still positive and significant, it is much smaller than the cumulative increase shown in Table 4. Furthermore, the range of the increases now encompass negative values, reflecting that fact that some teachers may actually perceive a decrease in their salaries if they use their salary from the previous year as a frame of reference.

Table 5. Year Over Year Salary Changes, Excluding ProComp Teachers Who Came to or Left DPS During 2010-2012

Year	Teachers	Mean	SD	Min	25%	Median	75%	Max
2010	2,430	-	-	-	-	-	-	-
2011	2,430	$1,581	$2,489	-$7,210	$376	$1,503	$3,154	$12,093

In contrast to this, the mean 2010 to 2011 salary increase under the traditional salary schedule would have been smaller at $725. However, the bottom end of the salary change distribution based on the traditional schedule never dips below 0. Using this method to compute average perceived salary gains for 2011 and 2012, we can compute a perceived ProComp salary gain effect as the difference in the average two-year perceived salary gain less the average increase a participant would have received under the traditional salary schedule. The histogram in Figure 2 below depicts the resulting distribution. This shows that over the two-year period

from 2010-11 to 2011-12, the average ProComp participant only perceives an average effect on their salary each year of $456. Even more notably, the variability in this effect is dramatic: some participants would perceive a positive effect in the thousands, but others may well perceive a negative effect in the thousands.

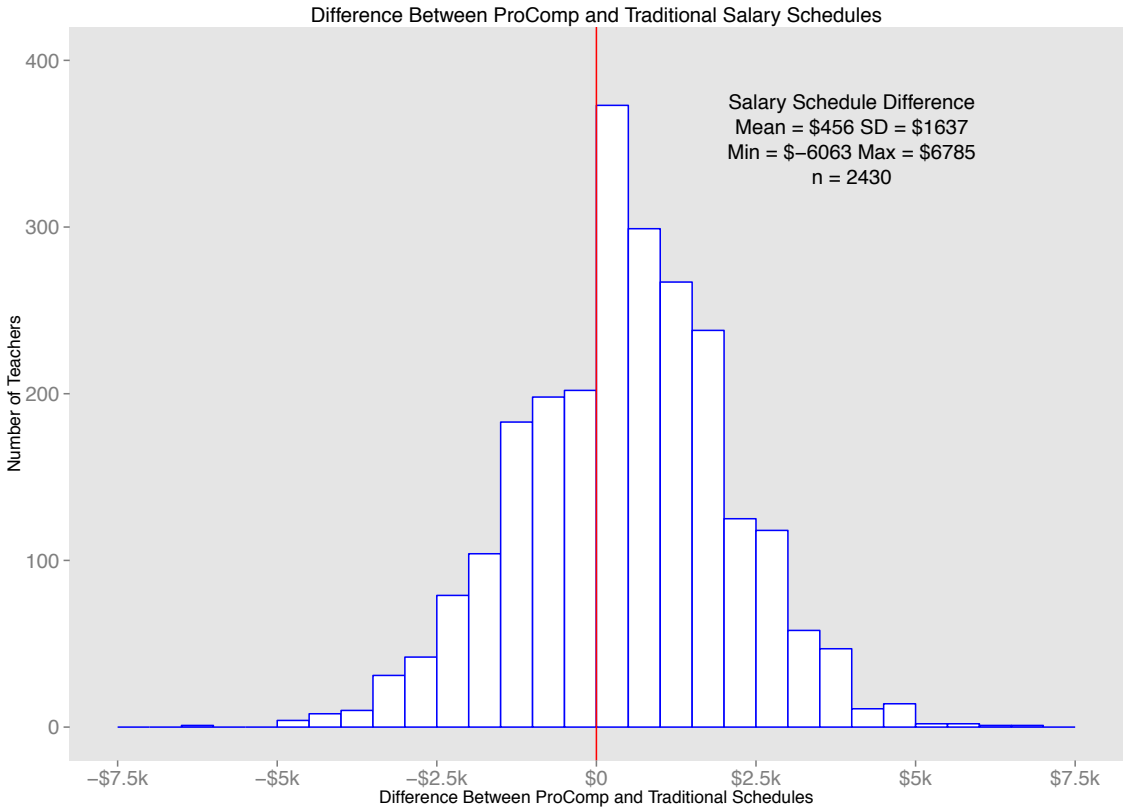

Figure 2. Perceived ProComp Effect on Salaries

Emergent Topic 2: HR Data Infrastructure

Another topic that emerged from our evaluation (but that is not discussed in greater detail in the full report) is the importance for DPS to establish clearer and more standardized procedures for maintaining its data infrastructure and providing data to researchers. This is the third major evaluation of ProComp that has been undertaken by a unique group of individuals. Prior to this evaluation, analyses related to similar issues and questions have been undertaken by a University of Colorado at Boulder team led by Ed Wiley, and by a University of Colorado at Denver team led by Diane Proctor, Robert Reichardt and Dan Goldhaber. However, our ability to build upon their work in the present report is limited by the fact that we are unable to get access to the same data sources, because copies of the data were not maintained within DPS's HR department. This is unfortunate because replication is a hallmark of scientific investigation, and in many instances we have found it impossible to replicate findings from these previous reports, even when the date ranges for the data overlap. Because we are not using identical data, retrieved through an identical process, in some instances (e.g., the student achievement analysis) it is impossible to know whether differences between our findings and the findings from these reports are attributable to new trends or to differences in the data or the analytical methods being employed.

Even within the restricted context of our report, on multiple occasions we were given data that was either missing important information, or that we later discovered to be inaccurate. As a consequence many of our analyses have had to be re-done, often multiple times, and the end date for the project had to be extended an additional three months. An investment into establishing a better infrastructure and process for the provision and verfication of data for future work could yield significant dividends with respect to more efficient and timely analyses in the future.

Chapter 1: Overview of ProComp Incentives

The ProComp system includes 10 distinct financial incentives, divided into four broad categories: Knowledge and Skills, Student Growth, Market Incentives, and Comprehensive Professional Evaluations. The dollar amounts awarded for each of the 10 ProComp incentives are based on a pre-negotiated percentage of an overall index, which was held constant at $37,551 from the beginning of the 2009-10 academic year through the 2011-12 academic year.

Payment for meeting the various ProComp incentives come in the form of either a one-time bonus or a permanent, "base-building" salary increase, depending on the incentive and the teacher's years of experience. Of the 10 incentives currently offered by DPS, six are offered only as a one-time bonus, two are offered only as base-building salary increases, and two are applied as either a bonus or a salary increase, depending on the circumstances.

During the 2009-10 through 2011-12 school years, DPS teachers earned an average of nearly four incentives annually. As Table 1.1 shows, Student Growth Objectives (SGOs) were the most commonly earned incentive in each of the three school years for which we have data, followed by Comprehensive Professional Evaluations (CPEs). Only a small minority of teachers earned the Exceeds Expectations or Advanced Degree incentives, while most of the other ProComp incentives were achieved by 30-60% of teachers in each year. Unfortunately, data for the Advanced Degree and Tuition Reimbursement incentives are incomplete for the 2009-12 period.

Table 1.1. ProComp Incentive Attainment

		2009-10	2010-11	2011-12
Student Growth	Top Performing	39%	50%	48%
	High Growth	50%	53%	54%
	Exceeds Expectations	15%	13%	11%
	Met 1 or 2 SGOs[1]	95%	93%	93%
Knowledge and Skills	PDUs	42%	54%	56%
	Adv. Degree	N/A	11%	13%
	Tuition Reimbursement	N/A	N/A	N/A
Evaluation	CPEs[2]	99%	99%	99%
Market Incentives	Hard To Serve	46%	53%	56%
	Hard To Staff	30%	31%	32%
Total ProComp Participants		3,270	3,364	3,606
Participants Submitting SGOs		2,485	2,893	3,029

Notes: [1] Calculated as a percentage of ProComp participants who submitted SGOs.
[2] Calculated as a percentage of ProComp participants who were evaluated.

Overview of ProComp Participants

All teachers and student service professionals (SSPs) who are covered by the DCTA collective bargaining agreement are eligible to join ProComp. ProComp-eligible employees include social workers, psychologists, school librarians, nurses, therapists, and intervention teachers, in addition to conventional classroom teachers. Charter school employees, however, are not eligible to join ProComp. For the purposes of this document, the term "teachers" refers to all ProComp-eligible educators.

The ProComp system officially began during the 2005-06 contract year, and all DPS teachers hired after January 1, 2006 are automatically enrolled in ProComp. Eligible professionals who were hired before 2006 were allowed to opt into ProComp during seven "windows" from 2005 through 2011. Table 1.2 shows that the number of ProComp participants has increased in recent years, as veteran teachers are replaced by new hires.

Table 1.2. ProComp Participants

	2009-10	2010-11	2011-12
Total DPS employees	5,393	5,507	5,690
Total non-charter school teachers	4,228	4,220	4,378
Total ProComp participants	3,270	3,364	3,606
ProComp participants present from 2009-10 through 2011-12	2,430	2,430	2,430

Student Growth Incentives

The student growth component of ProComp consists of four separate incentives, two of which are awarded for school-wide achievements, and two of which are individual awards. At the school level, teachers are eligible to earn Top Performing and High Growth incentives; as individuals, teachers can earn Student Growth Objective incentives (SGOs) or an Exceeds Expectations bonus, both of which are based on measures of student achievement.

Student Growth Objectives (SGOs)

At the beginning of each academic year, each DPS teacher confers with school leaders to establish two goals for their students' progress over the course of the year. These goals, called Student Growth Objectives (SGOs), may incorporate a wide variety of quantitative or non-quantitative measures, including nationally standardized tests, subject area exams created by DPS, or teacher-created tests, among other data sources.

Teachers who achieve both of their SGOs in a given year earn a salary increase equivalent to 1% of the ProComp index, or $376. Teachers who achieve only one SGO earn a one-time bonus of $376; for teachers who achieve two SGOs, the $376 is a base-building increase. In each academic year in our study, more than 70% of all ProComp participants earned either a bonus or a base-building increase for attaining one or more SGO, making SGOs the most widely earned incentive among ProComp teachers (see Table 1.3).

Table 1.3. SGO Attainment as Percent of All ProComp Participants

	2009-10	2010-11	2011-12
Achieved 2 SGOs ($376 salary increase)	61%	67%	65%
Achieved 1 SGO ($376 one-time bonus)	11%	13%	13%
Achieved 0 SGOs	5%	6%	7%
Did not submit SGOs	24%	14%	16%
Total ProComp Participants	3270	3364	3606

For more detail on SGOs, please see Chapter 3.

Exceeds Expectations

The Exceeds Expectations (ExEx) award is offered to teachers whose students achieved substantial growth on the Colorado State Assessment Program (CSAP) or what is currently known as the Transitional Colorado Assessment Program (TCAP) exams. Because students take these exams only in certain grades and subjects, the ExEx incentive is available only to teachers in grades 4 through 10 who teach mathematics or language arts. In the three years covered by our study, the percentage of teachers earning the ExEx bonus declined slightly, from 15% in

2009-10 to 13% in 2010-11 and 11% in 2011-12. In each of these school years, the ExEx incentive paid teachers a one-time bonus of $2,403.

Teachers were much more likely to receive the ExEx award if they taught more than one tested subject per year. In particular, teachers in lower grades—who often teach multiple subjects to a single classroom of students—have more opportunities to earn the ExEx bonus. As Table 1.4 illustrates, elementary and non-traditional school teachers, defined as any school that overlaps the grade levels that typically delineate elementary from middle and middle from high school, earned ExEx awards more frequently than their counterparts in traditional middle and high schools. This is easy to see by comparing the row for receiving the ExEx award two times over the three year time period from 2010 to 2012 (shown in bold).

Table 1.4. Frequency of Teachers Earning ExEx Reward Between 2009-12 by School Level

	Number of Times ExEx Achieved	Elementary School	Middle School	High School	Nontraditional
Math	0	26%	54%	46%	28%
	1	38%	18%	32%	33%
	2	**21%**	**15%**	**16%**	**25%**
	3	15%	13%	6%	14%
Number of Teachers		261	128	122	87
Reading	0	24%	43%	36%	32%
	1	36%	31%	35%	33%
	2	**26%**	**14%**	**17%**	**25%**
	3	15%	12%	11%	10%
Number of Teachers		259	147	127	107
Writing	0	23%	43%	36%	35%
	1	36%	31%	35%	29%
	2	**26%**	**14%**	**17%**	**26%**
	3	15%	12%	11%	10%
Number of Teachers		251	147	127	109

Because elementary and many non-traditional school teachers have fewer students in any given year than their middle and high school colleagues, their Median Growth Percentile (MGP) scores are more volatile, since random differences in each cohort could cause large swings in a teacher's MGP scores, regardless of the quality of instruction the students receive. This is illustrated in Figure 1.1, which compares MGP changes from 2011 to 2012 (vertical axis) as a function of the number of students associated with a teacher by school level (horizontal axis).

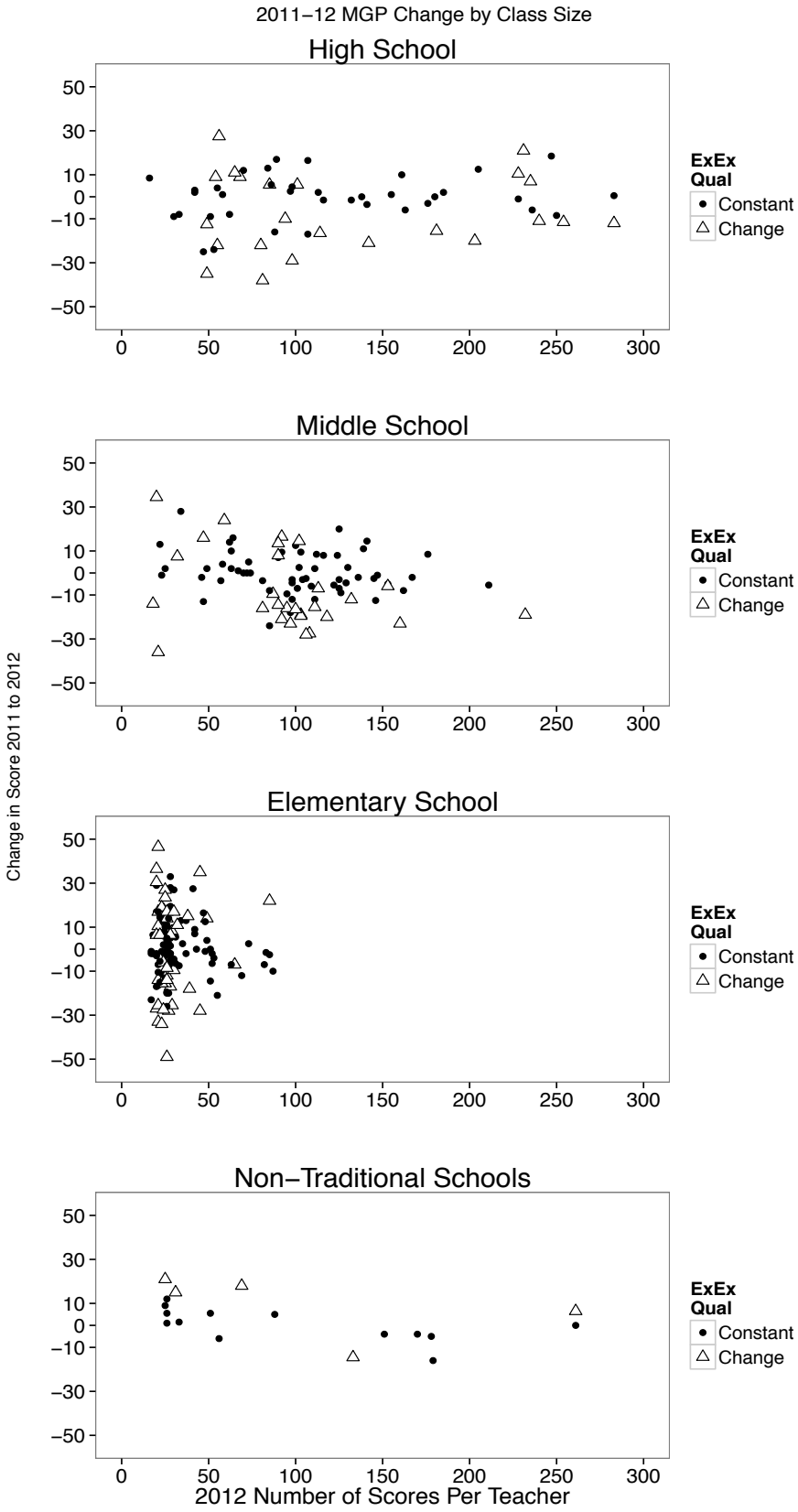

Figure 1.1 Volatility of Year to Year MGP Changes by Number of Students

The triangle markers in the Figure 1.1 plots indicate teachers who changed ExEx status from one year to the next because their MGPs increased or decreased dramatically. Notice that the largest changes in MGPs, both positive and negative, are found among elementary school teachers, who also have the smallest number of students each year. This demonstrates the inverse relationship between MGP volatility and the number of students associated with a teacher.

School-wide Bonuses: High Growth and Top Performing

Both the Top Performing and High Growth bonuses are based on the School Performance Framework (SPF), which rates schools in seven performance categories: Academic Growth, Academic Proficiency, College & Career Readiness, Improvement in College & Career Readiness Over Time, Student Engagement, Enrollment Rates, and Parent Satisfaction. These seven categories encompass literally dozens of variables, including CSAP and TCAP scores, parent satisfaction surveys, dropout rates, and attendance rates, among many others.

The Top Performing incentive is awarded to schools which are ranked in the top half of the annual SPF ratings. The High Growth incentive, however, is based exclusively on schools' Academic Growth score, which is determined by median student growth percentiles for each tested subject. Teachers earned a one-time bonus of $2403 for each incentive.

As Table 1.5 illustrates, the number of teachers receiving the Top Performing incentive increased considerably in the 2010-11 school year, largely because the number of schools qualifying for the incentive increased from 52 schools in 2009-10 to 77 schools in 2010-11. However, an overwhelming majority of teachers who earned the Top Performing bonus also earned the High Growth incentive. For example, during the 2011-12 school year, 48% of all ProComp teachers received the Top Performing bonus, while 43% of teachers earned both the High Growth and Top Performing incentives; in other words, only 5% of teachers earned the Top Performing incentive but not the High Growth award. Similarly, only 3% and 6% of teachers received the Top Performing incentive but not the High Growth award in the 2009-10 and 2010-11 school years.

Table 1.5. High Growth and Top Performing Attainment

	2009-10	2010-11	2011-12
Top Performing	39%	50%	48%
High Growth	50%	53%	54%
Earned Both	36%	44%	43%
Earned at Least One	53%	59%	59%
Total ProComp Participants	3270	3364	3606

Teachers in elementary and non-traditional schools were much more likely to receive the Top Performing and High Growth awards than their counterparts in middle and high schools throughout all three years. As shown in Table 1.6, 57% of teachers in elementary and non-traditional schools received the Top Performing bonus during the 2011-12 school year, compared with only 44% and 23% of teachers in middle and high schools. Teachers in non-traditional and elementary schools were also more likely to receive the High Growth award (77% and 55%, respectively), though 51% of high school teachers also received this award. This broadly mirrors the pattern seen in the ExEx award, suggesting that teachers in elementary and non-traditional schools disproportionately benefit from certain ProComp incentives.

Table 1.6. Percent of Teachers in Each School Level Earning School-Wide Awards, 2011-12

	Top Performing	High Growth	Total ProComp Participants
Elementary	57%	55%	1865
Middle	44%	33%	489
High	23%	51%	745
Non-traditional	57%	77%	507
All Teachers	48%	54%	3606

Market Incentives

Hard to Serve and Hard to Staff

The Hard to Serve bonus is designed to encourage DPS teachers to accept positions in high-needs schools. From the 2009-10 through the 2011-12 school years, the Hard to Serve incentive was offered to teachers as a one-time, $2,403 bonus for working in schools with a high percentage of students living in poverty.

Like the Hard to Serve incentive, the Hard to Staff incentive was also paid as a $2,403 bonus during the 2009-10 through 2011-12 academic years. Each year, DPS designates positions as Hard to Staff if the supply of licensed professionals is low and the rate of turnover is high. In recent years, the list of eligible Hard to Staff positions has included special education, ELA-S, and mathematics assignments, among others.

During the 2009-10 through 2011-12 school years, approximately half of all ProComp participants received the Hard to Serve bonus, while slightly less than one-third of participants served in Hard to Staff positions (see Table 1.7). Teachers who received the Hard to Staff incentive were somewhat more likely than other DPS teachers to receive the Hard to Serve bonus. In 2009-10, 59% of teachers serving in Hard to Staff positions also received the Hard to Serve Bonus; by 2011-12, that figure had increased to 67%.

Table 1.7. Hard to Serve and Hard to Staff Attainment

	2009-10	2010-11	2011-12
Hard to Serve	46%	53%	56%
Hard to Staff	30%	31%	32%
Earned Both	18%	20%	22%
Earned at Least One	58%	64%	66%
Total ProComp Participants	3270	3364	3606

Knowledge and Skills

Higher Education Incentives: Advanced Degrees and Tuition Reimbursement

ProComp participants receive a base-building salary increase of 9% of the index for earning each degree or approved professional license beyond a bachelor's degree. From the 2009-10 through 2011-12 school years, earning an advanced degree incentive added $3,380 to a teacher's base salary. Teachers are eligible to earn this incentive only once in any three-year period. During the 2010-11 school year, 384 DPS teachers (11% of ProComp participants) earned the Advanced Degree incentive; in the 2011-12 school year, this number increased to 481 teachers (13% of ProComp participants).

In addition to the salary increase for completing an advanced degree, DPS also offers teachers a Tuition Reimbursement incentive, which can be used to pay for preexisting student loans, fees for conferences and professional development workshops, or tuition for an advanced degree program. Teachers can earn up to $1,000 per year in Tuition Reimbursement, with a lifetime cap of $4,000. Data on attainment of this incentive was not provided for the 2009-10 through 2011-12 school years.

Professional Development Units

In an effort to encourage ongoing training, ProComp participants receive $751 for completing approved Professional Development Units (PDUs). Teachers who have 14 or fewer years of credited tenure with DPS earn a base-building salary increase for successfully earning the PDU incentive; teachers with more than 14 years of service earn a one-time bonus.

Teachers may complete multiple PDUs, but they may only earn a single $751 award in any given school year. However, PDU credits are "bankable", meaning that a teacher who completes two PDUs in a given school year can earn the award for the second completed PDU in a subsequent school year. From 2009 through 2012, PDUs seemed to steadily increase in popularity among DPS teachers: in the 2009-10 school year, only 42% of ProComp participants received a PDU award, but this figure climbed to 54% in 2010-11 and 56% in 2011-12.

Comprehensive Professional Evaluations (CPEs)

During the 2009-10 and 2010-11 school years, the CPE incentive was exclusively based on results of teacher evaluations conducted by school administrators. DPS began to transition from the CPE framework to Leading Effective Academic Practice (LEAP) evaluations in 2011-12, and teachers could achieve the CPE incentive by either earning a satisfactory rating on their CPE evaluation or by participating in the LEAP pilot program during that year. Teachers who participated in the LEAP pilot received the ProComp CPE award, regardless of their scores on the LEAP evaluations.

However, the exact payout for teachers who successfully earned the CPE inventive varies, depending on the teacher's employment status. Probationary teachers—who are either early in their tenure at DPS or have recently earned an unsatisfactory score on a professional evaluation—are evaluated annually, and are therefore eligible for a $376 base-building salary increase each year. Teachers in their first 14 years who work in Innovation Schools also receive annual evaluations, and are therefore eligible for the CPE incentive each year, regardless of their probationary status. Most non-probationary teachers who do not work in Innovation Schools undergo a professional evaluation once every three years, and are therefore eligible for a base-building salary increase of $1,138 for achieving a satisfactory rating on their evaluation. Teachers with more than 14 years of credited tenure with DPS are never eligible for the CPE incentive, regardless of their performance on professional evaluations.

Table 1.8. Teacher CPE Attainment

Rating	Employee Type	2009-10	2010-11	2011-12
Satisfactory[1]	Probationary, non-innovation	99%	99%	99%
	Innovation school	99%	100%	100%
	Non-innovation[2]	99%	98%	98%
Unsatisfactory	All teachers	< 1%	< 1%	< 1%
No evaluation conducted		30%	31%	43%
Total ProComp Participants		3270	3364	3606
ProComp Participants Evaluated		2289	2321	2055

Note: [1] Computed as proportion of teachers evaluated
[2] Non-innovation teachers earned a $1,127 base-building award; probationary and innovation teachers earned a $376 base-building award.

Table 1.8 shows that teachers who were evaluated in any given year almost always received the CPE incentive: fewer than 1% of teachers who were evaluated received an unsatisfactory rating in any given year. Table 1.8 also illustrates a notable decline in the total number of CPE incentives earned in 2011-12, since a smaller percentage of teachers were evaluated than in the previous two years. We suspect that LEAP and CPE evaluations were not conducted for all eligible teachers in 2011-12, or that some teacher evaluations were not reported in the DPS HR data file.

Chapter 2: Analysis of 2010-2012 Salary Increases among ProComp Teachers

Introduction

The number and type of incentives that teachers earn can and do change over time. However, the salary increases or decreases that accompany these changes in incentives earned may be perceived in different ways depending upon the frame of reference a teacher chooses to for comparison. One possible frame of reference is to a hypothetical base salary in which teachers earn none of the possible ProComp incentives in a given year. Relative to this frame of reference, any incentive that is attained counts as a positive. This can be easily quantified by cumulating for the three year period from 2009-10 to 2011-12 the total dollars earned above each teacher's 2009-10 base salary. However, if teachers choose a different frame of reference, the way that they will perceive year to year salary changes can be quite different. For example, imagine a hypothetical teacher who makes $40,000 in salary and bonuses combined in 2009-10. If this total amount of $40,000 becomes a teacher's new frame of reference, then in the next year any total earnings is less than $40,000 could be perceived as a salary decrease—even if the teacher continues to earn ProComp incentives that add on to his or her hypothetical base salary. Instead of experiencing all bonuses as an increase above their base dollar amount, teachers may view the current year's salary as their expectation for future years' earnings.

In this chapter we present a descriptive picture of ProComp salary changes relative to each of the frames of reference above,and compare these changes to those that would have been observed using the traditional salary schedule. Beyond this, we focus on possible explanations for the variability seen in teacher salaries under the ProComp and traditional systems.

Data Sources

The data for this analysis comes from various sources. DPS's Assessment, Research and Evaluation (ARE) department provided a comprehensive data set with information for each DPS employee that includes (but is not limited to) gender, race, ProComp status, a list of teachers who had met 0, 1 or 2 of their student growth objectives (SGOs) in a given year, and information about three ProComp salary rewards that are tied to the characteristics or performance of a teacher's school: Hard to Staff status, Hard to Serve status, and Top Performing status. DPS Human Resources (HR) provided a list indicating whether a teacher had earned the Exceeds Expectations (ExEx) reward, as well as who earned pay increases based on successful comprehensive professional evaluations (CPE). Further information about receipt of ProComp rewards for completion of professional development units (PDUs) came from Shirley Scott, who provided us with detailed information about all attempted PDUs in the past five years. We gathered information on the final award, given to teachers in "High Growth" schools, from publicly available data on the DPS ProComp website. DPS ARE provided a list of teacher's education level by year, which allowed us to calculate salary increases associated with the completion of advanced degrees. For details on how we assembled the data from these sources into a single file for analysis, see Appendix A.

Average DPS Teacher Salaries

While salary change and variability in salary change is our primary interest, it is helpful to ground these changes in the average salary earned by DPS teachers throughout our study. Table 2.1 displays the average DPS teacher salary in each of our three school years. This data comes from the Colorado Department of Education website and is available at http://www.cde.state.co.us/cdereval/rvaveteachsallinks.

Table 2.1. Average DPS Teacher Salaries

Year	Average Salary
2009-10	$49,778
2010-11	$49,432
2011-12	$49,775

Computing Salary Changes for ProComp Participants

The key variable of interest in the analyses that follow is the salary changes of teachers participating in ProComp over three academic years: 2009-10, 2010-11, and 2011-12. Note that we are not computing teachers' total compensation, since this is dependent on their tenure at DPS in addition to the ProComp incentives they have earned. Instead, we computed the salary changes in two differing approaches. The first approach, which we call the "cumulative salary increase method" conceptualizes a hypothetical base salary in 2008-09 as each teacher's frame of reference and then cumulates the total number of incentives and bonuses earned over the next three years as though they added to this base salary. The second approach, which we call "the difference in salary increases method" treats the salary increase based on incentives and bonuses earned in 2009-10 as each teacher's frame of reference. Salary that is earned from attaining incentives and bonuses in 2010-11 and 2011-12 is then compared to the salary from incentives and bonuses that had been earned in the previous year. Both methods calculate salary change attributed to all of the rewards listed in Table 2.2 with the exception of the Tuition Reimbursement incentive (shown in light gray in Table 2.2).

Table 2.2. ProComp Incentive Dollar Amounts

Area of Focus	ProComp Reward	Dollar Amount	
		One-Time Bonus	Base Salary
Student Growth	Top Performing School	$2,403	
Growth	High Growth School	$2,403	
	ExEx	$2,403	
	1 SGO Met	$376	
	2 SGOs Met		$376
Market Incentive	Hard to Staff	$2,403	
	Hard to Serve	$2,403	
Knowledge &	PDU		$751*
Skills	Tuition Reimbursement	$1000/year	
	Advanced Degrees		$3,380
Comprehensive	Probationary Teacher		$376
Evaluation	Non-Probationary		$1,127

Notes: * Successfully completing a PDU only counts toward base salary during the first 14 years of credited service in DPS. After that it constitutes a one-time bonus. Bonuses for tuition reimbursement were not included in this analysis.

The process of calculating salary increases took into account all ProComp rules including CPE probationary status, PDU carryover, and SGO bonus versus base-building rewards. Base salary increases from CPEs, PDUs, Advanced Degrees, and earning two SGOs were aggregated over the three-year period for teachers with less than 14 years of experience; teachers with more than 14 years of tenure are ineligible for the CPE incentive and receive only a bonus for completing a PDU. For each teacher, we computed each base-building award earned in a given year and we repeated that dollar amount in the calculation for every subsequent year. For both methods of salary change, our population of interest in each year is teachers from non-charter schools who participated in ProComp. Figure 2.1 shows how we narrowed the full population of DPS employees over a three-year period to the sample of 2,430 ProComp participants who taught in non-charter schools and were employed in DPS in all three years from 2009 to 2012.

Cumulative Salary Increase Method

Our initial method of computing salary change over time cumulates each teacher's salary increase over and above their 2009-10 school-year salary. In other words, since a base award is added to a teacher's base pay for as long as they remain at DPS, a PDU in 2009-10 also gets paid

in 2010-11 and 2011-12. On the other hand, one-time bonus payouts are only awarded once in the year they were earned. This method then adds up the total dollars earned above the 2009-10 salary for each year including the aggregated base increase and all bonuses. If a teacher earned a salary of $40,000 in 2009-10 and earned a CPE base increase that first year and two bonuses in each of the three years, then the teacher's aggregated increase would be the added $1,127 in base salary and $4,806 in bonuses for 2009-10, repeated for each of the three years. Thus, this teacher's three-year increase over the $40,000 base would equal $16,672.

Next, we removed teachers who entered or exited the district during the three-year time period. This allowed us to do year-to-year comparisons for the same teachers who were eligible for pay increases and bonuses each year. The yearly salary distribution data for this restricted sample is shown in Table 2.3.

Table 2.3. Three-Year Money Gain Above 2009-10 Salary, Excluding ProComp Teachers Who Came to or Left DPS During 2010-2012

Year	Teachers	Mean	SD	Min	25%	Median	75%	Max
2010	2,430	$5,338	$2,716	$0	$3,530	$5,558	$7,060	$13,519
2011	2,430	$6,919	$2,865	$0	$5,033	$6,685	$8,712	$16,899
2012	2,430	$7,779	$3,001	$0	$5,785	$7,812	$9,670	$18,026

In order to compare the full amount each teacher took home during the period above their 2009-10 salaries, we cumulate the amounts for each teacher across years. Figure 2.2 shows how much total money was earned above each teacher's 2009-10 salary. The average increase for a teacher present in all three years was $20,036 with a standard deviation of $7,228. Some teachers earned as little as $751 above their 2009-10 salary during the time period, while other teachers earned up to $48,067.

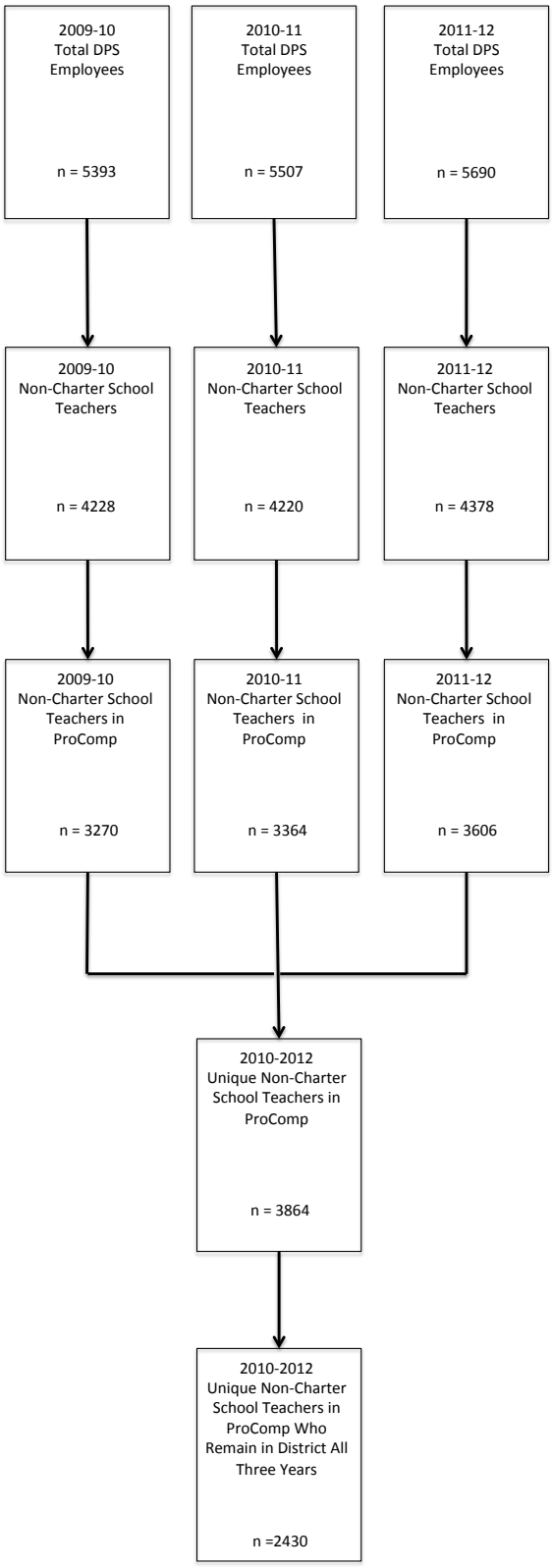

Figure 2.1. Sample Size Flow Chart

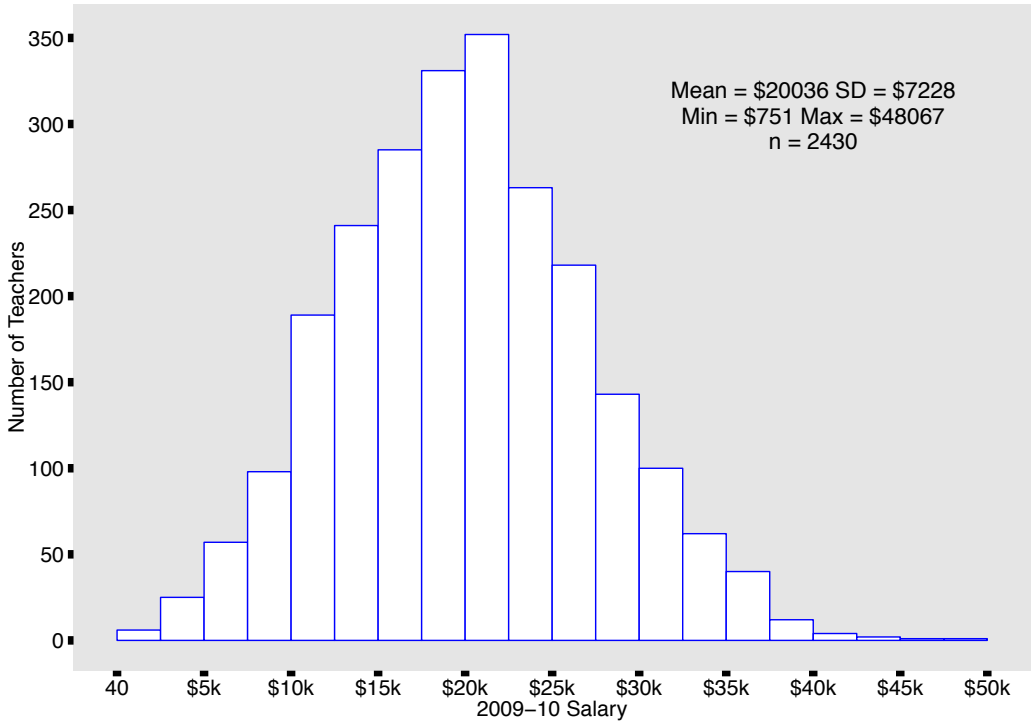

Figure 2.2. Total Money Earned Above 2009-10 Salary for Teachers (n=2,430)

Difference in Salary Increase Method

In our second method, we calculate the change experienced in total compensation in 2010-11 or 2011-12 relative to the change that was experienced in the previous year.. So for example if a teacher's bonuses remain the same in two consecutive years but they gain a base building award, then they experience a positive change. If, on the other hand, a teacher loses more than one bonus they had earned the year before, the teacher would experience a negative change in their total compensation.

Descriptive statistics for the annual salary increases for our population of interest are shown in Table 2.4. Note that in contrast to the descriptive statistics shown when salary increases were cumulated, here we see that teachers in the bottom quartile of the distribution in 2010-11 and 2011-12 would experience a perceived salary decrease relative to the previous year.

Table 2.4. Difference in Salary Increases, All ProComp Non-Charter Teachers

Year	Teachers	Mean	SD	Min	25%	Median	75%	Max
2010	3270	-	-	-	-	-	-	-
2011	3364	$1,744	$2,808	$-9,237	$0	$1,127	$3,155	$16,899
2012	3606	$1,349	$2,878	$-10,889	$0	$752	$2,403	$16,899

Next, we removed teachers who entered or exited the district during the three-year time period. This allowed us to do year-to-year comparisons for the same teachers who were eligible for pay increases and bonuses each year. The yearly salary change distribution data for this restricted sample is shown in Table 2.5.

Table 2.5. Difference in Salary Increases, Excluding ProComp Teachers Who Came to or Left DPS During 2010-2012

Year	Teachers	Mean	SD	Min	25%	Median	75%	Max
2010	2,430	-	-	-	-	-	-	-
2011	2,430	$1,581	$2,489	-$7,210	$376	$1,503	$3,154	$12,093
2012	2,430	$861	$2,349	-$10,889	$0	$752	$2,254	$11,717

Figure 2.3 shows the differences between the 2010-11 salary increases and the 2009-10 total salary increases for our sample of 2,430 teachers. The average change was $1,581 with a standard deviation (SD) of $2,489. However, some teachers' salaries decreased as much as $7,210 and others increased as much as $12,092. Figure 2.4 includes the same graph for the 2010-11 to 2011-12 school years.

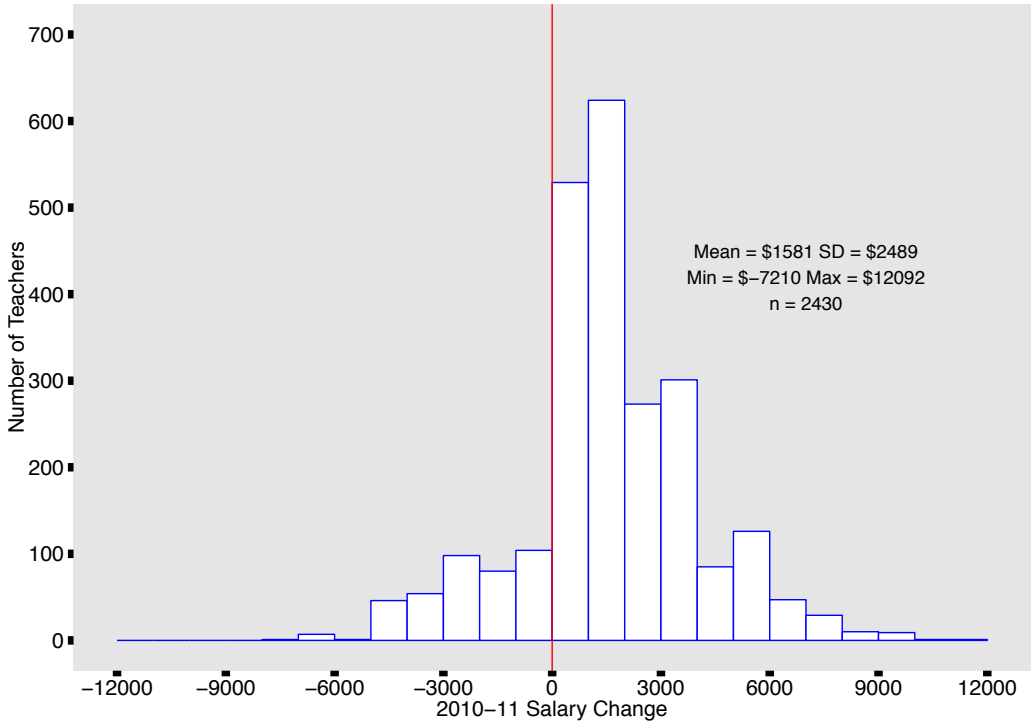

Figure 2.3. ProComp Difference in Salary Increases 2009-10 to 2010-11

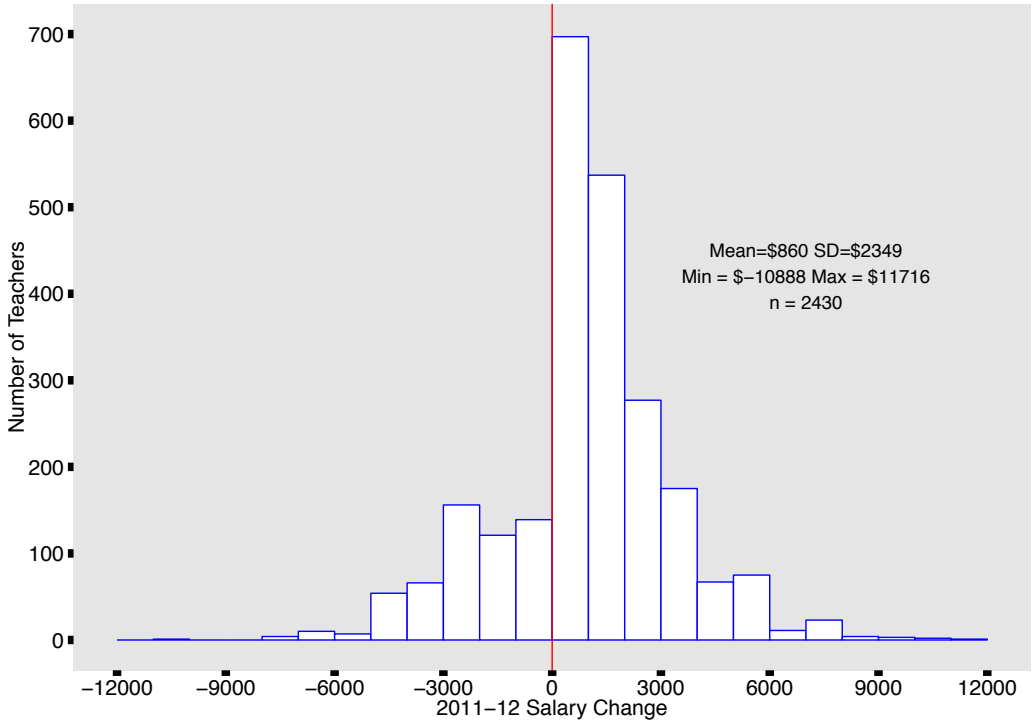

Figure 2.4. ProComp Difference in Salary Increases 2010-11 to 2011-12

Explanations of Year to Year Variability

Figures 2.3 and 2.4 show that there is considerable variability in the salary change experienced by ProComp teachers in any two-year period. The fact that ProComp bonuses can account for as much as $13,000 in any single teacher's yearly salary increases the probability that a teacher will experience significant change in their total take-home earnings because bonuses, by their very nature, are not guaranteed from year to year. In order to explore the possibility that the ProComp high dollar value bonuses, which we define as any of the five bonuses worth $2,403, account for this variability, we next calculated the change in each teacher's number of high dollar value bonuses earned across years. As Table 2.6 illustrates, roughly 40% of teachers in any given two-year period experience changes in the number of high value bonuses earned. Out of 2,430 teachers, roughly 2% experience changes of about $5,000 from year to year because of the loss or gain of two or more high dollar value bonuses.

Table 2.6. Change in Number of High Dollar Value Bonuses Earned (n=2,430)

Bonuses	2010 to 11	2011 to 12
-3	0.01%	0.0%
-2	0.2%	1.3%
-1	12.2%	12.8%
No Change		66.3%
1	15.1%	16.5%
2	3.4%	2.5%
3	0.4%	0.4%
4	0.0%	0.04%

Traditional Salary Schedule Scenarios

Computing Year-to-Year Salary Changes for Traditional Salary Schedule

The traditional salary scale, used prior to ProComp and for non-ProComp teachers today, consists of yearly salary increases for the first 13 years of a teacher's career. Other than these time-based salary increases, the only other way for teachers to increase their salaries is through advanced education. Similar to the above ProComp analysis, we computed the salary changes between two-year periods. As an example, we calculated the change between the 2009-10 total

salary and 2010-11 total salary that can be attributed to both experience and educational gains as shown in Table 2.7.

Table 2.7. 2009-10 through 2011-12 Traditional Salary Schedule

Years of Tenure	BA	BA +30 Hours	BA +60 Hours	MA	MA +30 Hours	MA +60 Hours	PhD
1	$37,551	$37,827	$38,101	$38,101	$41,206	$41,973	$44,610
2	$37,833	$38,188	$38,543	$38,543	$41,569	$43,993	$46,749
3	$37,938	$38,431	$40,076	$40,076	$42,924	$45,783	$48,664
4	$38,131	$38,639	$41,573	$41,573	$44,558	$47,543	$50,541
5	$38,477	$40,244	$43,340	$43,340	$46,434	$49,547	$52,676
6	$38,709	$41,953	$45,182	$45,182	$48,396	$51,637	$54,917
7	$40,341	$43,733	$47,078	$47,078	$50,471	$53,822	$57,276
8	$42,040	$45,548	$49,072	$49,072	$52,614	$56,119	$59,733
9	$43,799	$47,503	$51,164	$51,164	$54,854	$58,575	$62,301
10	$45,660	$49,521	$53,370	$53,370	$57,226	$61,067	$64,983
11	$47,588	$51,593	$55,628	$55,628	$59,630	$63,689	$67,788
12	$49,618	$53,798	$58,020	$58,020	$62,250	$66,436	$70,706
13	$52,154	$56,552	$61,100	$61,100	$65,349	$69,770	$74,218
14+	$52,154	$56,552	$61,100	$61,100	$65,349	$69,770	$74,218

ProComp teachers can receive a one-time salary increase of $3,380 for the attainment of a master's degree or PhD, but no more than once in a three-year period. On the other hand, traditional salary schedule teachers have thirteen-year salary increase "tracks" that are based on five possible educational levels, which contain the same three degree levels as ProComp, but with additional intermediate steps between degrees. Under the traditional salary schedule, a teacher who earns an advanced degree can increase her salary by as little as $355 or as much as $22,064, depending on the teacher's level of experience and the exact degree earned.

The only commonality between ProComp and the traditional salary schedule is that the traditional schedule is used to set the starting salary for any DPS employee regardless of their participation in ProComp. In order to calculate traditional salary system changes comparable to the ProComp analysis in the previous sections, we used a combination of education level and tenure for each employee in our 2,430 teacher subsample in order to set a baseline dollar amount. Typically, teachers are placed on the traditional schedule according to their total years of experience and education, but we do not have information about teachers' total years of experience, only the numbers of years that they have worked in DPS. So we use teacher's hire date as a proxy for years of experience. This will underestimate experience for those teachers in

our data who transferred to DPS from another school district. (Teachers' education level for each year in our three-year period came from the 'TeacherQuals.csv' file provided by DPS ARE.) Once each teacher's salary was calculated by referencing their education level and years of tenure with DPS, we calculated the year over year change exactly as we did in the analysis described in the previous sections. For instance, we subtracted the 2009-10 total salary from the 2010-11 dollar amount. Unlike ProComp, which has the potential for negative salary change year over year, the traditional salary schedule allows only increases or no change in a teacher's salary from year to year; thus, the descriptive statistics for our limited subset of 2,430 ProComp teachers who are not in charter schools shown in Table 2.8 are quite different from the ProComp numbers in Table 2.5.

Table 2.8. Year to Year Salary Changes for the Traditional Salary Schedule, Excluding ProComp Teachers Who Came to or Left DPS During 2010-2012

Year	Teachers	Mean	SD	Min	25%	Median	75%	Max
2010	2,430	-	-	-	-	-	-	-
2011	2,430	$724	$1,148	$0	$0	$193	$1,533	$13,118
2012	2,430	$803	$1,043	$0	$0	$221	$1,632	$6,756

The traditional salary schedule contains a higher number of teachers who receive little or no increase in their salary year over year. The vast majority of teachers see increases in their salary of up to about $1,500, with relatively few realizing larger gains by attaining an advanced degree. Since many teachers in DPS have more than 13 years of tenure there are a large number of teachers who would see no change in their salary under the traditional schedule. Since the traditional salary schedule weights tenure and education highly, new teachers with only a bachelor's degree would have yearly increases of less than $1,000 for the first few years of their tenure in DPS. This, coupled with the 13-year cutoff for salary increases, creates a highly skewed distribution with most teachers earning very small increases and a few earning larger gains. Figures 2.5 and 2.6 show the distribution of increases for teachers between the 2009-10 and 2010-11 as well as the 2010-11 and 2011-12 school years respectively.

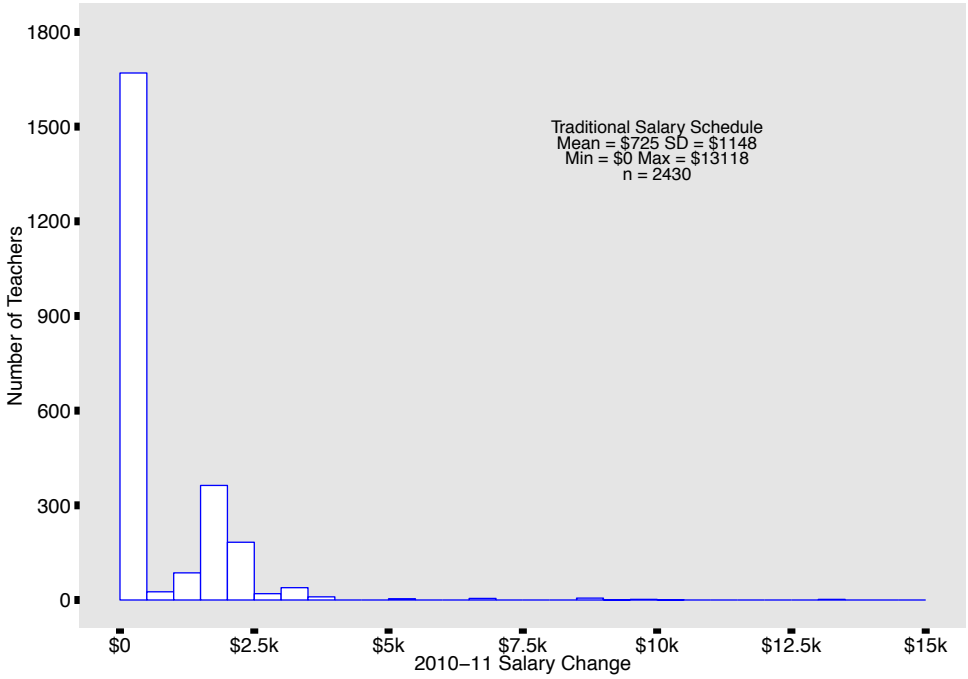

Figure 2.5. Traditional Year to Year Salary Change 2009-10 to 2010-11

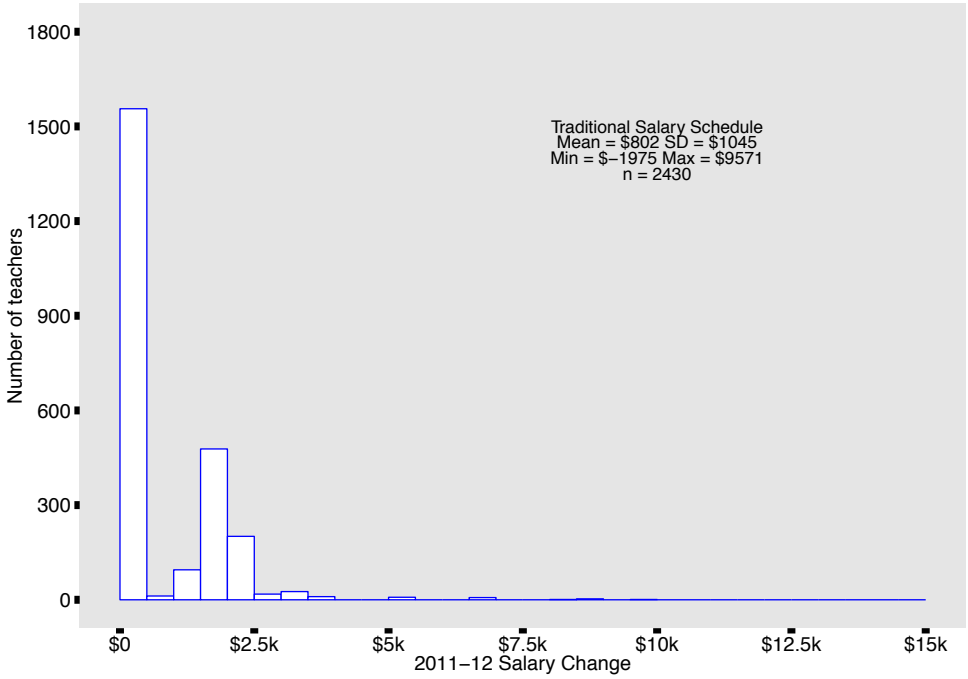

Figure 2.6. Traditional Year to Year Salary Change 2010-11 to 2011-12

The ProComp Effect on Salary Change

Large shifts in a teacher's year to year salary could be explained by one-time occurrences such as changing to or from Hard to Serve schools or Hard to Staff positions. If these fluctuations are only one-time occurrences, then teachers' salaries should be more stable through time. By averaging more than one year's salary change, the more extreme shifts should disappear and variability for teachers' salary changes should decrease. In order to compare ProComp with the traditional salary schedule, we averaged two years of salary changes (using our difference in salary increases method) for each of our teachers. Table 2.10 displays the annual salary change and the two-year average change under each salary system.

Table 2.10. Year to Year Change and Average by Salary Schedule

	ProComp			Traditional		
	2010 to 11	2011 to 12	Average	2010 to 11	2011 to 12	Average
Mean	$1,581	$861	$1,221	$725	$803	$764
SD	$2,489	$2,349	$949	$1,148	$1,043	$949
Min	-$7,210	-$10,889	-$4,431	$0	$0	$0
25%	$376	$0	$301	$0	$0	$0
50%	$1,503	$752	$1,128	$193	$282	$221
75%	$3,154	$2,254	$2,141	$1,533	$1,632	$1,632
Max	$12,093	$11,717	$7,060	$13,118	$9,571	$6,756

Averaging the changes between the two years significantly reduces the variability for the ProComp results while having a more limited effect on the mean and SD of the traditional salary schedule. The range between the largest and smallest ProComp salary changes is reduced from $22,606 to $11,491 when the changes are averaged over two years. While not as large, a reduction in range also occurs under the traditional salary schedule, which decreases from a maximum range of $13,118 to a range of $6,756. Both of these range reductions show that many of the more extreme shifts in salary from year to year are outlier values for the rare teacher who had either large educational shifts in a single year under the traditional salary schedule or large changes in the number of bonuses received under the ProComp salary schedule, possibly associated with changing schools.

The differences between the two schedules are most clearly demonstrated in Figure 2.7. For each teacher for the period from 2010-11 to 2011-12, we subtracted the average salary increase

the teacher would have experienced under the traditional schedule from the average increase they experienced under ProComp. A teacher with a negative value in Figure 2.5 is a teacher that would perceive that they would earn more money on the traditional schedule than on ProComp. A positive value means implies the opposite. On average, teachers experienced higher gains on ProComp by $456, but 36% of teachers perceive smaller increases than they would have on the old schedule.

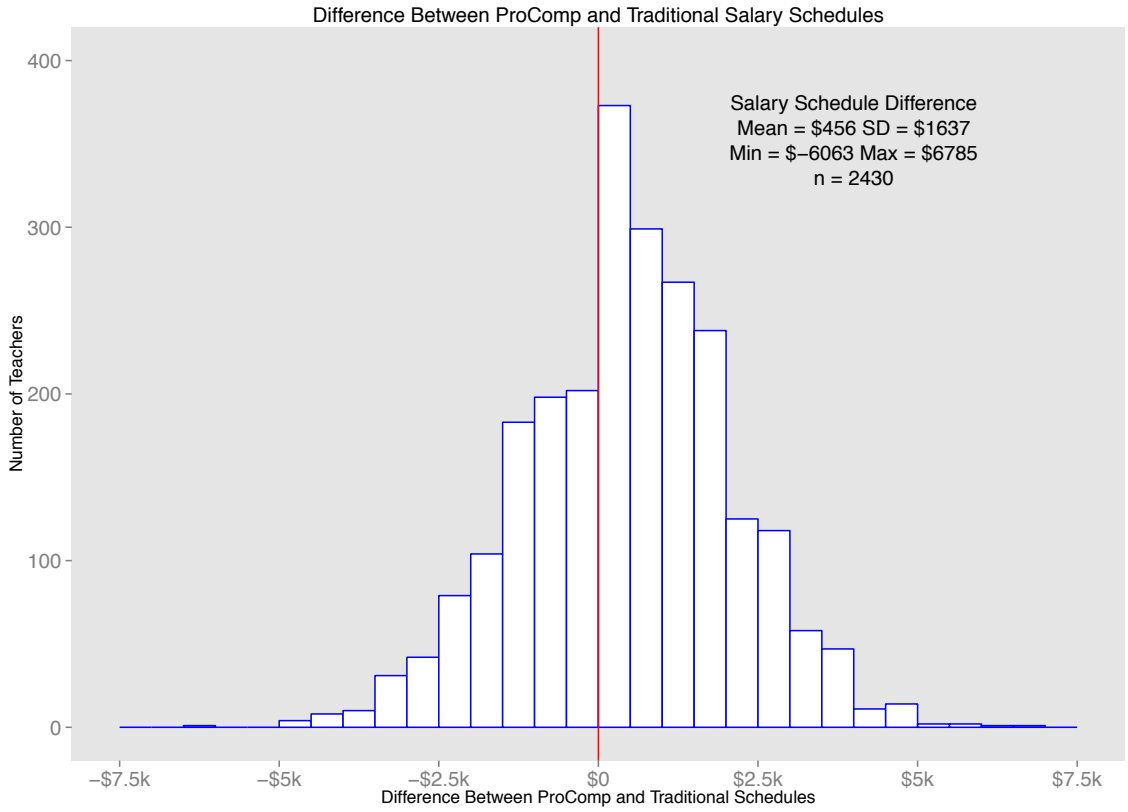

Figure 2.7. Comparison of Average Changes for 2009-10 through 2011-12

Individual Case Studies

To illustrate the differences in salary changes experienced by teachers under ProComp when applying our difference in salary increases method, relative to the changes they would have experienced under the traditional salary schedule, we present the cases of four individual teachers that represent different extremes. We selected one teacher, "Jack" because he had more than 14 years of experience as of 2009-10 and he is an example of someone that would have perceived a negative average salary change under ProComp. We chose "Julia" as an example of

a teacher who was new to the district with only a bachelor's degree. We also purposely selected "Jessica," the teacher with the most extreme shift on the traditional salary schedule.

Jack: Late Career Teacher

Jack started in a Hard to Staff school in 2009-10 and received multiple school-level bonuses that year, including Hard to Staff and High Growth. Because Jack had close to 24 years of tenure with DPS, he was ineligible for a CPE increase, but he did complete a district-sponsored PDU. He also achieved both of his SGOs, and this constituted his sole base salary increase. Thus, in 2009-10, Jack earned base increases and bonuses totaling $5,933.

In 2010-11, Jack transferred to a new school that was no longer High Growth or Hard to Serve. But this new school was designated as a Top Performing School, which offset the loss of the Hard to Staff and High Growth bonuses he had earned the previous year. Jack did not meet either of his two SGOs and completed no PDUs, and therefore did not earn the $376 base salary increase and $751 PDU bonus from the previous year. In total, Jack earned $2,403 in bonuses in 2010-11, but relative to the $5,933 he had earned the year before, he would perceive this as a total salary decrease of $3,530.

In 2011-12, Jack remained at the new school and again received a Top Performing school bonus. He again met neither of his two SGOs, but because he completed a school-sponsored PDU, his bonuses for 2011-12 totaled $3,154, which would be perceived as a $751 increase over the year before, though still a decrease of $2,779 relative to his salary in 2009-10. So averaging the salary changes from 2009-10 to 2010-11 and 2010-11 to 2011-12, Jack perceives a decrease of $1,202.

In contrast, had Jack been on the traditional salary schedule, his salary would have remained constant at $61,000 in each year because he had more than 13 years of experience and did not change his educational status. So for a teacher like Jack, it could feel as though participation in ProComp was having a negative impact on his salary, even if his total *cumulative* earnings under ProComp was higher than it would have been under the traditional salary schedule.

Julia: New Teacher with a Bachelor's Degree

Julia joined DPS in September of 2008 and thus had one year of tenure as of the 2009-10 school year. She met both of her SGOs and received a probationary CPE salary increase. With no bonuses, her total salary increased by $758 in the first year. In 2010-11, she changed to a school that earned a High Growth and a Top Performing award and also achieved an ExEx bonus, while meeting both SGOs and again receiving a probationary CPE base salary increase. In total, Julia saw her salary increase by $7,962 in 2010-11 relative to her salary in 2009-10.

In 2011-12, Julia earned the same awards as the previous year and she also completed a PDU. Since she was no longer classified as a probationary teacher, her salary increase was the maximum CPE amount of $1,127. Her bonuses and base increases totaled $10,968, which amounts to an increase over the previous year's amount by $2,254. Averaging the salary changes from 2009-10 to 2010-11 and 2010-11 to 2011-12, Julia would perceive an increase of $5,108.

In contrast, had she been on the traditional salary schedule, since she was a new teacher with less than seven years of experience and only a bachelor's degree, her yearly salary increases would have been less than $1000 a year. Specifically, for 2009-10 to 2010-11 and 2010-11 to 2011-12, Julie would have seen, respectively, a $105 and a $193 increase in her salary.

Jessica: Teacher with the Largest Annual Increase under the Traditional Salary Schedule

We purposely selected Jessica in order to compare how she actually faired on the ProComp salary schedule considering, in one year, her salary would have increased by $13,118 under the traditional schedule. As of the 2009-10 school year, Jessica had 19 years of tenure and was therefore ineligible for salary increases on the traditional salary schedule. However, in 2010-11, she received her PhD and thus moved from the maximum master's degree salary of $61,100 to the maximum PhD salary of $74,218. Averaged over the two years, Jessica would have perceived an average change of $6,559 under the traditional salary schedule. Under ProComp in 2009-10, Jessica received a Top Performing school bonus, a High Growth award and met both of her SGOs. Thus, in this first year, she earned a bonus and base-building total of $5,183. In 2010-11 she again earned all of these bonuses and base-building increases, but she would have

earned an additional salary increase of $3,380 for completing her PhD. In 2011-12, she met both SGOs and the same bonuses as she had in the previous two years, but she would experience no additional salary increase from earning her PhD. Averaging the salary changes from 2009-10 to 2010-11 and 2010-11 to 2011-12, Jessica would perceive an increase of $2,066.

Chapter 3: Student Growth Objectives

Introduction

School districts in various states (e.g., Hawaii, Louisiana, Maryland, New Hampshire, New York, North Carolina, Rhode Island, Texas, and Utah) are implementing a student learning objectives (SLO) system to evaluate student learning across tested and non-tested grades and subjects. The growth of SLOs nationwide can be attributed largely to federal and state initiatives to implement new teacher evaluations systems that factor student learning in a teacher's effectiveness rating (Marion & Buckley, 2011). Denver Public Schools (DPS) is one of the few districts nationwide with a long history of using student growth objectives (SGOs)[1] in the teacher Professional Compensation (ProComp) system. In 2004, the Community and Technical Assistance Center (CTAC; Slotnick et al, 2004) highlighted some benefits associated with implementing the SGO process at 16 of the ProComp pilot sites: an observed increase in conversations and collaborations between teachers to review student performance data, and increased attention to the data collected during the school year focused on monitoring student progress and adjusting instructional practices. In the CTAC evaluation of pilot site outcomes, a positive association was found between student performance outcomes achieved on the CSAP tests relative and quality rating[2] of the SGOs set by teachers.

Subsequent evaluations of SGOs have yielded mixed results. In the first internal evaluation of ProComp, Wiley, Gaertner, Spindler, and Subert (2007) reported on teacher perspectives about SGOs after the first full year of district-wide implementation. A slight majority of respondents surveyed, 52%, agreed or strongly agreed that the "SGO process is worth the time and effort it requires, and that the majority of respondents who had not met both of their SGOs thought the determination was fair" (p. 34). In the more recent 2006-2010 external evaluation of

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[1] DPS uses the acronym SGO since the focus is on student growth. However, SGO and SLO can be considered synonymous in their intention for measuring student learning.

[2] High quality was defined using a rubric established to identify SGOs meeting high quality criteria across seven dimensions: instructional period, assessments, expected gain or growth including baseline data, learning content, rationale, instructional strategies, and student population needs defined.

ProComp conducted by the University of Colorado at Denver (UCD), the authors highlighted concerns about the SGO process. As noted by Proctor & Price (2011),

> Teachers had numerous concerns around the way that SGOs were implemented in schools. Issues centered on consistency of SGOs between teachers and school sites, as well as the level of expectations reflected in SGOs. The data on implementation suggest a substantial need for more support and standardization around the SGO process, a need that was voiced by both principals and teachers. After the ProComp pilot ended many key supports were discontinued, and school personnel seemed to feel that they lacked much for the support and training they needed to appropriately implement SGOs. (pg. 114)

This study, like the UCD study, highlights key findings from evaluating SGO achievement results based on the total population (both ProComp and non-ProComp teachers) of teachers in the district who submitted SGOs each year. The analyses presented in this paper use SGO results from two additional years of SGO data (2010-2011 and 2011-2012 school years) not reflected in the earlier UCD study.

Data Sources

All SGO data examined in the analyses that follow were provided by DPS at the individual teacher level. Each teacher in the district receives a unique teacher identifier assigned by the district's human resources department. Fields in the SGO data set linked to individual teacher identifiers were included: the school associated with the teacher, a binary variable indicating whether a teacher met or did not meet their SGO, and additional data points required of teachers when entering their SGO information (e.g., stated learning objective, assessments used to evaluate students, the expected targets set at the beginning of the year for all students, and the instructional period covered by the SGO).

In addition to the SGO data, the state's Colorado State Assessment Program (CSAP) and Transitional Colorado Assessment Program (TCAP) growth percentile data were also provided to us by the district. The growth percentiles from the state summative assessments were provided

to us by the district to examine the question of whether there was a strong relationship between SGOs achieved and growth performance achieved by students on the state summative assessment. Although this question was also examined in UCD's study, the study assessed this relationship at the school level and used the school performance framework points for growth as a basis of comparison. More specifically, they reviewed the associations of the percentage of SGOs met at each school and the total number of growth points earned by each school on the district's school accountability framework. In the present study, we focus primarily upon the association between growth percentiles and SGO achievement with teachers as the units of analysis. Table 3.1 summarizes the different sources of data used in our analyses.

Table 3.1. Data Used in Present Study and Data Sources

Years	Data	Source
2007-2008 to 2011-2012	Student growth objective data	Department of Assessment Research and Evaluation (ARE)
2009-2010 to 2011-2012	Student growth percentile data linked to individual teachers and students	ARE
2009-2010 to 2011-2012	SGO rated data collected from pilot sites	SGO administrator from ARE and Professional Development Unit (PDU) administrator
2007-2008 to 2011-2012	Teacher characteristics (years of experience and degree type)	ARE

Table 3.2 presents the total number of approved SGOs that were completed (i.e., received a rating of "met" or "not met"), and the total number of individual teachers associated with pairs of approved SGOs (always equal to half the total number of SGOs completed).

Table 3.2. Total number of individual SGOs completed by year

Year	Total No. of SGOs completed	Total No. of Teachers
2007-2008	6,144	3,072
2008-2009	6,934	3,467
2009-2010	7,758	3,879
2010-2011	8,584	4,292
2011-2012	8,696	4,348

We found a large discrepancy between the total number of SGOs provided to us for the 2009-2010 year (7,758) relative to the total number of SGOs reported in UCD's evaluation report (9,263). Feedback from a former ProComp transition team member suggests the discrepancy is likely due to the use of incomplete and non-approved SGOs that may have been inadvertently included in the dataset provided to UCD. Table 3.3 shows the total number of teachers with student growth percentiles (SGPs) linked to them in one, two or three content areas between the 2009-10 and 2011-12 school years. This ranged from 716 to 893 for any given year and subject. We aggregated the SGPs using the mean instead of the median in order to keep the SGP aggregation method consistent with the approach being used in the LEAP framework. Next, we computed a mean growth percentile (MGP) for each teacher with a minimum of 10 students in the classroom (since this follows the minimum n size rule currently used in ProComp to compute growth for individual students on the Exceeds Expectations incentive). In the case of teachers who teach students in two or more grade levels for the same content area, the MGP represents the average growth achieved by students instructed by the same teacher irrespective of grade level. For example, if a language arts teacher taught distinct classrooms with grades 6, 7, and 8 students, we computed the MGP achieved by students in reading across all three classrooms and grades.

Table 3.3. Teachers with MGPs by Subject

Year	Content Area	Total number of teachers with MGPs
2010	Reading	893
2010	Writing	884
2010	Math	826
2011	Reading	820
2011	Writing	819
2011	Math	716
2012	Reading	869
2012	Writing	861
2012	Math	742

In the analyses that follow, the findings are based on the total population of both ProComp and non-ProComp teachers in the district that had their SGOs evaluated by approvers. Each year, SGO data is missing for several hundred teachers. Based on input from a ProComp Transition Team member, reasons that these teachers do not have SGO information associated with them include: teachers who transfer or join a school mid-year may have missed the SGO

submission period or teachers leave a school before the evaluation period ends at the close of the school year. Regardless of the reason, since we do not know how these teachers would have performed on their SGOs, all percentages and data reported in this study are based on the total population of teachers who have gone through the entire SGO process during the school year.

SGO Achievement at the District Level: Trends and Patterns

Table 3.4 presents the percentage of all teachers district-wide meeting 0, 1, or 2 objectives for each of the five years of data reviewed. In each year, more than 90% of teachers who submitted SGOs met at least one of their two objectives.

Table 3.4. Percentage of Teachers Meeting Objectives District-wide

Year	Met None	Met 1	Met 2
2008	6.4%	16.0%	77.6%
2009	8.0%	15.8%	76.2%
2010	6.4%	15.1%	78.5%
2011	8.0%	15.7%	76.4%
2012	7.8%	14.9%	77.3%

Teachers in ProComp who submitted SGOs were substantially more likely to meet both of their objectives than non-ProComp teachers. For the 2009-10 through 2011-12 school years, the percentage of ProComp teachers who met both SGOs was more than 10 points higher than that of non-ProComp teachers, as illustrated in Table 3.5.

Table 3.5. Percentage of Teachers Meeting Objectives by ProComp Status

Group	Year	Met None	Met 1	Met 2	Total N
Non ProComp	2010	9%	21%	70%	854
ProComp	2010	5%	14%	81%	3025
Non ProComp	2011	13%	22%	65%	830
ProComp	2011	7%	14%	79%	3462
Non ProComp	2012	11%	22%	68%	739
ProComp	2012	7%	14%	79%	3609

The following areas were considered in reviewing additional district-wide SGO trends and patterns: SGO achievement as a function of common types of assessments used by teachers, and SGO achievement as a function of teachers' degree attainment.

Most Common Assessment Types Used for SGOs

In each of the five years assessed, the three most common assessment types used for SGOs in the district were teacher-made assessments, followed by assessments classified as "other"[3], and a "body of evidence" which consisted of at least two assessments and typically included at least one teacher assessment. Other common assessments included available products such as the DRA2, Everyday Mathematics unit assessments and various district benchmark assessments. For each year, over 25% of all SGOs developed used teacher-made assessments and over 30% of objectives each year were set using either a body of evidence approach or an assessment classified as "other." Fewer than 10% of all objectives were set using the DRA2, benchmark assessments and Everyday Math assessments as sole outcome measures for student growth[4]. The percentage of objectives met for each assessment type remained relatively constant across years (see Appendix A). Figure 3.1 shows the percentage of SGOs met relative to each assessment type or combination of assessments most commonly used by teachers in the 2012 year. In Figure 3.1, "other", "body of evidence" are grouped under teacher made assessments since a large proportion of assessments in those two categories are comprised of various instruments created by teachers. The other most commonly used district assessments for SGOs are grouped together as "district assessments".

[3] Although a range of assessments were considered in the category of "other" (e.g., student portfolios), many of these assessments (e.g., annotated logs, reports for achievement, rubrics, quizzes, pre- and post-tests for art) were misclassified and should have been specified as teacher-made assessments. Additionally, the majority of teachers who submitted evidence under "other" were Student Service Providers (SSPs).

[4] Note that the DRA2 and the benchmark assessments were also used by some teachers as one of several assessments under the body of evidence approach.

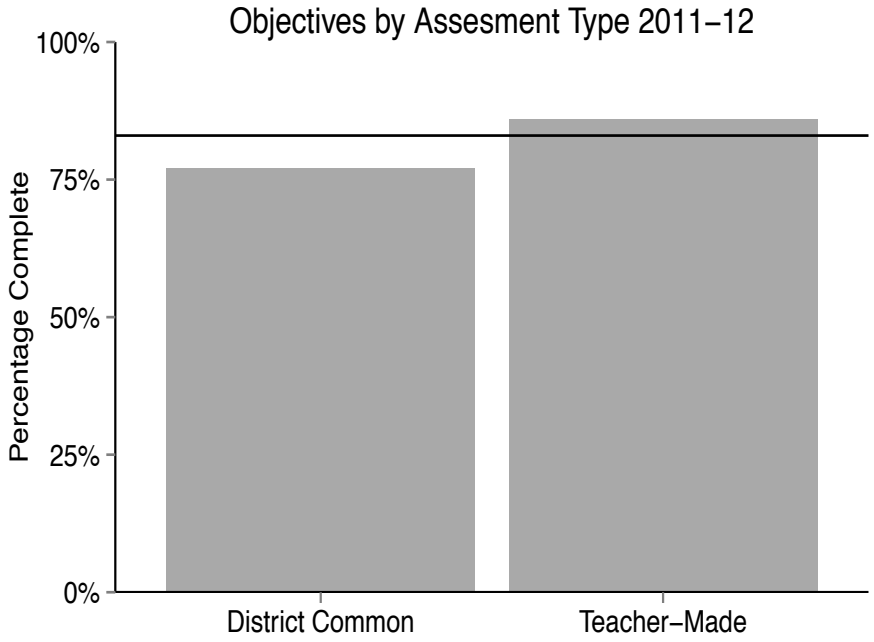


Figure 3.1. Percentage of objectives met by most commonly used assessment type or combination across district in 2012

As indicated in Figure 3.1, teacher-made assessments yielded a higher percentage of "met" objectives (approximately 86%) across the entire district relative to district common assessments (approximately 77%). The solid line located at the 83% mark reflects the district average found in 2012 across all assessments. A similar finding was reported in UCD's external evaluation.

Meeting Both Objectives Relative to Teacher Degree Type

When evaluating the percentage of teachers across the district who met both objectives and received base compensation as a function of teacher degree attainment (undergraduate or graduate), the results appear largely similar across the different groups. However, this finding can be attributed to the high percentage of teachers in the district meeting both SGOs in any given year. As indicated in Table 3.6, although the graduate degree group is slightly more likely to meet two objectives than the undergraduate group, the difference between groups only amounts to a one percentage point difference in four out of five years, and a two percentage point difference in the final year (2012).

Table 3.6. Percentage of Teachers by Degree Type Meeting Both Objectives District-wide

Degree Type	2008	2009	2010	2011	2012
Undergraduate	74%	76%	78%	76%	76%
Graduate	75%	77%	79%	77%	78%

Although the district-wide pattern for SGO achievement rates remains highly consistent across years, the outcomes can vary considerably when comparing the SGO achievement rates of teachers across schools. In the following section, we examine these between-school SGO differences more closely.

Examining Differences in SGO Performance at the School Level

In the UCD report (Proctor, et al. 2010), the authors compared school performance results and the percentage of objectives met at schools in the 2009-2010 year and suggested that there is little to no correspondence between the level of growth achieved by schools as measured by the school performance frameworks and the percentage of objectives met in each school (pg. 107). To illustrate this point, Figure 3.2 shows the distribution of the percentage of teachers meeting both objectives by traditional and alternative schools rated in the lowest rating category of the framework ("Accredited on Probation") for the 2012 school year.

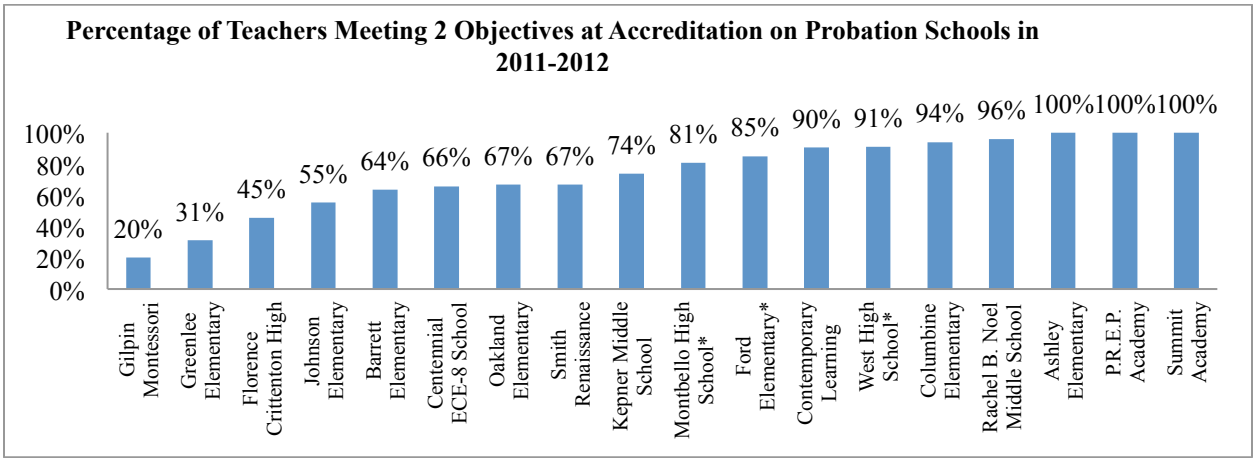


Figure 3.2. Percentage of Objectives Met by Schools Rated as "Accredited on Probation" in 2012

In Figure 3.2, the percentage of SGOs met by these schools sharing the same performance rating range widely, from 20% to 100%. Although half had percentages that fell below the district average (approximately 76%), the other half had percentages over 80. The SGO outcomes in 9 out of the 18 lowest rated schools in the district would imply that most teachers are achieving both of the growth objectives set for their students. This finding also illustrates the degree of variability found in SGO achievement rates for schools classified as sharing the same accountability performance rating.

During the more recent set of ProComp focus groups we conducted with teachers during the spring of 2013 (see Chapter 5), teachers expressed concerns about the uneven implementation of SGOs across schools. In response to these concerns, we examined the between-school differences in SGO outcomes to understand the magnitude of these differences.

Identifying Factors for Inter-School Variability of SGO Outcomes

Table 3.7 presents descriptive statistics for the number of SGOs met by the teachers within schools each year. On average within a given school in a given year, about 8% of teachers do not meet either of their objectives, 16% meet one objective, and about 76% meet both objectives. Although the average percentages for each SGO achievement category (0, 1, or 2 objectives met) appear constant across the years, the standard deviation, minimum and maximum values in the table each year indicate significant variability in the SGO achievement of teachers across schools. As an extreme example, in the 2007-2008 school year, the minimum percentage of teachers meeting both objectives at a given school is 27% and the maximum percentage of teachers meeting both objectives is 100%. More generally, the average standard deviation of the percentage of teachers earning both objectives across schools is 16.

Figure 3.3 illustrates the range of objectives met across schools in the district for the most recent SGO data available (2011-2012 school year). Each dot in the plot represents a unique school. Each school is mapped along the vertical axis which runs from 0% to 100% and represents the percentage of teachers who met both objectives. The horizontal line located at the 75% mark on the vertical axis represents the average percentage of teachers across the district who achieved both of their SGOs across the five-year period from 2008 to 2012. For example, in the 2011-2012 year, Collegiate Prep Academy had the lowest percentage (11.1%) of teachers

in the district who met both objectives; in contrast, Park Hill Elementary had the entire population of teachers meeting both objectives.

Table 3.7. Percentage of Teachers Meeting Objectives at Schools

Year	# of SGOs	Mean	SD	Min	25%	Median	75%	Max
	Zero	7%	8%	0%	0%	5%	10%	29%
2007-08	One	16%	12%	0%	8%	15%	24%	57%
	Two	77%	17%	27%	67%	79%	90%	100%
	Zero	8%	8%	0%	2%	7%	12%	40%
2008-09	One	17%	13%	0%	8%	14%	27%	59%
	Two	74%	17%	23%	64%	79%	87%	100%
	Zero	7%	7%	0%	0%	5%	10%	38%
2009-10	One	16%	11%	0%	8%	14%	22%	50%
	Two	78%	13%	42%	69%	80%	86%	100%
	Zero	8%	8%	0%	3%	7%	13%	35%
2010-11	One	16%	12%	0%	7%	14%	24%	47%
	Two	76%	16%	33%	67%	78%	89%	100%
	Zero	8%	11%	0%	0%	5%	12%	78%
2011-12	One	16%	12%	0%	7%	14%	22%	60%
	Two	76%	18%	11%	67%	79%	88%	100%

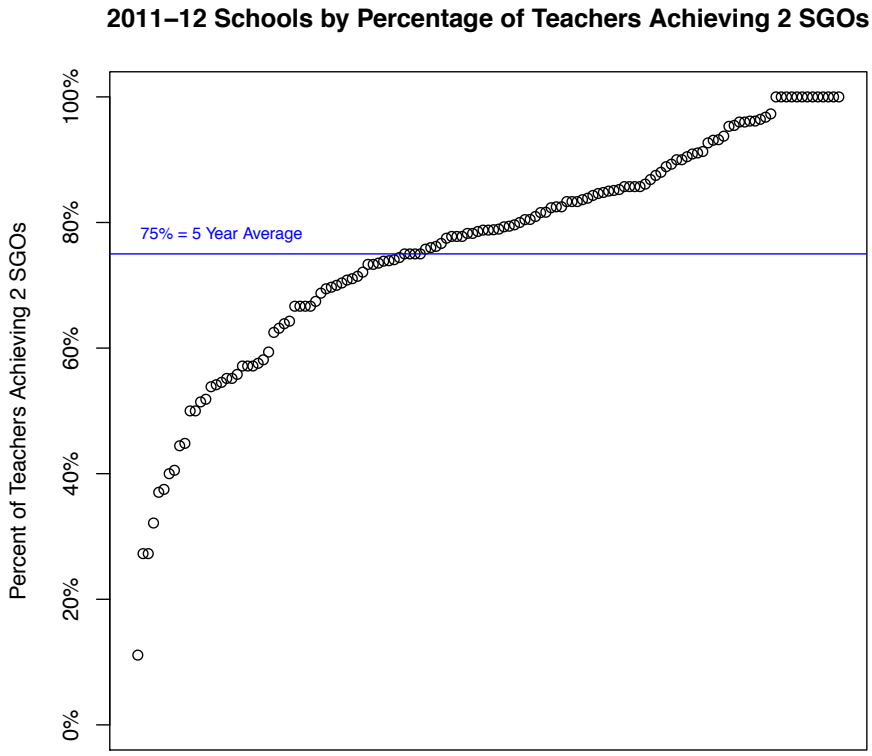


Figure 3.3. Two-SGO Achievement Rate by School

SGO Relationship to TCAP/CSAP Growth in the Classrooms

This section presents findings from evaluating the association between SGO outcomes and the level of growth achieved across DPS classrooms on the state's summative assessment. In the analysis, three school years (2009-2010 to 2011-12) of SGO outcomes were correlated with three years of pooled growth results obtained on the state's assessment program in reading, writing and math. The results were restricted to these three years since student-teacher links in prior years cannot be verified by ARE. Figure 3.4 presents a set of boxplots that depict the distribution of TCAP reading and math MGPs achieved relative to whether a teacher achieves 0, 1, or 2 SGOs in each of the three years reviewed.

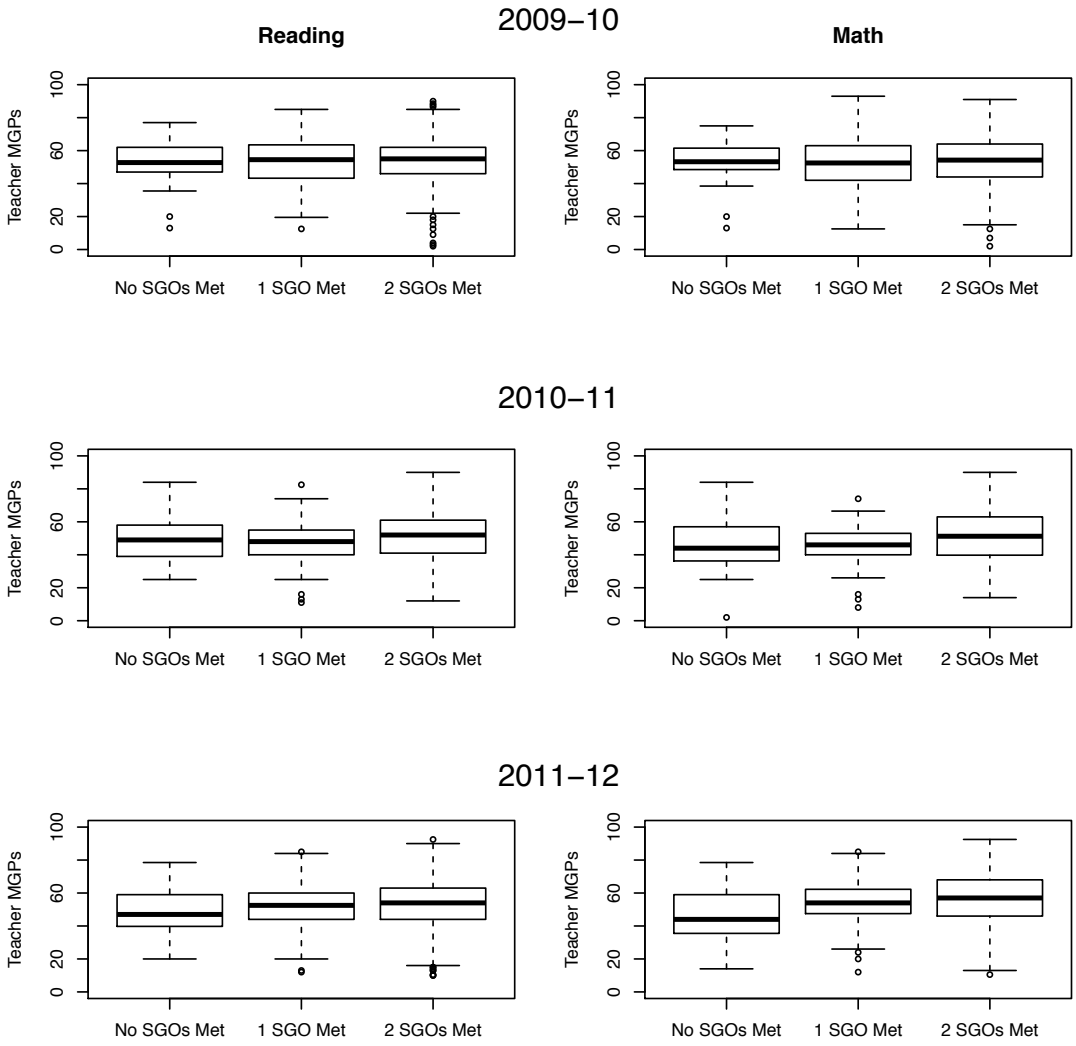


Figure 3.4. Reading and Math MGPs by SGO's Achieved

For all three groups of teachers, the growth achieved in the classrooms for most years in reading and math spans a wide range of possible MGP values, with the widest range for each year achieved by teachers meeting both objectives. The median growth achieved by each group represented by the solid lines in the box plots. Although the performance for teachers who met both SGOs is higher in both subject areas in 2011-2012, the difference is quite small and not in a consistent direction in all other years, and there is considerable overlap in the MGP distribution found between the three groups of teacher for each content area. Table 3.8 presents descriptives associated with the MGPs achieved by each group of teachers from the 2011-2012 year.

Table 3.8. MGP Descriptive Statistics for Teachers Meeting 0, 1, or 2 Objectives by Content Area 2011-12

Content Area	No. of Objectives Met	Min MGP	Max MGP	Mean	Std. Deviation
Math	0	13	85	47	16
	1	4	96	50	17
	2	7	99	53	17
Reading	0	20	81	49	14
	1	12	88	52	14
	2	10	93	53	17
Writing	0	24	85	51	14
	1	13	89	54	14
	2	4	94	56	15

Table 3.9 presents the correlations found between the number of SGOs met and the MGPs achieved by teachers in each content area. The SGO outcomes variable is treated as an ordinal variable where: 0 = did not meet both objectives; 1 = met one objective; 2 = met both objectives.

Table 3.9. Correlations between SGO outcomes and MGPs by subject and year

Content Area	Year	Correlations with SGO objectives met
Reading	2010	.03
Writing	2010	.04
Math	2010	.06
Reading	2011	.09
Writing	2011	.03
Math	2011	.12
Reading	2012	.09
Writing	2012	.10
Math	2012	.12

Note: Correlations reported are Spearman rank coefficients

Across years and subject areas, the SGO attainment and MGPs are weakly correlated. Although the growth metrics used here and the unit of analysis differ from the metrics and school level analysis used in the UCD evaluation, the level of correlations found in Table 3.9 are similar to the levels reported by Proctor, et al. (2010). In their report, the authors reported a correlation of no higher than .09 for any of three content areas assessed in 2009-2010 (p. 108).

According to the former Executive Director of ARE (personal communication, February 27, 2013), the district hopes that following the introduction of the new SLO process, SGO achievement would show a clearer relationship with growth outcomes achieved on the state summative assessments. Although the learning objectives being piloted this year should be connected to the Common Core or the Colorado Academic Standards, these content-based objectives are narrowly defined compared to the broad content captured by the state assessment. For this reason, the correlations between SGOs and MGPs may not reach the desired high levels (e.g., .6 and above), but may potentially be stronger than the levels currently found.

The next section presents findings from having two content experts from the Center for Assessment conduct a review of math and English language arts SGOs rated as "excellent" by a group of approvers. The purpose of having the reviewers apply the DPS rubric used by approvers to determine whether SGOs meet quality standards was to acquire a secondary check on whether the highest rated SGOs were meeting the highest quality standards in the rubric.

Examining SGO Quality Ratings

ARE staff collected quality ratings from a select group of principal or approver[5] participants over a three-year period from 2009-2010 to 2011-2012. Since the strength of the SGO process is predicated largely on the quality of feedback received by teachers from approvers, the rating process was implemented by ARE to provide approvers with criteria and guidelines to help improve the quality of the SGOs developed at their schools. Criteria in the rubric developed by DPS staff encompass seven different areas: 1) the rationale for setting the SGO; 2) the population being served; 3) the interval of instruction time; 4) the assessment or measures used to evaluate student growth; 5) the expected gain or target; 6) the learning content or objective specified and 7) instructional strategies to be employed. Raters assigned a score of 1 (unsatisfactory), 2 (needs improvement), 3 (acceptable), and 4 (excellent) to each SGO reviewed. Raters were given the following rules to assign a final rating to each SGO:

[5] In most schools, principals serve as the final approvers of SGOs, however, in some schools, the assistant principal or another lead administrator is selected to review and approve SGOs.

- To assign the highest score of 4 to the SGO, the SGOs should be rated as 4 in all 7 areas of the rubric.
- To assign a final score of 3 to the SGO, the SGOs should meet a 3 in all 7 areas of the rubric or may score a 4 in some dimensions but no lower than a 3 in all other dimensions.
- If any one of the dimensions were rated lower than a 3, the SGO was assigned a score of 2.
- In order to receive a score of 1, the SGO should be rated as a 1 across all 7 dimensions.

According to the former SGO coordinator and PDU leader, any SGO rated as 3 or higher is interpreted as an SGO that met the district's standard of "high quality".

Examining SLO Quality based on Input from Content Experts

Two content experts from the National Center for the Improvement of Educational Assessment (NCIEA) also reviewed a set of "excellent" rated SGOs (i.e., reviewed SGOs rated as 4) in Language Arts and Math using the district's rubric and scoring guidelines. The math reviewer, Dr. Pamela Paek, has worked extensively with states and districts to foster improved teaching and learning with a focus on math through improved practices in educational assessment. Her past research and peer reviewed publications focused on improving mathematical teaching practices and student learning through the use of complex performance tasks, and in identifying factors contributing to gender differences in mathematics performance of high school students. She has also worked with one assessment consortium (the Partnership for Assessment of Readiness for College and Careers, PARCC) to help develop math performance level descriptors. In addition to her Ph.D. in Education from the University of California, Berkeley, Dr. Paek holds a teaching certification in secondary mathematics. The English Language Arts reviewer, Dr. Jeri Thompson, spent 20 years in public education as a teacher, Reading Specialist, principal, and Director of Curriculum and Instruction at school districts in Maryland and Rhode Island. She currently serves as an expert English Language Arts

reviewer analyzing curriculum documents in reading for the National Center and State Collaborative consortium developing alternative assessments in both English language arts and math.

Both reviewers first rated the quality of the SGOs using the same rubric developed by DPS to see whether they would reach the same conclusion of assigning a final rating of 4 to each of the SGOs. They were also asked to identify areas where the ratings fell short of meeting the criteria noted under the highest score for each dimension in the rubric. The reviewers received a total of 30 randomly selected SGOs from the entire pool of SGOs rated as 4 from the 2011-2012 school year. To randomly select 30 SGOs out of the entire pool of SGOs rated as 4 in the most recent year of data available, the data set was first filtered for all SGOs rated as 4s. A random sample selection function was then applied to extract exactly 30 cases from the pool of excellent rated SGOs in both English language arts and in math.

According to both reviewers, not one of the 4 rated SGOs provided to them could justifiably receive an excellent rating. Further, they mentioned that based on the scoring rules developed by DPS, at least 20 in each content area should have received the "needs improvement" or "does not meet" rating in the rubric. The following summarizes four primary concerns raised by the content experts relative to the majority of excellent rated SGOs and also in reference to the rubric criteria developed by the district and provided to approvers.

First, excellent ratings appear to have been given to SGOs that were lacking clarity and specificity. The learning goals described by SGOs tended to either focus on highly discrete skills that could be learned within a shorter time interval than the typically year-long interval specified, or focused on a set of very broad standards that could not possibly be evaluated under a single SGO. The SGOs also lacked specificity with regard to the instructional strategies to be employed to improve performance for students with varying baseline abilities or special needs, and were not clear about the assessments that would used to evaluate the growth target (e.g., "I will use Everyday Math"). Second, there was no evidence provided that the quality of teacher made assessments was high enough to evaluate the objectives specified. Third, the DPS approver rubric criteria themselves are vague and open to competing interpretations. Fourth, since the overall quality rating given to each SGO is based on multiple ratings across seven dimensions and some of the dimensions should be given more weight over others (e.g., learning content

relative to instructional time period noted), the rules for assigning a quality rating for each SGO should have prioritized the scores given to more critical dimensions.

Based on their experience of having to use DPS' rubric to rate the SGOs, the two reviewers strongly recommended that the criteria in the rubric be revised to establish clearer expectations of quality in each of the scoring categories, and that the scoring procedures be revised to help approvers derive a final quality rating on an SGO across the seven categories. Additionally, they recommended that more training and/or guidance, including high-quality exemplars, need to be provided to ensure that approvers:

- Understand and apply the rubric criteria consistently;
- Are provided with clear examples of exemplary SGOs to serve as models of what high quality SGOs look like; and,
- Check that teacher-made assessments are reflective of high quality standards.

An example of an SGO rated as excellent by a principal and questioned by an NCIEA reviewer is located in Appendix C. The comments (in italics) provided by the reviewer highlight many of the common problems that both content experts encountered in their reviews.

Although the approach for examining SGO quality ratings in this study differs from the approach used in UCD's ProComp evaluation, the conclusions drawn across studies are remarkably similar. To rate the SGOs, the UCD researchers developed their own quality rubric and had each content specialist recruited rate the SGOs using the same rubric. Based on the ratings given to the SGOs by the content specialists, UCD researchers found that "it is debatable as to whether some of the SGOs [reviewed] should ever have passed principal inspection given their lack of clarity, poorly defined learning objectives, or lack of high expectations for students" (p. 115). Although the evaluators could only infer that some of these "poorly defined" SGOs met inspection by the principals, it could be the case, as suggested by some teachers participating in the SGO focus groups held in the fall of 2012, that some principals never checked the quality of the SGOs submitted in the beginning of the year. In this study, the issues highlighted by the reviewers that approvers are not consistently applying the scoring rules for evaluating the quality of the SGO, that the rubric itself appears to be problematic relative to how criteria have been specified to differentiate quality across the scoring categories, and that all of the SGOs reviewed

appeared to be weak in at least one scoring category assessed, all together suggest that different aspects of the evaluation or approval process including the rubric used to guide the process require strengthening.

Identifying Barriers and Opportunities to Improve the SGO Process

The focus groups with professional development unit (PDU) teacher leaders and approvers (principals or managers) were organized in the fall of 2012 to gather feedback from the field on how best to strengthen the existing SGO process. The feedback was designed to help structure recommendations in the event that SGOs were used for evaluating student outcomes in the new teacher evaluation system. A total of 18 teacher leaders participated in four separate teacher focus group sessions and a total of 15 approvers participated in three approver focus group sessions. Both PDU leaders and approvers came from different regions of the district and represented various elementary and secondary schools. All but one participant had over two years of experience working with SGOs, and 80% of participants had been with the district for over five years. In each session, participants were asked to provide feedback on the following themes:

- How to make the SGO process more meaningful to teachers and how to make the process more efficient from the perspective of developing and approving the SGOS;
- The type of supports needed to elevate the quality of developing and approving the SGOs are elevated; and,
- Whether SGOs should be used as one approach for evaluating student outcomes under the Leading Effective Academic Practice (LEAP) system.

A copy of the protocol used to the guide the conversation with teachers is located in Appendix D. For the first two themes, participants provided input in the form of recommendations. The three most common recommendations captured under each theme are highlighted in this section. For the third theme, participants provided rationales in support of using SGOs as a component of the student outcomes portion of LEAP. Common themes and

recommendations identified from the focus group data were also reviewed and checked for accuracy by the PDU and SGO administrators.

Meaningful and Efficient

To make the SGO process meaningful and efficient for teachers, focus group participants provided the following recommendations:

- Align the SGO process with Unified Improvement Process and the LEAP framework and use the SGOs as outcome measures for evaluating the effectiveness of instructional strategies specified in the Professional Development Units.
- Develop SGOs in teams to ensure oversight of rigor and allow the process to become more collaborative.
- Ensure ongoing progress monitoring to evaluate whether students are getting closer to meeting objectives.

Supports Needed

To ensure and raise the quality of the SGO process, the focus group participants recommended the following supports that would be needed:

- Provide SGO exemplars to help teachers and principals understand what high quality and rigorous SGOs should look like in different subject areas.
- Provide a full planning/working day for teacher teams to develop growth objectives to help schools meet UIP goals.
- Set rigorous and consistent district-wide expectations on all criteria (i.e., growth, learning content, instructional strategies, etc.) for the SGO development process.

Use of SGO as a Student Outcome Measure under LEAP

All but two of the 33 participants supported the use of SGOs in the new teacher evaluation system. While almost all approvers expressed concerns about using SGOs in the absence of consistent, district-wide quality expectations, almost all noted that they would support the use of SGOs in teacher evaluations. Teachers, they felt, would take responsibility for and "own" this part of the process. In other words, a sense of ownership would compel many teachers to buy into the student outcomes portion of their evaluation, and teachers would also view the SGOs as a more "authentic" representation of growth in their classrooms. This theme of ownership also emerged from all teachers who supported the use of SGOs for LEAP. The sentiments from this group are captured in the following quote from a PDU leader and veteran teacher:

> There are not a lot of areas that teachers have control over in LEAP. This is the only thing that we can control and define…this would give us a chance to make that 50% more meaningful for us in terms of understanding our students' growth.

A barrier analysis was applied to identify the key issues or "barriers" highlighted in themes raised during the focus groups that may adversely impact policies, values, procedures and processes. The purpose of such an analysis is to develop specific strategies to overcome systemic barriers and build an action plan to improve upon a process or system (Davis, 2004). The barrier analysis followed the process illustrated in Figure 3.5. For this project, data were collected and analyzed largely from the conversations that took place during each focus group session.

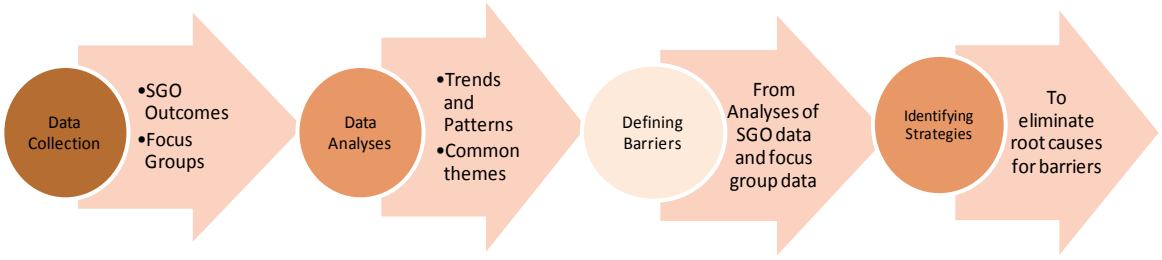


Figure 3.5. Barrier analysis process

A summary of the results from the barrier analysis based on the focus groups data is located in a table in Appendix E. In Appendix E, the last three rows of the table present an array of strategies and suggestions for addressing each barrier. Although assessing the merits of the recommendations provided by the teachers and approvers fall outside the scope of this paper, moving forward with an action plan to scale up the new SGO process would not be recommended unless district leaders dedicate the needed resources and support structures to sustain this process. As noted by one principal participating in the focus group:

> …we've learned how to juggle multiple priorities, and right now, since the SGOs are not high in the list of priorities identified by the district, this isn't one of the areas that many of us are going to make time for. But if we know this should be valued as a priority and we can see how this connects to school and district initiatives, then we'll include this among all of the [tasks] that we're asked to juggle and make time for it.

Currently, the level of commitment to the new SLO process only affects a small group of pilot schools. In anticipation of scaling up the SLO process, DPS may in the short-term want to consider implementing a few of the high value impact strategies identified in Appendix E. For example, ARE may want to coordinate the work with content experts in the Teaching and Learning Department to develop exemplary SGOs for different levels (e.g., math in the elementary grades and Algebra 1 in high school) and by content area. Considering that the SGOs will still be used for merit pay purposes this year, taking steps to provide exemplars of rigorous and high quality instructional strategies and learning content will be helpful to the field. Additionally, revising the rubric and conducting trainings on its effective use are needed to improve the SGO process for approvers and teachers. Before the SLO process is scaled up district wide either in the 2014-2015 or the 2015-2016 year, the district should at a minimum, test out the rubric with content specialists and refine it to ensure all criteria presented are clearly defined. Following the refinement of this rubric, information should be shared in various formats (e.g., webinars and in-person trainings) to help teachers and approvers understand the criteria used to define high standards and expectations.

References

Buckley, K. & Marion, S.F. (2011). A Survey of Approaches Used to Evaluate Educators in Non-Tested Grades and Subjects. Retrieved February 23, 2013, from www.nciea.org.

Slotnik, W.J., Smit, M., Glass, R.J., Helms, B.J. (2004). Catalyst for Change: Pay for Performance in Denver Final Report. Community Training and Assistance Center. Retrieved March 1, 2013 from http://www.ctacusa.com/denver-vol3-final.pdf

Proctor, D., Walters, B., Reichardt, R., Goldhaber, D., & Walch, J. (2011). Making a Difference in Education Reform: ProComp Evaluation Report 2006-2010. The Evaluation Center, University of Colorado Denver: Denver, CO

Wiley, E., Gaertner, M., Spindler, E., Subert, A. (2007). Denver Procomp Evaluation: A Mixed-Method Evaluation of Denver's Alternative Teacher Compensation System. Year 1 Report. Retrieved February 23, 2013, from Denver Public Schools: http://static.dpsk12.org/gems/newprocomp/ProCompEvaluation200607.pdf

Chapter 4: Effect of ProComp Participation on TCAP Scores

Introduction

Although ProComp was designed with a number of aims in mind, it could be argued that ProComp's "bottom line," like most educational programs and interventions, consists of its effects on student achievement outcomes. A key question, therefore, is whether students educated under the ProComp system on average have better outcomes than students educated under the traditional payment system, all else being equal.

The lack of a true experimental design limits prospects for a decisive answer to this question. However, some relevant evidence can nonetheless be gleaned by treating the implementation of ProComp as a quasi-experiment. Throughout the three years for which all relevant data were available (2009-2010, '10-'11, and '11-'12), there are teachers in the sample who (a) were in ProComp for all three years, (b) were not in ProComp at all, and (c) were initially not in ProComp but then opted in after one year. Thus, at the student level, the "treatment" condition is receiving instruction from a teacher enrolled in ProComp, while the "control" condition is receiving instruction from a teacher not enrolled in ProComp.

Clearly, teachers enrolled in ProComp and not enrolled in ProComp are not randomly equivalent. It may be possible to statistically control for some of the differences between the two groups: in particular, tenure and age differences exist, partially as a function of the fact that all teachers hired in the district since January 1, 2006 have been automatically enrolled in ProComp. However, given that enrollment in ProComp is not mandatory for veteran teachers, self-selection into the treatment and control groups may be associated with unmeasured factors such as motivation, household income, etc. The plausible sources of confounding make definitive causal conclusions very hard to support.

Student scores on the mathematics, reading, and writing sections of the Transitional Colorado Assessment Program (TCAP) constitute the primary outcome variable. Prior-year test scores for the same students on the same exam serve as a control variable in all models, along with teacher and student demographics and background characteristics. By controlling for as many factors as possible, it is hoped that the estimate of the difference in student scores between ProComp and non-ProComp teachers comes as close as possible to an estimate of a true causal effect.

To be more specific about causal effects, in principle, there are (at least) three pathways through which ProComp could affect student outcomes. A first pathway is via the effect of the implementation of ProComp on the district as a whole, relative to the counterfactual of it not being implemented. This has been examined previously by comparing student outcomes in pre-ProComp years to outcomes in the years following its implementation (Goldhaber & Walch, 2011; Wiley et al., 2010). In both cases these researchers used longitudinal data before and after the implementation of ProComp to estimate effects on student achievement. Using a variety of regression specifications, Goldhaber & Walch find some evidence of small positive effects on math and reading achievement (typically between about .02 and .04 in effect size units), but the results were not always consistent across grade levels and subjects, and these effects could be confounded by other interventions that occurred in DPS during the same time period as ProComp. A second pathway is via the effect on the teacher population (i.e., through recruitment and retention of a different population of teachers). The third is via the effect on individual teachers (e.g., though increased professional development, motivation, etc.). The analyses in the present chapter focus on these latter two possibilities, henceforth referred to as the "between-teacher" and "within-teacher" effects of ProComp. In the between-teacher approach, we contrast, for focal years 2010-11 and 2011-12, the achievement of students with teachers who have or have not opted into ProComp. In the within-teacher approach we contrasting student achievement among the subset of teachers that were not participating in ProComp as of 2010-11, but that had opted into ProComp as of 2011-12. Note that we are unable to replicate and extend the analyses conducted by Wiley et al (2010) and Goldhaber & Walch (2011) because DPS's Department of Assessment, Research and Evaluation (ARE) was unable to verify the quality of teacher to student data links for the years prior to 2009-10.

Baseline Equivalence and Data Screening

Prior to the specification of more complex statistical models, the data were examined descriptively and screened for any remaining potential issues. The sample included a total of 56,555 students, 6,938 teachers, and 178 schools; the effective sample size (i.e. the number of unique scores for each section of the TCAP across all three years) is between 129,512 and 134,181, which is greater than the total number of students because many students are present in

multiple years. Table 4.1 shows the means and standard deviations (SDs) for student test scores associated with teachers enrolled and not enrolled in ProComp, averaged across all three years of data. Note that TCAP scores are expressed on a horizontally and vertically equated score scale, making it possible to average scores across different grades and years.

Table 4.1. Average Scores Across all Three Years

	ProComp	Non-ProComp	Difference
Math	503.2 (95.9)	492.0 (94.5)	11.2
Reading	598.7 (83.1)	606.9 (84.3)	-8.2
Writing	496.3 (78.5)	511.9 (72.6)	-15.6

Note: Standard deviations are in parentheses.

The average age of teachers enrolled in ProComp was 39.6 (SD = 12.5), while the average age of teachers not enrolled in ProComp was 45.4 (SD = 10.6). An obvious explanation for this age difference is that teachers hired since 2006 have been automatically enrolled in ProComp. Because teachers near the beginning of their careers may be less effective than more experienced teachers, the lower scores associated with ProComp for Reading and Writing observed in Table 4.1 may in part be due to differences in the average experience of teachers in the two groups. Unfortunately, there is no available non-ProComp comparison group with comparable levels of experience for these younger teachers, and thus the results of the analyses that follow cannot be generalized to this range of experience. For these reasons, we decided to exclude all teachers from further analysis who were both (a) under 30 years old, and (b) had joined Denver Public Schools on or after January 1, 2006; 754 teachers met these criteria and were thus dropped. The final sample included a total of 55,301 students, 6,184 teachers, and 174 schools, and an effective sample size ranging from 114,030 and 120,724. In this reduced sample, the average age of teachers enrolled in ProComp was 42.1 (SD = 11.7), while the average age of teachers not enrolled in ProComp was 45.7 (SD = 10.5). Table 4.2 displays the new average scores by test once these teachers are excluded.

Table 4.2. Average Scores, Excluding Students of Inexperienced Teachers

	ProComp	Non-ProComp	Difference
Math	504.2 (94.9)	492.0 (95.9)	12.2
Reading	591.6 (83.0)	606.9 (84.3)	-15.3
Writing	497.9 (73.2)	511.9 (78.5)	-14.0

Note: Standard deviations are in parentheses.

As can be seen, the differences in achievement remain about the same, but for one case (reading) they are significantly larger. As a further precaution against a potential biasing of results against ProComp due to teacher experience, age and DPS hire date are used as covariates in the models described below. Table 4.3 compares all ProComp and non-ProComp teachers with respect to the covariates we control for in the regression models presented in the next section.

Table 4.3: Average Values of Covariates for ProComp and non-ProComp Teachers, Excluding Inexperienced Teachers

	ProComp	Non-ProComp
Prior year math	500.6 (92.2)	512.1 (91.6)
Prior year reading	590.4 (82.9)	599.8 (81.2)
Prior year writing	498.9 (72.5)	506.6 (74.6)
Age	42.1 (11.7)	45.7 (10.5)
Tenure in DPS	8.1 (8.1)	11.8 (6.1)
Student FRL status	69.1%	65.1%
Mean school FRL	68.8%	66.8%
Student race:		
White	20.0%	22.3%
Hispanic	59.0%	56.1%
Black	15.9%	16.3%
Asian American	4.1%	4.2%
Native American	0.9%	1.1%

Note. Standard deviations are in parentheses.

Models

In the present situation, the primary outcome variable (student achievement) varies between students, who are grouped or "nested" within both teachers (classes) and schools. The primary explanatory variable of interest—whether a teacher was enrolled in ProComp—varies between

different teachers in each school year and even within any given teacher across school years. In the latter case, teachers who were not in ProComp in 2010-11 but opted in for the 2011-12 school year constitute approximately 15% of all teachers in our data.

Given the nested structure of the data, the standard assumption of independence of error terms is likely to be violated (as students taught by the same teacher and students from the same school are more likely both to share common background characteristics and common environmental influences than students sampled at random from DPS). Further, teachers are not strictly nested in schools, as some teachers change schools over time. Because inferences are desired about the impact of ProComp on student achievement in general, and not just for these students, these teachers, or these schools, all three units (students, teachers, and schools) are treated as random in the analyses that follow. This stated, given a standard set of assumptions (i.e., TCAP scores constitute or approximate a continuous variable, residual terms are independent and identically, normally distributed conditional on all random and fixed covariates described below), a linear multilevel model can be used to relate student achievement scores to teacher ProComp enrollment. The basic analytic model (Model 1) takes on the following form:

$$y_{ijtk} = \alpha_0 + \beta \text{ProComp}_{jt} + \mathbf{Z}_{ij}\gamma + \zeta_{1j} + \zeta_{2k} + \varepsilon_{ijkt} \,. \tag{1}$$

In the model above y_{ijtk} is a subject-specific standardized outcome on either the mathematics, reading, or writing section of the TCAP for student *i* as instructed by teacher *j* in year *t* (either 2010-11 or 2011-12) in school *k*. The variable "ProComp" indicates whether teacher *j* was enrolled in ProComp in year *t*, and β represents the key parameter of interest in the model. The parameter ζ_{1j} is a random intercept for teacher, ζ_{1k} is a random intercept for school, and ε_{ijkt} is the person-specific residual or error term. The vector **Z** includes the following covariates: the prior year (*t*-1) test score for student *i*, year (expressed as a dummy variable for the year '11-'12), teacher age, teacher length of tenure in Denver Public Schools[6], student FRL status (expressed as

[6] Age and tenure act as proxies for experience. Unfortunately, information on total teacher experience is not available.

a dummy variable), student race (expressed as a collection of dummy variables collectively expressing whether the student was Caucasian American [non-Hispanic], African American, Hispanic, Asian American, or Native American), and the average FRL status of all students in school *k* (i.e., school-level FRL).[7]

As previously mentioned, there are two distinct pathways through which ProComp may affect student outcomes via teachers: via an effect on the teacher population (the "between-teacher" effect) and via an effect on individual teachers (the "within-teacher" effect). To examine these potential effects separately, β in the model above can be decomposed into between-teacher and within-teacher effects via the following model (Model 2):

$$y_{ijtk} = \alpha_0 + +\beta_w(\text{ProComp}_{jt} - \overline{\text{ProComp}}_{\cdot j}) + \beta_b \overline{\text{ProComp}}_{\cdot j} + \mathbf{Z}_{ij}\gamma + \zeta_{1j} + \zeta_{2k} + \varepsilon_{ijkt} \qquad (2)$$

In which $\overline{\text{ProComp}}_{\cdot j}$ is the average value of the ProComp dummy variable for a given teacher (i.e., averaged across all students and all years available for that teacher), and β_b and β_w thus estimate the between-teacher and within-teacher effects of ProComp, respectively (see Rabe-Hesketh & Skrondal, 2012). In this model, only teachers who switched from not being enrolled in ProComp in the 2010-11 school year to being enrolled in ProComp in 2011-12 school year (approximately 15% of the sample) contribute to the estimation of β_w. The full sample (including the "switchers") contribute to the estimation of β_b; however, the contribution of the "switchers" is weighted according to how many of their students' test scores were generated when they were not enrolled in ProComp versus when they were. Given that y_{ijtk} contains only two years of test scores, these teachers' contributions to the estimation of β_b cancel out, on average.

[7] The model described here is the most "saturated" of the models specified. A variety of other models were specified as well, using subsets of these control variables (e.g., only using prior test scores as a covariate, with no other demographics in the model). Results from these models were comparable to the results presented here; they were often of slightly greater magnitude (which is expected given that there are fewer control variables), but always in the same direction. The results presented here may therefore be considered the most conservative of the results obtained.

This model makes the assumption that there is no specific effect of the *act* of enrollment in ProComp on student outcomes. It could be, for example, that teachers in their first year of enrollment of ProComp have different average student outcomes (either higher or lower) than ProComp teachers in general (even conditioning on covariates including age and length of tenure in DPS). To test this assumption, an alternative strategy was also employed, in which the "switchers" were removed from the dataset entirely and Model 1 was re-estimated; the estimate of β in this model is thus an estimate of β_b using only data from teachers who did not switch into ProComp in 2011-12. Comparison of β from this model and β_b from Model 2 provides evidence as to whether the "switchers" had noticeably different outcomes than would be expected given their enrollment status in ProComp in each year and all other covariates.

Finally, it may be the case that ProComp has a different effect depending on the grade levels of the school (elementary, middle, or high school), or the combination of grade level and subject. Therefore, the models described above were estimated again while restricting the data to each grade level.

Results

Results for Model 1 are provided in Table 4.4, which examines the overall effect for ProComp by subject. As can be seen, on average, students of teachers enrolled in ProComp received slightly higher Mathematics TCAP scores and slightly lower Reading and Writing TCAP scores than did students of teachers not enrolled in ProComp, when controlling for all covariates listed above. Expressed in effect size units as a proportion of the achievement outcome SD of students associated with non-ProComp teachers (see Table 4.1), the estimates correspond to 0.05, -0.04 and -0.04 for math, reading and writing respectively. All three of these differences were significant at the 5% level.

Table 4.4: Regression Coefficients for Model 1

	Mathematics $n = 922$	Reading $n = 1116$	Writing $n = 1106$
ProComp	2.83* (1.25)	-2.93* (.99)	-2.80* (.85)
Year (2011 v. 2010)	-.94* (.40)	1.69 (.38)	-1.78* (.35)
Prior year score	.79* (.01)	.69* (.01)	.79* (.01)
Age (in years)	-.05 (.07)	-.20* (.05)	-.11* (.04)
Tenure in DPS	.13 (.10)	.14 (.08)	.09 (.06)
Student FRL status	-4.00* (.49)	-5.85* (.46)	-5.29* (.44)
Mean school FRL	-6.15 (3.51)	-17.21* (.90)	-10.99* (2.76)
Student race (compared to White)			
Hispanic	-6.11* (.58)	-7.01* (.53)	-5.70* (.51)
Black	-9.83* (.69)	-10.27* (.64)	-9.73* (.60)
Asian American	4.43* (.96)	.53 (.89)	2.62* (.85)
Native American	-8.04*(1.94)	-7.12* (1.77)	-8.64* (1.68)
Intercept	134.58 (3.99)	232.35 (3.38)	144.65 (3.15)
Variance of random effects:			
School	7.04 (.78)	4.66 (.68)	5.94 (.62)
Teacher	15.25 (.53)	13.30 (.47)	10.17 (.35)
Student	37.09 (.12)	35.60 (.11)	33.61 (.10)

Note: Standard errors are in parentheses, * indicates $p < .05$.

Model 2 attempts to decompose the overall effect of ProComp into between-teacher and within-teacher effects. Results are given in Table 4.5, which only focuses on the key ProComp treatment variable of interest. The last row contains the results of a Hausman test, which examines whether the between-teacher and within-teacher effects are significantly different from one another.

Table 4.5. Regression Coefficients for Model 2

	Mathematics $n = 922$	Reading $n = 1116$	Writing $n = 1106$
ProComp: Between	4.80* (1.74)	-3.60* (1.29)	-3.19* (1.05)
ProComp: Within	0.90 (1.72)	-2.03 (1.49)	-2.09 (1.41)
Between and within effects different?	3.90 (2.39)	-1.56 (1.95)	-1.10 (1.73)

Note: Standard deviations are in parentheses, * indicates $p < .05$.

When decomposed, the between-teacher effects were significant and negative for Reading and Writing (-0.04 in effect size units), and significant and positive for Mathematics (0.05 in effect size units); the within-teacher effects were never significant. The differences in the between-teacher and within-teacher effects were never significant.

An alternative way of estimating the between-teacher effect of ProComp would be to drop the data from all "switchers" and retain only those teachers who were either enrolled in ProComp or not for the duration covered by the dataset, and then re-estimate Model 1. Table 4.6 displays estimated coefficients from such a model. All the coefficients from this model are within a single standard error of the between-teacher estimates displayed in Table 2, revealing no evidence that the sub-population of teachers who switched into ProComp in 2011-12 have significantly different average student outcomes than would be expected given the covariates in Model 2.

Table 4.6. Regression Coefficients for Model 1, Estimated Using Only Non-Switchers

	Mathematics	Reading	Writing
ProComp: Between	6.11* (1.84)	-3.37* (1.38)	-3.30* (1.10)

Note: Standard deviations are in parentheses, * indicates $p < .05$.

A final investigation examined whether the effects of ProComp were different for elementary, middle, and high school students. These models were specified both with an overall effect of ProComp as in Model 1 and with the decomposed between-teacher and within-teacher effects of ProComp as in Model 2; however, because the between- and within-teacher effects were not noticeably different, for the sake of simplicity only the overall results are presented in Table 4.7.

Table 4.7. Regression Coefficients for Model 1, by Grade Level

	Mathematics	Reading	Writing
ProComp: Elementary	3.26 (1.93) $n = 433$	1.58 (1.82) $n = 440$	1.69 (1.39) $n = 430$
ProComp: Middle	3.03 (2.34) $n = 181$	-2.66 (1.90) $n = 275$	-3.76* (1.85) $n = 276$
ProComp: High	3.93 (2.51) $n = 181$	-3.31* (1.55) $n = 235$	-6.35* (1.75) $n = 235$

Note: Standard deviations are in parentheses, * indicates $p < .05$.

As can be seen, when decomposed by grade level, the estimated impact of ProComp is significant and negative for Writing scores at the middle and high school levels, and for Reading scores at the high school level. No other estimated effects were significantly different from zero.

Discussion

Results from the analyses of TCAP scores do provide evidence of a small positive effect of ProComp on Mathematics test scores, and a small negative effect of ProComp on Reading and Writing test scores. These differences are more apparent at higher grade levels, and appear to be mainly due to differences between teachers enrolled in ProComp and not enrolled in ProComp (between teacher effect), rather than changes that occur within individual teachers as a result of becoming enrolled in ProComp.

The magnitudes of all effects were of questionable practical significance. Even the largest effect, an estimated 6.35 point difference in average Writing scores at the high school level (favoring non-ProComp teachers), represents an effect size of only approximately .08, and most effects were either far smaller than this or were nonsignificant. Beyond this, it is important to note the potential for bias in the effects we have estimated due to other differences between ProComp and non-ProComp teachers that were are not able to adjust for statistically. Overall, we find relatively weak evidence that ProComp has a strong causal effect on student achievement in either a negative or a positive direction.

References

Goldhaber, D., & Walch, J. (2011). Strategic Pay Reform : A Student Outcomes-Based Evaluation of Denver ' s ProComp Teacher Pay Initiative Dan Goldhaber University of Washington Joe Walch University of Washington, 0–40.

Rabe-Hesketh, S., & Skrondal, A. (2008). *Multilevel and longitudinal modelling using Stata*. STATA press.

Wiley, E. W., Spindler, E. R., & Subert, A. N. (2010). Denver ProComp : An Outcomes Evaluation of Denver's Alternative Teacher Compensation System 2010 Report.

Chapter 5: ProComp Focus Groups

Overview

In the spring and summer of 2013, our team conducted eight focus groups with DPS teachers in an effort to determine their primary areas of concern regarding the ProComp system. These focus groups included a total of 47 participants in small groups of four to seven teachers. We made an attempt to include a sample of teachers that would represent a variety of schools, subjects, and grade levels taught. We also made an effort to ensure that the focus groups included both veteran teachers and relative newcomers to the district, as well as a handful of teachers who had chosen not to opt into ProComp. The focus groups also included counselors, librarians, therapists, intervention teachers, and nurses—all of whom are eligible to earn ProComp incentives. For the sake of simplicity, we refer to this full collection of educators as "teachers" throughout this chapter. A complete description of the focus group participants can be found in Tables 5.1, 5.2, and 5.3.

Table 5.1. Focus Group Participants by Job Title

Job Title	Participants
Classroom Teachers	26
Special Education Teacher	6
Academic Facilitator	3
Gifted and Talented Teacher	3
Library Media Specialist	2
Nurse	1
Psychologist	1
Social Worker	1
Education Technology Teacher	1
Speech Language Pathologist	1

Table 5.2. Focus Group Participants by Experience

Years of Experience	Participants
0-5	9
6-10	7
11-15	13
16+	18

Table 5.3. Focus Group Participants by School Type

School Type	Participants
Elementary	20
Middle	8
High	13
Other	6

Note: "Other" includes K-12 schools, K-8 schools, and teachers who work at multiple sites.

As we selected the 47 focus group participants, our goal was to capture a broad range of teachers' views on ProComp, not necessarily to select a random sample of DPS employees. Because our sample of teachers was non-random and relatively small, the data presented here is not necessarily generalizable to the DPS teacher population as a whole. Instead, the participants helped guide us toward topics that are worthy of further investigation for future DPS teacher surveys on ProComp, and we generated a draft of just such a survey that was motivated by our findings[8]. A complete version of this survey is provided in Appendix G.

The focus group discussions were relatively free-form, and participants were encouraged to openly voice their opinions. However, the focus group facilitators did ask a small handful of standardized questions to help inspire discussion (see Appendix F), and we tabulated statistics on the number of participants who expressed certain opinions on the ProComp system. While these figures may provide a useful snapshot of the views of the focus group participants, they should not be mistaken for unbiased indicators of the opinions of the entire DPS teaching corps.

Teachers expressed a wide variety of concerns about ProComp in the focus groups. For the purposes of this report, we have grouped these concerns into five categories: impact on teaching practice, impact on teacher recruitment and retention, desire for increased incentives, confusion and mistrust, and fairness of award distribution.

[8] In October of 2013 a decision was made by district leadership not to administer this survey in time for inclusion with the present report. It may still be administered at some juncture in the future.

Impact on Teaching Practice

One theme that emerged from the focus groups was ProComp's perceived lack of impact on teaching quality. A majority of focus group participants (64%) made comments to the effect that ProComp has had minimal influence on their teaching practices. In one focus group, a teacher said that "We didn't go into this job for the money," [April 10, 2013, 4:30 p.m.] and teachers expressed similar sentiments in each of the other seven groups.

Many participants felt that their students are their primary source of motivation, and that ProComp incentives do not substantially alter their work habits: "It would never be in my mind to say, if I just work a little bit harder I'm going to get $2,300." [April 12, 2013, 4:30 p.m.] Some teachers expressed appreciation for the extra pay earned through ProComp incentives, but agreed that their motivations are primarily linked to their students:

> For me, it's about the students. I only work with SPED [special education] and also deal with mental health issues. I love seeing the progress and how hard they work to learn. The pay is nice but it's about the kids. [April 17, 2013, 4:30 p.m.]

However, a minority of teachers did suggest that certain incentives had a positive impact on their teaching practices. Specifically, 11% said that the incentives for completing SGOs and PDUs improved their teaching, and 21% felt that feedback from recent LEAP evaluations was helpful:

> We've actually gotten really good feedback from our POs [peer observers], and we've been able to go back to the classroom and do some adjustments… I mean my scores weren't that great, but… she [the peer observer] taught me a lot of things. [April 17, 2013, 4:30 p.m.]

However, not all teachers agreed that the LEAP evaluations were useful, and several teachers suggested that the usefulness of the evaluations "just depends on the person"—the administrator or peer observer—who conducts the evaluation. One teacher even felt that the LEAP system was "unethical" and "privileges the dominant class" by having built-in biases towards teachers

with classrooms filled with traditionally higher-performing students; others in her focus group nodded in agreement. [April 24, 2013, 4:30 p.m.]

Another handful of participants suggested that ProComp might actually have a negative impact on the overall quality of teaching in Denver schools. Several teachers indicated that ProComp can encourage competition among teachers or damage professional relationships within schools. For example, a third-grade teacher argued that the Exceeds Expectations incentive creates tension among teachers at her school. This teacher's perception was that the Exceeds Expectations incentive is available to fourth-grade teachers whose students exhibit substantial improvement relative to their third-grade scores, and the focus group participant said that her third-grade students' strong performance strained teacher relationships in her school:

> There are fourth-grade teachers who are actually upset with us this year, in some ways, because we got over 70% [proficiency] on the third-grade reading, which is phenomenal. But the furthest they go in 4th grade, there's no way [that they will earn the Exceeds Expectation incentive]. And I know in the back of [the teachers'] mind is knowing how hard is it going to be for me to get, my [Exceeds] Expectations, is that going to happen again this year? Probably not… it does weird things to the staff. [April 12, 2013, 4:30 p.m.]

It is important to note that the sentiment this teacher expressed actually represents a misconception about the way that student growth is evaluated to determine if students have "exceeded expectations." However, such misconceptions are not uncommon, and can contribute to skepticism about the fairness of the incentive.

Similarly, other focus group participants worried that their peers spend too much time focusing on ProComp incentives, and therefore might put less energy into working with their students: "I just feel like with all these *systems*—of how to get a bonus, or how to survive your evaluation—are we focused on the kids at all?" In the same focus group, another teacher remarked, "Whenever you have salary tied to performance, it forces people to make poor decisions. And it's no longer about the kids, and I think that's the number-one value of our district." [April 12, 2013, 4:30 p.m.]

Although a number of teachers clearly worried that ProComp might cause damage to the overall quality of teaching in the district, few were able to specifically identify the mechanism for that damage, other than mentioning strained relationships among teachers. A handful of teachers agreed that select ProComp initiatives—most notably PDUs and teacher observations under LEAP—actually enhanced their teaching practices, but most focus group participants seemed to think that ProComp ultimately has had a negligible impact on the quality of teaching in Denver schools.

Desire for Increased Incentive Amounts

Focus group participants overwhelmingly agreed that ProComp incentive awards are too small: 85% of participants stated that they feel inadequately compensated by ProComp, and 89% felt that the incentive sizes were far too low—more than one teacher characterized them as "insulting." Virtually every ProComp incentive received criticism from at least some teachers, and teachers also expressed frustration at the changes made to the ProComp system in recent years.

As of the 2008-09 school year, several substantial changes were made to the ProComp system. The dollar amount of several bonuses (Hard to Serve, Hard to Staff, and Top Performing) were increased, the High Growth bonus was added, and student loans became eligible for the Tuition Reimbursement incentive. However, the Exceeds Expectation incentive was reduced from base-building to a bonus for all teachers, PDUs were changed from base-building to bonuses for teachers with more than 14 years of tenure, and CPE incentives were eliminated entirely for teachers with more than 14 years of tenure. In other words, teachers with more than 14 years of tenure lost several opportunities to earn incentives, and all teachers lost the opportunity to have an Exceeds Expectation incentive added to their base salary.

This switch from base-building incentives to bonuses was a frequent topic of conversation in the focus groups, and 68% of participants endorsed a return to base-building incentives. Plenty of teachers echoed the sentiment that all incentives should be changed to base-building: "Return everything to salary building, rather than just bonuses. It could be used as a tool to attract a tremendous amount of talented people." [April 17, 2013, 4:30 p.m.] Other teachers suggested that base-building opportunities would add stability to teacher salaries: "If everyone had a more

stable, predictable path, with base-building things, it would be more fair." [April 12, 2013, 4:30 p.m.] This desire for more predictability and stability in their salaries calls to mind the salary gain analysis in Chapter 2 of this report, which showed substantial variability in the incentives and bonuses teachers earn from year to year.

Some participants expressed strong opinions about the reduction in available incentives for teachers with more than 14 years of tenure, and a handful of focus group participants (17%) said that they felt "disrespected" by the lack of available incentives for veteran teachers:

> The veteran teachers who are working hard for the district... this is what we're retiring from [a system that imposes a restriction on base building after 14 years]. This is what I've given my life to, and it's so disrespectful for DPS to have introduced that 14-year rule. [April 10, 2013, 4:30 p.m.]

Several teachers felt that DPS is taking advantage of veteran teachers' loyalty to the district: "It feels disrespectful that they realize veteran teachers are unlikely to leave." [May 14, 2013, 4:30 p.m.] Some focus group participants suggested that it might be worthwhile to adjust the ProComp system to include some additional pay for experienced teachers:

> I think experience should be a part of ProComp as well, especially for going through the LEAP evaluation. The fact that we're maintaining our job means we're doing something right, and so I think experience should play a part in base-building for ProComp. [April 12, 2013, 4:30 p.m.]

Another teacher suggested that "DPS needs to find a balance… your pay shouldn't necessarily just be based on experience. But it also shouldn't just be based on performance or the things that you do for your growth." [April 12, 2013, 4:30 p.m.] In at least one focus group, the most enthusiastically-supported suggestion was to keep a traditional step-increase schedule, and add bonuses on top of that.

Nearly every ProComp incentive was criticized as "insignificant" by at least some focus group participants. For example, teachers struggled to understand why the SGO incentive ($376) was so much smaller than other incentives, and the Hard to Serve and Hard to Staff bonuses

($2,403 each) were often cited as insufficient to make a difference in employment decisions. Teachers also argued that the advanced degree and tuition reimbursement incentives were not enough to make further education worthwhile:

> I've been considering going to graduate school to attain a Master's, but it's not financially rewarding through ProComp to do this… Why would I get even more student loans—and then still not make enough money to even pay those student loans—to be worse off than I am now? [April 17, 2013, 4:30 p.m.]

The size of the PDU incentive seemed to receive a disproportionate amount of criticism from focus group participants. In one group, four different teachers agreed that the small size of the PDU incentive ($751) actually "turned teachers off" from doing professional development, since considerable work is necessary to obtain one credit. Other teachers argued that the system discourages teachers from completing multiple PDUs, since only one PDU is acknowledged by the district each year:

> It just seems like, every year we're highly encouraged to take care of those PDUs. So if every year it's going to be like that, why would you do more than one? Unless you just have lots of free time. [April 12, 2013, 4:30 p.m.]

Note that in the quote above it appears that this teacher may not be aware that PDUs are bankable. Almost universally, teachers in the focus groups took the opportunity to argue that ProComp incentives should be increased. However, there were some veteran teachers (30%) who acknowledged that ProComp initially had a positive impact on their salaries:

> I've been in ProComp the whole time. And it really essentially doubled my salary... Because I was such a longtime teacher and I've been on so many plateaus... I'm in a Hard to Staff school, in a Hard to Serve position, with National Board Certification and so I met tons of incentives and it really was a wonderful [boost] in salary after nine years of nothing, no movement at all.… So ProComp really gave just exactly what they said it

would do, it gave you a chance to be rewarded, increase your salary, earn to learn. All the things that it was supposed to do, it did. [April 17, 2013, 4:30 p.m.]

Although there seems to be a strong theme of disappointment with the payouts for certain ProComp incentives, there are at least a handful of veteran teachers who recognized that ProComp initially infused additional funds into the teacher compensation system. Clearly, plenty of teachers have shown disappointment with the elimination of certain base-building incentives, especially for veteran teachers. However, at least some of those same veteran teachers show a nuanced perspective toward the overall impact that ProComp has had on their compensation.

Confusion and Mistrust

Another prominent theme in the focus groups was the idea that the ProComp system is too complicated: 40% of participants made explicit statements to the effect that ProComp was difficult to understand, and 45% said that they struggled to obtain accurate, up-to-date information about ProComp. Teachers often remarked that they felt "lost" or "overwhelmed" when they first tried to learn about the ProComp system:

> It's very overwhelming! …I do remember at first just going 'ok, let's just take all this information, and I'll kind of figure it out,' and then not actually [figuring it] out. And again, it was my first time in DPS, and first time even hearing about a system that isn't just hey, well each year you get a raise. So I didn't know what it all meant. I didn't even know what an SGO was. What's an SGO? What is this? What is a PDU, what's going on here? So you're telling me 'oh, I need to do this' or 'ok, I need to do that' and … it seemed very overwhelming at the time for me as a very young and very new educator. [April 12, 2013, 4:30 p.m.]

Many teachers also claimed that they struggle to obtain accurate information about ProComp. Only 19% of respondents said that they rely on the ProComp website as a source of information about their pay structure, and other teachers suggested that the website was too "cumbersome" to

use regularly. Some teachers recommended that the district implement yearly training programs to help teachers understand ProComp, and 11 participants specifically suggested that it would be useful to imbed ProComp experts at each school. Many teachers also felt that the one-time ProComp orientation provided by DPS was insufficient for understanding the intricacies of the system:

> I had always dealt with bonus structures so that was nothing new to me. [But] the amount of time that they spent on it, [I needed] about five *more* hours the next day to actually understand it. Because in the orientation it was presented so quickly that it's overwhelming… I mean they throw so many things [at you], within such a short amount of time. [April 12, 2013, 4:30 p.m.]

One veteran teacher even cited the confusing system as the primary reason why he chose not to opt into ProComp:

> I'm really not clear how the salary path with ProComp would look. There's base-building things and there's bonus things… but with the old salary matrix it's pretty clear what's happening. That was the reason I didn't jump in last summer [during the final ProComp opt-in period]. [April 12, 2013, 4:30 p.m.]

A handful of participants (17%) specifically mentioned that they struggle to understand the School Performance Framework (SPF) system, which is the basis for the Top Performing and High Growth incentives. The SPF system incorporates literally dozens of variables to create overall scores for each school, and some teachers were frustrated by their inability to understand why their school's rating would change from year to year:

> The two things that we didn't have when the ProComp agreement was introduced was the SPF, or LEAP. And those two things change everything!... And so at issue for us is what happened with the SPF and why we went to orange. We've had long discussions and I don't even begin to understand it. [April 12, 2013, 4:30 p.m.]

Partly because of their inability to fully understand the SPF system, some teachers said that they did not understand the difference between the Top Performing and High Growth incentives: "The High Growth and the Top Performing… I don't understand the difference. They sound kind of like the same (thing)." [April 12, 2013, 4:30 p.m.] In many of the focus groups, teachers often referred to Top Performing and High Growth in tandem, as if the two incentives are synonymous; in reality, the High Growth award is based exclusively on student improvements on state assessments, but performance on growth only serves as one component of the total SPF score that is used to identify which schools earn the Top Performing incentive. Based on the focus group feedback, it seems that many DPS teachers do not fully understand the criteria for these two incentives.

Veteran teachers often appeared to be even more frustrated by their inability to comprehend the changes enacted in ProComp as of the 2008-09 school year. In particular, teachers were unhappy with the shifts from base-building incentives to bonuses, and some participants felt that these changes were made unilaterally, without teacher input. Partly because of these changes, 60% of focus group participants stated that they do not trust the ProComp system:

> Being a seasoned veteran of 27 years, I get *nothing*. I joined because I was told that my salary would never plateau again. And [some] people wouldn't join because they said, "DPS is going to fool you. They're going to pull the rug out from under you." And I said "That's not true. I believe everything everyone says all the time. This is going to be good, this is going to be good for us." And you know what? They were right. I was wrong. [April 17, 2013, 4:30 p.m.]

Many teachers also expressed frustration with the criteria for the Hard to Serve bonus. In several focus groups, participants commented that schools with at least 91% of their students receiving free or reduced lunch (FRL) had previously been eligible for the Hard to Serve bonus, but teachers were angry that the threshold had shifted to 93% in recent years. At least five individual focus group participants asked, "What's the difference between 91% and 93%?" or "Why would a school where 80% or more students participate in the FRL program not be considered a Hard to Serve school?" As one participant remarked,

> You can have 91% of your students on free and reduced lunch and you're *not* considered hard to serve.… How many schools have 89% free and reduced lunch students? Oh, your populations are easy to serve. Really? … and so if you're 89% free and reduced lunch oh, that's *easy*. Anybody could do that. [April 17, 2013, 4:30 p.m.]

Teacher frustration with the Hard to Serve bonus criteria might be partially rooted in misconceptions about the ProComp system. Each January, the ProComp Transition Team publishes a list of Hard to Serve schools, based on the percentage of students participating in the FRL program; Hard to Serve schools automatically maintain their status for a three-year term. According to the most recent guidelines published on the ProComp website, the threshold for elementary schools was 92% FRL, but middle and high schools qualified for the Hard to Serve bonus if their FRL percentage was over 85% and 75%, respectively. It is unclear whether teachers in our focus groups were aware of the differing thresholds for different school levels, and it seems possible that some schools lost their Hard to Serve status because the schools' demographics changed slightly—not necessarily because of a unilateral policy change by the district.

Since many participants felt that they did not understand the intricacies of ProComp, it was unsurprising that participants often expressed other misconceptions about the ProComp system. For example, some teachers seemed to believe that no incentives are available to teachers with more than 14 years of tenure, despite the fact that veteran teachers are actually eligible for several ProComp incentives. Participants also mentioned that they believed that SGO incentives were only awarded as bonuses to teachers with more than 14 years of tenure, and this is also incorrect: teachers who achieve both of their SGOs earn a base-building salary increase of $376, regardless of tenure. Similarly, a few teachers did not realize that PDUs are base-building for teachers with less than 14 years of tenure, and some participants did not know about the Tuition Reimbursement incentive at all. In one focus group, none of the participants realized that Tuition Reimbursement funds could also be used to pay for student loans or registration fees for professional conferences and workshops. Misconceptions about the ProComp system appear to be common among the teachers, and this seems to fuel some of the mistrust expressed by focus group participants.

Finally, teacher mistrust seemed to be exacerbated by the perception that teacher paychecks often contain errors. While a handful of participants (17%) suggested that they struggle to understand their paychecks, some were further angered by payment errors:

> Trying to figure out what you're supposed to get is so hard. And I have been paid mistakenly, I got paid for SGOs one year. And, *six months* later, it was yanked out of my paycheck. We have another teacher on our staff, a young teacher, who got Exceeds Expectations on CSAP last year, who suddenly got a call [that] said, "we want that money back." And that was several thousand dollars. And I think when you're in your 20s, that's pretty devastating. …I'd say 80% of our teachers don't even know where to look [to see] if they are being correctly paid. And DPS is *making mistakes*. I don't know where it's coming from, but they're making mistakes. [April 12, 2013, 4:30 p.m.]

Regardless of the actual volume of paycheck errors occurring in the district, it seems clear that some teachers do not sufficiently understand their paychecks or the ProComp payment system in general. At the very least, it seems that teachers hold misconceptions about ProComp, and it may be worthwhile to explore ways to improve teacher understanding and comfort with the system.

Fairness of Award Distributions

Many teachers also expressed concern over the distribution of ProComp incentives, and 77% of focus group participants agreed that ProComp awards were unfairly allocated, since not all teachers are eligible for all bonuses. Perhaps more disturbingly, a sizeable minority of participants (32%) felt that many of the ProComp awards are "manipulable" or "cheatable," and this perception contributes to the sense of mistrust felt by focus group participants.

The Exceeds Expectation award was one of the most widely criticized incentives, since it is only available to teachers in grades 4 through 10 whose students take exams in mathematics or language arts. As one elementary school teacher remarked, "There is a lot of animosity that 4th and 5th [grade teachers] get this bonus and we can't." [April 12, 2013, 4:30 p.m.] Twelve focus group participants complained that they contribute to their colleagues' Exceeds Expectation

bonuses because they participate in school-wide literacy efforts, but they are not actually eligible to receive the bonus themselves. Some teachers suggested eliminating the Exceeds Expectation bonus entirely, while others argued that it should be available to all teachers if the incentive remains part of ProComp:

> If we're going to have that, it should be [available] to everyone ... from gym to art. And that's why I have a problem with LEAP too. My subject is no more important than your subject. My subject's no more important than art or gym. So I think everyone should be tested on it. If my class is going to be tested, every class should be tested… and appropriately rewarded. [April 17, 2013, 4:30 p.m.]

In some of the focus groups, teachers also voiced strong complaints about the fact that intervention teachers and facilitators are now ineligible to receive the Exceeds Expectation bonus. Similar criticisms were raised by teachers in a wide variety of ineligible subjects and grade levels, including social studies, early childhood education, and science, among many others. As one elementary school teacher put it, teachers would prefer a more equitable approach to "sharing the loot." [May 14, 2013, 4:30 p.m.]

Many focus group participants felt that the Top Performing and High Growth incentives were particularly unfair, since they believed that those awards were only available to teachers in low-poverty schools. One teacher said she had transferred from a high-poverty school to a low-poverty school and, even with the Hard to Serve bonus, she was now earning significantly more. She felt this was not fair, since she was "the same teacher she always was." [April 24, 2013, 4:30 p.m.] In a different focus group, a teacher remarked,

> One of the things I've noticed, yes you get a Hard to Serve bonus, but… I've looked at the other schools that are not Hard to Serve schools, what I've noticed is that, if you take a [low-poverty] school for example like Grant Ranch, they are getting those bonuses [Top Performing and High Growth] every year, regardless. So even the money that we get because of ProComp, because we are Hard to Serve, I feel like it's a wash in some ways. [April 12, 2013, 4:30 p.m.]

Finally, focus group participants often stated that SGOs and PDUs varied enormously in rigor. A handful of teachers complained that some PDUs were much more difficult to complete than others, and that this seemed unfair. Participants also said that some PDUs were far more useful than others, and that it was disappointing to see teachers complete PDUs solely for financial reasons:

> Some teachers report PDUs that are extraordinarily valuable, like I was able to take this and apply it to my professional practice tomorrow morning. And other folks are very much like, ehhhhh… I'm doing it for the financial reward.… if you're just going to do it to placate your principal, then that's a whole different ballgame. [April 17, 2013, 4:30 p.m.]

Focus group participants were even more frustrated by the perceived unfairness of SGOs, which vary substantially in difficulty, depending on an educator's exact job within a school. For example, one librarian suggested that she had an unfair advantage because she created her own SGOs: "As a librarian, I do a self-assessment for my SGOs, and I pretty much made my SGOs every year… So how is that fair to you, because you have different [criteria for meeting your SGOs]?" [April 12, 2013, 4:30 p.m.]

More disturbingly, some teachers felt that the SGOs are often "rigged" or "manipulable" in one direction or another, depending largely on the whims of administrators. Several focus group participants said that SGOs were easy to meet if school leaders wanted teachers to earn their SGO incentive, but that other administrators made it unreasonably difficult to meet the incentive.[9] One teacher described her school-dictated SGO as "impossible" to achieve, and another focus group participant said that teachers inevitably write easy-to-achieve goals if they are given the opportunity to do so:

[9] SGO completion rates do in fact differ substantially by school; see Chapter 3.

> You know what teachers do? Of course you know what teachers do.… In the back of your mind [you're thinking], "how do I write the SGO so it's attainable?" That's always what the case is. [April 12, 2013, 4:30 p.m.]

In all of the focus groups, participants repeatedly emphasized the inequities in the ProComp system. Teachers generally perceive the Exceeds Expectations, Top Performing, and High Growth bonuses as incentives that are available to only a limited segment of the DPS teaching corps, and there is widespread concern about the consistency of PDUs and SGOs. These perceptions that awards are unfairly allocated seems to contribute to the mistrust that many teachers feel toward ProComp.

Impact on Teacher Recruitment and Retention

Despite the strong opinions that teachers voiced about certain ProComp incentives, 77% of focus group participants stated that ProComp had no impact on their decision to come to DPS or to remain at DPS. A number of teachers said that they chose to remain at a particular school primarily because of the sense of community that they feel in the workplace, not because of their salaries:

> I have been lucky to be working with a group of teachers that really care, that are very professional. And we build that relationship… and I wouldn't leave it…. It's part of my family. And that's what motivates me to stay in DPS. Not because of the salary. [April 17, 2013, 4:30 p.m.]

Interestingly, a number of focus group participants said that they knew little or nothing about ProComp when they were initially hired by DPS, and that the payment system therefore had no impact on their employment decision: "I took a job in 2008, right when the financial system basically collapsed. So I was lucky to get any job. So basically, I went where I found a job…. it did not incentivize me to work at DPS." [April 17, 2013, 4:30 p.m.]

Teachers frequently repeated that ProComp incentives are "nice", but not large enough to significantly impact their employment choices. One teacher said that she came to DPS partly

because the district seemed more financially stable during the recession than neighboring districts, but that ProComp played little role in her decision:

> I just think there were some financial factors that DPS was a little bit more afloat than some of the other districts… but I don't think that's on ProComp's merits…. The bonuses are these kind of nice carrots dangled out there but, long term, they're not really adding to that base salary. [April 12, 2013, 4:30 p.m.]

A small handful of teachers (11%) did, however, say that ProComp impacted their decision to come to DPS or stay at DPS:

> One of the things that I remember liking about ProComp starting out was the idea that—I'm very data focused so I had my sheet in front of me. I was like, ok which ones can I get this year, which ones can I get next year? And I just like… planning it out, knowing what to expect… student loan incentives is a biggie. The $4000 dollars is amazing… I kind of saw it as a bonus for coming to DPS. [April 24, 2013, 4:30 p.m.]

However, another handful of focus group participants (15%) claimed that ProComp hurts retention, particularly for teachers who have five or more years of tenure in DPS. Several teachers argued that ProComp incentives help teachers earn higher salaries early in their tenure at DPS, but the compensation then levels off as teachers gain experience: "After five or six years, now I'm seeing it level out.… I'm getting great scores… I'm doing my job, I'm doing *great*, but my paycheck doesn't really reflect that." [April 12, 2013, 4:30 p.m.]

Similarly, some teachers suggested that certain incentives hurt teacher retention. Exceeds Expectations were widely cited as a disincentive for many teachers to stay in the district, since the bonus is awarded only to a relatively small subset of teachers who administer standardized exams in their subject area:

> I don't feel like the retainment [sic] of those great teachers is a priority.… [When] we start off, our salaries are good… [but] some of the science or social studies [teachers] that don't feel like they can get the rewards on TCAP, they can't get the [Exceeds]

> Expectations, they can't get the Hard to Staff, they can't get so many of these things, that it almost becomes not worth it for some of them. [April 12, 2013, 4:30 p.m.]

Although some focus group participants certainly were not shy about expressing unflattering opinions of ProComp, only a minority of those participants felt that ProComp had a substantial impact on teacher recruitment and retention. Some teachers suggested that ongoing frustrations with ProComp—particularly the perceived lack of incentives for veteran teachers—negatively impact retention, but very few teachers said that ProComp has a meaningful effect on teacher recruitment. Most teachers agreed that their employment decisions are driven by their relationships with students and their colleagues; ProComp ultimately seems to have a much smaller impact on teacher decision-making.

Discussion

A number of strong themes emerged from the focus groups. Teachers feel frustrated by the perceived inequities in certain ProComp incentives, and they overwhelmingly—and unsurprisingly—support increases in the sizes of incentives, as well as a switch from bonuses to base-building incentives. Despite these criticisms, only a small minority of focus group participants felt that ProComp has had a negative impact on teacher recruitment and retention. Some teachers clearly have strong opinions—both negative and positive—about the effectiveness of LEAP evaluations, PDUs, and SGOs, but most participants agreed that ProComp has had only minor impacts on teaching practice in DPS, although some teachers expressed concerns that ProComp has a negative impact on teacher collaboration and collegiality.

A more troubling issue is teachers' lack of understanding of the ProComp system. Participants routinely expressed their struggles to understand the intricacies of their paychecks, and they also held a wide range of misconceptions about specific ProComp incentives. There seems to be a clear need for improved communication about ProComp, and teachers suggested a number of ways to improve their understanding of the system, including annual trainings for existing staff, improvements to the ProComp website, and imbedded experts in selected schools. Considering the depth of teacher misunderstandings about the payment system, it seems that at

least some of the mistrust that teachers feel toward ProComp could be mitigated through improved communication.

Appendix A: Data Sources

This chapter describes the data used for the analyses presented in this report. In what follows we describe each department in DPS that provided us with data, the name of the files that were provided and a short overview of the variables and sample sizes associated with each source.

Human Resources Teacher Information

Between the months of April and November of 2013, DPS Human Resources provided us with seven versions of the file named "NEA CEA DCTA - ProComp Request - 2009-10 through 2011-12.xlsx." The first six version of the file contained errors or masked data, which needed to be corrected in order to use the file. The final version, which is the main teacher data set for this report's analysis, was named "NEA CEA DCTA - ProComp Request - 2009-10 through 2011-12 - Submit V7_Unmasked_DPSID-Partcipant-SchoolID.xlsx." This file contains information about all DPS employees between the 2009-10 and 2011-12 school year separated into three individual excel file tabs for each year. Table A1 details the variables available in this file.

Table A1. DPS HR Data File Year Tab Variables

Variable Name	Description
DPSID	Teacher ID
Unmasked.Participant.ID	ProComp ID
Teacher.PC.Status	ProComp Status of Teacher in Given Year
School.Year	School Year
First.PC.Opt.In,Date	Date Teacher First Joined ProComp
Last.Hire.Date	Most Recent Hire Date
Birth.Date	Date of Birth
Race	Ethnicity
Gender	Gender
Teacher.Hard.to.Serve.Status	Hard to Serve Bonus Eligibility
Teacher.Hard.to.Staff.Status	Hard to Staff Bonus Eligibility
Position.Level	Number of Jobs a Teacher Hold Concurrently
Position.Start.Date	Date Teacher Started Current Role
Position.End.Date	Date the Role Held This Year Ended
Unmasked.School.as.of.Dec.1	School of Record as of December 1st this School Year
Unmasked.School.as.of.May.1	School of Record as of May 1st this School Year
CDE.Job.Code	Job Sub Category Code for CDE
Top.Performing.Status	Top Performing Bonus Eligibility

The DPS HR file also contained a fourth tab labeled "Evaluations and Tenure" which contained detailed variables about teachers' Comprehensive Professional Evaluation status including information about probationary status, review year and evaluation status. Table A2 outlines the variables available in the evaluation and tenure excel tab.

Table A2. Evaluation and Tenure HR Variables

Variable Name	Description
Review Due Year	Expected Year of CPE Evaluation
UNMasked Teacher ID	DPS Teacher ID
Tenure Status	Probationary Status
Eval Status	Evaluation Completed Status
Eval Satisfactory	Evaluation Satisfactory or Not

We combined this HR file's various parts into a single file that became the primary source for all our analyses. But, because of the format of the file that repeated teacher information up to four times in a given year, certain logic had to be applied to make the master file amenable to statistical analysis in the R and Stata programming environments. Table A3 illustrates how the sample sizes changed from the individual year excel tabs into our single line per teacher per year data file. Each teachers in the HR excel file was repeated in multiple rows depending on schools in the "Unmasked.School.as.of.Dec.1" and "Unmasked.School.as.of.May.1" columns. In order to narrow these results to one DPSID per year, comparisons were made between the December and May school listed in the above fields. If the schools matched and all other variables were equal across rows then teacher's information was combined into one row. If either the May or December fields were blank and the other variables were equal across rows then month that contained a school number was considered the school of record and the teacher's information was combined into a single row of data. In less than 100 cases per year, the schools in May and December did not match and these teachers were combined into a single row and the school as of May 1st was considered the school of record.

Table A3. Yearly Excel Row Count and Final Yearly Teacher Count

Year	Original Row Count	R Master File Unique Number of Teachers Per Year
2009-10	9,818	5,393
2010-11	12,968	5,507
2011-12	12,545	5,690

The R master file created from this DPS HR information was the basis for all other data merging and analysis. In all cases below, data was merged into this master file using the R merge command with the merge argument "all" set to all.x=TRUE which kept the master file number of rows constant. If new data being added to the master file did not contain all of the DPSIDs in a given year that the master file contained then the remaining master file DPSIDs received NAs for the added variables. If, on the other hand, the information being added to the master file contained DPSIDs in a given year that the master file did not contain, this information was dropped. The sample size per year in Table A3 remained constant through the addition and creation of all variables used for our analysis.

SGO Information

Student Growth Objective information was provided by Shirley Scott, the ProComp PDU Administrator for DPS. The SGO spreadsheet, named "Tbl_SGO_2007 to 2012.xlsx," contained information pertaining to every SGO submitted for DPS approval from the 2007-08 to 2011-12 school year. Of the 58 variables included in the file, only a small number were pertinent to the analysis we conducted and therefore many were dropped before merging them into our master file.

Table A4. Variables used from DPS SGO file

Variable Name	Description
DPSID	Teacher ID
School_Year	School Year
Status_Text.1	First SGO Completed or Not
Status_Text.2	Second SGO Completed or Not
Decision_Text.1	First SGO Met or Not
Decision_Text.2	Second SGO Met or Not

Table A4 shows the variables that we merged with our file after a simple conversion from text fields to numerical results. To convert the SGO file to useable information for later analysis we created a series of zeros, ones and NAs for each DPSID based on the following logic: For each of the two SGOs in a given year, a teacher received a one if they met the SGO, a zero if the SGO was completed but not met, and an NA if the SGO was never accepted or completed. The

new SGO columns were then merged into our master file. Table A5 illustrates the number of completed and met SGOs by year.

Table A5. SGO Samples Sizes by Year

Year	All	Completed	Met
2007-08	6,144	5,922	5,079
2008-09	6,934	6,779	5,834
2009-10	7,778	7,722	6,695
2010-11	8,614	8,570	7,252
2011-12	8,758	8,722	7,390

PDU Information

The data concerning Professional Development Units (PDUs) used in this analysis was also provided from Shirley Scott, the PDU coordinator for the DPS ProComp office. The file, named "Copy of PDU registration 2010 - 2013 COLOR sort by Instructor and Site.xls," contained information about all successful PDUs during the 2009-10 through 2012-13 school years. Not all of the information contained in the file was necessary for our analysis so we limited the file to the variables listed in Table A6. The Excel file was color coded by type of PDU which led to the manual creation of our PDU type variable based on the five colors used, yellow for central district sponsored PDUs, green for personal PDUs, orange for school wide PDUs, no color for other.

Table A6. PDU Variables

Variable	Description
DPSID	Teacher ID
End.Date	Date the PDU was Completed

Before merging the PDU information into the master file, we created a variable for the number of each type of PDU for each teacher per year and the total number of PDUs achieved by teacher by year. The PDU information was merged with the master file using school year and DPSID as the matching variables between the two files. Table A7 illustrates the final count of PDUs by type for each of our three years.

Table A7. PDU Count by Year

Year	Personal	Central	School	Other
2009-10	86	2,502	622	0
2010-11	424	2,394	1,259	277
2011-12	140	2,548	1,846	18

ExEx Information

All Exceeds Expectation (ExEx) information was provided by Yu-Lu Hsiung, Research Manager in the DPS Department of Assessment, Research and Evaluation (ARE) in a file named "2012_ExExTeachers_qualandnot_allbizrulesapplied_Elena.xlsx." This file contained teachers in each of our three school years that were eligible for the ExEx award because of number of that teacher's students tested using the CSAP. Table A8 contains the name of the variables from the ExEx file that we used to compute our ExEx variables.

Table A8. ExEx Variables

Variable	Description
DPSID	Teacher ID
Fiscal_Year	School Year
Subject	CSAP Tested Subject
Qualified	Received ExEx or Not

Based on the information provided in the ExEx spreadsheet, we created a variable for each teacher for each year that consisted of a 1 if they received an ExEx bonus, 0 if they did not, and NA if they were not eligible. Table A9 illustrates the number of teachers in each year who were eligible and number of teachers who received the ExEx award based on the ExEx spreadsheet.

Table A9. ExEx Sample Size of Eligible and Qualified Teachers

Year	Eligible	Qualified
2009-10	814	482
2010-11	792	448
2011-12	765	406

Teacher Education

Changes in teachers' advanced degrees from year to year earn teachers a one time salary increase. Teacher educational status was provided by DPS ARE in the form of a spreadsheet named "TeacherQuals.csv." This spreadsheet contained each DPS employee's DPSID and a row for each educational degree they had attained as well as the year they attained the degree. In each year, we calculated the maximum degree that each teacher had attained and then merged this information with our master file based on school year and DPSID. Table A10 contains the number of DPS employees by degree for each of our three school years.

Table A10. Number of DPS Employees by Degree Type

Year	Bachelor's Degree	Master's Degree	PhD
2009-10	2,340	2,843	100
2010-11	2,361	2,915	99
2011-12	2,284	2,863	91

2012 LEAP Information

In 2012, many of the teachers who would have received a bonus associated with the CPE process were participating in the LEAP pilot. As part of the LEAP pilot participation guidelines all teachers participating in 2012 were guaranteed a CPE salary increase regardless of LEAP rating. In order to accurately capture the CPE salary increase, we integrated the LEAP pilot participants into our CPE salary increase information.

The information regarding LEAP pilot participants was provided by Gerda Visser-Wijnveen, a data reporting analyst from the Teacher Talent Management/LEAP organization within DPS. The spreadsheet, named "Participant list LEAP 2011-2012.xlsx," provided a list of all the teacher DPSIDs that participated in the LEAP pilot program. This information was combined with the CPE information for 2012 to approximate a list of teachers who should receive the CPE base increase for that year. In total, the LEAP spreadsheet included 3,993 teacher IDs from the 2011-12 school year who participated in the pilot.

High Growth and Top Performing Information

Teachers that work in schools designated as High Growth schools or Top Performing School during a given school year are eligible for a one time bonus. The list of schools for each year that were designated High Growth is available through the DPS ProComp website at the following web address: http://denverprocomp.dpsk12.org/history. Any teacher we designated as working in a High Growth school was given a 1 for receiving a High Growth bonus. Any teacher not receiving the award received a 0 in this field. The same process was followed for teachers in Top Preforming Schools, with teachers receiving a 1 if they received the award and a zero if they did not. Table A11 lists the number of schools in each school year that was eligible for this award.

Table A11. Number of High Growth and Top Performing Eligible Schools per Year

Year	High Growth	Top Performing
2009-10	64	52
2010-11	79	77
2011-12	71	70

CSAP Data

All of our CSAP information was provided by DPS ARE in the form of a file named "ExExLink_Assessments_021113.csv." This file contained information about all standardized tests taken by students during the 2009-10 to 2011-12 school years. The file includes information about test scores as well as the grade of the students who took the tests, the student's ID and the teacher's DPSID. Table A12 lists the variables in the provided spreadsheet that we used to combine this information with our master file.

Table A12. Variables in CSAP Spreadsheet

Variable	Description
teacher_dpsid	Teacher ID
student_number	Student ID Number
test_category	Test Type: CSAP, CELA, MAP, etc.
measure_name	Subject: Math, Reading, Writing
grade_name	Grade Level: 1-12
ss	Scale Score
np	Percentile
school_year	School year

Using the information from this spreadsheet, we created new variables in our master file that expressed the median percentile per teacher per subject per year on the CSAP and the number of tested students in each subject the teacher had in a given year. This information was then merged into our master file using our standard merging practice.

We also joined individual students with the teacher information using a merge structure that allowed students to be repeated multiple times in each year corresponding to all the teachers they had in a given year. This file became the main file used for our achievement analyses. Table A13 shows the sample sizes for each year and subject of both teachers and individual students with test scores.

Table A13. Number of Teachers and Students Per CSAP Subject

Year	Math		Reading		Writing	
	Teachers	Students	Teachers	Students	Teachers	Students
2009-10	1,026	55,698	1,075	58,880	1,052	58,888
2010-11	942	52,146	995	54,113	989	54,070
2011-12	918	53,946	1,002	57,582	1,025	57,577

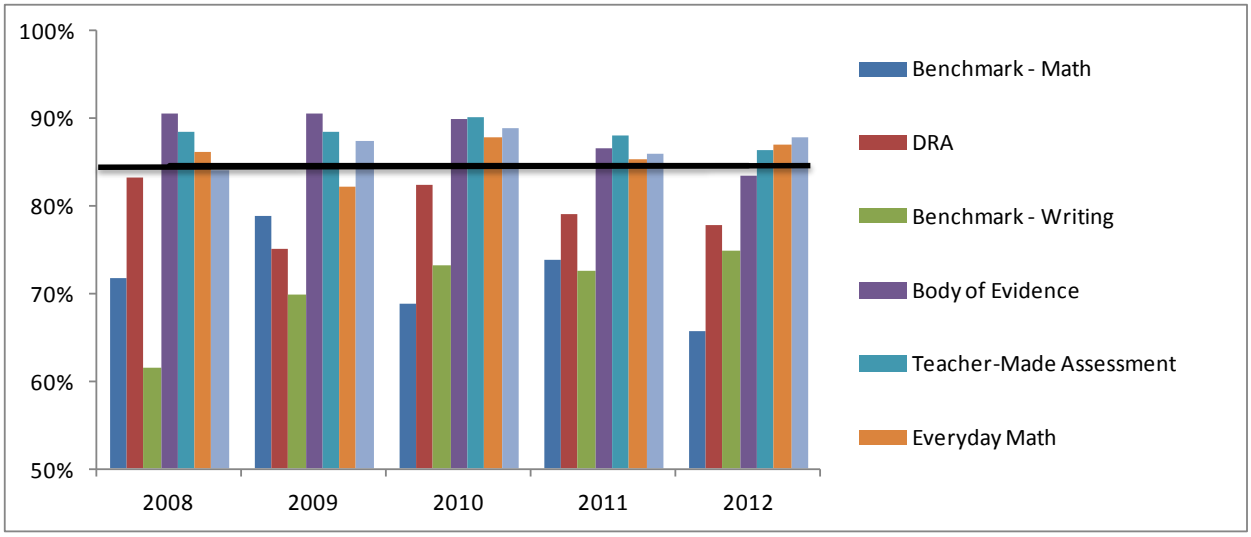
Student Demographics

Student demographics are important covariates in our CSAP regression and therefore were added to our student by teacher CSAP file. Student demographics were provided by Yu-Lu Hsiung from DPS ARE in the form of a text file called "StudentDemographics.txt." This file contained all pertinent demographic information for ever DPS student between 2009-10 and 2011-12 by student ID number. Table A14 contains all of the variables provided in this file.

Table A14. Student Demographic Variables

Variable	Description
year	School Year
student_number	Student ID
stu_race	Ethnicity
stu_disability	Disability Status
stu_frl	Does student qualify for Free or Reduced Lunch
stu_grade	Grade for that school year
stu_gender	Gender
stu_expelled	Was the student expelled that year
stu_gt	Gifted and Talented Status

Appendix B: Percentage of Objectives Met by Assessment Type Specified by Teachers



The above graph presents the most commonly used assessments for setting SGOs by teachers. The solid line in the graph represents the mean percentage of objectives met (85 percent) by all teachers in the district over the five year period. For each of the five years reviewed, teacher-made assessments, the body of evidence approach, and all assessments classified as "other" yielded higher percentages of objectives met relative to the district benchmark tests and Direct Reading Assessments (DRAs).

Appendix C: Example of an Excellent Rated SGO with Embedded Reviewer Notes

Grade Level: 2 **Content**: Math

Rationale: This objective supports a central team goal.

Input: The rationale should describe how the objective supports the central team goal and what the goal actually is. Based on the rubric criteria, I'd rate the rationale as a 1 since no goals are listed.

Population: 85% of 2nd grade students who attend math class 85% of the time.

Input: Why only 85% of students? Why not the entire class? It's obvious this teacher was provided some aspect of the rubric since she included the 85% attendance criterion. I'd rate this piece as a 3 using the rubric criteria provided.

Interval of Time: One school year

Input: It should not take an entire year for students to do 2-digit addition. I think the learning content description needs to be described better to indicate why this interval of time makes sense. Using the rubric, I'd rate this a 2.

Assessment: Curriculum-Based Measurement (CBM)

Input: The assessment is identified but not described to know anything about the CBM used, what is covered on it, etc. I think this would be a "2" using the rubric. But I don't know that this is necessarily agreed upon by the teacher and principal. The rubric needs to be revised to better define and rate what needs to be included for the assessment piece.

Expected Gain: By the end of the school year, 85% of the students who attend math class

85% of the time will score 90% or higher on the CBM post-test focusing on double-digit addition with and without regrouping.

Input: Using the rubric, I'd rate this a 2 because I don't understand the assessments enough to know if these scores are appropriate for the categories provided. I also can't tell if these targets are really anchored in baseline data. A percentage of students were identified but it's not clear why this group, and why the 67% of students that were rated unsatisfactorily are lumped into this 85% total. Better differentiation and targets need to be set based on how students initially perform. Also, justification of how scores are set and performance levels are devised need to be explained. The pre and post CBM assessment only assesses double-digit addition with and without regrouping? How many items? How are the assessments the same or different from pre to post? Why 85%? How did this number come to be the focus? 90% of students were scoring below proficient on the pre-test.

Baseline: My baseline data was collected from a CBM pretest focusing on double-digit addition with and without trading. Approximately 67 % of my second grade students scored unsatisfactory and 23 % scored partially proficient on the pretest. No students were successful with the trading concept. Scores 90 % or above were considered proficient, scores ranging from 70 - 89 % were considered partially proficient, and scores lower than 70 % were considered unsatisfactory.

Input: How were these scoring rules on the CGM decided?

Learning Content: Students will understand the standard of operations and computation. Students will be able to use manipulatives, number grids, tally marks, mental arithmetic, and/or paper-and-pencil to solve problems involving the addition of 2-digit whole numbers.

Input: This goal is larger than what is being measured in the pre and post test. The description here indicates students will use a variety of techniques for doing double-digit addition. How are all aspects of this to be measured? Seems like what's on the assessments are very basic representations of what students may be able to do. Also, why does it take a full year to do this? How many lessons? How is this an essential concept of math that is worthy of being targeted and focused specifically? In describing the rationale, all of these would be better clarified to know how appropriate this learning content is. I'd rate it a 2 using the rubric.

Strategies: Students will have the opportunity to practice addition with 2-digit numbers during our daily morning math routine. Students will utilize various manipulatives, base-10 blocks, math journals, small group instruction and interactive activities to fully comprehend double-digit addition using a variety of strategies.

Input: Strategies are listed to show how students may engage with the content over the school year. But there are no details provided about how teachers would use this information for differentiation, remediation, or anything else that would target student specific needs throughout the school year. It's just a list of strategies provided but there's nothing that specifies how resources will be used to help both teachers and students make sure this content is mastered. Using the rubric, I'd rate this a 2.

Rating: 4

Additional Input from Reviewer:

My ratings for each category are listed below. I am not sure how these are computed together to come up with an overall rating but I'd overall give this SGO an overall rating of 2, definitely not a 4, as there are too many ambiguities or lack of detail to provide a rating higher than 2 for almost all categories. It's unclear to me how principals or others are coming up with a holistic rating of an SGO when there are seven specific parts to the rubric. I think it'd be important for ratings of each category be included so teachers know how to revise their SGO to meet ALL aspects of the criteria across categories to get them to a "4" rating. I would use these ratings below and my comments that discuss my ratings for each component to help teachers revise their SGOs to better attend to the specifics that are required in the criteria to make an exemplary SGO.

Rubric Categories	Rating
Rationale	1
Population	3
Instructional Time	2
Assessment/Alternative Measure	2
Expected Gain	2
Learning Content	2
Strategies	2

Appendix D: SGO Focus Group Protocol with Teachers

SGO Focus Group Structure for Teachers

Introduction (5 minutes – talk about the possible use of SGOs in teacher evaluations) – Eliciting feedback on four specific themes:

- How to make the SGO process more meaningful?
- Suggestions for making the process more efficient.
- What type of supports or professional development activities are needed to help improve upon the SGO process and to ensure that this process is directly connected to clear instructional goals connected to targeted learning content and assessments? And finally,
- If the SGO process is revamped and refined such that this becomes a highly valued activity for evaluating student growth, to what extent would you want this process to be factored into your evaluation?

Before the discussion begins, ask the focus group members to tell you how many years of experience they've had with the SGO process.

I. First theme: developing a meaningful SGO process.

Context: In the past, the SGO process was documented as having high value to teachers participating in the pilot, but in more recent years, many of your peers have indicated to the PDU Administrator that this process is no longer meaningful for you. However, if these are to be used for your evaluation in the future, then the process will need to be refined to ensure that the SGOs are fair and credible measures of student growth and are valued by teachers.

Possible prompts to start conversation:

- To what extent do you see a direct connection between the classroom activities you do throughout the school year and the learning content and assessments identified in your SGOs? Explain.
- How would you rate the quality of feedback you receive from your instructional leader or administrator evaluating your SGOs? How useful is this feedback for helping you make any improvements or adjustments to your own teaching practice?
- Keeping in mind that this process may be considered for teacher evaluations, what can we do as a district to ensure that this SGO process is more meaningful to you to help monitor student progress on your objectives?
- What would you suggest to make this process more meaningful for your instructional practice?

II. Second theme: Efficiency

Context: Provide information on improvements and enhancements that will be made to the SGOs this year.

Possible prompts to start off conversation:

- Based on your past experience with the SGO process and the information shared about improvements/enhancement, what additional and specific aspects of the process do you believe need to be improved or streamlined? Explain.
- How much time does it currently take for you to develop your objectives? Are there specific aspects that need to be improved or streamlined relative to the development of SGOs?

III. Third theme: Supports and PD needed?

Context: In contrast to the sustained and in-depth trainings provided to schools during the pay for performance pilot years, district level support to ensure consistent training for the SGO process has diminished overtime.

Possible prompts to start off conversation:

- What specific type of support do you think would be most beneficial to help either novice or experienced teachers with any aspect of the SGO process? Explain.
- (If applicable) To what extent do you feel that the rubric used to evaluate the rigor of SGOs has been useful for improving upon the development process?
- To what extent do you think teachers are ready to start developing SGOs that address the common core and the new Colorado standards? Do you believe there is enough familiarity with these standards at your school to ensure alignment between the SGOs and these national and state standards?
- To what extent is there adequate support provided at your school to ensure that appropriate instructional strategies are being used to improve student learning as defined in your objectives? Explain.

IV. Fourth theme: Teacher evaluations and the role of SGOs.

Context: Provide brief overview of the role of SGOs for teacher-made or team developed assessments in the evaluation system (show the 5 categories) and to explain weighting considerations being made between categories.

Talk about how teachers determined the amount of weight that the SGOs should have in ProComp evaluations. In this case, we'd like their ideas to inform the conversation with the district on appropriate weighting of Category 4 and potentially Category 2 (district-made tests).

Possible prompts to start off conversation: (first ask how many are in state-tested vs. non-state tested subjects)

- If all of your suggestions for improving upon the process were to be implemented, to what extent would you like to see the SGOs contribute to your individual evaluation of student growth? How much weight should be attributed to SGOs relative to other categories being considered?
- If all of the improvements you recommended on the SGO process were made, do you think this would be a fair approach for evaluating student growth taking place in your classrooms?

Appendix E: Summary Table of SGO Barrier Analysis Results

Issue: Changes to institute to make SGOs viewed as a rigorous and valid process for evaluating student growth and outcomes	**Barrier 1: Perceived rigor and consistency for setting, developing, and evaluating SGOs**	**Barrier 2: Perceived coherence or alignment between SGOs, LEAP, UIP, and PDUs**	**Barrier 3: Perceived level of meaningful insights and feedback gained from the SGO process**	**Barrier 4: Perceived level of adequate time available to set meaningful SGOs**
Barrier shows up in student outcomes analysis?	Yes	Yes	Inferred based on the mismatch between rigor ratings provided and SGO outcomes (how is meaningful input by an approver provided when weak SGOs are rated highly?)	Inferred based on prevalence of weakly defined SGOs reviewed by content specialists (e.g., lack of specificity or details reflecting minimal time spent developing SGOs).
Barrier shows up in PDU leaders focus groups?	Yes	Yes	Yes	Yes
Barrier detected in approvers' focus groups?	Yes	Yes	Yes	Yes
Specific recommendations to address or work around this barrier	• Develop SGO exemplars for teachers with different assignments and serving different grades	• Develop a visual showing connections between SGOs and all other district reform efforts • Create concrete examples of exemplary	• Ensure the minimum of 3 conference requirements are met • Incorporate smart goals as progress monitoring milestones for SGOs	• Set aside dedicated days (e.g. green days) for SGO developmen t and evaluation. • Ensure SGO

	• Ensure SGOs developed in teacher-teams, not in isolation • Assign mentor or provide SGO hotline to help new principals/ approvers with SGO process • Send checklist to all teachers and approvers outlining criteria, expectations and guidelines for SGOs • Ensure rigorous but differentiated growth expectations for students	SGOs linked to exemplary school goals, PDUs and the LEAP framework	• Assign mentor or provide SGO hotline to help new principals/ approvers with this process • Identify demonstration sites to exemplify "good instructional practices" for others • Addressing barriers 1 and 2 will strengthen level of meaningful insight gained	conversations are sustained during data, vertical, and grade level team meetings
Messages that need to be developed/modified to address this barrier	• Clearly articulate rules for adjusting the SGOs mid-year • Emphasize importance of collaborative process • Require teachers to articulate	• Establish clear policy goals for linking SGOs to other reform efforts and communicate initiative at all levels across the district	• Communicate reminders to approvers and teachers about minimum conferencing requirement • Frame SGO process as an ongoing formative process for teachers – loses credibility as a purely summative process	• SGOs should be considered and treated as a district priority and messaged as such with all stakeholder groups across the district

	goals for students who fall outside of attendance requirement to ensure all students are being monitored			
Changes to institute in the process given this barrier	• Provide PD to teachers and approvers regarding rigor and consistency in all facets of the process. Deliver through different modes (in person/on-line webinars) • Institute team SGO development approach • Develop quality selection criteria for teacher- and team-developed assessments	• After policy goals are set, key central administrators should launch communications about interconnections between each initiative • Incorporate visual showing linkages and exemplars to use for teacher teams developing SGOs	• Define and set smart goals as frequent checks for SGO progress for all teachers • Provide interactive webinars focusing on instructional strategies and examples of linking actionable strategies to SGOs • Develop cross-site learning opportunities across schools	• Identify days in school calendar to incorporate SGO conversations in current grade-level team, data team and vertical team meeting days.

Appendix F: ProComp Focus Group Protocol

Thank you for taking the time to share your thoughts on ProComp with us! My name is _____ and I'm with the ____. We've been asked by the DCTA and DPS to evaluate ProComp, and as part of our work, we'd like to get your thoughts about ProComp. We're not decision makers, we're here to listen to what you have to say and to ensure that your input is used to help inform the upcoming ProComp re-negotiation process. We're not here to judge anyone's opinion, only to gather all of the information we can to provide as much input from you to DPS and DCTA. We want to make sure you have an opportunity to give us the information you believe is important. If we run out of time, you can send us an email with any additional thoughts and feedback. All of your feedback will be kept confidential and no names will be disclosed - so we would greatly appreciate your candid feedback.

Icebreaker: To start, I'd like each of you to tell us your name, give a brief background of your experience in DPS, and in two to three sentences tell us what you think is most important for us to hear about ProComp.

Now we'll ask you some questions about ProComp and we'll go around the room to make sure we hear from all of you.

1. Did ProComp have any impact on your decision to come to DPS and in what way?
2. Is your decision to stay with the district influenced by ProComp and in what way?
   Probes:
   a. Have the Hard to Serve/ Hard to Staff Bonuses influenced your decision to stay in your job or school? Why?
   b. What about any other element in the system?
   c. Are any of the ProComp elements contributing to a more collaborative environment with your colleagues at your school and does this influence your decision to stay at your school?
3. In what ways has ProComp had a positive impact on your salary?
   Probes:
   a. Is the incentive structure for earning raises and bonuses under ProComp more appealing to you than what's provided under the traditional step system?

b. Does ProComp provide you with adequate and fair opportunities to earn a salary increase or bonus?

4. In what ways do you think your professional practices may have changed as a result of being part of ProComp?

   Probes:

   a. Do the PDUs (mention school-wide, personal or central) positively and directly contribute to your knowledge and skills?
   b. In what ways, if any, does the SGO process help improve your professional practice?
   c. Do you receive actionable feedback from your Administrator and Peer Observer on the LEAP framework indicators /domains to help you improve upon your professional practice?
   d. During the school year, does the prospect of earning a bonus or raise motivate you to change your practice?

5. Were you given an orientation to ProComp? What was this like?

   Probes:

   a. When you have questions about some aspect of ProComp, where do you turn to for answers?
   b. Where do you learn about changes made to the ProComp system?
   c. Where do you turn to for support on writing SGOs and developing PDUs?

6. Possible Wrap-Up Question: If you could change one aspect of the ProComp system, what would you like to see changed?

Potential Follow-Up Questions

Salary & PDUs

1. Do ProComp's incentives for salary increases motivate you to work harder?
2. How many of you have earned a salary base increase by completing an approved PDU since you've joined DPS?
   a. How much did it/does it increase your salary?
   b. What kind of PDU was it and what motivated you to develop one (personal) or to utilize one that was developed centrally (central PDU)?

c. For those of you who developed a personal PDU and got it approved, what process do you follow?
d. For those who of you who have not pursued a PDU, what factors prevented you from applying for a PDU?

School-wide PDUs

For those of you who earned school-wide PDU credit in the past or are currently pursuing a school-wide PDU this year:

1. How did you and your colleagues select the focus for the school-wide PDU?
2. Do you think this school-wide approach fosters increased collaboration with your colleagues?

*SGO*s

1. What do you have to do to get a salary increase or bonus for meeting your student growth objectives?
2. Does the amount you get for meeting one or both of your SGOs motivate you in your work?
3. Are SGOs discussed among your colleagues who teach in the same subject area?

Ex Ex

1. What do you have to do to get a salary increase or bonus to get your students to "exceed expectations"?

School-wide Bonuses – Top Performing and High Growth

These incentives are provided to everyone if a school is considered to be high growth and/or a top performer in the district.

1. How many of you have received either one or both of these awards?
2. Do you think this incentive fosters more collaboration across school personnel to maintain the school's high growth or top performer status?
3. Could you provide some examples to help us understand what this collaborative effort looks like at your school to maintain your school's high growth or top performer status?

Appendix G: DRAFT ProComp Teacher Survey

A. Please indicate which of the following best describes your current position. (*Select One*)

- ❑1 A classroom teacher who regularly teaches students in grades K-12 (including long-term substitute teacher)
- ❑2 A principal or assistant principal → ***STOP QUESTIONNAIRE***
- ❑3 A short-term substitute teacher → ***STOP QUESTIONNAIRE***
- ❑4 A paraprofessional/teacher's aide → ***STOP QUESTIONNAIRE***
- ❑5 A non-teaching position (e.g., counselor, librarian, psychologist) → ***STOP QUESTIONNAIRE***
- ❑6 Other teaching position → ***CONTINUE WITH QUESTIONNAIRE***

Please write your answers directly on the questionnaire by checking the appropriate box or writing your answer in the space given.

YOUR CLASS(ES) & INSTRUCTION

1. What grade or grades do you currently teach at this school? *(Check all that apply.)*

Grades													
K	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**ungraded**
❑	❑	❑	❑	❑	❑	❑	❑	❑	❑	❑	❑	❑	❑

2. What subjects do you currently teach at this school? *(Select all that apply.)*

❑1 Multiple subjects in a self-contained classroom

OR:

❑2 English/reading/language arts

❑3 Mathematics

❑4 Science

❑5 Social studies/history/civics/geography

❑6 Computer sciences

❑7 Health education

❑8 Foreign languages

❑9 Arts and music

❑10 Physical Education

❑11 Vocational/Technical Education

❑12 Other: _____

BACKGROUND

3. Including this year as one, how many years have you …?

(Fill in each space with a number.)

a. Taught on a full-time basis	_____years
b. Taught at this school (full-time)	_____years
c. Taught at DPS (full-time)	_____years

4. Do you plan to return to this school next year?

❒1 Yes

❒2 No

❒3 I don't know

5. Do any of the following statements reflect the reason for your answer to Question 4 above? *(Select One on Each Line.)*

	Yes	No
a. I applied for a teaching position at a different school within the district	❑1	❑2
b. I applied for a teaching position at a different school in another district	❑1	❑2
c. I applied for a non-teaching job (including non-education job)	❑1	❑2
d. I received a formal job offer to teach in another school	❑1	❑2
e. I received a formal job offer for a non-teaching job (including non-education job)	❑1	❑2
f. I am retiring or may be retiring	❑1	❑2
g. Other (specify:_____)	❑1	❑2

6. What is the highest degree that you have earned? *(Select One.)*

❒1 Associate Degree

❒2 Bachelor's Degree

❒3 Master's Degree

❒4 Master's Degree plus 30 credits

❒5 Doctorate Degree or Professional Degree

❒6 Other: _____

7. What type of teaching certification do you hold? *(Select One.)*

❒1 Not certified

❒2 Initial or Provisional Certification (entry level certification)

❒3 Permanent or Professional Certification (second level certification)

❒4 Transitional Certification (those in alternative route programs)

❒5 Internship Certification (those enrolled in masters program and have completed half the program requirements)

8. Is this certification in the area of your <u>main teaching assignment</u> this year (i.e., content area(s) and grade(s))? *(Select One.)*

❒1 Yes

❒2 No

9. Do you or have you participated in the following programs? *(Select all that apply.)*

	Yes, I currently participate in this program	Yes, I am a graduate of or participated in the program in the past	No, I have not participated in this program
a. Teach for America	❑1	❑2	❑3
b. ALP 1 program at Metro State	❑1	❑2	❑3
c. Denver Teach Today	❑1	❑2	❑3
d. Denver Teacher Residency at DU	❑1	❑2	❑3

10. Are you male or female? *(Select One.)*

❒1 Male

❒2 Female

11. What is your race or ethnicity? *(Select One.)*

❒1 African-American (not of Hispanic origin)

❒2 American Indian or Alaskan Native

❒3 Asian or Pacific Islander

❒4 Hispanic or Latino

❒5 White (not of Hispanic origin)

❒6 Other *(describe)*_____

12. How often do you engage in the following activities as part of your instructional practice?
(Select one on each line.)

	Never	Sometimes	Often	Not Applicable to my class
a. Design my classroom lessons to be aligned with specific curricular standards	❑1	❑2	❑3	❑9
b. Plan different assignments or lessons for groups of students based on their performance on assignments or assessments	❑1	❑2	❑3	❑9
c. Re-teach topics because student performance on assignments or assessments did not meet expectations	❑1	❑2	❑3	❑9
d. Have students help other students learn class content (e.g., peer tutoring and groupings, pairing, etc.)	❑1	❑2	❑5	❑9
e. Conduct an assessment to find out what students know about a topic before teaching it	❑1	❑2	❑3	❑9
f. Attempt to contact parents or guardians whose children are having academic problems.	❑1	❑2	❑3	❑9

13. Which tests in the subject(s) you teach do your students take? *(Select all that apply.)*

❑1 TCAP tests in Reading, Writing and Math in grades 4-10

❑2 TCAP tests in Reading, Writing and Math in grade 3 and TCAP science tests

❑3 Interim or benchmark tests (e.g., district developed interims, NWEA MAPs, Scantron, Acuity, etc.)

❑4 Classroom tests (e.g., self-developed, from curricular materials, end of unit tests)

❑5 Other exams (e.g. AP exams, IB exams)

❑6 Students in my class(es) generally do not take tests

14. During a typical week, approximately how many hours do you spend working on school work outside of formal school hours (e.g., in the evenings, before the school day, and on weekends)? *(Write the number of hours on the line below.)*

_____ hours

15. What is your status in the ProComp system?

❑1 I am not enrolled in ProComp → ***SKIP TO QUESTION 21***

❑2 I was automatically enrolled in ProComp when I joined DPS → ***CONTINUE TO QUESTION 16***

❑3 I voluntarily opted in to ProComp → ***CONTINUE TO QUESTION 16***

16. Did you receive one of the school-wide incentives last year ? (*Select One***)**

❑1 Yes, I received the Top Performing Bonus

❑2 Yes, I received the High Growth Bonus

❑3 No, I did not receive a bonus

17. Do you currently receive a ProComp incentive for working in a Hard To Serve school?

❒1 Yes → ***SKIP TO QUESTION 19***

❒2 No → ***CONTINUE TO QUESTION 18***

18. What size of annual bonus would be sufficient to attract you to a Hard To Serve school?

$ _____ → ***SKIP TO QUESTION 21***

19. Did you decide to work in this school as a result of the ProComp Hard To Serve incentive?

❑1 Yes, ProComp was the main reason I decided to work in this school.

❑2 Yes, ProComp is part of the reason I decided to work in this school.

❑3 No, ProComp was not a reason I decided to work in this school.

❑4 No, I was working in this school before ProComp

20. The ProComp Hard to Serve bonus encourages me to remain in this school.

❑1 Strongly Disagree

❑2 Disagree

❑3 Neither Agree Nor Disagree

❑4 Agree

❑5 Strongly Agree

PROFESSIONAL DEVELOPMENT & STAFF INTERACTIONS

21.

"Professional development activities" include seminars, workshops, or training sessions designed to improve your teaching practices. These include district- and school-sponsored activities, as well as activities organized by teachers.

During the 2012-13 academic year, approximately how much time did you devote per month to professional development activities?

_____ hours

Now say you had been offered a one-time $800 salary bonus for completing an additional professional development unit (PDU). Assume that the additional professional development unit would be of high quality. How much total time per month would you have devoted to this?

_____ hours

If you had been offered a one-time $1500 bonus, how much total time per month would you have devoted to this?

_____ hours

22. During the 2012-2013 academic year, about how many total hours of professional development did you receive in each of the following areas? *(Select one on each line.)*

		Less than 1 hour	1-20 hours	More than 20 hours
a.	Content: In-depth study of topics in your subject area(s)	❑1	❑2	❑3
b.	Setting student learning objectives	❑1	❑2	❑3
c.	Designing student assessments	❑1	❑2	❑3
d.	Analyzing and interpreting student achievement data	❑1	❑2	❑3
e.	Classroom and behavior management	❑1	❑2	❑3
f.	Teaching special student populations (e.g. ELL and special education students)	❑1	❑2	❑3
g.	Identifying and addressing student social and emotional issues	❑1	❑2	❑3

23. For the professional development activities you participated in during the previous school year, how useful did you find the activities? *(Select one on each line.)*

		N/A	Not Useful	Some what Useful	Very Useful	Extremely Useful	Check this box if the activity qualified you for a ProComp PDU
a.	Content: In-depth study of topics in your subject area(s)	❑1	❑2	❑3	❑4	❑5	❑
b.	Setting student learning objectives	❑1	❑2	❑3	❑4	❑5	❑
c.	Designing student assessments	❑1	❑2	❑3	❑4	❑5	❑
d.	Analyzing and interpreting student achievement data	❑1	❑2	❑3	❑4	❑5	❑

e.	Classroom and behavior management	❑1	❑2	❑3	❑4	❑5	❑
f.	Teaching special student populations (e.g. ELL and special education students)	❑1	❑2	❑3	❑4	❑5	❑
g.	Identifying and addressing student social and emotional issues	❑1	❑2	❑3	❑4	❑5	❑

24. Last school year (2012-13), how frequently have you engaged in the following activities with <u>other teachers</u>? *(Select one on each line.)*

	Never	1-3 times per week	More than 3 times per week
a. Analyzed student achievement data or student work with <u>other teachers</u> at my school	❑1	❑2	❑3
b. Met with <u>other teachers</u> at my school to discuss instructional planning	❑1	❑2	❑3
c. Met with <u>other teachers</u> at my school to discuss the needs of individual students	❑1	❑2	❑3
d. Met with <u>whole school staff</u> to discuss school goals and improvement strategies	❑1	❑2	❑3

25. Last school year (2012-13), how frequently have you engaged in the following activities with <u>other school personnel</u>? *(Select one on each line.)*

	Never	1-3 times per year	More than 3 times per year
a. Observed lessons taught by <u>another teacher</u> at my school	❑1	❑2	❑3
b. Had my lesson observed by <u>another teacher</u> at my school	❑1	❑2	❑3

c Analyzed student achievement data or work with administrators at my school	❑1	❑2	❑3
d. Met with administrators at my school to discuss the academic needs of individual students	❑1	❑2	❑3
e. Had an administrator observe my instruction (not for formal evaluation purposes)	❑1	❑2	❑3
f. Discussed the social or behavioral needs of individual students with staff, including counselors, psychologists, etc.	❑1	❑2	❑3

SCHOOL CLIMATE

26. Think about your school staff (colleagues and administrators). Please indicate whether you agree or disagree with the following statements:

	Disagree	Agree
a. I feel that teamwork is a key component of my school's culture.	❑2	❑3
b. I feel that my peers actively help me to succeed as a teacher.	❑2	❑3
c. I feel that school leaders give me adequate time to work with my peers.	❑2	❑3
d. I feel that I am in competition with my peers.	❑2	❑3
e. I feel comfortable discussing work-related worries and frustrations with school leaders.	❑2	❑3
f. I feel that many of my co-workers only help me when my work has an impact on them.	❑2	❑3
g. When teachers work together at my school, we usually do so only because we feel obligated.	❑2	❑3
h. I feel that my classroom planning is substantially better because of collaboration with my peers.	❑2	❑3

i. I generally feel that my opinions about school matters are heard and acknowledged.	❑2	❑3
j. I feel that school personnel often criticize each other behind their backs.	❑2	❑3
k. I feel that meetings with my peers have little positive impact on our effectiveness.	❑2	❑3
l. I feel that my peers consistently go out of their way to help me if I have a question or concern.	❑2	❑3

27. Think about <u>your school staff</u> (colleagues and administrators). Please indicate whether you agree or disagree with the following statements:

	Disagree	Agree
a. I feel that school leaders actively encourage teachers to work together.	❑2	❑3
b. I feel that many of the teachers at my school frequently use unflattering or offensive names for their peers.	❑2	❑3
c. In a dispute with parents or students, I'm not sure whether I can rely on the backing of school leaders.	❑2	❑3
d. I feel that most of my peers want me to succeed as a teacher.	❑2	❑3
e. I feel that teachers at my school often argue in a disrespectful manner.	❑2	❑3
f. I feel that it is usually best to keep work-related difficulties to myself.	❑2	❑3
g. I feel that school leaders trust teachers to do their jobs well.	❑2	❑3
h. I feel that the majority of my peers would help if I have a work-related question or concern.	❑2	❑3
i. I feel that teachers at my school are almost always kind to each other.	❑2	❑3
j. I feel that disagreements between teachers at my school are usually handled professionally.	❑2	❑3

k. I trust that teachers at my school seek ways to be respectful of others' differences.	❑2	❑3

28. Do you agree or disagree with the following statements about the ProComp system and accountability system? *(Select One on Each Line.)*

	Agree	Disagree
a. I have a strong understanding of our school's SPF and what factors contribute to our school's rating this year	❑1	❑2
b. The criteria for a teacher to earn more incentives under ProComp award relies too heavily on student test results	❑1	❑2
c. The amount awarded for working in a Hard To Serve school is not enough to motivate teachers to switch schools	❑1	❑2
d. The amount awarded for the Exceeds Expectations incentive is not enough to motivate extra effort	❑1	❑2
e. The amount awarded for completing PDUs is not enough to motivate extra effort	❑1	❑2
f. The amount awarded for the SGO incentive is not enough to motivate extra effort	❑1	❑2

29. During the 2012-13 school year, did you receive any updates about ProComp from the following groups or individuals? *(Select One on Each Line.)*

	Yes	No
a. DCTA	❑1	❑2
b. DPS Human Resources	❑1	❑2
c. My school's administrators	❑1	❑2
d. My school's DCTA representative	❑1	❑2
e. My school's PDU leader	❑1	❑2

30. Which of the following statements would you consider to be true or false about ProComp? *(Select One on Each Line.)*

	True	False	I don't know
a. I lose all base building opportunities in ProComp once I have 14 years of teaching experience	❑1	❑2	❑3
b. The hard to serve school bonus is given to all employees working at schools in which at least 93% of students are eligible for free or reduced-price lunch	❑1	❑2	❑3
c. Only teachers instructing in state-tested subjects are eligible for the Exceeds Expectations bonus	❑1	❑2	❑3
d. Tuition assistance provided through ProComp can only be used for course tuition related to a degree program	❑1	❑2	❑3
e. Under ProComp, I am required to have a mid-year conference with my SGO approver/evaluator.	❑1	❑2	❑3
f. PDUs do not provide base-building opportunities.	❑1	❑2	❑3

31. During the 2012-2013 school year, did you complete a PDU?

❑1 Yes → ***SKIP TO QUESTION 33***

❑2 No → ***CONTINUE TO QUESTION 32***

32. Please select the answer below that best reflects why you did not complete a PDU.

❑1 I was not employed at DPS during the 2012-2013 school year

❑2 I have not had time to complete a PDU, but plan to do so in the future

❑3 I am not part of ProComp and have no financial incentive to complete a PDU

❑4 I am part of ProComp, but do not feel that the bonus amount is enough to compensate for the extra time and effort

❑5 Other (please specify) _____

33. Whether or not you participate in ProComp, you have probably formed some general impressions of the program. Please indicate your level of agreement with the following statements. *(Select one on each line.)*

		Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
a.	ProComp can motivate participants to improve instructional practices	❑1	❑2	❑3	❑4	❑5
b.	ProComp can ultimately improve student achievement	❑1	❑2	❑3	❑4	❑5
c.	ProComp will ultimately help DPS attract and retain qualified teachers	❑1	❑2	❑3	❑4	❑5
d.	ProComp will improve teacher collaboration in DPS	❑1	❑2	❑3	❑4	❑5
e.	ProComp is aligned with the goals of our school district	❑1	❑2	❑3	❑4	❑5
f.	ProComp is aligned with my goals as an educator	❑1	❑2	❑3	❑4	❑5
g.	I feel more pressure and job stress as a result of ProComp	❑1	❑2	❑3	❑4	❑5

h.	ProComp is a fair program	❑1	❑2	❑3	❑4	❑5
i.	ProComp helps to create a positive work environment	❑1	❑2	❑3	❑4	❑5
j.	The financial incentives in ProComp will lead to improved instructional practice	❑1	❑2	❑3	❑4	❑5
k.	ProComp provides a more focused way to think about my work	❑1	❑2	❑3	❑4	❑5

34. You have probably formed some general impressions about the traditional (master) salary schedule as well. Please indicate your level of agreement with the following statements. *(Select one on each line.)*

		Strongly Disagree	**Disagree**	**Neither Agree nor Disagree**	**Agree**	**Strongly Agree**
a.	The traditional salary schedule can motivate participants to improve instructional practices	❑1	❑2	❑3	❑4	❑5
b.	The traditional salary schedule can ultimately improve student achievement	❑1	❑2	❑3	❑4	❑5
c.	The traditional salary schedule will improve teacher collaboration in DPS	❑1	❑2	❑3	❑4	❑5
d.	The traditional salary schedule is fair	❑1	❑2	❑3	❑4	❑5
e.	The financial incentives in the traditional salary schedule will lead to improved instructional practice	❑1	❑2	❑3	❑4	❑5

35. Were you employed as a teacher at DPS before January 1, 2006?

❒1 Yes → ***CONTINUE TO QUESTION 36***

❒2 No → ***SKIP TO QUESTION 37***

36. Please indicate how, if at all, the following features of your job or your school have changed as a result of ProComp. *(Select One on Each Line.)*

	Changed *significantly* for the worse	**Changed *slightly* for the worse**	**Did not change**	**Changed *slightly* for the better**	**Changed *significantly* for the better**	**Don't Know**
a. Teachers' focus on student learning	❑1	❑2	❑3	❑4	❑5	❑9
b. Teachers' willingness to collaborate and work together	❑1	❑2	❑3	❑4	❑5	❑9
c. Teachers' relationships with administrators	❑1	❑2	❑3	❑4	❑5	❑9
d. Morale of school personnel	❑1	❑2	❑3	❑4	❑5	❑9
e. My motivation to perform my job well	❑1	❑2	❑3	❑4	❑5	❑9
f. My motivation to stay at this school	❑1	❑2	❑3	❑4	❑5	❑9
g. My own skills and abilities	❑1	❑2	❑3	❑4	❑5	❑9
h. My level of job stress	❑1	❑2	❑3	❑4	❑5	❑9
i. Student performance	❑1	❑2	❑3	❑4	❑5	❑9
j. The quality of professional development offered in the school	❑1	❑2	❑3	❑4	❑5	❑9

37. If you have any other thoughts you would like to share about ProComp, please include them here.