Getting the Pieces Right: Professional Development, Compensation, and School-Wide Performance

Teacher Incentive Performance Award
Prince William County Public Schools

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ABOUT CTAC

The Community Training and Assistance Center is a national not-for-profit organization with a demonstrated record of success in the fields of education and community development. CTAC builds district, state, and community capacity by providing technical assistance, conducting research and evaluation, and informing public policy. It focuses on developing leadership, planning and managerial expertise within school systems, community-based organizations, collaborative partnerships, state and municipal governments, and health and human service agencies. Since 1979, CTAC has provided assistance to hundreds of community-based organizations, coalitions and public institutions in the United States and several other countries.

CTAC's staff is comprised of nationally recognized executives, educators, policy makers, researchers and organizers who have extensive experience working with city, county and state agencies, educational institutions, federal legislative bodies, not-for-profit organizations, philanthropic institutions and the private sector.

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Executive Summary

The Teacher Incentive Performance Award (TIPA) initiative, a $10.9 million, five-year program supported by the U.S. Department of Education's Teacher Incentive Fund (TIF), sought to increase student achievement in the 30 highest-need schools in Virginia's Prince William County Public Schools (PWCS). Unlike most TIF programs, which focus on the performance of individual teachers, TIPA awarded compensation based on school-level performance.

Beginning with the initial planning year in 2010-11, TIPA continued through the 2014-15 school year. The initiative supported the efforts of schools to improve their effectiveness as measured by a diverse set of criteria, including improved student performance on Virginia's Standards of Learning (SOL) assessments, evidence of standards-based planning in instruction, and parent and student satisfaction with school climate.

TIPA focused on four main goals:

- Increasing student achievement in high-need schools;
- Building teacher and principal capacity in high-need schools by providing customized professional development;
- Recruiting and retaining highly effective teachers and principals in high-need schools; and
- Increasing the overall effectiveness of high-need schools.

TIPA's Theory of Action

If the objective is to improve student achievement in high-need schools, then the entire educational approach of those schools must change. From the earliest design sessions, the PWCS planning team—comprised of principals, teachers, and central administrators—understood that financial incentives alone would not be enough to strengthen teacher practice and improve student learning.

Multiple strategies would be needed to bring about sustainable change in student performance. The planning team believed that all educators must collaborate to improve instruction and that professional development for teachers must be responsive to the specific context of individual classrooms. Learning standards must drive classroom instruction and teachers must be held accountable for implementing standards-based instruction. Any performance awards earned by schools must be based not only on student growth and achievement, but also on factors that

contribute to achievement, such as a positive school culture, teacher leadership, parental engagement, and parent and student satisfaction. Finally, principals must provide the leadership needed to motivate and support faculty, re-direct resources, and spearhead change. Even with such a diverse list of objectives, the initiative's theory of action can be summarized quite simply: *to build a learning environment supportive of school leaders, teachers, students, and parents in their efforts to improve student performance.*

To implement this theory of action, TIPA focused on the following strategies:

Collaboration. TIPA supported teamwork among educators and placed significant value on professional learning communities (PLCs) as a key strategy to strengthen student outcomes. The planning team's early decision to implement a school-wide approach to performance-based compensation set the stage for educators to work together, sharing the most effective practices for helping all students master the learning standards.

Real-time professional development. TIPA leadership revamped professional development for teachers in the TIPA schools. Three professional development coordinators (PD Coordinators) worked directly with school faculties, including teams of teachers and individual teachers, to address the immediate learning needs of students. The PD Coordinators engaged school staff in reflective inquiry and guided teachers in the examination of student data to better understand the root causes of underperformance. Once the causes were identified, the PD Coordinators worked with teachers during the school year to target and remedy those issues. The TIPA PD Coordinators modeled instructional strategies to address student needs, monitored progress data continuously, and responded to the changing needs of teachers as they arose. Efforts were directed at working with teachers to address the immediate learning needs of their current students, as opposed to professional development designed to increase a teacher's general knowledge or skill for future use in the classroom.

Standards-based educator evaluation. Prior to TIPA, PWCS designed its evaluation system (the Professional Performance Process, or PPP) to focus on teaching practice and student learning needs. As a continuous improvement model, PPP promotes ongoing communication between educator and evaluator, which in turn supports a positive working environment. This atmosphere of collaboration fostered often difficult but important conversations about changes in teacher practice needed to strengthen student learning. PPP gave TIPA a strong foundation to build upon.

Multiple school effectiveness criteria. TIPA leadership ultimately developed 23 School Effectiveness Criteria, all of which schools were required to meet in order to compete for awards. These criteria were developed to improve school performance, with a significant emphasis on student growth and achievement, educator development, improvement in school conditions and culture, and student and parent satisfaction.

School leadership. For TIPA to be successful, principals must lead the reform effort. To that end, TIPA provided ongoing support and professional development to the 30 principals in the TIPA schools, an investment that ultimately helped teachers to strengthen their instruction and better serve high-need students.

Methodology

TIPA served the neediest schools in PWCS. The 30 schools with the lowest student performance in the division and with at least 50% of students qualifying for free or reduced-price meals were selected to participate. An additional 26 schools served as "comparison schools." Although state assessments revealed similar trends in student achievement at TIPA and comparison schools, the overall academic performance of the comparison schools was higher at the start of the initiative.

Over the five years of the initiative, the Community Training and Assistance Center (CTAC) used a mixed-methods approach utilizing both quantitative and qualitative data and methods to evaluate TIPA's effectiveness. The multiple sources of data included:

- Student achievement on state assessments, i.e., Standards of Learning (SOL) test results in the subjects of English language arts (ELA), mathematics, science, and history;
- Teacher retention data;
- Professional development data, including the amount provided to teachers;
- Surveys, interviews, and focus groups involving teachers, principals, central administrators, school board members, students, and parents; and
- School effectiveness scores for each of the 23 criteria used to determine annual performance awards.

To assess the impacts of the TIPA initiative on student achievement, this report analyzes the difference in student achievement between TIPA and comparison schools using two methods—descriptive analysis and a Difference-in-Differences model.

Using the same two methods, this report also assesses the impact of TIPA on teacher retention by comparing teacher exits from the division and teacher transfers between schools at TIPA and comparison schools.

In addition, the report documents the nature and extent of professional development (PD) provided to teachers in TIPA schools and analyzes the relationship between the amount of PD teachers received and changes in their students' achievement.

Finally, this report examines the perceptions of PWCS stakeholders concerning TIPA's theory of action: Did they find the initiative's strategies for increasing student learning effective? Why or why not?

Findings

Student Achievement

During the initiative, SOL scores increased faster in TIPA schools than in comparison schools in all four subjects. As a result, by the end of the initiative, achievement gaps shrank in all four subjects, most prominently in mathematics.

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The results from the Difference-in-Differences (DiD) model indicate that TIPA implementation led to statistically significant increases in student achievement across all four subjects. In particular, TIPA was associated with a statistically significant increase in mathematics ($p < 0.01$) and science ($p < 0.05$). In ELA and history, the increase was also statistically significant, but at the $p < 0.10$ level.

Teacher Retention

Descriptive analysis reveals a pattern that teachers in the comparison schools were slightly more likely to opt into TIPA schools once the initiative began as compared to teachers opting to transfer out of TIPA schools. However, the results of the DiD model indicate that TIPA did not have a direct impact on teacher retention in the 30 TIPA schools. This finding is consistent with the perceptual data which indicate that most educators did not believe TIPA would be a defining factor in whether educators elected to stay at or transfer to high-need schools.

Professional Development

The PD Coordinators provided TIPA teachers with more than 1,300 one-on-one coaching sessions during 2013-14 and 2014-15, with an average duration of 29 minutes. During the same period, a total of 1,272 group coaching sessions were held, with an average length of 60 minutes and an average of 8 participants per session.

The results from the multiple regression analysis show a nonlinear relationship between the amount of time a teacher spent with PD Coordinators and the achievement of his or her students. At one hour, the positive relationship between professional development and student achievement reaches its maximum. That is, an hour of professional development is associated with an improvement of 7.6% of a standardized deviation unit in student achievement.

Stakeholder Support for TIPA

Strategy 1: Collaboration

Stakeholders highly valued a collaborative approach to increasing school effectiveness. Respondents indicated that division services were better coordinated under TIPA than they had been previously. Moreover, teams of teachers began to collaborate when analyzing student data and developing instructional strategies as a consequence of the initiative. Respondents also agreed that teachers were better able to meet the needs of their students by working collaboratively.

Strategy 2: Real-Time Professional Development

Educators in the TIPA schools expressed strong support for the professional development they received in contrast to teachers in the comparison schools. The survey measured the degree of satisfaction with the professional development provided. The mean score differences on survey responses between TIPA and comparison schools demonstrated that educators in the TIPA schools were more satisfied than their peers with the professional development provided and that in all years these differences were statistically significant. More importantly, the differences between the satisfaction of TIPA educators and comparison school educators with the professional development increased over time.

Interview and focus group participants valued the PD Coordinators' efforts to directly assist teachers with emergent student learning issues.

Strategy 3: Standards-Based Educator Evaluation

Survey responses showed positive perceptions by teachers and administrators for the standards-based educator evaluation system known as the Professional Performance Process. Agreement with the overall effectiveness of PPP increased over the four survey years. For TIPA schools, the mean score increased from 3.92 to 4.0 over the initiative. Additionally, on two survey questions—one regarding the fairness of teacher evaluations conducted by the principal, the other concerning whether student growth on the Virginia SOLs should be a part of teacher evaluation—both administrators and teachers in the TIPA schools showed increases in the level of agreement from year two to year five.

The growing approval of PPP registered by the surveys was also largely reflected in interviews and focus groups. Nearly all respondents held favorable views of PPP overall.

Strategy 4: Multiple School Effectiveness Criteria

As the broad range of TIPA School Effectiveness Criteria reflects, PWCS understood from the outset that sustained increases in test scores require multiple reinforcing strategies. By including school effectiveness criteria such as standards-based planning, student wellness, teacher leadership and development, positive student behavior, and student and parent satisfaction, TIPA sought to promote practices and outcomes that foster improved student learning. These positive practices and outcomes continued in the TIPA schools even when two-thirds of the TIPA schools did not receive annual compensation awards. TIPA's focus on strong communication, collaboration among educators, and rewarding practices supportive of student learning helped maintain an affirming school culture among the participating schools.

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Strategy 5: School Leadership

Focus group and interview participants stressed that school leadership does matter.

The value of strong school leadership was highlighted at the 2015 TIPA Best Practices Conference. Along with their staffs, nine TIPA school principals provided an overview of the strategies they had used to raise student achievement. There was no one best approach, but rather a series of best practices which built on the experience and strengths of each staff. Over the four implementation years of the initiative, the nine schools with the strongest leadership received 62% of all TIPA awards (32 of 51 total awards).

Lessons from TIPA

The student achievement data present encouraging evidence that TIPA had a positive impact on student learning and that the strategies employed to implement TIPA's theory of action contributed to this overall success. While it is not possible to isolate the relationship between any single TIPA strategy on increases in student achievement, it appears that their work in tandem—work that was consistently supported by local educators throughout the five-year initiative—yielded some noteworthy effects.

A common misconception about performance-based compensation is that it must be all about competition. Not true. TIPA was specifically designed to create learning environments that encouraged teacher collaboration, supported teacher growth and development, valued parent and student feedback, stressed a positive school culture, held educators and students to high standards, and supported leadership development. Statistical evidence suggests that this more collaborative version of a compensation system produced gains in student achievement.

A key lesson learned from the initiative is that there is no single "magic pill" to improve student learning. Educators must design and implement a performance-based compensation initiative that engages and supports the entire school community, while focusing on factors that local educators believe must be addressed to improve student outcomes.

CHAPTER 1

Overview of the TIPA Initiative

Background

Located in the Washington, D.C. metropolitan area, Prince William County Public Schools (PWCS) is the second largest school division in the Commonwealth of Virginia. The division serves approximately 87,200 students in 95 separate school facilities and employs more than 6,000 teachers and administrators. The culturally and ethnically diverse student population is approximately 32% White, 32% Hispanic, and 21% African American, with the remaining 15% comprised of students of Asian, American Indian/Alaskan Native, Native Hawaiian/Other Pacific Islander or multi-racial descent. Over 37.5% of the student population is economically disadvantaged, and more than 21% is English language learners.

In the years leading up to TIPA, PWCS saw an increasing number of students enter its schools who were eligible for free or reduced-price meals, English language learners, or both. These student subgroups have significant learning needs, and in April 2009 the School Board directed the division to explore a "merit pay plan" designed to improve student achievement in the county's highest-need schools. Later redefined as a "performance-based compensation system," the goal of the new plan was to raise student test scores by strengthening teacher practice. The superintendent assembled a planning team comprised of principals, teachers, teacher association leaders, and representatives from central administration to research both funding

opportunities and best practices. As part of this research effort, the planning team contacted the Community Training and Assistance Center (CTAC), a national leader in performance-based compensation and systemic reform.

The planning team met over six months to research performance-based compensation approaches, identify specific models, discuss how schools should be selected to participate in the initiative, and determine which changes in teacher practice and student performance should be rewarded with additional compensation. In collaboration with CTAC, the team developed the application for federal funding under the Teacher Incentive Fund Program.

The minutes of these meetings indicate an open exchange of ideas that did not always result in universal agreement. One important shared goal was to design an approach that went beyond student test scores to include more diverse elements the team believed would contribute to student learning, such as a positive school climate, professional development for educators, and standards-based instructional planning.

The team debated issues that would become key items in the model eventually implemented by the division. One particularly thorny issue—the impact of unequal compensation on teacher morale—provides useful insight into how these discussions took shape. As a consequence of the team's widespread concern over pitting teachers against one another for additional pay, discussion moved from the idea of rewarding individual teachers to rewarding teams of teachers and finally to rewarding whole schools based on their collective performance on the award criteria.

However, because some teachers would inevitably contribute more than others to student achievement and growth in the core academic subjects—the ultimate goal of the initiative—the team eventually developed a two-tier system for awards. All school-based administrators and teachers in the four core academic subjects (English language arts, mathematics, science, and history) would be eligible to receive larger "Tier I" performance awards. All other teachers and administrators would be eligible for smaller "Tier II" awards.

The team also devoted considerable time to the question of whether additional compensation would help high-need schools attract and retain highly effective teachers and principals. Several team members stressed that money alone would not be a determining factor for most educators in selecting where to work.

Finally, the team sifted through many ideas and metrics, both quantitative and qualitative, to define the criteria against which participating schools would be measured in determining eligibility for awards. While team members ultimately settled on 20 specific criteria to be included in the grant application for federal funds, the minutes of the team meetings reveal more than 40 possible metrics under consideration during the planning period.

In addition to the development work by the team, the TIPA Project Director held 60 individual and group meetings with principals at TIPA-eligible schools and meetings with over 200 PWCS teachers. More than 1,900 school staff members responded to a division-wide survey designed to identify the institutional characteristics most likely to support student learning. This communication effort further intensified once the grant was awarded, with the goal of ensuring that participating schools clearly understood how the initiative would be implemented.

The level of collaboration was strong during the development of TIPA continuing through the five years of the initiative. Teachers and their representatives were essential participants in TIPA. In 2011, the work of the Prince William Education Association was recognized by the Virginia Education Association for its role in developing and implementing TIPA as a comprehensive approach to improve student outcomes.

Getting Started

In September 2010, PWCS, in partnership with CTAC, was awarded a U.S. Department of Education Teacher Incentive Fund (TIF) grant in the amount of $10.9 million. The grant—the Teacher Incentive Performance Award (TIPA) initiative—to be implemented over five years, served the very neediest schools in PWCS. The 30 schools with the lowest student performance in the division and with at least 50% of students qualifying for free or reduced-price meals were selected to participate. An additional 26 schools served as "comparison schools." Although state assessments revealed similar trends in student achievement at TIPA and comparison schools, the overall academic performance of the comparison schools was higher.

TIPA focused on four main goals:

- Increasing student achievement in high-need schools;
- Building teacher and principal capacity in high-need schools by providing customized professional development;
- Recruiting and retaining highly effective teachers and principals in high-need schools; and
- Increasing the overall effectiveness of high-need schools.

Early Challenges

In order to ensure that this performance-based compensation initiative was well developed and supported across the school division, PWCS decided to devote the first year of the grant to planning. This period proved critical, allowing PWCS time to respond to a series of implementation challenges, set their schools up to succeed, and shape the direction of the initiative for the next four years. PWCS used the planning year to successfully adapt its existing teacher evaluation system to meet the requirements of the grant, as well as to adjust some of the initiative's requirements to better align with PWCS's operating and support systems. Specifically,

- PWCS's educator evaluation system, the Professional Performance Process, or PPP, had been in place for two years before the start of the initiative. However, it did not fully satisfy federal requirements. PPP's original design included six assessment standards for teachers and school-based administrators, with student outcomes constituting required evidence when assessing teacher performance. In other words, teachers could submit student test scores as evidence that they met the standard for instructional delivery. However, the TIF grant requirements specified that student growth be included as a separate component of the evaluation process. The Virginia Department of Education (VDOE) had also recently

updated its own requirements for educator evaluations, stipulating that 40% of each evaluation be based on student academic progress. To satisfy both the TIF and VDOE requirements, PWCS added a seventh standard to PPP requiring that 40% of the evaluation be based on student growth.

- Additionally, the VDOE had begun calculating student growth percentiles (SGPs)[1] based on the Virginia Standards of Learning (SOL) tests, which meant SGPs could be used within the TIPA School Effectiveness Criteria to measure student growth. This became another metric schools could employ within PPP to measure a teacher's impact on student growth.
- PPP became a critical factor in the design of TIPA. A participating school could become eligible for an award if it ranked in the top third of TIPA schools based on the TIPA School Effectiveness Criteria. However, individual teachers could *only* receive awards if they met or exceeded the seven PPP standards. Thus, while TIPA was clearly a school-based incentive initiative, teachers performing poorly, as measured through PPP, were excluded from receiving additional compensation.
- The planning year also provided time for the TIPA leadership team to reassess the initiative's requirements within the specific context of PWCS.[2] To be eligible for awards, TIPA originally required all schools to meet their Adequate Yearly Progress (AYP) and be accredited by VDOE. However, in 2011 only four of the TIPA schools met their AYP. If this requirement was left in place, it could act as a disincentive for teachers in schools that did not meet their AYP. To remedy this situation, PWCS asked for and received approval from the U.S. Department of Education to remove AYP and VDOE accreditation as prerequisites for competing for compensation awards under TIPA. In their place, VDOE accreditation was changed from a prerequisite to a separate criterion and two other new TIPA School Effectiveness Criteria were added:
    - Overall student achievement on the Reading SOL test, based on the reading achievement target established by the Virginia Board of Education.
    - Overall student achievement on the Mathematics SOL test, based on the mathematics achievement target established by the Virginia Board of Education.

Devoting the first year of the grant to planning proved critical; it allowed PWCS time to respond to implementation challenges, set their schools up to succeed, and shape the direction of the initiative for the next four years.

TIPA School Effectiveness Criteria and Award Structure

With these adjustments, the TIPA School Effectiveness Criteria were set; all schools were measured by these 23 criteria beginning in the 2011-12 school year. Table I.1 is a list of the full TIPA School Effectiveness Criteria and the possible points that a school could receive for meeting each criterion.

Eighteen of the TIPA criteria were measured by data collected by PWCS (e.g., SOL test scores, survey data, attendance data). The remaining five criteria[3] were measured using data collected and analyzed

TABLE I.1

TIPA School Effectiveness Criteria

Criteria	Possible Points
1. High percentage of students scoring "Pass Advanced" on Standards of Learning Tests	12
2. Achievement and growth of students with Limited English Proficiency on Standards of Learning Tests	12
3. Achievement and growth of students with disabilities on Standards of Learning Tests	12
4. Achievement and growth of economically disadvantaged students on Standards of Learning Tests	16
5. Overall student achievement and growth on Standards of Learning Tests	16
6. High levels of performance on state wellness measures	3
7. Multiple observations of teacher performance throughout the year	3
8. Opportunity for teachers to serve in leadership roles within the school or school division	4
9. Parent satisfaction with level of involvement in decision-making	4
10. Parent satisfaction with teacher quality	5
11. Evidence of standards-based planning in instruction	5
12. Parent satisfaction with school climate	5
13. Student satisfaction with school climate	6
14. Commitment to ongoing professional development of administrators	6
15. Commitment to ongoing professional development of teachers	6
16. High student attendance	6
17. A clear instructional vision for the school	7
18. Staff stability	7
19. "Highly qualified" staff in the school	8
20. Student behavior that creates a positive learning environment	8
21. Full accreditation by the Commonwealth of Virginia (VDOE)	10
22. Overall student achievement on Reading Standards of Learning Tests	5
23. Overall student achievement on Mathematics Standards of Learning Tests	5
Total Possible Points	**171**

during an annual half-day school visit by one of several TIPA Review Teams made up of three retired Prince William County principals.

The TIPA award structure was based on a whole-school model with tiered levels of compensation. Schools were rank-ordered by their performance on the 23 TIPA School Effectiveness Criteria. The pool of award money was distributed to eligible instructional staff members until it was exhausted. Table I.2 shows the award amounts for instructional staff eligible for the incentive award.

TABLE I.2

Award Amount for Eligible Instructional Staff

Instructional Staff	Award Amount
SOL Teachers (Tier I)	$3,216
Non-SOL Teachers (Tier II)	$1,000
Elementary School Principals (Tier I)	$6,026
Middle School Principals (Tier I)	$6,575
High School Principals (Tier I)	$6,685
Elementary School Assistant Principals (Tier I)	$4,585
Middle School Assistant Principals (Tier I)	$4,747
High School Assistant Principals (Tier I)	$5,380
Other Administrators (Tier II)	$1,000

- If an administrator or teacher had one or more *Not Meeting Standard(s)* on the Summative Evaluation Report at the end of the school year, he/she was ineligible to receive the award.
- Teachers who were assigned to multiple grade levels or multiple disciplines of instruction received a pro-rated award consistent with the portion of their teaching assignment that met a Tier I and/or Tier II assignment.
- A teacher or administrator who used sixteen or more days of combined leave (sick or personal) during a school year also received a pro-rated award.

For each of the four years when performance awards were given, all eligible educators in the 13 top scoring TIPA schools on the school effectiveness criteria received their awards. More than $1,200,000 was awarded each year, with the contribution by PWCS increasing from 20% to 80% by the end of the grant period.

The Impact of TIPA's Early Challenges

The changes made to TIPA during the planning year and at the beginning of year two—which amounted to redesigning core requirements midstream—were significant enough that, in some school divisions, they might have derailed the initiative. Principals and teachers found themselves faced with a modified system of evaluation, as well as three new criteria their schools must meet in order to be eligible for performance awards. Yet even though the inclusion of student growth as a component of teacher evaluation had been poorly received in other school districts across the country, PWCS's focus on communication and professional development ensured that educators understood and accepted these changes, allowing TIPA to remain on course.

PWCS understood that for TIPA to succeed, it would be critical to sustain communication with and to provide training to principals so that they could, in turn, train their teachers in all components of the initiative. Throughout the 2011-12 school year, principals at TIPA-eligible schools participated in monthly professional development sessions based on elements of PPP and the revised TIPA School Effectiveness Criteria. This ongoing professional development particularly focused on the use of SGPs in both PPP and the TIPA School Effectiveness Criteria.

During the CTAC interviews and focus groups conducted in spring of 2012, teachers and principals revealed concerns about using student growth as part of PPP, with student growth in general and SGPs in particular still widely misunderstood. Both principals and teachers felt that including student growth in evaluations would discourage teachers from working with struggling students. However, assisting the lowest performing students to exhibit growth is a positive outcome that can benefit a teacher's evaluation. Based on these interviews, CTAC recommended further teacher training, and in year three of the initiative, PWCS began using staff from its Office of Accountability to train teachers on student growth and SGPs.

PWCS's focus on communication and professional development ensured that educators understood and accepted implementation changes, allowing TIPA to remain on course.

TIPA's Theory of Action

TIPA was designed by educators, for educators—particularly those teaching in the most challenging schools. From the initial design sessions, the planning team understood that money alone would not be sufficient to strengthen teacher practice and improve student learning. The objective was to improve student achievement in high-need schools; therefore, the educational approach in those schools must change.

TIPA's theory of action was multifaceted, but can be summarized as *building a learning environment that supports the role of school leaders, teachers, students, and parents in improving student performance.* The planning team believed that all educators need to collaborate to improve instruction and that professional development for teachers must be targeted to their specific classroom needs. Learning standards drive classroom instruction and teachers are held accountable for implementing standards-based instruction. Any performance awards earned by schools must be based on student growth and achievement but also on factors that contribute to improved achievement, such as a positive school culture, teacher leadership, and parent and student satisfaction. Finally, principals provide the leadership needed to motivate and support faculty, re-direct resources, and spearhead change.

To implement this theory of action, TIPA focused on the following strategies:

Collaboration. TIPA supported teamwork among its educators and placed significant value on professional learning communities (PLCs) as a key strategy to strengthen student outcomes. The planning team's early decision to implement a school-wide approach to performance-based compensation set the stage for educators to work together, sharing the most effective practices for helping all students master the learning standards.

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TIPA's ongoing support and professional development built the capacity of TIPA principals—an investment that ultimately helped teachers to strengthen their instruction and better serve high-need students.

TIPA Leadership

TIPA was led by the Deputy Superintendent at PWCS, who chaired the TIPA leadership team (see endnote two). The leadership team provided guidance throughout the initiative, resulting in better coordination of division services to support TIPA over the five years. Key TIPA program staff included the following:

TIPA Project Director. The focus group and survey participants all spoke to the importance of the Project Director in the overall success of TIPA. The Project Director helped direct and implement the TIPA strategies (defined above) that were integral to the success of TIPA's theory of action. She

worked closely with the 30 TIPA principals, providing leadership development and securing division resources as needed in the TIPA schools. The Project Director also managed the work of the TIPA Review Teams who visited schools to assess their attainment of specific TIPA School Effectiveness Criteria and oversaw the work of the Professional Development Coordinators. Finally, she implemented the overall performance-based compensation framework that employed 23 School Effectiveness Criteria to determine compensation awards.

TIPA Professional Development Coordinators. To implement the new approach to providing professional development to the TIPA schools, the initiative employed three Professional Development Coordinators (PD Coordinators). The work of the PD Coordinators began in the 2011-12 school year. For the 2013-14 and 2014-15 school years (the period of analysis), the PD Coordinators documented all of their professional development activities in the TIPA schools, supplying data for analysis of (1) the type of professional development activities (e.g., standards-based planning); (2) the amount of time spent in each school; and (3) the level of professional development offered (i.e., whole faculty, teams of teachers, individual teacher or principal).

The three PD Coordinators provided job-embedded professional development and support customized to the needs of each school staff. Using a "Plan, Do, Study, Act" approach, they provided standards-based professional development and follow-up to individuals and groups, including grade-level/content teams. For example, a PD Coordinator might lead a workshop for teachers at the same grade level, modeling a specific instructional strategy for teaching English language learners (ELL). On subsequent days, the PD Coordinator would observe the teachers as they tried out the new strategy in their classrooms, offering real-time feedback and coaching.

CHAPTER II

Methods of Data Collection and Analysis

CTAC's evaluation focused on measuring the impact of TIPA on student achievement and teacher retention and understanding what factors contributed to those changes. Over the five years of the initiative, CTAC employed a mixed-methods approach using both quantitative and qualitative data and methodologies to determine TIPA's effectiveness. The multiple sources of data included:

- Student achievement on state assessments, i.e., Standards of Learning (SOL) test results in the subjects of English language arts (ELA), mathematics, science, and history;
- Teacher retention data;
- Professional development data, including the amount provided to teachers;
- Surveys, interviews, and focus groups involving teachers, principals, central administrators, school board members, students, and parents; and
- School effectiveness scores for each of the 23 criteria used to determine annual performance awards.

In order to determine whether TIPA's interventions improved student learning, it was necessary to collect data both from the TIPA schools and from a set of comparison schools that did not participate in TIPA. In considering appropriate comparison schools, CTAC looked at those with similar trends in certain variables (e.g., prior SOL scores and student socioeconomic status) that were likely related to student outcomes (e.g., SOL scores), even if their student outcomes and socioeconomic status were slightly higher in the comparison schools.

As explained below, the key analytic approach of this study (i.e., Difference-in-Differences, or DiD) assumes similar outcome trends among TIPA and comparison schools. A propensity score matching technique was used to select comparison elementary schools that resembled as closely as possible the TIPA elementary schools. Because this approach was not feasible for middle and high schools due to the small number of these schools in the division and the differences among them on key variables, comparison schools were selected based on similar observable school characteristics. A total of 26 schools were identified as comparison schools, including 19 elementary schools, five middle schools, and two high schools.

Student Achievement Analysis[4]

To better understand the impact of the initiative on student learning, student achievement data (i.e., SOL test results in ELA, mathematics, science, and history) were collected and analyzed.

Descriptive statistical analysis was conducted to summarize the overall trends in student outcomes for the TIPA schools. This served as a useful starting place for understanding the experiences of the 30 TIPA schools.

Descriptive analysis has the potential to be misleading as changes may result from a variety of factors unrelated to TIPA. To address this concern, the CTAC team employed a Difference-in-Differences (DiD) model to directly estimate the impact of the TIPA initiative. The DiD model controls for observable and measurable student and teacher characteristics that may have contributed to student growth, something the descriptive analysis does not accomplish. In addition, DiD allows for a higher level of "control" over time-invariant, unobservable and immeasurable factors, such as a student's innate ability. Nevertheless, because the selection of TIPA schools was made by PWCS stakeholders, it may be that TIPA and comparison schools still differ in unobserved ways that may cause TIPA schools to produce larger or smaller gains independent of TIPA. Although the inclusion of comparison schools mitigated this possibility, caution is still warranted when interpreting the findings.

Equation (1) provides the basic structure of the DiD model in estimating the effect of the TIPA initiative on student achievement.[5]

$$Y_{ist} = \beta_0 + \beta_1 (TIPA_s) + \beta_2 (Post2011_t) + \beta_3 (TIPA_s \times Post2011_t) + X_{ist} + e_{ist} \qquad (1)$$

Here Y_{ist} is the standardized SOL test score of student i in school s at time t. This outcome is modeled as a function of the following variables: variable $TIPA_S$, which is coded 1 if a student is in a TIPA school and 0 otherwise; variable $Post2011_t$, which is coded 1 if the observed test score comes from the post-implementation period of TIPA and 0 otherwise; and an interaction term of $TIPA_S$ and $Post2011_t$. The DiD estimate of the effect of the TIPA initiative is measured by β_3, which

identifies the average effect on student achievement in TIPA schools following the announcement of the TIPA initiative. In addition, a vector of student-level covariates X_{ist} is included to control any observed differences in the TIPA schools and the comparison schools. Finally, because the treatment of interest (i.e., being a TIPA school versus being a comparison school) was assigned at the school level, standard errors are clustered on schools.[6]

Teacher Retention Analysis[7]

To better understand the impact of the initiative on teacher transfer and exit decisions, the study team collected and analyzed teacher data (i.e., teachers who transferred across schools or left PWCS). Descriptive statistical analysis was conducted to summarize the overall trends in teacher outcomes for the TIPA schools.

As described in the previous section, a DiD approach was undertaken to address possible outcomes that might actually reflect changes that could not be attributed to TIPA. The DiD model controls for any observable and measurable teacher characteristics, as well as time-invariant unobservable factors that may have contributed to teacher attrition/retention outcomes. The same limitations with the DiD approach (as previously identified) apply to this analysis.

Professional Development Analysis

CTAC analyzed whether there was a relationship between the amount of professional development a TIPA teacher received (as provided by the PD Coordinators) and the achievement of the teacher's students. Multiple regression modeling was used to estimate the relationship between professional development and student achievement.

Surveys

Throughout TIPA, CTAC used a variety of methods to examine the perceptions of stakeholders on the five key strategies of the initiative: collaboration, real-time professional development, standards-based educator evaluation, the 23 school effectiveness criteria, and school leadership. Beginning in 2011-12, CTAC administered surveys each fall to central administrators, principals, teachers, teacher association leaders, and parents. Survey questions were grouped thematically, with each grouping referred to as a scale.

Six scales were used in the 2011-12 and 2012-13 survey administrations, addressing the following themes:

A. School Conditions and Culture

B. Opportunities for Professional Improvement and Leadership

C. Content of Professional Development

D. Professional Performance and Evaluation

E. Performance-Based Compensation

F. Knowledge Regarding the TIPA Initiative

For the last two survey years (2013-14 and 2014-15), the Opportunities for Professional Improvement and Leadership scale was discontinued. For those two years, CTAC surveyed respondents on the impact of the PD Coordinators in the TIPA schools over that time period.

Respondents registered their level of agreement or disagreement with each statement using a five-point Likert scale, for which a "5" represents "strongly agree" and "1" represents "strongly disagree." The survey also included an open-ended question inviting respondents to share comments or concerns about the initiative.

Perceptions of educators in the 30 TIPA and 26 comparison schools were gathered in the fall of four of the five years of the TIPA initiative (i.e., 2011-12, 2012-13, 2013-14, and 2014-15). Over the course of the initiative more than 5,000 survey responses were analyzed. An average of 1,400 staff participated in the survey each year, with an average response rate of 44.5%.

As shown in Table II.1, in all years, the number of respondents for the TIPA schools were consistently higher than those for the comparison schools. Classroom teachers comprised the largest group of respondents in both school groups, with "other" certified staff making up the second largest group.

TABLE II.1

Number of TIPA Educator Survey Respondents*

	2011–12	2012–13	2013–14	2014–15	Total
TIPA Schools	1,020 (55.9%)	608 (62.0%)	761 (64.4%)	689 (67.6%)	3,078 (61.5%)
Comparison Schools	805 (44.1%)	372 (38.0%)	420 (35.6%)	330 (32.4%)	1,927 (38.5%)
Overall	**1,825**	**1,195**	**1,297**	**1,155**	**5,472**

*The numbers of educators do not add up to the totals in this table because some respondents did not indicate their school and could not be assigned to the appropriate category. The percentages cited are percentages of total respondents who indicated their school.

Parents were also invited to share their perspectives on the TIPA initiative. They could participate either online or using a hard copy of the survey, both of which were available in English and Spanish. The parent survey questions focused on three survey scales: School Conditions and Culture, Performance-Based Compensation, and Knowledge Regarding the TIPA Initiative. An open-ended question was also included in the parent survey.

Cross-tabulations and figures were used to describe the participants' perceptions as recorded by the surveys. *T*-tests were conducted to examine the statistical significance of the differences across groups. In addition, factor analyses were conducted and Cronbach's alpha was calculated to establish the factor structure of the survey and the internal consistency of the survey items within each scale.

Interviews and Focus Groups

Each year in early April, the CTAC study team conducted confidential interviews and focus groups with dozens of educators and stakeholders in the division to explore the survey responses in greater depth. Over the course of the initiative, more than 630 individuals in various roles participated, including school board members, central administrators, school principals, classroom teachers, teacher association leaders, parents, and students. Table II.2 provides a summary of the interviewees by role.

TABLE II.2

Number of Interview and Focus Group Participants,* 2010–2015

Role or Role Group	2010–11	2011–12	2012–13	2013–14	2014–15
Board of Education	5	8	3	1	2
Superintendent	1	1	1	1	1
External/Business Leaders	4	3	N/A	N/A	N/A
Central Office Administrators	9	8	6	3	2
Curriculum and Instruction Administrators	12	8	7	6	5
Principals: TIPA Individual Interviews	30	30	11	8	9
Principals: Non-TIPA Individual Interviews	24	11	N/A	N/A	N/A
Principals: Non-TIPA Focus Groups	N/A	21	9	14	9
Teacher Association Leaders	4	2	1	3	3
Teachers: TIPA Focus Groups	27	30	26	30	32
Teachers: Non-TIPA Focus Groups	17	10	N/A	N/A	N/A
Parents: Focus Groups	23	30	11	10	3
Students: Focus Groups	25	21	19	15	19
Total Participants	**181**	**183**	**94**	**91**	**85**

*Some participants served in multiple roles; however, this is an unduplicated count.

Individual interviews took approximately one hour and focus groups ninety minutes. CTAC regularly reviewed and revised interview and focus group protocols in response to the previous years' findings and shifting local contexts. Participants were selected by PWCS and included teachers and principals representing a variety of school levels and subject areas.

All of the interview and focus group responses were transcribed in real-time in as much detail as possible and analyzed using NVivo 9.0 software. The analysis focused on such major themes as professional development, school climate and conditions, and performance-based compensation, with responses to each theme analyzed separately across all interviews and focus groups.

TIPA School Effectiveness Criteria Scores

Because one of TIPA's primary goals was to increase the effectiveness of high-need schools, the planning team developed a set of 23 criteria by which to measure performance and determine eligibility for awards (see Table I.1 in Chapter I for a full list of criteria). The 23 criteria carried a maximum score of 171 points.

To understand the distribution of the TIPA awards and the predictive power of the 23 criteria, CTAC used the school effectiveness score data from 2011-12 to 2014-15 and examined the following questions:

1. How has the TIPA award been distributed across the years and across the TIPA schools?
2. How have the school effectiveness scores changed across the years and across the TIPA schools?
3. Which of the 23 school effectiveness criteria best predicts whether a school receives a performance award?

Answers to these questions are discussed in Chapter IV and in Appendix D.

Limitations of the Data and Analysis

To reiterate, while the DiD analyses on student achievement suggest statistically significant and substantively meaningful relationships, they are still susceptible to sources of bias. This is because it is difficult to be sure that *observationally*-similar schools are *actually* similar. For example, while we do control for all available confounders such as changes in student demographics and designations in these schools over time, other potentially relevant factors—such as student mobility patterns and principal leadership characteristics—were not available to us to explicitly control for in the DiD model.

In addition, although CTAC collected and analyzed educators' survey responses in both TIPA and comparison schools across the years, the response rates by year varied. And because the surveys were anonymous, it cannot be determined whether the same teachers and principals responded from one year to the next, leaving open the possibility that some of the changes observed are functions of different samples in different years. Parent surveys have the same limitation.

In spite of these limitations, however, consistent findings emerge from the student achievement and teacher retention analyses, survey responses, interviews, focus groups, and school effectiveness ratings. The findings delineate a clear picture of the strengths and challenges of the TIPA initiative.

CHAPTER III

Quantitative Analyses of TIPA Impacts[8]

The student achievement and teacher retention analyses were based on TIPA and comparison school data gathered from the 2008-09 school year through the 2014-15 school year. This provided three years of pre-TIPA data and four years of post-TIPA data (i.e., data collected during the initiative). The professional development analysis used data logged by the PD Coordinators in the 2013-14 and 2014-15 school years.

Major Findings

Student Achievement

Descriptive statistical results show that the SOL growth rate of students in TIPA schools was greater than the growth rate of students in comparison schools during the initiative. As Figure III.1 illustrates, scores began to increase in all four core subjects in the TIPA schools with the first year of full implementation of the initiative (2011-12). Scores also increased in three of the four subjects in the comparison schools, but to a lesser extent. As a result, SOL test achievement gaps between the TIPA and comparison schools shrank in all four subjects, most prominently in mathematics.

The Difference-in-Differences (DiD) model directly estimates the impact of the TIPA initiative. The results indicate that TIPA was associated with a

statistically significant increase in student achievement in mathematics ($p < 0.01$) and science ($p < 0.05$). In ELA and history, the increase was also statistically significant, but at the $p < 0.10$ level.

By subject, TIPA bolstered student achievement over the four-year period as follows:

- For mathematics, the achievement gain was 11% of a standard deviation. Compared with the comparison schools, TIPA contributed approximately 2 to 4 additional months of student achievement growth.[9]
- For science, the achievement gain was 8.1% of a standard deviation. Compared with the comparison schools, TIPA contributed approximately 2 to 4 additional months of student achievement growth.
- For ELA, the achievement gain was 3.6% of a standard deviation. Compared with the comparison schools, TIPA contributed approximately 1 to 2 additional months of student achievement growth.
- For history, the achievement gain was 6.7% of a standard deviation. Compared with the comparison schools, TIPA contributed approximately 2 to 3 additional months of student achievement growth.

During the initiative, SOL scores increased faster in TIPA schools than in comparison schools in all four subjects.

Teacher Retention

CTAC compared the number of TIPA teachers who transferred out of TIPA schools to the number of comparison school teachers who transferred into TIPA schools. The data show that teachers in the comparison schools were slightly more likely to opt into TIPA schools once the initiative began as compared to teachers opting to transfer out of TIPA schools.

However, the results of the DiD model indicate no direct impact of TIPA on teacher retention in the 30 TIPA schools. This finding is consistent with the perceptual data presented in Chapter IV, where results indicate that most educators did not believe that TIPA would be a defining factor in whether educators elected to stay at or transfer to high-need schools.

Real-Time Professional Development

A strategy in TIPA's theory of action was to change the way professional development was delivered to teachers by providing on-site and readily-accessible professional development to all teachers. TIPA employed three PD Coordinators to implement this approach. For TIPA teachers, the PD Coordinators provided more than 1,300 one-on-one coaching sessions during 2013-14 and 2014-15, with an average duration of 29 minutes. During the same period, a total of 1,272 group coaching sessions were held, with an average length of 60 minutes and an average of 8 participants per session.

The results from multiple regression analysis show a nonlinear relationship between the amount of time a teacher spent with PD Coordinators and the achievement of his or her students. At one hour, the positive relationship between professional development and student achievement reaches its

maximum. That is, an hour of professional development is associated with an improvement of 7.6% of a standardized deviation unit in student achievement.

TIPA teachers and principals felt positively about the professional development provided by the PD Coordinators, as Chapter IV discusses in detail. However, the estimated relationship between professional development and student achievement does not have as strong a causal warrant as the DiD model in studying the effect of TIPA. Although the multiple regression model controls for observed differences between teachers, there are reasons to believe many unobserved differences were left uncontrolled, such as teachers' self-selection in contacting the PD Coordinators for assistance or the willingness of school principals to utilize the PD Coordinators.

Student Achievement Analysis

Descriptive Statistics

The descriptive statistics are a useful starting place for understanding the experiences of the 30 TIPA schools. To determine whether students in TIPA schools had a growth rate higher or lower than their observationally similar peers in comparison schools, we first describe average student outcomes (i.e., measured in terms of standardized mean SOL scores) by subject over time.[10] Plots of these average scores are shown in Figure III.1 which contrast the changes in student outcomes for the TIPA and comparison schools.

Figure III.1

Mean SOL Scores of TIPA Schools vs. Comparison Schools, by Subject

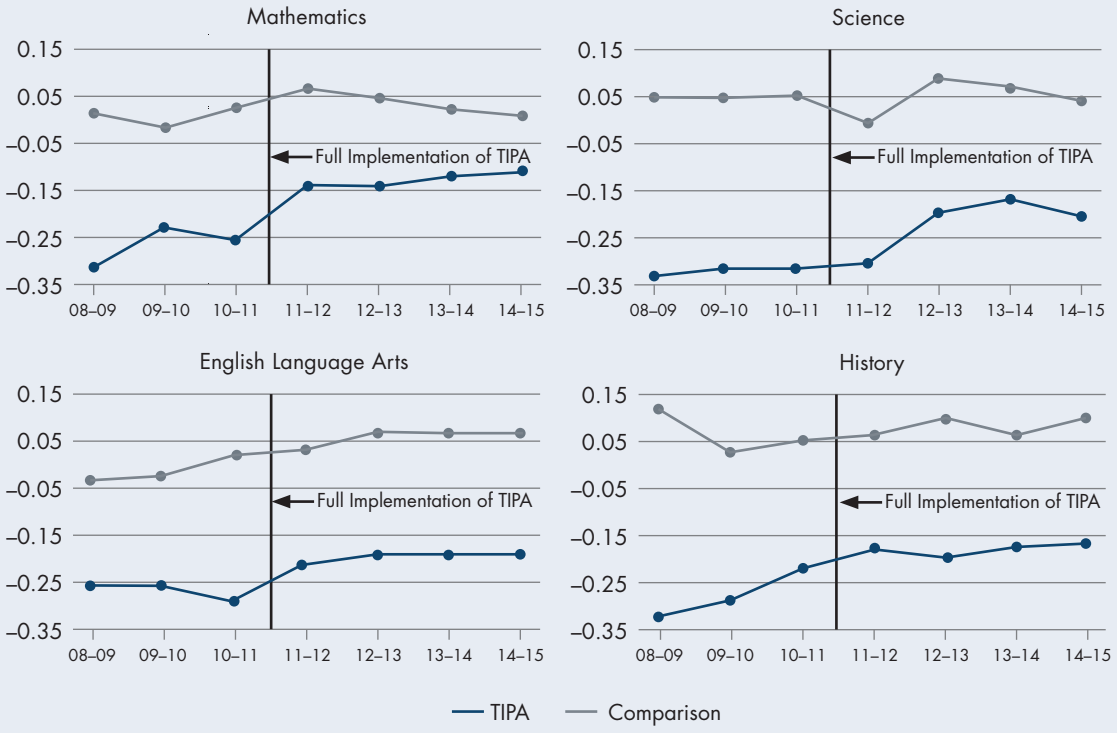


Figure III.1 indicates some systematic differences between TIPA and comparison schools prior to the full implementation of the TIPA initiative in school year 2011-12. The changes in SOL scores were relatively flat over time in both TIPA and comparison schools in the pre-TIPA period. SOL scores were lower than average in the TIPA schools (see the negative mean scores in Figure III.1), while scores in the comparison schools tended to be near or above the division's average. This is to be expected, since TIPA schools were selected specifically because they served students with the lowest performance in the division, with at least 50% of their students qualifying for free or reduced-price meals. In the comparison schools fewer than 50% of students were eligible for free or reduced-price meals.

More importantly, Figure III.1 shows that, in all four subjects, scores increased in the TIPA schools beginning in the first year of full implementation (2011-12). Scores also increased in three of the four subjects in the comparison schools, but to a lesser extent. In mathematics, the achievement gap between TIPA and comparison schools shrank significantly over the course of the initiative. Achievement gaps also shrank in science, ELA, and history, although the changes were not as striking as in mathematics.

Difference-in-Differences Model

Table III.1 contains the estimated results for all TIPA schools by subject. As shown in the mathematics column, the *Constant*, 0.046, is the predicted mean mathematics SOL score of a typical comparison school student in the pre-TIPA period (2008-09 through 2010-11)—the estimate is not statistically significant, suggesting that the mathematics achievement of comparison schools was not statistically distinguishable from that of the division as a whole in the pre-TIPA period.[11] The coefficient of *TIPA*, –0.226, indicates that a typical TIPA school student scored

TABLE III.1

Estimates of the Impact of TIPA on Student Achievement, by Subject

	Mathematics	Science	English Language Arts	History
TIPA (TIPA schools in the pre-period)	-0.226*** (0.047)	-0.255*** (0.034)	-0.194*** (0.035)	-0.231*** (0.037)
Post 2011 (Comparison schools in the post-period)	0.060*** (0.014)	0.047** (0.014)	0.100*** (0.013)	0.036 (0.019)
Post 2011 x TIPA (TIPA schools in the post-period)	0.110*** (0.027)	0.081** (0.030)	0.036* (0.021)	0.067* (0.035)
Constant (Comparison schools in the pre-period)	0.046 (0.032)	0.068** (0.023)	0.021 (0.028)	0.087** (0.029)
No. of Observations	202,406	101,606	199,322	150,931
Covariates	Y	Y	Y	Y

***Statistically significant at $p < 0.01$; **at $p < 0.05$; *at $p < 0.10$. The estimated coefficients of TIPA and its interaction term are all relative to the coefficients of comparison schools.

statistically significantly lower than a typical comparison school student. The coefficient of *Post 2011* captures the predicted change in mathematics scores for the comparison schools from the pre- to post-TIPA period (the years after 2010-11)—a statistically significant estimate of 0.06 indicates that students of comparison schools registered a 0.06 standard deviation unit growth.

The key coefficient of interest is *Post 2011* x *TIPA*, and it captures TIPA's independent impact on student achievement during the initiative. A statistically significant estimate of 0.11 suggests that TIPA led to an improvement of 11% of a standard deviation in student achievement in mathematics over the four-year period. Compared with the comparison schools, TIPA contributed approximately 2 to 4 additional months of student achievement growth in mathematics.

The remaining columns present the results for science, ELA, and history, respectively. All of the coefficients on the interaction term *Post 2011* x *TIPA* are positive and statistically significant, with $p < 0.05$ for science and $p < 0.10$ for ELA and history. For science, the estimated effect of TIPA was 0.081 of a standard deviation. Compared with the comparison schools, TIPA contributed approximately 2 to 4 additional months of student achievement growth in science.

For ELA, the estimated effect of TIPA was 0.036 of a standard deviation. Compared with the comparison schools, TIPA contributed approximately 1 to 2 additional months of student achievement growth in ELA.[12]

For history, the estimated effect of TIPA was 0.067 of a standard deviation. Compared with the comparison schools, TIPA contributed approximately 2 to 3 additional months of student achievement growth in history.

In considering months of student gain, it is important to bear in mind that the numbers do not represent findings for the division as a whole. The statistical analysis is confined to a set of relatively high-need schools—the TIPA schools and the comparison schools.

Teacher Retention Analysis

To assess whether TIPA had an impact on teachers electing to stay or exit a TIPA school and if TIPA attracted teachers from comparison schools, CTAC separated teacher transfers into two categories: TIPA teachers who transferred *out of* TIPA schools and comparison school teachers who transferred *into* TIPA schools (Table III.2). Although the evidence is not conclusive, the findings indicate that teachers in the comparison schools became more likely to opt into TIPA schools after the initiative began. As Table III.2 also shows, in the three years prior to the implementation of TIPA, about 24% of transferring teachers in comparison schools opted to move into TIPA schools. However, in the four years that TIPA was in place, the percentages increased from 24% to 32%, 40%, 35%, and 26%, respectively. These data must be interpreted with caution, but one explanation is that teachers may have been drawn to TIPA schools by the chance to participate in one or more of the initiative's strategies (e.g., a collaborative, school-based approach to performance-based compensation, real-time professional development, and/or strong school leadership).

TABLE III.2

Number and Percentage of Teachers Who Transferred Into or Out of TIPA Schools and Comparison Schools

	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
TIPA Schools							
Transferred into Another TIPA School	16 (35.6%)	17 (36.2%)	23 (29.5%)	17 (37.0%)	22 (36.1%)	25 (34.7%)	15 (26.3%)
Transferred out to a Non-TIPA School	29 (64.4%)	30 (63.8%)	55 (70.5%)	29 (63.0%)	39 (63.9%)	47 (65.3%)	42 (73.7%)
Total Transfers	**45 (100%)**	**47 (100%)**	**78 (100%)**	**46 (100%)**	**61 (100%)**	**72 (100%)**	**57 (100%)**
Comparison Schools							
Transferred into Another Non-TIPA School	17 (65.4%)	24 (72.7%)	70 (89.7%)	25 (67.6%)	18 (60.0%)	28 (65.1%)	39 (73.6%)
Transferred out to a TIPA School	9 (34.6%)	9 (27.3%)	8 (10.3%)	12 (32.4%)	12 (40.0%)	15 (34.9%)	14 (26.4%)
Total Transfers	**26 (100%)**	**33 (100%)**	**78 (100%)**	**37 (100%)**	**30 (100%)**	**43 (100%)**	**53 (100%)**

TABLE III.3

Estimates of the Impact of TIPA on Teacher Outcomes

	Left PWCS	Transferred Schools
TIPA (TIPA schools in the pre-period)	0.024* (0.010)	0.010 (0.010)
Post 2011 (Comparison schools in the post-period)	0.016* (0.007)	-0.010 (0.006)
Post 2011 x TIPA (TIPA schools in the post-period)	-0.003 (0.012)	0.008 (0.011)
Constant (Comparison schools in the pre-period)	0.116*** (0.004)	0.053*** (0.006)
No. of Observations	28,289	25,041
Covariates	Y	Y

***Statistically significant at $p < 0.01$; **at $p < 0.05$; *at $p < 0.10$. The estimated coefficients of TIPA and its interaction term are all relative to the coefficients of comparison schools.

Difference-in-Differences Model

Table III.3 presents the DiD results for the two relevant teacher outcomes: the probability of teachers leaving PWCS at the end of each school year, and the probability of teachers transferring across schools. The result for "Left PWCS" indicates the coefficient estimate *Constant* equals a statistically significant 0.116, suggesting that the typical teacher at a comparison school had a probability of 11.6% of leaving in the pre-TIPA period (2008-09 through 2010-11). The coefficient on *TIPA* equals 0.024 and is statistically significant at $p < 0.10$, indicating that the typical teacher at a TIPA school was more likely than his or her peer at a comparison school to leave the division in the pre-TIPA period. The coefficient on *Post 2011* captures the predicted change in the probability of leaving for a typical comparison school teacher—a statistically significant estimate of 0.016 indicates a predicted increase in the post-TIPA period.

The key parameter of interest is the coefficient on the interaction term *Post 2011* x *TIPA*, which gives the estimated relationship of TIPA with a teacher's departure from PWCS. A statistically non-significant estimate of -0.003 suggests no relationship between TIPA and teacher retention (as measured by leaving PWCS). The result for the other outcome, teachers transferring schools, also indicates no relationship, with an estimate of 0.008 which is not statistically significant.

The "no relationship" estimates of TIPA with teacher attrition/retention outcomes, while consistent with CTAC's survey and interview results, should be interpreted with caution. On the one hand, results from the descriptive analysis suggest that teacher outcomes at both TIPA and comparison schools fluctuated in ways that do not correspond with the goals of TIPA. It is possible the estimates were distorted by factors not captured by the model, such as school leadership changes that may have impacted teachers' decisions to remain or leave a specific school. On the other hand, only very limited teacher characteristics are controlled for due to data limitations, which could further distort the estimates.

Professional Development Analysis

Descriptive Statistics

Between October 2013 and June 2015, data was collected on the professional development provided by the three PD Coordinators. This data included the frequency, length, and content of coaching activities throughout these two years. The distribution of coaching activities is presented in Figure III.2, where the number of one-on-one and group coaching sessions is broken down by length of session. A total of 1,338 one-on-one coaching sessions took place, with an average session length of 29 minutes. A total of 1,272 group coaching sessions took place, with an average length of 60 minutes and an average of 8 participants per session.

As Figure III.3 shows, the one-on-one and group sessions covered a total of 19 topics. Among these, standards-based planning, active learning strategies, and data analysis were the most commonly covered in the one-on-one sessions, with a total of 338, 381, and 200 sessions, respectively. Most of the group coaching sessions were devoted to improving PLC effectiveness (418), standards-based planning (210), data analysis (154), and school improvement planning (147). Most of the coaching

Figure III.2

Number of One-on-One and Group Coaching Sessions by Length of Session

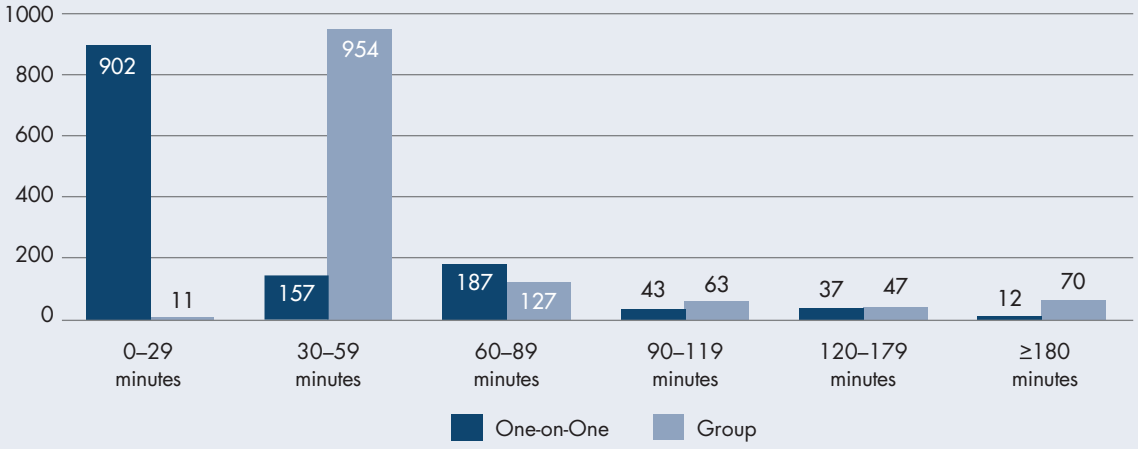
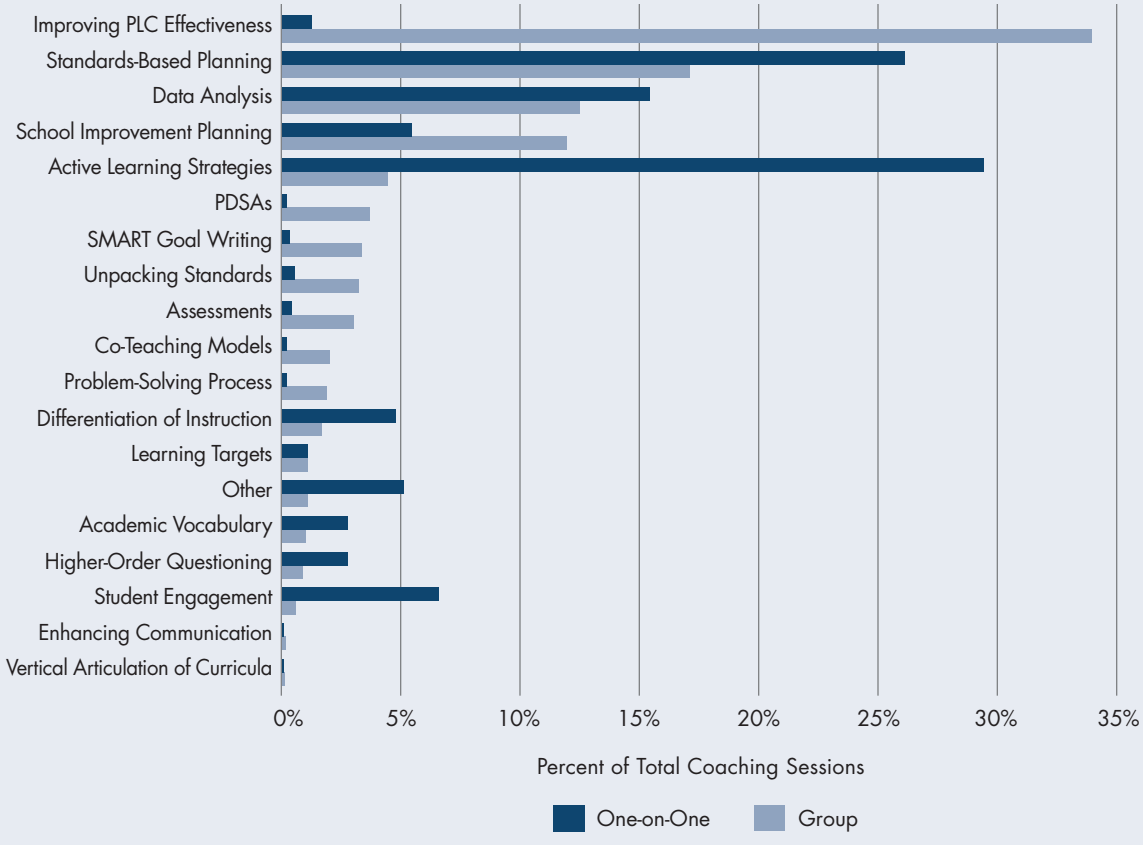


Figure III.3

Topics of Focus by PD Coordinators in One-on-One and Group Coaching Sessions



topics were relevant to the seven performance standards used by PWCS in its evaluation systems; only 294 of the sessions were not related to one of the standards.

When aggregating data to the school level, a positive association emerged between total hours of coaching and changes in SOL scores. As shown in Table III.4, the schools with fewer hours of professional development, on average, showed less improvement in scores than the schools with more hours of professional development. This applies to all four subjects. However, there could be confounding factors driving the results of these descriptive statistics, a concern addressed under *Multiple Regression Model*.

TABLE III.4

Amount of Professional Development and Corresponding Changes in SOL Scores

	Coaching in TIPA Schools		Changes in SOL Scores from Spring 2013 to Spring 2015			
	Total Hours	Average Length in Minutes	Mathematics	Science	English Language Arts	History
Schools with the Least Professional Development						
School A	0.7	20.0	0.190	0.198	-0.630	0.210
School B	3.7	55.0	0.264	-0.026	0.103	0.162
School C	6.2	46.3	-0.208	-0.312	-0.127	0.262
School D	6.8	45.0	-0.449	-0.454	-0.152	-0.633
School E	7.2	47.8	-0.215	-0.188	-0.105	-0.118
Schools with the Most Professional Development						
School F	33.6	77.5	0.277	0.128	0.100	0.121
School G	36.8	20.3	-0.067	-0.186	-0.201	-0.182
School H	38.3	21.7	0.520	0.200	0.355	0.130
School I	47.6	52.9	-0.129	0.032	-0.094	-0.262
School J	54.7	74.5	0.087	-0.040	0.012	0.112

Multiple Regression Model

In order to examine more rigorously the relationship between professional development and student growth within the TIPA schools in the 2013-14 and the 2014-15 school years, CTAC linked data about specific teachers with their student achievement scores, employing the multiple regression model in Equation (2). The sample of teachers was limited to (a) those who received professional development in school years 2013-14 and/or 2014-15; and (b) those for whom student SOL test scores were available for both 2013-14 and 2014-15 (i.e., Spring 2014 and Spring 2015), allowing us to calculate test score growth.

$$\Delta Y_{ij} = \beta_0 + \beta_1 \mathrm{PD}_j + \beta_2 PD_j^2 + \beta_3 X_{ij} + e_{ij} \qquad (2)$$

ΔY_{ij} is the growth in SOL test score of student i of teacher j in school year 2014-15. PD_j measures the extent to which teacher j participated in professional development activities during the period when professional development was provided (i.e., school years 2013-14 and 2014-15). PD_j is constructed by adding the total number of minutes a teacher attended either one-on-one coaching sessions or group sessions. β_1, the coefficient of PD_j, captures the difference in student growth for teachers who received more or less professional development. β_2, the coefficient of PD_j^2, captures the nonlinearity of the professional development's effect on student growth. As with years of teacher experience, the marginal return of one more unit of professional development decreases following the increase of professional development. In addition, a vector of variables X_{ij} is included to control for factors that affect student growth, such as a teacher's level of experience and education.[13]

The estimation results of Equation (2) are reported in Table III.5. In Column (1), no controls on experience and education are included, and the estimated coefficient of professional development is not statistically significant. In other words, there is no statistically significant relationship, when there are no controls on experience and education, between the amount of professional development a teacher received from the PD Coordinators and an increase in the students' SOL scores for that teacher.

TABLE III.5

Estimates of the Impact of TIPA Professional Development on Student Achievement

	(1) No Controls	(2) With Experience Control	(3) With Experience and Education Controls
Professional Development	0.110 (0.070)	0.153** (0.077)	0.156** (0.073)
Squared Professional Development	-0.058* (0.030)	-0.077** (0.031)	-0.085** (0.031)
Experience		0.017** (0.007)	0.015* (0.007)
Squared Experience		-0.001** (0.001)	-0.001** (0.001)
Degree Dummies	No	No	Yes
No. of Observations	2,590	2,590	2,590

***Statistically significant at $p < 0.01$; **at $p < 0.05$; *at $p < 0.10$.

However, as stated earlier, the estimated coefficient may be confounded by the effect of other factors such as experience. For example, if teachers with few years of experience who yield low student growth are highly correlated with high professional development dosage, the professional development's effect could be significantly underestimated in Column (1), since, by leaving experience uncontrolled, the coefficient of professional development captures the effect of inexperience.

Column (2) controls for teacher experience, which has led to statistically significant estimates on both professional development and squared professional development. This implies a nonlinear relationship between the amount of time a teacher spends with the PD Coordinators and the achievement of his or her students. When the amount of professional development provided to a teacher reaches one hour

(the average amount under TIPA) the positive relationship between professional development and student achievement reaches its maximum, i.e., an hour of professional development is associated with an improvement of 7.6% of a standardized deviation unit in student achievement. As the amount of professional development provided to the teacher increased beyond one hour, the impact on student achievement diminishes.

Column (3) controls for both teacher experience and education level, with similar estimated results of professional development on student achievement. It is worth noting that after controlling for education level the effect of experience becomes smaller, a sign that experience and education level tend to be positively correlated in TIPA schools.

One important caveat concerning the regression analysis: the results are sample specific and may not be extrapolated to all the teacher participants in TIPA schools. Out of 8,532 student records that are linked with teacher participants, only 2,591 were included in the regression due to missing data on student growth. In addition, the estimated relationship between professional development and student achievement does not have as strong a causal warrant as the DiD model in studying the effect of TIPA. Assuming there is no systematic difference between teachers who participated in more professional development and those who participated in less, the estimated results can be interpreted as the causal effect of professional development. Although Equation (2) attempts to control for observed differences between teachers who engaged in professional development in greater or lesser amounts, there are reasons to believe many unobserved differences were left uncontrolled.

For example, the PD Coordinators used a variety of methods to select teachers to work with, including: requests from the principals and instructional coaches, examining teacher-student outcome data, and/or a request by the teacher. The selection process could have had an impact on this analysis.

In light of these limitations, one should refrain from drawing strong conclusions from this regression analysis; meanwhile, Chapter IV examines survey, interview, and focus group feedback from teachers, principals, and central administrators concerning the value added to teacher practice by the PD Coordinators.

CHAPTER IV

Stakeholder Perceptions of TIPA Strategies

PWCS wanted to understand the impact of the set of specific strategies TIPA employed to improve student achievement. Therefore, it was important from the outset of the initiative to understand how various stakeholders—school board members, central administrators, principals, teachers, teacher association leaders, parents, and students—perceived the interventions at TIPA schools.

CTAC conducted surveys, interviews, and focus groups with stakeholders at both TIPA and comparison schools during each year of the initiative. By presenting respondents with a set of questions directly related to the strategies used to implement TIPA's theory of action, CTAC hoped to flesh out the student assessment data discussed in Chapter III. For if the student assessment data tell us *what* the overall impact of TIPA was, the perceptual data gathered through surveys and interviews helps address *why* certain outcomes occurred.

PWCS sought feedback on the following TIPA strategies:

- Increase *collaboration* among educators to strengthen instruction and improve student outcomes.
- Provide *real-time professional development* to teachers with a focus on immediate classroom needs.

- Implement a continuous-improvement model, *standards-based educator evaluation system* that focuses on the relationship between educator performance and improved student learning.
- Employ *multiple school effectiveness criteria* to improve school performance, with a significant emphasis on student growth and achievement, educator development, improvement in school conditions and culture, and student and parent satisfaction.
- Strengthen *leadership* by supporting principals, who can in turn support teachers to improve their practice and better serve high-need students.

While it is not possible to isolate the relationship between any single TIPA strategy on increases in student achievement, it appears that their work in tandem—work that was consistently supported by local educators throughout the five-year initiative—yielded some noteworthy effects.

Appendix B provides an overview of the survey results for the overall TIPA initiative. This chapter focuses on the strategies employed by TIPA to reach its goals.

Findings

Strategy 1: Collaboration

A main objective of the TIPA planning team was to foster strong educator collaboration rather than competition. Through its surveys, interviews, and focus groups, CTAC queried stakeholders on the success of this objective.

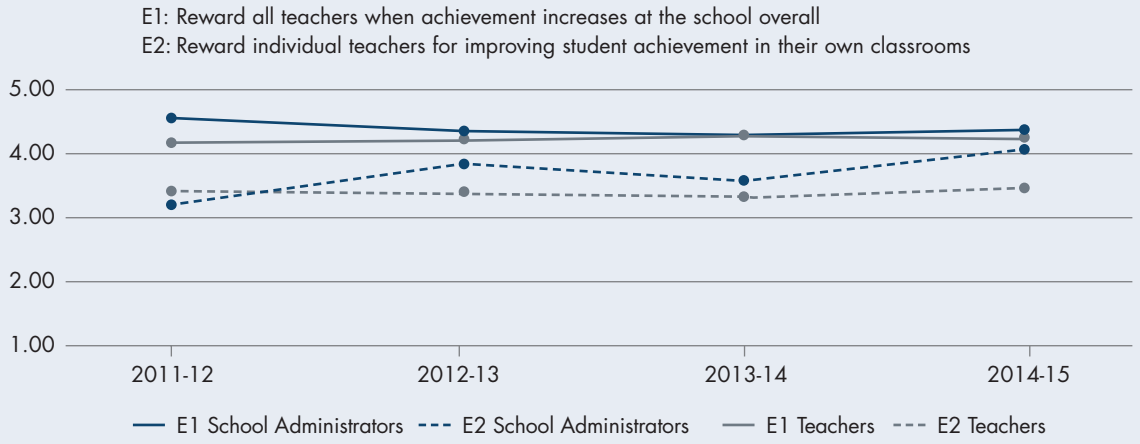
A key concern of the TIPA planning team was the impact of a performance-based compensation initiative on the ability of educators working collaboratively to improve student achievement. Implementing a school-based approach to performance-based compensation was selected to encourage collaboration among educators at each participating school.

The survey specifically asked educators[14] their views on a school-wide versus individual teacher approach to performance-based compensation. Specifically, the survey asked if all teachers should be rewarded when achievement increases in the school overall or only those individual teachers improving student achievement in their own classrooms. At the beginning of the initiative, both TIPA teachers and administrators were highly in favor of rewarding all teachers when student achievement increased at the school overall. The level of agreement changed little over time, with four-year average mean scores of 4.20 and 4.45 for teachers and administrators, respectively. This presented a contrast with agreement around the idea of rewarding individual teachers, which was low for both groups at the beginning but increased over time; the four-year average mean scores for this subscale were at the much lower level of 3.53 and 3.70 for teachers and administrators, respectively, as shown in Figure IV.1.

The school-wide approach to performance-based compensation received strong support and increased collaboration among educators.

Figure IV.1

TIPA School Administrator and Teacher Perceptions of Awards for Teachers



The school-wide approach to performance-based compensation received strong support over the course of the initiative and brought about increased collaboration among educators, a change which focus group and interview participants perceived positively:

> *With the compensation, they have moved from an isolation model to collaboration formed by a Professional Learning Community. Everyone should be compensated. We do this, we get rewarded. Classroom teachers are a resource with the focus on collaboration and not isolation.*
>
> —Principal [15]

> *TIPA does not make teachers better. However, inadvertently it has influenced teachers to become more team minded and to collaborate about the program and other things. We are almost in shock with the adjustment to sitting down and having a focused conversation about our classrooms.*
>
> —Teacher

> *Conferences [among teachers] are held as normal parts of teaching now. They were suspicious at first.*
>
> —Principal

TIPA fostered many types of collaboration. School leaders talked about how the increased collaboration was manifested through a greater focus on student outcome data:

> *The conversations around the data and looking at the rubric, planning next steps, and the practices of coaching, consulting, and collaborating are all examples of TIPA's impact.*
>
> —Principal

> *Since there is a targeted focus on what is happening in each classroom—student outcomes—there is a better understanding of what is needed to improve, there is more individualized and targeted instruction and, as a result, you are seeing improvement.*
>
> —Central Administrator

"The practices of coaching, consulting, and collaborating are all examples of TIPA's impact."

> *We are a true data decision-making school. We dig deep with it and have some monitoring in place to check use from time to time. I love the data piece for it makes you push the envelope. As discussions are held with teachers and groups of teachers, information is broken down to reflect on particular units, particular kids, and plans to improve not only individual teachers but the whole school. Data guides us to practices, assessment ideas, and we employ Response to Intervention. Development of a 90-day plan is based on mid-year data and includes standards and specific plans for instructional content and delivery.*
>
> —Principal

According to interviews, TIPA also had a positive impact on strengthening coordination among operating and support systems across PWCS. Several central administrators commented on the increased collaboration among division systems:

> *The system is site-based and TIPA helped align and create consistency.*
>
> —Central Administrator

> *The collaboration has improved among the division systems. The TIPA Program Director has been the driving force in strengthening collaboration.*
>
> —Central Administrator

Other central administrators spoke favorably of TIPA's sustained focus on the school improvement model and the alignment of professional development with school needs. Speaking to the positive communication between TIPA schools and the division's curriculum department, one central administrator noted that there was now "reciprocal responsibility between the central administration and the schools."

Strategy 2: Real-Time Professional Development

A strategy in TIPA's theory of action was to change the way professional development was delivered to teachers by providing on-site and readily-accessible professional development to all teachers. TIPA employed three PD Coordinators to implement this approach. TIPA was designed to help teachers address instructional issues with their present students in real-time, eschewing the standard PD approach of developing lesson plans for "average" students in a given grade.

Educators in the TIPA schools were more satisfied than their peers in the comparison schools with the professional development made available to them. Educators in the TIPA schools indicated that the professional development led to a collaborative approach in engaging teams of teachers to address the needs of students. Additionally, teachers believed that the professional development provided them with practical skills to implement new instructional strategies and that it deepened the teachers' knowledge of the subject area. More importantly, the differences increased between TIPA and

TABLE IV.1

TIPA and Comparison School Educator Perceptions of the Content of Professional Development

Scale	TIPA Year	TIPA Schools			Comparison Schools			Mean Difference
		MEAN	SD	N	MEAN	SD	N	
Content of Professional Development	Year 2	3.90	0.73	1,018	3.77	0.75	804	0.13*
	Year 3	3.88	0.75	608	3.71	0.79	371	0.17*
	Year 4	3.97	0.72	761	3.80	0.77	420	0.17*
	Year 5	3.92	0.82	688	3.68	0.84	330	0.24*

*Indicates statistically significant difference at $p < 0.05$ between TIPA schools and comparison schools.

comparison school educators over time. As Table IV.1 shows, the differences in the mean scores in this survey scale between TIPA and comparison schools are statistically significant in all years.

For the last two years (2013-14 and 2014-15) of the survey, a new scale was added to assess the impact of the professional development provided by the PD Coordinators. The survey asked respondents to assess the effectiveness of the professional development on improving teacher practice. Only educators in the TIPA schools were asked to complete this section of the survey. Table IV.2 covers the period 2013-14 and 2014-15, and shows that the perceptions of school administrators (i.e., principals and assistant principals) and other staff (i.e., other certified and non-certified staff) became increasingly more positive regarding the work of the PD Coordinators. The perceptions of teachers remained stable.

> ***"Teachers are not working harder; they are working differently because of the professional development."***

However, when contact with PD Coordinators was high, TIPA educators indicated strong support for the professional development received, as shown in Table IV.3. The greater the contact with the PD Coordinators, the stronger the response from the TIPA educators. For example, in the responses to question #1, for the year 2014, the average score on this question for schools with low engagement with the PD Coordinators was 2.65. If the school had a medium level of engagement with the PD Coordinators, its average score was 3.02 and for schools with high levels of engagement, the average score was 3.65. Additionally, for all the survey questions in Table IV.3, the difference in the average scores of schools with low, medium or high engagement with the PD Coordinators are mostly statistically significant.

Where the PD Coordinators were able to work closely with teacher teams, they built productive relationships.

> *The PD Coordinator has helped us unpack standards in every core area. The main technique is cognitive coaching, but sometimes she strays into consulting when she prompts, "Have you thought about this?" She has given us assistance for our day of planning. For*

TABLE IV.2

Survey Responses on the Impact of Professional Development, by Educator Role

Impact of PD Coordinators	School Administrators		Teachers		Other Staff	
	2013–14	2014–15	2013–14	2014–15	2013–14	2014–15
1. The TIPA PD Coordinator has assisted me in using student assessment data in real-time to allow me to differentiate instruction to meet the needs of my students.	4.00	4.36	3.08	3.04	2.89	3.26*
2. The professional development offered by the TIPA PD Coordinator has been effective in strengthening my classroom instruction.	4.03	4.30	3.12	3.04	3.00	3.21
3. I have seen measurable improvement in student learning when I employ the instructional practices that I have learned from the TIPA PD Coordinator.	3.87	4.25	3.09	3.07	2.97	3.20*
4. The professional development provided by the TIPA PD Coordinator has made a positive impact in our school.	4.00	4.25	3.23	3.15	3.14	3.34
5. The coaching support provided by the TIPA PD Coordinator has made a positive impact in our school.	4.10	4.25	3.25	3.14	3.14	3.35*
6. The TIPA PD Coordinator is an important resource for me that I feel would assist me long-term in meeting the needs of my students.	4.20	4.29	3.11	2.99	2.99	3.24*
Overall Impact	**4.03**	**4.29**	**3.14**	**3.07**	**3.02**	**3.27***

Means are based on a 5-point Likert scale: 5 = Strongly Agree, 4 = Agree, 3 = Undecided, 2 = Disagree, 1 = Strongly Disagree.
*Indicates statistically significant differences at $p < 0.05$ between 2013–14 and 2014–15 for other staff—no statistically significant differences were found for the other groups.

> *example, with ESOL we are using more visuals, manipulatives, academic vocabulary, and sentence frames. She asks, "What else can we do?" and this expands our thinking. She is a good listener. She doesn't tell us what to do.*
>
> —Teacher

However, with only three PD Coordinators and 30 TIPA schools, the support from the PD Coordinators that teachers responded to so favorably was not always possible at every school. The following comments reflect the importance and difficulty of the PD Coordinator role:

> *Last year the PD Coordinator met with our teams one day per week. She brought ideas from other schools for us to use. She is not as available this year, and does not meet us here on a regular basis.*
>
> —Teacher

TABLE IV.3

Survey Responses Based on Level of Engagement with PD Coordinators, by School Year

Impact of PD Coordinators	Year	Mean Engagement[16]			Sig. by Level of Engagement
		LOW	MEDIUM	HIGH	
1. The TIPA PD Coordinator has assisted me in using student assessment data in real-time to allow me to differentiate instruction to meet the needs of my students.	2014	2.65	3.02	3.65	LM/LH/MH*
	2015	2.82	3.28	3.72	LM/LH/MH*
2. The professional development offered by the TIPA PD Coordinator has been effective in strengthening my classroom instruction.	2014	2.75	3.16	3.53	LM/LH/MH*
	2015	2.86	3.28	3.53	LM/LH*
3. I have seen measurable improvement in student learning when I employ the instructional practices that I have learned from the TIPA PD Coordinator.	2014	2.75	3.14	3.46	LM/LH/MH*
	2015	2.87	3.31	3.51	LM/LH*
4. The professional development provided by the TIPA PD Coordinator has made a positive impact in our school.	2014	2.86	3.27	3.68	LM/LH/MH*
	2015	2.93	3.39	3.69	LM/LH/MH*
5. The coaching support provided by the TIPA PD Coordinator has made a positive impact in our school.	2014	2.90	3.28	3.66	LM/LH/MH*
	2015	2.94	3.35	3.73	LM/LH/MH*
6. The TIPA PD Coordinator is an important resource for me that I feel would assist me long-term in meeting the needs of my students.	2014	2.75	3.12	3.56	LM/LH/MH*
	2015	2.81	3.22	3.62	LM/LH/MH*
Overall Impact	**2014**	**2.77**	**3.17**	**3.59**	**LM/LH/MH***
	2015	**2.87**	**3.31**	**3.64**	**LM/LH/MH***

Means are based on a 5-point Likert scale: 5 = Strongly Agree, 4 = Agree, 3 = Undecided, 2 = Disagree, 1 = Strongly Disagree.
*Indicates statistically significant differences at $p < 0.05$ between Low/Medium (LM); Low/High (LH); Medium/High (MH).

> *It should be noted that she has a tough job. It's hard meeting everyone's needs, being in different buildings. It's hard to coordinate all of that. She worked one-on-one with my teachers who were on "improvement plan" to help get those individuals back on track so they wouldn't lose their jobs. She worked with those teachers once a week. Every time she walks into a different building she has to put on a different hat. Tough thing to do.*
>
> —Principal

Another TIPA principal stated that she often discusses the needs of her teachers with the PD Coordinator, noting that teachers let down their guard around the Coordinator, "letting her know what they don't know," without fear of reprisals.

Principals often mentioned that they wanted more of the PD Coordinators' time for their teachers. While division resources cannot support the continuation of these positions, TIPA principals reported that instructional strategies recommended by the PD Coordinators would be continued. These include:

- Standards-based instruction and assessment,
- Collaborative student data analysis to better guide instructional strategies and share effective practices,
- Conducting instructional rounds,
- Greater focus on Response-to-Intervention (RTI) and differentiated instructional practices, and
- Employing the school improvement process (Plan, Do, Study, Act) that TIPA utilized during the initiative.

Central administrators found the PD Coordinators helpful in distributing division resources more effectively across schools, with the PD Coordinators acting to focus division support for teacher practice from a variety of sources:

> *In the 30 TIPA schools, PWCS has infused resources from the State, special education, Title I, TIPA, and Accountability (School Improvement Grants) to effectuate student learning in these schools. They all now focus on student growth—largely through the work of TIPA—which focuses on student growth.*
>
> —Central Administrator

Teacher association leaders believe that the real impact of TIPA is the addition of the professional development for the teachers:

> *Teachers are not working harder; they are working differently because of the professional development.*
>
> —Teacher Association Leader

Overall, interview and focus group respondents showed strong support for the professional development designed to directly assist teachers with emergent student learning issues:

> *Our PD Coordinator comes for a day and offers several ways to help. A day may be some combination of reading, math or data. She may observe and give feedback, help plan a unit or work with reflections. She works both with individual teachers and grade-teams. She is always there if you need her when she is in the building, or you can call her.*
>
> —Teacher

> *The biggest impact, in a positive way, was the professional development. It helped to focus the staff on doing the right thing. A continual process for improvement—refining, improving, rethinking, reviewing, planning, and making adjustments. This is customized professional development that is developed collaboratively with the principals and the needs of the teachers.*
>
> —Central Administrator

As a result of the work of the PD Coordinator, my teachers have strengthened their expertise in their academic discipline, become more effective collaborators and more reflective practitioners.

—Principal

Strategy 3: Standards-Based Educator Evaluation

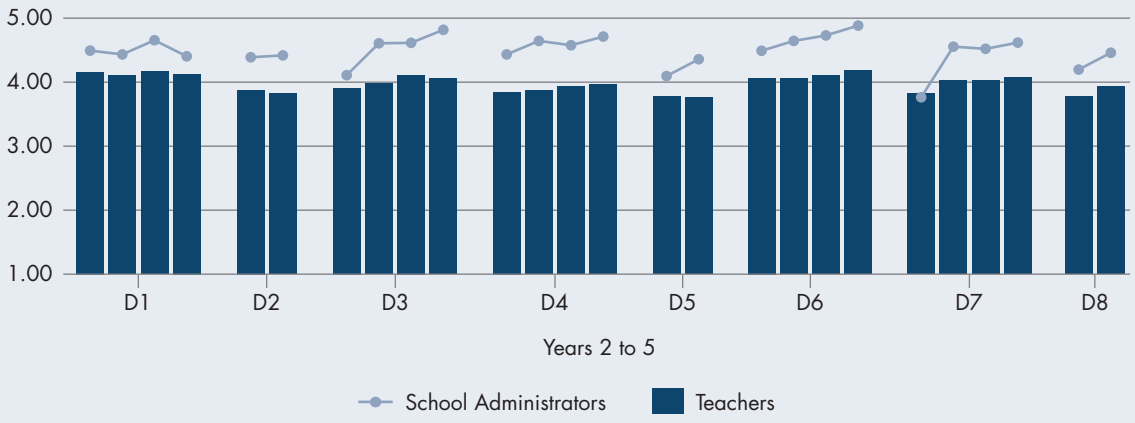
TIPA depended on the successful implementation of the Professional Performance Process (PPP) in two important ways. First, teachers had to meet all PPP standards (including the student growth standard) to be eligible for TIPA awards. Second, the focus of TIPA was to help all students master learning standards by strengthening teacher practice. As a continuous improvement model, PPP promoted ongoing communication between educator and evaluator. TIPA leadership believed that this meaningful feedback between teachers and their principals would be key to the success of TIPA. Any perception of PPP as either ineffective or unfair could seriously impact the success of TIPA.

To measure educator perceptions of PPP, CTAC developed a separate survey scale (Professional Performance and Evaluation) which addressed the following questions:

1. Expectations for teacher effectiveness/professionalism are well defined.
2. Expectations for principal effectiveness/professionalism are well defined.
3. The principal observes each classroom multiple times during the year.
4. The principal provides helpful feedback on classroom effectiveness.
5. The school principal receives feedback from central administration.
6. Teachers' evaluations conducted by the principal (or a designee) are fair.
7. Student growth on the Virginia SOL is a component of teacher evaluation.
8. Student growth on the Virginia SOL is a component of principal evaluation.

Figure IV.2

TIPA School Administrator and Teacher Perceptions of the Professional Performance and Evaluation Process*



*Questions 2, 5, and 8 were asked only in the first two years of the survey.

Figure IV.2 shows the responses over time to the eight questions included in the Professional Performance and Evaluation scale for TIPA respondents. Responses indicate that the key components of the PPP system are well received by teachers and administrators and that the overall teacher PPP system is judged to be fair.

Overall, the mean scores on the scale as shown in Table IV.4 indicate a strong upward trend among TIPA schools and a moderate upward trend among comparison schools, indicating increasingly favorable views of PPP over time as educators became more familiar with it.

TABLE IV.4

TIPA and Comparison School Educator Perceptions of Professional Performance and Evaluation

Scale	TIPA Year	TIPA Schools			Comparison Schools			Mean Difference
		MEAN	SD	N	MEAN	SD	N	
Professional Performance and Evaluation	Year 2	3.92	0.67	1,018	3.89	0.70	804	0.03
	Year 3	3.96	0.69	608	3.91	0.68	371	0.05
	Year 4	4.08	0.72	760	4.05	0.67	420	0.03
	Year 5	4.10	0.76	689	3.97	0.75	330	0.13*

*Indicates statistically significant difference at $p < 0.05$ between TIPA schools and comparison schools.

Finally, an analysis of how teachers and administrators perceived PPP in the TIPA schools (Table IV.5) shows that support for PPP continued to rise each year for both teachers and administrators.

The similarity of trends among school administrators and teachers proved to be one of the most prominent findings for the Professional Performance and Evaluation scale as it relates to the PPP evaluation process. In general, for PPP, both teachers and school administrators supported the expectations for performance, the value of feedback during the evaluation process, the fairness of the evaluations, and the use of student growth as a component of the evaluation systems.

TABLE IV.5

TIPA School Administrator and Teacher Perceptions of Professional Performance and Evaluation

Scale	TIPA Year	School Administrators			Teachers			Mean Difference
		MEAN	SD	N	MEAN	SD	N	
Professional Performance and Evaluation	Year 2	4.24	0.58	36	3.91	0.67	969	0.33*
	Year 3	4.51	0.52	28	3.94	0.69	573	0.57*
	Year 4	4.61	0.43	30	4.07	0.71	698	0.54*
	Year 5	4.68	0.37	30	4.08	0.77	638	0.60*

*Indicates statistically significant difference at $p < 0.05$ between TIPA School Administrators (i.e., principals and assistant principals) and Teachers (i.e., classroom teachers, other certified staff, and non-certified staff).

Interview and focus group respondents expressed general agreement that the PPP process was fair and timely, and some administrators spoke positively about student growth and the importance of multiple measures in evaluation, particularly in differentiating between levels of practice (i.e., good versus excellent).

> *It is a fair and timely system of evaluation. Yes, it does differentiate practice. It acknowledges excellence. You can see in the documentation a good teacher versus an excellent teacher. Student growth is a key factor.*
>
> —Central Administrator

> *Yes; the PPP is framed well for individual teachers to grow. It recognizes quality teaching as well as deficiencies in practice because there is more of a visual component. Teachers can look at the matrix and see where they meet the standards and where they need to improve. The evaluator and teacher are both looking for the same qualities to meet the standards.*
>
> —Principal

Interviewees commented on the amount of time it took to conduct the PPP evaluation process. They described the time involved as "inordinate" and the work as "very time-consuming." Yet they also expressed appreciation for the individualized nature of the evaluation approach and believed the time was well spent.

> *The PPP allows teachers face time with principals, allows for direct pre- and post-conferences for individual teachers in addition to specific subject conversations. The process is great but very time-consuming. It is tedious but the value supersedes the time and effort.*
>
> —Principal

Teachers appreciated the pre- and post-observation conversations and feedback, noting that the process helped them set realistic goals for their own students while still working within the context of other classrooms at their grade level.

> *It now seems like the evaluation is more like a partnership—the formal [observation] provides insight and feedback and the informal provides for reflection prior to the formal. We have both autonomy and need to demonstrate competency.*
>
> —Teacher

> *In the past [before TIPA], evaluations were subjective. It depended on whether or not the evaluator "liked you that day." Now it is clear as to what is expected. We still adhere to the matrix and both the evaluator and teacher know the expectations. Our job is to provide evidence that we did an effective job.*
>
> —Teacher

> *The PPP grew on me. At first I thought it was an unfair drag on teachers. Now I see it as valuable while getting lots of feedback. The pre/post conferences and data help in planning future work and the feedback is helpful. Portfolios are kept and things have become very predictable. Support is given to determine goals, collaborate, and improve.*
>
> —Teacher

Administrators, teacher association leaders, and teachers noted some inconsistency among principals in implementing PPP. The type of critique heard most frequently was "[PPP] still leaves room for principal interpretation," or, more negatively, that it involved "too much 'I'm going to get you.'" However, the idea that principals would use evaluation as the basis for disciplinary action against teachers was a minority opinion expressed in only a few interviews.

Overall, PPP worked to strengthen TIPA by providing teachers with meaningful feedback based on both their practice and their student data. As one teacher put it, "Because of TIPA, we monitor data a lot more."

Finally, as discussed in Chapter I, a seventh standard for PPP (student growth) was introduced in the 2011-12 school year and came to constitute 40% of the evaluation. Previously, student growth was used only as evidence to support a teacher's attainment of the other six standards. The positive trends of frontline educators showing approval of PPP continued even with such a significant change.

Strategy 4: Multiple School Effectiveness Criteria

TIPA was a performance-based compensation system that valued the importance of a broad range of functions: (a) planning activities (e.g., clear instructional vision and identifying teacher leadership opportunities), (b) effective educational practices (e.g., standards-based planning and real-time professional development), and (c) qualitative outcomes (e.g., high student attendance and student and parent satisfaction).

By including effectiveness criteria that measured other factors than just test scores—factors designed to improve the day-to-day experience of principals, teachers, and students—TIPA was designed to have a positive impact on school culture and, therefore, to support student learning.

TIPA respondents showed high levels of agreement on employing multiple school effectiveness criteria to improve student outcomes. The School Conditions and Culture scale included such issues as the use of multiple types of assessments to monitor student progress, whether teachers differentiated instruction, and whether the school encourages parent involvement. Table IV.6 shows that the results were similar between TIPA and comparison schools, with mean scores as high as 4.24 in the TIPA schools and 4.23 in the comparison schools. These were the highest means for all six survey scales. Additionally, the associated standard deviations were low, indicating the narrow spread of educators' views.

TABLE IV.6

TIPA and Comparison School Educator Perceptions of Their Schools' Conditions and Culture

Scale	TIPA Year	TIPA Schools			Comparison Schools			Mean Difference
		MEAN	SD	N	MEAN	SD	N	
School Conditions and Culture	Year 2	4.18	0.56	1,020	4.16	0.57	805	0.02
	Year 3	4.23	0.56	608	4.23	0.56	372	0.00
	Year 4	4.24	0.58	761	4.22	0.52	420	0.02
	Year 5	4.24	0.63	689	4.16	0.62	330	0.08*

*Indicates statistically significant difference at $p < 0.05$ between TIPA schools and comparison schools.

By including effectiveness criteria that measured other factors than just test scores—factors designed to improve the day-to-day experience of principals, teachers, and students—TIPA was designed to have a positive impact on school culture and, therefore, to support student learning.

TIPA and comparison schools showed similarly high levels of favorability about school culture and conditions, notwithstanding that in each year of the initiative, two-thirds of TIPA schools did not qualify for any awards. From the outset, the TIPA planning team was concerned that this failure might result in low teacher morale, negatively impacting perceptions of school culture and, by extension, student learning. That this did not occur suggests that TIPA's focus on strong communication, collaboration among educators, and strengthening practices that support student learning helped maintain a positive school culture in the TIPA schools.

The focus groups and interviews provided more insight into the widespread belief among stakeholders that TIPA was having a positive impact on school culture. Interviewees pointed to the specific aspects of TIPA they found most supportive of a positive environment for student learning, including the professional development provided, the focus on individual student learning needs, real-time feedback to teachers, transparency around expectations, and improved communication.

> *The lessons that we learned [through TIPA] and may be sustained are a sense of community; vertical alignment; SOL responsibility for all educators in grades K-5. In this school we all feel a sense of responsibility to teach all students even in the non-tested grades. The data meetings and unit assessments support the teachers to make adjustments in the curriculum and instruction early on.*
>
> —Teacher

> *It has provided better ways to keep students engaged.*
>
> —Teacher

> *Parent involvement strategies have improved.*
>
> —Teacher

> *There is a school culture of "above and beyond." We won't settle for the status quo.*
>
> —Teacher

Principals felt that TIPA helped them focus more on the student and less on the teacher, spurring a "results"-oriented commitment to student growth and progress. They also noted that standards-based planning was a key part of this new focus.

Central administrators remarked on a positive shift in school culture due to TIPA, particularly as related to collaboration and what one administrator called a "shared-vision":

Now they understand that every child is everyone's responsibility. It changes the culture when they work collaboratively.

—Central Administrator

Sure the awards are part of it but that is not what they are talking about—it's more the shared vision and I think that is the biggest change in culture from what I'm hearing.

—Central Administrator

Teachers and teacher association leaders also spoke of collaboration as a major change in the culture in their schools:

Our PLCs [professional learning communities] and the collaboration. That is the take-away for me; the fact that we do work as a team and that started with TIPA. When we are working together, the sky is the limit.

—Teacher

A teacher focus group at a school that never received a performance award described TIPA's impact as follows:

We are a Title I school with low academic scores and a population of students from many low socioeconomic homes. TIPA is not the purpose of us being here. However, TIPA has given us more focus, more deeply fine-tuned our curriculum and instruction, especially in reading and other parts that we are struggling with.

—Teacher

A parent emphasized the importance of a strong school culture among other goals of the TIPA initiative:

The rewards should not just be focused on student scores but should find a way to measure a healthy school culture, student growth, professional development implementation, meeting needs of all students, and improving parent involvement.

—Parent

Students were also included in the annual PWCS survey concerning school climate. In each year of the initiative, 75% to 80% of the TIPA schools received a score of five or six (on a zero to six scale) from students asked to rate their school culture.

Additionally, as is discussed in greater detail in Appendix D, TIPA effectiveness scores generally improved over the years for most of the 30 TIPA schools. From 2011-12 to 2014-15, the total effectiveness score increased for 21 schools (70%), remained the same for two schools (7%), and decreased for seven schools (23%). For 13 schools (43%), the increase was at least 10 points, while for six schools (20%), the decrease was at least 10 points. On average, the total school effectiveness scores for the 30 TIPA schools increased by five points from 2011-12 to 2014-15. With the exception of the six schools, the TIPA schools all showed continuous improvement over the grant period.

Strategy 5: School Leadership

The success of a new initiative often hinges on whether stakeholders feel the project is done *with* them not *to* them. Crucial to the success of TIPA was the belief of the 30 participating principals that their voices would be heard throughout the project.

The TIPA Project Director played an important role in supporting school leadership. Having already worked closely with division principals to develop and implement the revised supervision and evaluation process (i.e., PPP), she brought to TIPA pre-existing relationships based on trust and mutual respect. And since one of the critical components of the TIPA theory of action was a strong supervision and evaluation process, she was able to communicate clearly with principals regarding project expectations, as well as provide the professional development necessary to support them in meeting those expectations. These well-worn paths of communication helped expand the principals' understanding of the direct connection between professional growth and student learning—a critical part of TIPA's theory of action—while at the same time ensuring that they were active contributors to and leaders in the initiative.

> ***"School leadership makes and breaks everything."***

Frontline educators discuss the value of effective school leaders at critical junctures of the TIPA initiative:

> *Retaining teachers and effective teachers is all based on upon the leadership within your school. The amount [of additional compensation] is not large enough to attract teachers to work in a high-need school. School leadership makes and breaks everything.*
>
> —Teacher

> *The leadership for the school is very important in setting a positive tone.*
>
> —Teacher

The value of strong school leadership was highlighted at the 2015 TIPA Best Practices Conference. Along with their staffs, nine TIPA school principals provided an overview of the strategies they had used to raise student achievement. There was no one best approach, but rather a series of best practices which built on the experience and strengths of each staff. Over the four implementation years of the initiative, the nine schools with the strongest leadership received 62% of all TIPA awards (32 of 51 total awards).

In summary, TIPA focused on supporting its principals throughout the five years of the initiative, while PWCS educators repeatedly emphasized the role of school leaders in cultivating a positive school environment—one that would motivate teachers in high-need schools. The message we heard in focus groups and interviews, among all respondents, was that leadership does matter.

Areas of Concern

This chapter discusses the effectiveness of TIPA's key strategies. Two notes of concern were also raised in the interviews and focus groups throughout the initiative. Respondents showed less support for TIPA's two-tiered approach to individual awards. By this approach, if a school received the TIPA award, teachers in the four core subjects each received a compensation award of $3,216 (Tier I), while all other full-time teachers received an award of $1,000 (Tier II). No compensation was provided to paraprofessionals such as teaching assistants.

During interviews and focus groups, the study team often heard the argument that paraprofessionals and teachers receiving Tier II compensation awards supported the instructional programs of the Tier I teachers. Teachers, principals, central administrators, and school board members all agreed that a single-tier approach might have worked better.

Finally, as the initiative progressed, educators expressed concern that the TIPA School Effectiveness Criteria made it easier for elementary schools to receive awards than middle or high schools. For the duration of the TIPA initiative, neither of the two high schools and only one of the four middle schools received an award (although it did so twice).

CHAPTER V

National Implications

The 2015 reauthorization of the Elementary and Secondary Education Act (ESEA) as the Every Student Succeeds Act (ESSA) ushers in a new competitive program for performance-based compensation: the Teacher and School Leader Incentive Program (TSLIP). TSLIP is designed to develop, complement, improve or expand comprehensive performance-based compensation systems—also known as human capital management systems—for teachers and principals, in order to raise student academic achievement and close the performance gaps.

As with the previous federal Teacher Incentive Fund (TIF) program, the federal government will be investing hundreds of millions of dollars over the next few years to meaningfully address student learning needs at our highest-need schools. The lessons learned and the challenges faced during the five-year PWCS TIPA initiative can contribute to improved performance and results in the next phase of the national implementation of performance-based compensation.

Planning is Essential

Planning was critical in TIPA, even before the initiative was funded. As noted earlier, the planning team went through a thoughtful design process for its initiative's model, one that allowed for an expansive exchange of ideas among central administrators, principals, teacher association leaders, and teachers. The team's work resulted in the development of the TIPA School Effectiveness Criteria, which were developed to improve school performance, with a significant emphasis on student growth and achievement, educator

development, improvement in school conditions and culture, and student and parent satisfaction. Even with the advantage of such careful preparation by the team, the subsequent planning year proved critical in allowing TIPA to move forward—an indication of how flexible and responsive an initiative such as TIPA must be in order to succeed on the ground.

Furthermore, teacher and principal evaluations were required for all TIF grants. Over the last five years the educational community has seen many states and districts rush the implementation of their evaluation systems with often deleterious consequences for how educators perceive the effectiveness and fairness of those systems. This was not the case with PWCS's Professional Performance Process (PPP). Prior to the beginning of TIPA, the division piloted PPP over a two-year period, gradually expanding to the more than 90 schools in PWCS.

Given the success of TIPA, CTAC recommends that TSLIP allow for a planning year, as well as a six-month lead time between the announcement of the program and the deadline for applications. This additional time gives school districts the opportunity to engage in thoughtful design and development of their initiatives.

Collaboration Makes a Difference

A common theme expressed in interviews and focus groups was that TIPA was the key to leveraging division resources and aligning instructional initiatives in the participating schools. This benefit came about largely due to the TIPA Project Director and PD Coordinators, whose close collaboration with principals, teachers, and central administrators made them highly effective in obtaining division resources and services (e.g., Title I, special education, ELL support, etc.) to address the immediate needs of students. In other words, at TIPA schools the Project Director and the PD Coordinators took ownership for coordinating division resources to be provided to the entire school, not just those components of its operation directly impacted by the grant. Additionally, teachers commented that PD Coordinators shared effective instructional practices across TIPA schools, creating connections between classrooms and improving teaching.

Indeed, effective collaboration became a hallmark of TIPA, largely due to its school-wide approach to performance-based compensation. Rather than pit one educator against another, TIPA encouraged teacher teams to share the most effective practices for improving learning outcomes for all students.

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Professional Development Produces Improved Teacher Practice

Teachers identified job-embedded professional development—that is, professional development provided as close to the classroom as possible, with the teacher's own students as the focal point—as the most effective in helping them meet the learning needs of their students. Teacher teams reported

having a more focused planning approach after working with their PD Coordinator, while individual teachers noted that receiving non-evaluative feedback in a trusting setting made a difference in their practice. The PD Coordinators helped teachers think through instructional strategies without insisting on a singular approach. Grade-level teams became more reflective in the assessment of their instructional approach. Teachers did indeed begin to work differently.

Professional development that was on-site and readily-accessible to teachers made a difference in the TIPA initiative and assisted teachers to meet the needs of their students in real-time.

Student Learning Depends on Positive Learning Environments

The phrase, "you measure what you value," is heard often in discussions of educational accountability. In creating its performance-based compensation system, PWCS wanted to create a school-wide approach that measures success not only in student achievement and growth, but also in those key areas PWCS believes *support* student achievement and growth. Specifically, over 48% of the TIPA School Effectiveness Criteria measured a school's progress toward improving school culture, standards-based instruction, commitment to ongoing professional development, teacher leadership, instructional vision, and other variables all intended to contribute to a positive learning environment. An important takeaway from TIPA is how much a positive learning environment—where teachers want to work, where parents see the educational process as meeting the needs of their children, and where students want to go to school—can increase student achievement. The statistically significant gains in SOL test scores at TIPA schools are a testament to this fact.

Leadership is the Tipping Point

TIPA focused on supporting school leaders through the five years of the initiative. The regular meetings of the TIPA principals with the TIPA Project Director, the sharing of ideas and practices, and the principals' willingness to engage their faculties in a process of continuous learning helped these leaders to create powerful learning environments. For many of the TIPA schools, leadership was the tipping point. Effective principals utilized the diversity of approaches employing their own skill set along with the strengths and needs of their teachers. TIPA gave principals the flexibility to implement a theory of action for improved student learning best suited to their own schools.

An Alternative Approach to a School-Wide Model for Performance-Based Compensation

This report documents how teachers and school leaders worked together in a collaborative way to improve student outcomes through the TIPA initiative. This model avoided the typical "merit pay" approach where teachers compete against each other and there is a financial incentive not to work as a team or share effective approaches and instructional strategies. As effective as the TIPA model is, more can be done to advance a greater degree of collaboration for *more* schools within a school district. Under the TIPA model, only the top third of schools received performance awards based largely around student growth and achievement. What if we alter the school-wide model to give *all* schools a better opportunity of securing a performance award each year and not just the "high flyers"

for student growth? One potential approach is to make the awards more inclusive. For example, rather than award schools based on student achievement benchmarks, the district uses a performance-based compensation approach in which a school competes against its own performance from the previous year. For instance, if the district sets the performance target at 5% higher than what was achieved in the previous year:

- Schools reaching 75% of their target (beyond last year's performance) are eligible for 75% of the award;
- Schools reaching 100% of their target are eligible for 100% of the award; and
- Schools exceeding their target by 25% are eligible for 125% of the award.

While such an approach requires careful fiscal planning to keep the awards from exceeding program resources, it allows all schools to compete each year for performance awards, mitigating the poor morale likely when only a few schools have a realistic chance of winning awards.

Final Thoughts

One could ask whether PWCS's key strategies to implement its theory of action (i.e., a focus on school collaboration, standards-based evaluation, real-time professional development, employing multiple measures of school effectiveness, and strengthening school leadership) could have succeeded just as well without providing additional compensation for educators.

A common theme expressed throughout the teacher focus groups was that teachers teach in high-need schools because they love the students and the challenge of the work. However, CTAC also heard teachers say that they appreciate the recognition that performance awards bring to their work. They perceive the awards as validation of their efforts to help students—with many academic challenges—improve. There is nothing radical about the idea of receiving performance-based compensation for outstanding work. Why should educators be treated differently than other professionals? A teacher can be passionate about education and the endless possibilities it creates for students and at the same time want recognition for their ongoing efforts to improve their practice.

Since the individual awards to teachers were based on the overall performance at the school level, TIPA acted as the "incentive" to coalesce a school faculty around student learning goals that were challenging and required the adoption of new ideas and strategies. The story of TIPA is a story of school-wide collaboration creating a performance-based compensation approach that made a difference for student learning.

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Appendix A

Student and Teacher Characteristics

Characteristics of Students and Teachers in Prince William County Public Schools

Table A.1 describes division-wide student characteristics (e.g., enrollment, race/ethnicity, socioeconomic status) across all five years of the initiative. PWCS is a large district with an average enrollment of 80,000 students, where about 20% of the students are African American, 30% are Hispanic, and 33% are White. The proportion of students from economically-disadvantaged families rose steadily from 36.8% in 2010-11 to 42% in 2014-15. The proportion of English language learners remained stable at around 17% from 2010-11 to 2013-14 before increasing sharply to 22.9% in 2014-15.

TABLE A.1

Student Characteristics by Year in PWCS*

	2010–11	2011–12	2012–13	2013–14	2014–15
Total Students	76,538	78,744	80,642	82,199	82,627
Ethnicity					
African American	20.3%	20.4%	20.4%	20.5%	20.9%
American Indian**	0.6%	0.6%	0.6%	0.5%	0.5%
Asian	7.5%	7.6%	7.6%	7.8%	7.9%
Hispanic	28.5%	29.0%	29.7%	30.8%	32.0%
Multi-Racial	7.2%	6.9%	6.7%	6.6%	6.4%
White	35.8%	35.5%	35.0%	33.8%	32.4%
Other Demographic Characteristics					
Economically Disadvantaged	36.8%	38.0%	39.9%	40.2%	42.0%
English Language Learners	17.8%	17.8%	17.1%	17.0%	22.9%
Gifted (Grades 4–5)	17.8%	18.9%	18.2%	17.2%	17.5%
Special Education	10.8%	10.9%	10.8%	11.0%	10.9%
Title I (Elementary schools)	23.1%	25.3%	29.8%	31.2%	33.2%
Student Mobility	16.2%	15.8%	16.6%	20.7%	16.1%

*Percentages are in terms of total students.

**American Indian also includes American Alaskan and Hawaiian/Pacific Islander.

Table A.2 focuses on the characteristics of the teaching workforce in the division from 2010-11 to 2014-15. Most teachers in PWCS are female, white and have a graduate degree. The student-teacher ratio is around 15 to 1.

TABLE A.2

Teacher Characteristics by Year in PWCS*

	2010–11	2011–12	2012–13	2013–14	2014–15
Total Teachers**	*5,286*	*5,186*	*5,364*	*5,545*	*5,528*
Student to Teacher Ratio	14.5	15.2	15.0	14.8	14.9
Ethnicity					
African American	12.0%	12.2%	11.8%	11.4%	11.8%
American Indian***	0.3%	0.3%	0.2%	0.3%	0.3%
Asian	1.7%	1.9%	2.0%	2.1%	1.9%
Hispanic	5.4%	5.3%	5.3%	5.5%	6.2%
Multi-Racial	2.2%	2.3%	2.3%	2.2%	2.2%
White	79.6%	79.9%	80.3%	79.9%	79.6%
Selected Characteristics					
Female	80.2%	81.0%	81.1%	80.4%	80.3%
Male	19.8%	19.0%	18.9%	19.6%	19.7%
Graduate Degree	65.2%	64.7%	65.8%	66.8%	74.2%

*Percentages are in terms of total teachers.

**The category Total Teachers includes teachers and professional staff paid out of the school's budget.

***American Indian also includes American Alaskan and Hawaiian/Pacific Islander.

Characteristics of Students and Teachers in TIPA and Comparison Schools

Tables A.3 and A.4 describe the students and teachers in the 30 TIPA schools and the 26 comparison schools. Due to data friction and other restrictions, not all students and teachers presented in these two tables were included in the descriptive and Difference-in-Differences model analyses. Nevertheless, Tables A.3 and A.4 provide a holistic picture of the rich information used in CTAC's quantitative analysis.

Student Characteristics. Table A.3 shows the student demographic data on TIPA and comparison schools over the five years of the TIPA initiative. Student enrollment grew slowly and steadily in both TIPA and comparison schools, in line with the overall division trend as presented in Table A.1. In terms of ethnicity, TIPA and comparison schools had similar distributions of African American, American Indian, Asian and multi-racial students, all of which remained relatively stable. The percentage of Hispanic students in the TIPA schools was almost twice as high as that of the

comparison schools, with a corresponding gap in White students. The percentage of Hispanic students steadily increased and the percentage of White students steadily decreased in both TIPA and comparison schools over the course of the initiative, a pattern reflected in the division as a whole.

Because TIPA was designed to serve the highest-need schools, participating schools had higher percentages of students eligible for free and reduced-price meals than comparison schools and registered higher percentages of other student demographic indicators correlated with economically-disadvantaged status, such as percentage of ELL students and degree of student mobility. Over time, the change in each of these indicators remained consistent between TIPA and comparison schools, as well as in the division overall.

The similarity in trends relating to ethnicity and socioeconomic status reconfirmed the selection of comparison schools, and, just as importantly, justified the student achievement measures used in the statistical analyses described in Chapter III—had TIPA and comparison schools developed different trends from each other or from the division as a whole, the standardized student scores would not accurately reflect the relative student achievement.[17]

TABLE A.3

Student Characteristics by Year, TIPA and Comparison Schools*

	2010–11		2011–12		2012–13		2013–14		2014–15	
	TIPA	Comp	TIPA	Comp	TIPA	Comp	TIPA	Comp	TIPA	Comp
Total Students	22,380	22,208	22,905	21,765	23,272	22,130	23,954	22,616	24,385	23,137
Ethnicity										
African American	25.2%	23.7%	25.5%	24.4%	25.3%	24.3%	25.0%	24.4%	24.6%	24.8%
American Indian**	0.7%	0.5%	0.6%	0.5%	0.6%	0.5%	0.5%	0.5%	0.4%	0.4%
Asian	6.7%	8.2%	6.5%	8.3%	6.5%	8.3%	6.6%	8.3%	6.5%	8.1%
Hispanic	47.5%	25.1%	48.8%	26.4%	50.1%	27.3%	51.3%	28.9%	53.0%	29.5%
Multi-Racial	5.9%	7.1%	5.5%	7.0%	5.1%	7.0%	4.8%	6.7%	4.4%	6.5%
White	13.9%	35.3%	13.1%	33.3%	12.4%	32.5%	11.9%	31.1%	11.1%	30.6%
Other Demographic Characteristics										
Economically Disadvantaged	64.9%	34.6%	67.3%	37.3%	70.3%	39.0%	70.6%	36.9%	72.5%	41.1%
English Language Learners	48.0%	15.8%	34.6%	16.2%	48.9%	15.8%	34.4%	18.1%	44.2%	21.2%
Gifted (Grades 4–5)	10.5%	20.8%	10.7%	21.6%	9.6%	20.3%	8.7%	20.1%	9.2%	20.7%
Special Education	11.4%	11.9%	11.3%	12.2%	11.2%	12.0%	11.3%	12.1%	11.1%	12.0%
Student Mobility	22.1%	15.1%	23.0%	15.2%	23.0%	14.8%	26.1%	19.8%	20.9%	14.5%

*Percentages are in terms of total students.

**American Indian also includes American Alaskan and Hawaiian/Pacific Islander.

Teacher Characteristics. Table A.4 shows teacher demographics for TIPA and comparison schools. The student-to-teacher ratio, which remained quite stable at both TIPA and comparison schools, was lower in TIPA schools, suggesting TIPA schools had smaller class sizes. In terms of ethnicity, TIPA schools employed more African American and Hispanic teachers, and therefore fewer White teachers, than the comparison schools. The ethnicity composition did not change much over time.

TABLE A.4

Teacher Characteristics by Year, TIPA and Comparison Schools*

	2010–11		2011–12		2012–13		2013–14		2014–15	
	TIPA	Comp	TIPA	Comp	TIPA	Comp	TIPA	Comp	TIPA	Comp
Total Teachers	1,727	1,438	1,750	1,432	1,789	1,480	1,843	1,517	1,815	1,522
Student to Teacher Ratio	13.0	15.4	13.1	15.2	13.0	15.0	13.0	14.9	13.4	15.2
Ethnicity										
African American	17.1%	12.1%	17.4%	11.5%	16.5%	11.4%	15.2%	12.1%	15.6%	13.1%
American Indian**	0.2%	0.4%	0.2%	0.3%	0.3%	0.2%	0.3%	0.3%	0.3%	0.4%
Asian	2.1%	1.6%	2.2%	1.8%	2.1%	2.4%	2.4%	1.8%	2.3%	1.8%
Hispanic	7.1%	5.2%	7.3%	4.7%	6.9%	4.9%	7.4%	5.3%	8.5%	5.8%
Multi-Racial	2.2%	2.2%	2.3%	2.3%	2.5%	1.9%	2.5%	1.7%	2.1%	1.6%
White	71.3%	78.4%	70.4%	79.3%	71.8%	79.1%	72.2%	78.8%	71.2%	77.3%
Other Demographic Characteristics										
Female	83.3%	82.7%	83.9%	83.1%	84.3%	84.1%	83.6%	83.1%	84.6%	81.9%
Male	16.7%	17.3%	16.1%	16.9%	15.7%	15.9%	16.4%	16.9%	15.4%	18.1%
Graduate Degree***	63.4%	64.3%	63.5%	65.6%	64.4%	66.6%	64.8%	66.5%	N/A	N/A

*Percentages are in terms of total teachers.

**American Indian also includes American Alaskan and Hawaiian/Pacific Islander.

***2014-15 graduate degree data were not available.

Appendix B

TIPA Educator Survey

CTAC surveyed educators in the 30 TIPA and 26 comparison schools during four of the five years of the initiative (i.e., 2011-12, 2012-13, 2013-14, and 2014-15) and surveyed the parents of students in the 30 TIPA schools over this same period.

For the first two survey years, survey scales addressed the following issues: (A) School Conditions and Culture, (B) Opportunities for Professional Improvement and Leadership, (C) Content of Professional Development, (D) Professional Performance and Evaluation, (E) Performance-Based Compensation, and (F) Knowledge Regarding the TIPA Initiative. For the last two years of the survey, the scale for Opportunities for Professional Improvement and Leadership was replaced with a scale assessing the impact of the PD Coordinators in TIPA schools. The interview and focus group questions were adjusted accordingly, with respondents asked to assess the overall impact of the TIPA initiative.[18]

Table B.1 provides a summary of the educator survey findings over the course of the initiative. Overall, perceptions of educators in the TIPA schools were positive on all six scales during the four-year survey period, with the scale mean scores ranging from 3.31 to 4.24. Mean scores of educators in TIPA schools were higher compared with the comparison schools on all scales for all years. The differences in mean scores between TIPA and comparison schools were often, but not always, statistically significant—mean scores of educators in TIPA schools were higher to the point of statistical significance in four of six scales over the course of the initiative (i.e., Scales B, C, E, and F).

TABLE B.1

TIPA Educator Survey Summary

Scale	TIPA Year	TIPA Schools			Comparison Schools			Mean Difference
		MEAN	SD	N	MEAN	SD	N	
A. School Conditions and Culture	Year 2	4.18	0.56	1,020	4.16	0.57	805	0.02
	Year 3	4.23	0.56	608	4.23	0.56	372	0.00
	Year 4	4.24	0.58	761	4.22	0.52	420	0.02
	Year 5	4.24	0.63	689	4.16	0.62	330	0.08*
B. Opportunities for Professional Improvement and Leadership	Year 2	3.89	0.65	1,020	3.81	0.66	804	0.08*
	Year 3	3.89	0.66	608	3.77	0.64	372	0.12*
	Year 4	…	…	…	…	…	…	…
	Year 5	…	…	…	…	…	…	…
C. Content of Professional Development	Year 2	3.90	0.73	1,018	3.77	0.75	804	0.13*
	Year 3	3.88	0.75	608	3.71	0.79	371	0.17*
	Year 4	3.97	0.72	761	3.80	0.77	420	0.17*
	Year 5	3.92	0.82	688	3.68	0.84	330	0.24*
D. Professional Performance and Evaluation	Year 2	3.92	0.67	1,018	3.89	0.70	804	0.03
	Year 3	3.96	0.69	608	3.91	0.68	371	0.05
	Year 4	4.08	0.72	760	4.05	0.67	420	0.03
	Year 5	4.10	0.76	689	3.97	0.75	330	0.13*
E. Performance-Based Compensation	Year 2	3.66	0.80	1,018	3.48	0.87	804	0.18*
	Year 3	3.74	0.78	608	3.47	0.83	372	0.27*
	Year 4	3.75	0.76	761	3.47	0.83	418	0.28*
	Year 5	3.85	0.74	687	3.40	0.83	328	0.45*
a. Rewards for Performance-Based Compensation	Year 2	3.82	0.76	1,014	3.57	0.86	802	0.25*
	Year 3	3.92	0.72	608	3.58	0.81	372	0.34*
	Year 4	3.86	0.74	760	3.53	0.82	418	0.33*
	Year 5	3.96	0.72	687	3.46	0.83	328	0.50*
b. Attract/Retain Strong Teachers/ Principals	Year 2	3.32	1.19	1,015	3.28	1.14	802	0.04
	Year 3	3.40	1.23	607	3.23	1.15	372	0.17*
	Year 4	3.31	1.27	758	3.23	1.20	417	0.08
	Year 5	3.38	1.34	686	3.17	1.22	325	0.21*
F. Knowledge Regarding the TIPA Initiative	Year 2	3.58	0.91	1,016	2.67	0.94	804	0.91*
	Year 3	3.74	0.78	608	3.47	0.83	372	0.27*
	Year 4	3.80	0.93	761	2.58	1.00	420	1.22*
	Year 5	3.78	1.04	689	2.52	1.04	329	1.26*

Scale B: Opportunities for Professional Improvement and Leadership was only asked in Years 2 and 3 of the initiative.

*Indicates statistically significant difference at $p < 0.05$ between TIPA schools and comparison schools.

Appendix C

Stakeholder Perceptions of Performance-Based Compensation

How do stakeholders perceive the value of performance-based compensation as a means of (1) rewarding teachers and administrators electing to work in high-need schools; and (2) attracting and retaining high quality teachers and administrators to these schools?

One of the goals of TIPA was to retain highly effective teachers and principals in high-need schools. As the data in Chapter III reveal, TIPA did not have a significant impact on this goal.

In the survey, the scale measuring educators' perceptions with respect to performance-based compensation included a subscale that examined educators' views regarding whether performance-based compensation is a vehicle to attract and retain strong teachers and principals. The survey data indicate that respondents from TIPA schools showed greater agreement with this idea than their peers at comparison schools, but agreement levels were nonetheless fairly low. Specifically, the mean scores in the TIPA schools ranged from 3.32 to 3.38 while those in the comparison schools dropped from 3.28 in year two to 3.17 in 2014-15. The fact that educators' perceptions stabilized at a low score level in the TIPA schools and kept drifting lower in the comparison schools suggests that TIPA's impact on the turnover of teachers and principals was limited—a finding consistent with that of the teacher retention analysis in Chapter III and comments of interview and focus group participants in Chapter IV.

When focusing on educators in TIPA schools alone, both administrators and teachers showed low agreement levels on items that pertained to attracting and retaining teachers. In addition, their agreement levels on the two items barely increased over time. These findings are consistent with other input from interviews and focus groups indicating that educators had mixed opinions about the impact of TIPA on these factors, and, by extension, on the turnover of teachers and principals.

During the five years of focus groups and interviews, both administrators and teachers spoke of the satisfaction they derived from working with students in Title I schools. While gratified by the idea of additional compensation as an acknowledgement of their hard work, teachers indicated that it would not be the determining factor for staying put or moving to another school. Issues such as school leadership, collaboration with their colleagues, school climate, and making a difference for students were all more important factors.

In focus groups, parents expressed a range of opinions about performance-based compensation for teachers: that teachers work hard; that compensation should definitely be linked to student learning; that (in their own words) "money is not the driving force for what teachers do"; that "[teachers] deserve more money and should not be penalized if student learning is not what some test determines"; that "whether a teacher does his best should be checked and dealt with in other ways"; and that "teachers must reach their standards just as they expect children to reach the standards set for them."

Appendix D

TIPA School Effectiveness Criteria

TIPA's approach to performance-based compensation uses multiple measures to define success and places significant emphasis on educator development and improvement in school conditions and culture in addition to student growth and achievement. If much of TIPA's success can be attributed to its commitment to supporting principals, teachers, and ultimately students through targeted professional development, the other equally critical piece was its award system designed around the 23 School Effectiveness Criteria. Each of the criteria had a number of points associated with it and an identified data source. Effectiveness Criterion 2, for example, measured the progress of Limited English Proficiency (LEP) students at individual schools by looking at the median student growth percentile (SGP) on reading and mathematics SOL assessments.[19] The maximum 12 points were awarded if the school median SGP for LEP students was 40 or above for both reading and mathematics. For less growth, fewer points were awarded.

Because there was no clear-cut metric available for five of the 23 criteria, the TIPA Project Director incorporated input from stakeholders to create a set of assessment rubrics that measured the following criteria:

- Evidence of standards-based planning in instruction
- Commitment to ongoing professional development of administrators
- Commitment to ongoing professional development of teachers
- A clear instructional vision for the school
- Student behavior that creates a positive learning environment

The TIPA Project Director collaborated continuously with the 30 principals on how best to interpret and measure the 23 TIPA School Effectiveness Criteria; how to understand their relationship to school policies, customs, and achievement goals; and, finally, how to help schools make the changes necessary to meet the criteria. The creation of clear rubrics, high quality exemplars, and support in implementing key processes helped to enhance the knowledge and skills of the TIPA principals and increased their ability to lead their staffs in improving student learning.

The 23 TIPA School Effectiveness Criteria focusing on student achievement, student growth, teacher quality, and school climate constituted the overall metric used to determine awards for those high-need schools demonstrating the greatest improvement. Table D.1 documents how each school scored on an aggregate basis for the 23 criteria over the four-year period. This table identifies each of the 30 TIPA schools[20] with the total school effectiveness score for that school in each of the four years of the initiative and their total change from 2011-12 to 2014-15. For example, in 2012, elementary school A received 139 out of a possible 171 points; it had an overall increase in effectiveness of 19 points. Finally, the numbers in white cells indicate that the school received a TIPA award in that corresponding year.

TABLE D.1

TIPA School Effectiveness Scores (All 23 Criteria)

School	2012 (Y2)	2013 (Y3)	2014 (Y4)	2015 (Y5)	Total Change (Y2–Y5)
Elementary A	139*	142*	146*	158*	19
Elementary B	140*	154*	142*	154*	14
Elementary C	137*	142*	140*	148*	11
Elementary D	149*	155*	148*	159*	10
Elementary E	144*	154*	141*	148*	4
Elementary F	140*	146*	150*	142*	2
Elementary G	155*	150*	133*	144*	-11
Elementary H	142*	110	150*	156*	14
Elementary I	138*	145*	129	152*	14
Elementary J	145*	130	154*	158*	13
Elementary K	104	107	152*	162*	58
Elementary L	117	138*	131	143*	26
Elementary M	117	128	139*	135*	18
Elementary N	138*	136*	125	127	-11
Middle A	138*	129	132*	123	-15
Elementary O	127	141*	108	134	7
Elementary P	124	128	136*	126	2
Elementary Q	107	136*	90	107	0
Elementary R	133	139*	128	118	-15
High A	99	97	88	116	17
High B	109	123	107	124	15
Elementary S	112	102	100	125	13
Elementary T	125	125	126	133	8
Elementary U	108	128	98	114	6
Middle B	130	133	127	134	4
Middle C	102	85	106	103	1
Elementary V	132	131	130	132	0
Elementary W	124	115	110	115	-9
Middle D	130	134	131	116	-14
Elementary X	127	121	93	97	-30
Average	**128**	**130**	**126**	**133**	**5**

*Denotes schools that received a TIPA award.

Table D.1 indicates that the TIPA effectiveness scores generally improved over the years. From 2011-12 to 2014-15, the total effectiveness score increased for 21 schools (70%), remained the same for two schools (7%), and decreased for seven schools (23%). On average, the total effectiveness scores for the 30 TIPA schools increased by five points from 2011-12 to 2014-15.

Additionally, CTAC examined the specific school effectiveness criteria to determine if some were better predictors of whether a school would receive a TIPA award. For example, if schools that received the TIPA awards had consistently higher scores in certain criteria than non-awarded schools, it would provide information on which criteria proved to be the most consequential during the initiative. To understand which criteria were stronger predictors, Table D.2 presents the average

TABLE D.2

Mean Differences by Criterion and School Year between TIPA Schools Receiving an Award and TIPA Schools Not Receiving an Award

School	2011–12	2012–13	2013–14	2014–15
Criterion 1	4.00*	2.97*	3.21*	4.29*
Criterion 2	2.89*	5.41*	5.10*	4.89*
Criterion 3	0.00	0.00	0.00	0.00
Criterion 4	5.89*	6.32*	5.47*	5.97*
Criterion 5	5.56*	6.01*	4.60*	5.16*
Criterion 6	0.25	0.65	0.36	0.78
Criterion 7	0.33	0.88	1.24	0.71
Criterion 8	-0.08	0.22	-0.11	-0.04
Criterion 9	0.56	0.12	0.29	0.00
Criterion 10	0.00	0.00	0.00	0.00
Criterion 11	0.16	0.00	0.00	0.06
Criterion 12	0.00	0.00	0.00	0.00
Criterion 13	1.14*	0.92	0.65	1.43
Criterion 14	-0.03	0.00	0.00	0.00
Criterion 15	0.16	0.00	0.00	0.00
Criterion 16	0.67	0.53	0.47	0.47
Criterion 17	1.09	0.00	0.00	0.00
Criterion 18	0.00	0.00	0.00	0.00
Criterion 19	0.48	-0.63	0.46	-0.47
Criterion 20	-0.16	0.00	0.00	0.00
Criterion 21	0.67	1.29*	5.29*	4.12*
Criterion 22	0.36	0.29	1.34	2.20
Criterion 23	0.00	0.29	1.59	0.88

*Denotes the five largest differences in mean school effectiveness scores for each year.

difference in school effectiveness scores for each of the 23 criteria by year between schools that received the TIPA award and those that did not. Numbers in white cells indicate the five largest differences in each particular school year.

For example, during the 2011-12 school year, the difference in the mean score on Effectiveness Criterion 1 was four points between the 18 schools that were not rewarded by TIPA and the 12 schools that were rewarded by TIPA. The difference is one of the five largest differences.

According to the differences shown in Table D.2, the following criteria appear to be consistently more effective in differentiating the performance of the 30 eligible schools:

- Criterion 1: High percentage of students scoring "Pass Advanced" on SOL tests;
- Criterion 2: Achievement and growth of students with Limited English Proficiency on SOL tests;
- Criterion 4: Achievement and growth of economically disadvantaged students on SOL tests;
- Criterion 5: Overall student achievement and growth on SOL tests; and
- Criterion 21: Full accreditation by the Commonwealth of Virginia.

In other words, schools were more likely to receive awards when they showed high levels of performance on student achievement/growth criteria, as opposed to criteria designed to evaluate school climate, such as parent or student satisfaction.

Additional analysis of middle and high schools reaffirms the finding that the likelihood of a school receiving a TIPA award is primarily based on the student achievement/growth criteria.

Appendix E

Best Practices Conference

Introduction

As discussed throughout this report, TIPA employed the following strategies over the course of the initiative:

- Increase *collaboration* among educators to strengthen instruction and improve student outcomes.
- Provide *real-time professional development* to teachers with a focus on immediate classroom needs.
- Implement a continuous-improvement model, *standards-based educator evaluation system* that focuses on the relationship between educator performance and improved student learning.
- Employ *multiple school effectiveness criteria* to improve school performance, with a significant emphasis on student growth and achievement, educator development, improvement in school conditions and culture, and student and parent satisfaction.
- Strengthen *leadership* by supporting principals, who can in turn support teachers to improve their practice and better serve high-need students.

The results of many of these strategies are reflected in what individual schools accomplished to improve student learning. In August 2015, PWCS held a best practices conference to highlight many of the TIPA success stories.

Presentations were made by teams representing nine highly successful TIPA schools—of the 30 schools selected for the initiative, these nine together received 62% of all performance awards.

The second half of the conference was devoted to a "Working the Work" session, designed to allow participants the opportunity to respond to the presentations, including identifying strategies for implementation at their own schools and planning next steps for the coming academic year. During this session, presenters from the individual sessions were available to answer questions and provide additional information and support to the participants.

Session Content

The content of the sessions (although not mutually exclusive) fell into the following five categories relating, in part, to the TIPA strategies:

- Effective instructional leadership
- Increased educator collaboration
- Continuous improvement through a standards-based evaluation system

- Better use of planning time and data gathering for real-time professional development
- Strengthening literacy

Effective instructional leadership. Leadership matters, yet there is no one approach that guarantees success, no magic pathway. The clear lesson from the sessions devoted to leadership was that effective engagement appears in many forms. The presentations geared toward administrators focused on the principal as instructional leader, with emphasis on the importance of spending time in the classroom; conducting structured and unstructured observations; and providing face-to-face feedback to teachers that is non-judgmental, goal-oriented, inclusive of praise, and focused around specific suggestions for improvement. Presenters pointed out to principals the advantage of discussing feedback with teachers in real-time, asking and answering questions while the observation is fresh in their minds. Examples of effective leadership strategies included spending less time in the office and more time monitoring classrooms in collaboration with teachers, as well as attending collaborative learning team meetings and working directly with teachers to connect the learning standards to curriculum and classroom instruction.

Presenters provided some suggestions to help principals efficiently manage their many responsibilities as instructional leaders. These included: (1) making a habit of visiting every classroom right after morning arrival at least once a week, without returning to the office until the completion of rounds; (2) seeking out students in the classroom after receiving discipline referrals rather than calling them to the office; (3) handling routine questions by contacting teachers/students during daily walkabouts; (4) scheduling "no office" days several times during the school year; and (5) making a schedule of priorities.

While the term "leadership" generally refers to principals, assistant principals and other administrators, building teacher leadership also emerged as an important strategy during the conference. Session leaders shared the many benefits of having teachers provide professional development to their peers: it fosters collaboration, provides an efficient way for teachers to work together and learn from one another, positively impacts professional practice, increases student learning, and improves school climate. This job-embedded professional development provides teachers with accessible experts for immediate feedback and ongoing support. Administrators learned the importance of encouraging input from more reticent teachers and received suggestions for empowering them to become teacher leaders.

Like the TIPA model of job-embedded professional development and the Professional Performance Process (PPP) system of evaluation, building leadership capacity within a school helps address needs specific to that school that might not be relevant elsewhere in the division. Furthermore, when teachers are empowered to be experts or teacher leaders, they increase team collaboration and help to increase staff engagement in collaborative learning.

Increased educator collaboration. Collaboration goes hand-in-hand with leadership. Administrators cannot effectuate positive change by themselves. Core academic teachers, reading specialists, ESOL teachers, and special education teachers can create powerful approaches to strengthening student learning. Stronger relationships among and between administrators, teachers, and students can lead to improved student and teacher performance, higher expectations

for students, and a trusting, respectful school climate. Furthermore, collaborating with the Central Office can secure professional development tailored to a school's specific needs.

Presenters stressed the power of collaborative learning teams (CLTs) and professional learning communities (PLCs) to increase learning while building a collaborative culture. By attending CLT meetings, principals learn the curriculum along with their teachers, better enabling them to discuss student performance vertically, monitor teacher performance standards based on PPP, and learn which teachers are most in need of professional development. In one session, participants had the opportunity to sit in on a "live" CLT meeting focused around developing a protocol to address student needs.

Continuous improvement through a standards-based evaluation system. Instructional improvement is not accomplished by chance. Session leaders showed that using PPP can help to improve teacher practice and offer needed professional development. Participants were provided a systemic way of collecting and disaggregating the results of assessment data and then taught ways to use the results to improve teaching and interdisciplinary learning. Participants commented on how strong data systems seem to support the shared ownership of all student achievement while data monitoring tools help educators to make instructional decisions and create a culture conducive to student success.

While student achievement data is critical, other types of data also need to be gathered and analyzed. For example, in one session administrators were given tools to help them get the most from the observation and feedback process. These included the practice of reading through their observations and listing areas in need of monitoring; clustering those areas with "like" themes and gathering additional data through informal walk-throughs and instructional rounds; labeling areas of strength and growth based on the information gathered from rounds; and collaborating with staff members to identify needed resources. They also learned ways to glean instructional needs from teachers' evaluations and how to use PPP to target professional development and monitor the progress of student learning.

Better use of planning time and data gathering for real-time professional development. Change doesn't come from winging it or guessing at root causes of student underperformance. Creating common planning time enhances a school's ability to focus on good core instruction, as does vertical alignment across grade levels and alignment through the CLT process.

Schools in the School Improvement Process (SIP) require systems and/or processes to manage data, instruction, and teacher collaboration. Focusing on a continuous improvement process for school improvement planning, content or grade-level planning, and individual professional growth planning can lead to improved professional practice, better vertical alignment, and increased student achievement.

Leaders from one session talked about their school's focus on good core instruction, vertical alignment, common language, common vocabulary, and uniform academic vocabulary across grade levels as well as alignment through the CLT process. They utilized the Plan, Do, Study, Act (PDSA) tool (www.deming.org/theman/theories/pdsacycle) and a process of root cause analysis using the "5 Whys" (www.isixsigma.com) to identify appropriate professional development and support needs.

The outcome of this process includes helping teachers to become reflective practitioners and differentiating professional development based on learning styles, individual needs, team needs, and entire staff needs.

Additionally, workshop presenters stressed that data must be gathered in real-time and used in real-time to assist teachers and strengthen student learning. Professional development needs to help teachers with their current students, which means that it needs to be timely and tailored to specific classroom needs.

Participants at all levels were provided with opportunities to find new ways to approach school/grade/classroom-level data, and learn new ways to streamline their current practice. They also learned how data systems are organized, whom they are for, and why and how they are used.

Strengthening literacy. Two of the sessions focused specifically on the area of literacy, with the goals of making all teachers and specialists share responsibility for the success of all students, and increasing student engagement and time-on-task while decreasing the need for intervention services. Building-level educators focused on making reading materials more rigorous and interesting for students working independently during the literacy block, ideally helping them (especially those who struggle) learn to like reading.

One strategy involved distributing students across teachers in accordance with the specific needs of the individual students—regardless of their designated classroom teacher. For example, train the reading instructional support staff in Guided Reading techniques and Benchmark Literacy and assign them to grade-level groups; at the same time, assign the ESOL teacher to a group of students who require ESOL instruction. The reading specialist works with a group of the lowest ability students, while the high ability/gifted students are placed together in one classroom to focus on literacy extension activities.

The benefits of this strategy are the shared responsibility for all students felt by all teachers and the increased student engagement arising from students receiving instruction from the educator most qualified to meet their needs. Students are guaranteed daily Guided Reading instruction, with fewer pull-outs and more inclusive practice. There is more cohesion among staff and teacher absences impact only one group rather than an entire class. In addition to increasing student engagement and performance, this method decreases referrals for eligibility, student disruption, and frustration among low and high ability students—a truly balanced literacy program.

The second strategy used a three-pronged approach—effective planning, effective instruction, and effective motivation—to motivate students to read. Participants were also shown how to use a master schedule to support their CLTs and to use reading specialists for maximum effectiveness. They learned strategies for increasing the volume of reading by students, reducing "fake reading," and improving instructional planning and delivery in every classroom. Some strategies suggested by participants during the comment period included having their students build a classroom library around their individual needs and interests; focusing teachers' thinking around literacy and instructional planning; and making better use of close reading and online resources.

Participant Takeaways

At the end of the conference, participants were asked to comment on the most valuable lessons they had learned from the presentations. Their responses focused around the importance of instructional leadership, collaboration, purposeful use of data and progress monitoring of student performance, organizing systems of support that address the needs of each student, and trust and respect within a school culture.

In addition, conference participants stressed the following themes: teachers need to have high standards for all children—no excuses accepted; adult learning needs to be ongoing—students learn from teachers who are themselves lifelong learners; educators and students need to be reflective—learn from what worked and what did not; and teaching is hard work—period.

Endnotes

Chapter I

1. Student Growth Percentile (SGP) calculates how much a student has learned in the previous year by comparing each student to others who have performed similarly in the past. The final number is the percentage of similar students who had lower scores on the given assessment. For example, an SGP of 67 for a fourth grade student would indicate that the student performed better than two-thirds of students with the same third grade score. An SGP of 25 would indicate that the student performed better than only one-quarter of students with the same third grade score.

2. Once the initiative was underway, the planning team was reconfigured as the TIPA leadership team. Led by the Deputy Superintendent and TIPA Project Director, the leadership team included central administrators, TIPA principals, and teacher association leaders.

3. These five School Effectiveness criteria are: evidence of standards-based planning in instruction; commitment to ongoing professional development of administrators; commitment to ongoing professional development of teachers; a clear instructional vision for the school; and student behavior that creates a positive learning environment.

Chapter II

4. The descriptive statistics and DiD model results are provided by our evaluation partners on the TIPA project, Dr. James H. Wyckoff of the Curry School of Education, University of Virginia and Dr. Allison Atteberry of the University of Colorado-Boulder School of Education.

5. The DiD model on teacher outcomes is very similar to Equation (1), but it has a logistic functionality.

6. Stronger statistical analysis would be a regression discontinuity (RD) model. However, the small sample size precluded a meaningful RD analysis. A time-based DiD model (also known as a comparative interrupted time series model) was also explored. Its results were consistent with the findings of the DiD model in direction but were generally not statistically significant.

7. The UVA team conducted the analysis. See Chapter III.

Chapter III

8. The descriptive statistics and DiD model results are provided by our evaluation partners on the TIPA project, Dr. James H. Wyckoff of the Curry School of Education, University of Virginia and Dr. Allison Atteberry of the University of Colorado-Boulder School of Education.

9. The statistical analysis reports effects in standard deviation units. Subsequent to the analysis, CTAC used empirical estimates from the work of Hill et al. (2007) to translate changes in test score standard deviations into the metric of months of student achievement growth. This metric is only intended to provide illustrative benchmarks. For more details, refer to Hill, C. J., Bloom, H. S., Black, A. R., and Lipsey, M. W. (2007). *Empirical benchmarks for interpreting effect sizes in research* (MDRC Working Papers on Research Methodology). New York, NY: MDRC. Available at: http://onlinelibrary.wiley.com/doi/10.1111/j.1750-8606.2008.00061.x/pdf.

10. Students' SOL scores have been converted to a scale reported in standard deviation units.

11. To be more concise, "a typical comparison school student" is substituted for "a comparison school student with average covariate characteristics."

12. Recall Figure III.1, where the growth trends for ELA at both TIPA and comparison schools are presented—it is not clear from the trend plot whether TIPA had a significant positive effect on ELA. The DiD estimate parses this effect.

13. Student socioeconomic characteristics are not controlled for in Equation (2) because of limited data, and, more importantly, because they are not expected to substantively affect results. Past achievement was accounted for in Equation (2), which means factors that can affect achievement, such as poverty, have already been accounted for. Therefore, there is no need to control for such factors as long as we assume poverty affects achievement in the same way in the past and current periods.

Chapter IV

14. The survey analysis includes an examination of the responses by three teacher categories: classroom teachers, other certified staff, and non-certified staff. Since nearly all respondents each year were certified staff (i.e., classroom teachers and other certified staff) and there were no statistically significant differences between the groups, the three teacher categories have been grouped into one category, "teacher," for the purposes of discussion in the report. For similar reasons, the principal and assistant principal responses have been grouped into one category, "administrators."

15. All teachers and principals who are quoted in this report worked in TIPA schools.

16. CTAC calculated the average per teacher contact (in minutes) with the PD Coordinators for the TIPA schools. Schools were ordered from low to high in terms of average teacher contact with the PD Coordinators. The third with the lowest average teacher contact time was identified as the "low" category, the second third was identified as the "medium" category and the upper third was identified as the "high" category in Table IV.3.

Appendices

17. Students' SOL scores have been standardized around the mean SOL score for students taking the same SOL test in the same grade and year in PWCS. This allows for comparisons even across different tests, subjects, and school years, provided the relative student characteristics of TIPA schools remain stable over time—information in Table A.1 and Table A.2 confirms this relative stability.

18. The survey employed five categories—translated into a five-point Likert scale in order to conduct quantitative statistical analyses (1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree)—to measure educator views in six scales. The statistical tests are based on the mean scores and their associated standard deviations.

19. The student growth percentiles were provided to PWCS by the Virginia Department of Education.

20. Schools are not named, just referred to by a letter and whether the school is an elementary, middle or high school (i.e. Elementary A, and so on).

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