A Team-Based Leadership Intervention in New York City Schools

An Evaluation of the Targeted Intensive School Support Program

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Preface

In 2013, NYC Leadership Academy (NYCLA) received funding from the U.S. Department of Education through the Investing in Innovation program to develop the Targeted Intensive School Support (TISS) program and contracted with RAND to conduct an independent evaluation of the program. This report describes the findings on the implementation and effects of TISS from the evaluation. The research was undertaken by RAND Education and Labor, a division of the RAND Corporation that conducts research on early childhood through postsecondary education programs, workforce development, and programs and policies affecting workers, entrepreneurship, and financial literacy and decisionmaking. The research reported here was supported, in whole or in part, by the U.S. Department of Education (under grant number U411C130107) through a subgrant to the RAND Corporation from NYCLA. The opinions expressed are those of the authors and do not represent the views of NYCLA or the U.S. Department of Education.

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Summary

Effective leaders can play an important role in the success of a school. As a result, districts and other educational organizations have increasingly invested in programs preparing new leaders and supporting these leaders as they enter schools. In 2013, the NYC Leadership Academy (NYCLA) developed a leadership intervention in collaboration with the New York City Department of Education (NYC DOE) to support schools that were facing particular challenges, the Targeted Intensive School Support (TISS) program. NYCLA asked RAND to provide an independent evaluation of the program's implementation and effect; this report details findings from this evaluation.

The Targeted Intensive School Support Program

Prior to TISS program, NYC DOE had a robust leadership support system. The district had internal preservice preparation programs for principals and assistant principals (APs) and partnerships with nonprofit organizations like NYCLA and universities to provide other opportunities for preservice training. New principals entering NYC DOE were provided with the opportunity to access up to 72 hours of coaching in the first year at no cost to the school. This coaching was initially provided by NYCLA, but was brought in-house to create a district-provided coaching program over the course of the study period. Principals in NYC DOE schools were also supported by strong evaluation processes and a variety of professional development resources.

The TISS program aimed to adapt the traditional individually oriented model of leadership development and support to establish a team-based approach to leadership for NYC DOE schools that were facing particular challenges. The program was designed to have the following five key components:

1. *Teaming and shared preservice training:* The program aimed to match principals and APs from NYCLA's existing preservice programs based on leadership styles and engage participants in a range of collaborative preservice training activities to build their capacity as a team.
2. *Coplacement into NYC DOE schools:* The program aimed to coplace these principals and APs with shared training into a school, providing the principal with a like-minded leader who could help to execute improvements to the school.
3. *Team-based coaching:* The program aimed to provide coaching to both the principals and the APs (and in some cases the broader leadership team), with an expectation that

30 percent of all coaching hours be used to support others on the leadership team in addition to the principal.
4. *Extended coaching:* The program aimed to increase the number of hours of coaching and the length of time over which coaching took place. Although new principals in NYC DOE traditionally were offered 72 hours of coaching in the first year of principalship, the program aimed to provide school leaders with 328 hours of coaching over the first three years.
5. *Needs-based coaching:* The program aimed to engage the principal and other school leaders in a diagnostic process to review data and identify the schools' priorities and areas for needed support. The expectation was that coaching would then be informed by these identified priorities and support needs.

TISS leaders were drawn from NYCLA's existing preservice training programs for principals and APs. The program served a total of 32 NYC DOE schools over five years: the first set of TISS leaders were placed into schools prior to the 2014–2015 academic year, followed by two additional cohorts entering in 2015–2016 and 2016–2017. After entering NYC DOE schools, TISS leaders were supported by NYCLA for up to three years.

The implementation of the program's key components evolved over time due to changing conditions on the ground. Because of the timing of when the program was initially funded, the preservice component of TISS could not be fully implemented for the initial cohort of TISS leaders, with later TISS cohorts benefiting from more information on the program, expanded matching and teaming activities, and earlier exposure to the coaching and diagnostic components. In the second year of the program, it became clear that the district was not going to provide any specialized placement preferences for TISS principals, so NYCLA loosened its restrictions on coplacement to sustain the program and continue serving as many TISS participants and schools as possible. To support these principals who were not coplaced, NYCLA had to adapt its conception of team-based coaching to focus on the identification of partners within the existing school team rather than centering on an AP partner who the principal was paired with prior to placement. There were also several other adaptations to the program over time, including the relaxing of requirements that TISS participants complete the preservice program and the embedded matching and teaming components, and greater formalization of and emphasis around the diagnostic component.

Study Approach

To assess the implementation of the TISS program, RAND worked with NYCLA to establish fidelity measures and thresholds for each of the program's key components. Drawing on data from coaching records and other program documentation, we tracked fidelity of implementation across the full study period for each school where a TISS principal was placed. When 75 percent of TISS schools met fidelity threshold(s) for a key component, TISS was determined to have been implemented with high fidelity at the program level. The implementation analysis also documented the adaptations of the program and the barriers and facilitators to implementation through interviews with TISS principals, TISS coaches, NYCLA staff, and district leadership.

To assess the effect of TISS, we first needed to identify a set of comparable principals and schools. Given that all TISS principal participants were new principals and were expected

to come from NYCLA's residency-based preservice program—the Aspiring Principal's Program (APP)—we needed to compare TISS principals to other new principals participating in residency-based training programs. Some of these comparison principals were trained through APP but opted not to participate in TISS or were trained in earlier cohorts, whereas other comparison principals were drawn from other residency-based principal preparation programs offered by the district or external providers. We required that principals remain in the school for one full year to be included in the sample and continued to include the school in the sample even if the TISS principal left the school.

Once narrowing the sample to schools with new, residency-trained principals who remained in the school at least one full year, we used a propensity weighting approach to ensure that the comparison schools looked similar to TISS schools in terms of academic achievement prior to the new principal's placement in the school. To be included in this weighting process, schools had to have one year of preplacement data; a total of 28 TISS schools and 54 comparison schools met these requirements. After weighting, the comparison group schools were similar to TISS schools according to prior achievement in English language arts (ELA) and mathematics, as well as the demographic and socioeconomic characteristics of their students.

To account for the small remaining differences after weighting, we used a generalized linear regression model that controlled for a number of school-level characteristics, including prior test scores and chronic absenteeism rates, school grade configuration (e.g., high school, middle school, and K–8 school), and the proportions of students by race/ethnicity, disability status, English Language Learner status, and socioeconomic status. We estimated the effects of the TISS program on average school outcomes in the third year after the TISS principal was placed. The primary outcomes were ELA and math achievement scores, though we also conducted exploratory analysis examining effects of the TISS on chronic student absenteeism, six dimensions of school culture, and principal retention.

There were several limitations to the study approach. First, with just 28 TISS schools and 54 comparison schools, we had limited power to assess effects and examine variation in effects by implementation and across key subgroups of interest. Second, TISS principals were not selected randomly and the comparison group included schools and principals who may have had different characteristics than TISS principals and schools. Therefore, the differences observed in the outcomes of TISS and comparison schools may not be fully attributed to the TISS program. In addition, evolving treatment and comparison conditions over the study period made it difficult to characterize the program and the counterfactual, creating some challenges with interpretation of the findings. And finally, we faced data limitations that prevented us from examining some aspects of implementation and effect that we had hoped to assess.

Implementation Findings

Only two of the five key components of TISS were implemented with fidelity (Table S.1). The majority of TISS principals completed the APP program, though the exact teaming and matching activities participants engaged in during this preservice component varied widely across years and across participants within a given year. The diagnostic component was also implemented with fidelity, with 82 percent of TISS schools completing a diagnostic and using findings from the process to inform goals for school improvement and coaching priorities. Coplacement rates decreased dramatically over time, with only 50 percent of all TISS schools

Table S.1
Percentage of Schools Implementing TISS Program Component with Fidelity

	Year 1 TISS Schools (2014–2015)	Year 2 TISS Schools (2015–2016)	Year 3 TISS Schools (2016–2017)	Total
APP completion	100%	67%	89%	82%
Coplacement	100%	50%	11%	50%
Team-based coaching	71%	58%	78%	68%
Extended coaching	71%	42%	44%	50%
Needs-focused coaching	71%	92%	78%	82%
Total schools	7	12	9	28

NOTE: Numbers represent percentages of schools in the final analytic sample implementing with fidelity. Cells highlighted in green indicate that the component was implemented with fidelity at the program level, meaning that at least 75 percent of schools are implementing the component with fidelity. Cells in red indicate that the component was not implemented with fidelity at the program level.

receiving a TISS principal and AP who were paired and cotrained. The team-based coaching and extended coaching components were not implemented with fidelity, and there was wide variation in the amount of training received and the degree to which this coaching was team based across TISS schools.

Based on interviews we conducted with principals, coaches, and NYCLA leadership, the program benefited from buy-in among coaches and some participants, strong support from program staff, and the flexibility of NYCLA in adapting the program to face challenges on the ground. However, these interviewees also reported substantial barriers to implementation that ultimately hindered NYCLA's ability to implement the program with fidelity, including a lack of buy-in from district leadership and some TISS participants, limited understanding of the program among some stakeholders, major challenges coplacing principals and APs, and limited time among some TISS participants to engage in the additional hours of coaching.

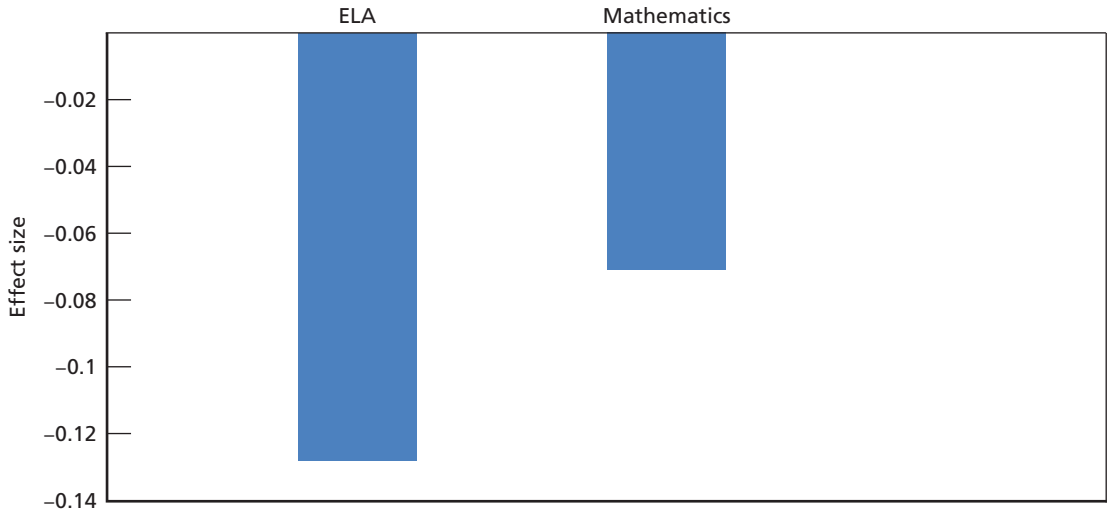
Impact Findings

We did not find evidence of positive effects of the TISS program across the report's outcome measures. In mathematics and ELA, we found no statistically significant differences in standardized achievement scores when comparing TISS schools to the weighted group of comparison schools with residency-trained principals (Figure S.1). We also found no statistically significant differences relative to comparison schools with residency-trained principals in the areas of school culture and principal retention. TISS schools underperformed relative to the comparison schools in terms of chronic absenteeism among students.

Discussion

The TISS program's team-based leadership approach to supporting high-needs schools offered an innovative approach to leadership development and support in a context where most of

Figure S.1
Third-Year Effects of TISS on Student Achievement Relative to Comparison Schools



SOURCE: NYC DOE Administrative Data (AY 2015–2016, 2016–2017, 2017–2018, 2018–2019).
NOTE: No results were statistically significant at the 5 percent level. Estimates represent standardized effect sizes. Estimates are based on 28 treatment schools and 54 comparison schools.

these efforts were focused on the principal as an individual. However, NYCLA faced substantial challenges coplacing principals and APs, due in part to diminishing buy-in and support from the NYC DOE for the program as the district made changes to move away from external partners to provide more of their leadership support in-house. Despite NYCLA's efforts to reenvision teaming in the face of challenges with coplacement, the TISS program was ultimately not implemented as planned. In light of this, it was not surprising that we found no evidence of positive effects of the program, with TISS schools underperforming compared with comparison schools with residency-trained principals in reducing students' chronic absenteeism.

These findings offer several lessons to districts and leadership support organizations. First, interventions that hinge on coplacement should be considered with caution because very specific conditions are needed for coplacement to succeed such as strong buy-in from the district, which may change with turnover in leadership and evolving priorities. When coplacement does not occur, the investments made in matching and cotraining teams of leaders prior to placement are lost. The evolution of TISS to focus on team-building among existing staff may have helped to build transferrable skills around teaming that were robust to where and with whom principals were placed. Flexibility and willingness to adapt interventions can be valuable in sustaining programs in district contexts with uncertain and changing conditions. However, in the case of TISS, such adaptations were not sufficient to overcome the barriers to implementation and generate positive effects for students. Finally, although TISS is unlikely to continue as a program, there may be some valuable aspects of the intervention that could be integrated into other leadership development and support interventions, such as the diagnostic process, which was reported to have helped TISS participants and coaches engage in more strategic coaching and leadership activities that align with priorities for school improvement.

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Abbreviations

AP	assistant principal
API	Assistant Principal's Institute
APP	Aspiring Principals Program
CITS	comparative interrupted time series
ELA	English language arts
i3	Investing in Innovation
LAP	Leadership Advancement Program
LEAP	Leaders in Education Apprenticeship Program
NPS	new principal support
NYC DOE	New York City Department of Education
NYCLA	NYC Leadership Academy
TISS	Targeted Intensive School Support

CHAPTER ONE

Introduction

Effective leadership is an important component of school success. Principals are tasked with wide-ranging responsibilities. They establish a vision for the school, develop and maintain a school culture, provide instructional leadership, evaluate and support the development of school staff, and ensure the school operates effectively and that facilities are maintained. Prior research indicates that there is variation in effectiveness across principals, and that principals' skill in managing these responsibilities is related to student achievement (Bartanen, Grissom, and Rogers, 2019; Branch, Hanushek, and Rivkin, 2012; Hallinger, Bickman, and Davis, 1996; Supovitz, Sirinides, and May, 2009; Walsh and Dotter, 2018), teacher retention (Boyd et al., 2011; Grissom and Bartanen, 2019), and other outcomes of interest (Liebowitz and Porter, 2019).

Districts, states, and other support organizations are interested in developing systems and interventions that support principal effectiveness. Research points to a number of ways that such systems and interventions might influence principal effectiveness, including rigorous preservice preparation and support for early career principals once on the job (Gates et al., 2019a, 2019b). States and districts use a variety of training models to help novice principals learn and manage the complex demands of the principal position, such as mentoring, coaching, new principal institutes and networking support (Crow and Whiteman, 2016). However, there remains limited rigorous evidence on which types of support for early career principals might be most valuable in supporting improved principal effectiveness and student achievement.

This report documents findings from a rigorous evaluation of an innovative early career leadership intervention that was implemented in New York City Department of Education (NYC DOE) schools between 2014 and 2019. The Targeted Intensive School Support (TISS) program—a team-based leadership and coaching intervention—was developed to support turnaround in struggling schools by the NYC Leadership Academy (NYCLA). At the time TISS was developed, NYCLA was already operating preservice preparation and coaching programs to support school leaders in NYC DOE schools. The TISS program aimed to draw participants and coaches from these programs to participate in its team-based approach to school leadership support, including cotraining and coplacing principals and assistant principals (APs) and 328 hours of high-quality coaching for the leadership team over three years.

We start by providing some additional background on the context for leadership support in NYC DOE in Chapter Two. In Chapter Three, we describe the design of the TISS program and the prior evidence that suggests that the program's components might help to improve student outcomes. We then provide an overview of our approach to analyzing the implementation and effect of the program in Chapter Four. Implementation and impact findings are summarized in Chapters Five and Six. Finally, we conclude with a discussion of the findings and key takeaways for leadership support efforts.

CHAPTER TWO

The Context for Leadership Support in New York City

The NYC DOE is by any measure the largest school district in the United States. As of 2019, it served 1.13 million students, operated 1,840 schools and had an annual operating budget of $34 billion (NYC DOE, webpage, undated-a, undated-c). In 2017, NYC DOE had the highest spending per pupil among the 100 largest districts in the United States with an average of $25,199 per student (U.S. Census Bureau, 2019). NYC DOE has typically outperformed other urban districts in the state: 47 percent of NYC DOE students tested proficient in English language arts (ELA) and 43 percent tested proficient in mathematics on New York State assessments in 2018, compared with fewer than 30 percent in other urban districts in New York (NY State Board of Regents, 2018). Like most school districts, NYC DOE has continued to see racial/ethnic disparities in student achievement. In 2018, more than half of White students scored proficient on English Language tests compared with 35 percent of African American students and Hispanic students. In mathematics, 54 percent of White students scored proficient, while fewer than one-third of African American and Hispanic students scored proficient (NY State Board of Regents, 2018).

As the senior leader in the NYC DOE, the chancellor was the ultimate person responsible for leadership development. The district had layers of oversight and support between the chancellor and the school principal. By state law, superintendents were responsible for appointing and evaluating school principals. As of 2019–2020 school year, NYC DOE had 46 superintendents, who oversaw geographically oriented districts or groups of specialized schools within the NYC DOE. Those superintendents were, in turn, overseen and supported by nine executive superintendents who have overarching responsibility for their region or group of schools.

In hiring and supporting school leaders, superintendents and executive superintendents leveraged DOE-wide infrastructure including a district-wide pool of principal candidates and a number of support programs and career development opportunities for aspiring and current principals. To supplement the district's internal capacity, NYC DOE also partnered with universities and nonprofit organizations to provide leadership support through preservice training and support for early career principals.

NYCLA has been a particularly important external partner to the district. NYCLA was originally established to support leadership development in NYC DOE, but has now expanded their course offerings across several states (NYCLA, webpage, undated-a, undated-b). NYCLA clients include school districts, state agencies, universities, and nonprofit organizations. Since its establishment in 2003, the organization has provided preservice training to aspiring principals and APs, coaching to new and continuing principals, and consulting and professional development around leadership support. Three of NYCLA's main leadership support programs in NYC DOE are described in Box 2.1.

Box 2.1: NYC Leadership Academy's Leadership Support Efforts

Below we provide a brief description of NYCLA's three leadership support programs in NYC DOE. These programs provided the foundation for TISS.

Aspiring Principals Program

The organization's flagship program was the Aspiring Principals Program (APP), a preservice program for aspiring principals that was initially developed for NYC DOE but has now been replicated in other districts across the country. The program consisted of rigorous recruitment and selection to identify promising leaders, a five-week summer intensive program, a school-based residency under a mentor principal, and a summer planning phase to help principals transition successfully into their new schools.

Leadership Advancement Program

In addition to preservice training for principals, NYCLA also offered preservice training for aspiring APs through the Leadership Advancement Program (LAP). The LAP program consisted of weekly trainings and residency-based learning opportunities for teachers who aspired to be APs.

NYCLA Coaching

In 2005, NYCLA began providing coaching to most of the first-year principals in NYC DOE. NYCLA's coaching program matched new principals with coaches—retired principal supervisors with specialized training—who offered one-on-one support throughout the first year. NYCLA's model for coaching was organized around four pillars: (1) a facilitative learning process whereby school leaders use inquiry, reflection, and feedback to shift their leadership behaviors; (2) coaching work that is closely aligned to leadership competencies and standards; (3) responsiveness to district policies and initiatives; and (4) tailored support to meet individual needs and unique school context. All new principals were offered 72 hours of coaching support in their first year. Continuing principals who wanted to purchase additional hours did so with their school budgets, and according to NYCLA, nearly 50 percent of early career principals purchased additional coaching at some later point in their tenure. As of 2013, NYCLA had served more than 2,000 principals. However, as described below, NYC DOE began to make shifts in its leadership support portfolio under Chancellor Farina, and as a result, the district shifted away from NYCLA as the primary provider of coaching for new principals. As of 2017, all coaching (outside the TISS program) was conducted by a district-provided coaching program, which was informed by NYCLA's coaching program. NYCLA continued to provide coaching-related services to districts across the country and to experienced principals in NYC DOE interested in coaching.

The idea for the TISS program was developed by NYCLA in 2013 in collaboration with NYC DOE under Chancellor Dennis Walcott's administration. However, implementation of the program occurred during the administrations of Chancellors Carmen Fariña (2014–2018) and Richard Carranza (2018–2019). Throughout the study period, effective school leadership was a priority for the NYC DOE, and there were a number of notable shifts in the systems and structures for supporting school leaders driven by changes in district leadership and NYC DOE's involvement in the Principal Pipeline Initiative[1] between 2011 and 2016 (Gates et al., 2019b; Turnbull et al., 2016). In 2014, Chancellor Fariña advanced a new vision plan focused on "ensuring that every neighborhood has high-quality schools and that every child has the opportunity to succeed" (NYC DOE, 2015). To support this vision, the NYC DOE developed the Framework for Great Schools emphasizing the importance of school principals and their ability to promote collaborative leadership within the school and to effectively engage with the community (NYC DOE, 2015). NYC DOE also promoted greater autonomy for principals regarding budget and staffing and restructured school and school leader support systems to provide a single point of contact in the areas of instruction, operations, special education, and student services such as health and safety. And importantly for NYCLA's programs, including TISS, during this time, NYC DOE moved away from the use of external organizations to provide leadership support and toward more internal district responsibility for these efforts.

Below we provide some additional details on NYC DOE's approaches to leadership support over the study period in three areas most relevant to the TISS program: preservice leadership training, hiring of leaders into schools, and coaching and support for new leaders.

Preservice Training for Leaders

To serve as a school principal or APs in NYC DOE public schools, aspiring leaders had to obtain an administrative license from the State of New York. This required completion of a state-approved preparation program, which included several district-provided programs, as well as universities and nonprofit organizations that the district had established partnerships with (Gates et al., 2019a). External preservice preparation providers explicitly aligned preparation efforts with the expectations for NYC DOE leaders. Aspiring leaders were responsible for attaining their license and typically paid for their own preparation. However, through its internal programs and partnerships with several of the external programs, the district was able to offer opportunities for aspiring leaders to pursue their credential at low or no cost.

Some of these preservice training opportunities were distinguished by offering on-the-job training through a residency in an NYC DOE school as a central component of their programs. According to district data on the preservice training of principals placed into NYC DOE schools during the study period, approximately one-third of all principals were trained through residency-based programs. Among new principals who received residency-based training, approximately 47 percent participated in the district's internal preservice programs, the Leaders in Education Apprenticeship Program (LEAP) and the Assistant Principal's Institute

[1] The Principal Pipeline Initiative was funded by the Wallace Foundation and provided funding to NYC DOE and five other districts between 2011 and 2015 to enact multifaceted reforms to improve leadership development and support throughout the pipeline. See the Wallace Foundation, 2019 for additional information on the Principal Pipeline Initiative.

(API). LEAP is a year-long residency for teacher leaders and APs with Master's degrees that includes a one-year internship at the aspiring principal's home school (Turnbull et al., 2013, 2016), whereas API is a preservice training program geared toward individuals aspiring to become APs. NYCLA was involved in helping the district to develop the LEAP program, and some of its elements were modeled off of NYCLA's preservice preparation program.

Outside these district-provided preparation programs, the largest external residency-based preservice program was NYCLA's APP. More information on APP is provided in Box 2.1. External residency-based training programs were also offered by New Leaders, NYC Bank Street Principals Institute, NYC Fordham AMPEL, and NYC Teachers College Summer Principals Academy. As part of its work in the Principal Pipeline Initiative, the NYC DOE Office of Leadership began work in 2011 to refine its expectations for school leaders and communicate those expectations to external preparation programs serving NYC DOE and distributed clear guidance on expectations for aspiring leaders in 2015 (Turnbull et al., 2016, p. 16). During the 2014–2015 school year, NYC DOE began redirecting its financial resources away from external partnership programs and toward its district-run LEAP program (Turnbull et al., 2016, p. 19). Despite this shift in emphasis toward internal programs, NYC DOE data suggest that the district continued to hire leaders trained by external providers at similar rates throughout the study period.

Leadership Hiring

Between 2014–2015 and 2016–2017, an average of 132 new principals were hired into NYC DOE schools each year. Principal and AP hiring was governed by Chancellor's Regulation C-30 to ensure the hiring process is merit based and equitable. Only candidates who were part of the district-wide Principal Candidate Pool were eligible to apply for vacant principal positions. To be eligible for the candidate pool, candidates must have had an administrative license from the state of New York and meet teaching experience (currently 7 years) and other requirements established by NYC DOE. As part of the Principal Pipeline Initiative, the NYC DOE revised its school leader standards during the 2013–2014 school year and aligned the candidate pool screening process to those standards. The revised Principal Candidate Pool screening involved performance assessments designed to determine whether the candidate meets the district's principal standards (NYC DOE, webpage, undated-b; Turnbull et al., 2013, 2016).

Once candidates were part of the pool, they had to submit applications for open principal vacancies in NYC DOE's districts. The superintendent reviewed applications and selected candidates for further evaluation by a larger committee as input to the final principal selection (NYC DOE, 2015). Superintendents selected between three and five applicants from the pool, who were then interviewed by a school-level committee made up of school staff, parents, and a designee of the chancellor. The committee made recommendations to the chancellor, who then made a final hiring decision (NYC DOE, 2015).

When it came to filling AP vacancies, the principal rather than superintendent was the hiring authority. Any candidate who met the basic eligibility requirements—which included having a New York state administrative license and five or more years of teaching experience—could apply. The principal then reviewed applications and made the selection based on input from a hiring committee. Although principals had decisionmaking authority when it came to filling AP vacancies, staffing decisions related to APs—including termination and

reassignment—were governed by contractual agreements between the Board of Education and the Council of Supervisors and Administrators of the City of New York.

The NYC DOE principal and AP hiring processes did not provide special preferences to principals who graduated from particular preservice preparation programs. To support high rates of placement into NYC DOE schools for their graduates, preparation programs made efforts to ensure that their program content reflected the needs of the district and offered placement support in the form of networking activities with superintendents and practice interviews.

Coaching and Support for Leaders

NYCLA began to provide coaching to all first-year principals in NYC DOE in 2005, with optional support for some second-year principals (Turnbull, Riley, and MacFarlane, 2013). At the time of the TISS program's development, each new principal in the district was offered 72 hours of coaching support from NYCLA. Principals at all levels of experience could access additional coaching through district support networks, but had to fund that out of their school budgets. More detail on NYCLA's coaching model is provided in Box 2.1.

Under Chancellor Fariña, the district began to provide coaching internally through the new principal support (NPS) program rather than through external partners (Zimmerman, 2017). The transition began in 2014, and as of 2017 all first-year principal coaching (outside the TISS program) was conducted by the district through NPS. The NPS coaching program relied on current principals in NYC DOE to serve as Master Principal Coaches for the district's novice principals. NPS offered 72 hours of coaching for each new principal including a minimum of 36 hours on-site coaching. In exchange for this support, the NPS Master Principal Coaches received a payment of $25,000 per year in excess of their compensation as a principal. NYC DOE did not have formal supports for all APs, although 44 percent of novice APs surveyed in 2015 reported that they did receive coaching and mentoring support from the district (Turnbull et al., 2016, p. 51).

Ongoing coaching and support for school leaders was informed by the evaluation process. The evaluation process in NYC DOE resulted in a measure of leadership practice that incorporated evidence from the principal quality rubric and a measure of student learning. The district created a principal practice observation tool that outlined how evaluators were to measure the ten indicators in the principal quality rubric (NYC DOE, 2017). Evaluators assessed principal practice during supervisory visits by the district superintendent. Superintendents served as evaluators for at least one of the required visits but "principal leadership facilitators" also conducted visits (NYC DOE, 2017). Principals that received low ratings in their evaluations were required to create a principal improvement plan for the following school year and additional supervisory visits (NYC DOE, 2017).

CHAPTER THREE

The Targeted Intensive School Support Program

In 2013, NYCLA received funding from the U.S. Department of Education through an Investing in Innovation (i3) development grant to create the TISS program.[1] We first provide a description of the program, including the five key components of the program, the staff supporting implementation, and the program participants. We follow with a brief discussion of the evidence base that underpinned the development of the program.

Description of the Program

The Five Key Components of TISS

The TISS program was conceived of as an intervention for schools that were identified by NYC DOE as struggling and in need of comprehensive intervention. The program aimed to prepare a team of two like-minded leaders (or thought partners) that could accelerate the change process in these struggling schools and provide the team with robust coaching support. TISS was designed around five main program components: (1) preservice teaming and training, (2) coplacement of the principal and AP, (3) team-based coaching, (4) extended coaching, and (5) needs-focused coaching. In this section, we describe the rationale for each of these key components and describe how they compared with the "status quo," the leadership support the district provided to other new principals. We also describe the key activities carried out under each of the five program components and how those activities evolved over time in response to implementation constraints (described in detail later in this report). Details on the TISS program are summarized in Table 3.1.

Preservice Teaming and Training

The TISS program was designed to draw participants from NYCLA's existing preservice preparation programs, including aspiring principals from the APP and APs from the LAP (see Box 2.1 for more information on these preservice programs). TISS required an aspiring principal and aspiring AP to team up and receive shared preservice preparation that included some team-oriented components. This contrasted with the traditional approach to preservice training, in which aspiring principals and APs (including those in NYCLA's programs) were developed as individuals. Aspiring leaders might have engaged with others in their schools of employment or residency and might have engaged with other aspiring leaders in a training cohort, but would not intentionally have been codeveloped for placement into a school as a

[1] This grant program is now called the Education Innovation and Research.

Table 3.1
A Description of the TISS Programs

Program Component	Aim	Key Activities	Changes over Time	Contrast to Traditional Leadership Support
Preservice teaming and training	Match like-minded principals and APs and build capacity as a team	Recruitment of team-minded leaders, hosted mixers/informal networking, completion of aligned preservice curriculum, mixers/informal networking and partner selection, team capacity-building work through projects and coresidencies, exposure to coaching, and diagnostic aspects of TISS	Initial cohort had truncated and less robust preservice component, later cohorts had intensive preservice teaming with coresidencies, and more exposure to coaching and diagnostic components; APP completion requirement relaxed for later cohorts	Most principals were trained to enter schools as individual leaders; principals and APs were typically trained separately
Coplacement (cohiring) of principal and AP	Ensure principal has support from another like-minded leader	Informed central office, district admins to build buy-in; provided joint interview prep; identified openings	Coplacement required for continuation in TISS program for the initial cohort, requirement loosened for later cohorts	Principals entered schools as individuals; APs hired through separate process, often on different timelines
Team-based coaching	Build team cohesion; ensure the broader capacity of the leadership team	Coaches trained on team coaching; coaching delivered to others beyond principal (at least 30% of coaching hours)	Expanded concept of team-based coaching and adapted strategies to accommodate TISS principals not coplaced and include existing school staff	Principal coaching focused primarily on individual capacity building
Extended coaching	Increase the amount of support to the leader and team	Assigned coach provides up to 164 hours of coaching by the end of Year 1, 292 hours by the end of Year 2, and 328 hours by the end of Year 3	No changes	First-year coaches offered 72 hours in the first year only
Needs-focused coaching	Ensure that coaching focuses on evidence-based priorities	Used diagnostic tool/process to identify needs and inform coaching; provided access to specialist coaches as needed	Earlier introduction to diagnostic during preservice training; more formalized process and engagement with NYCLA staff around diagnostic	Coaching often focused on immediate needs and areas of crisis without deep inquiry into the issues a school faces and a clear vision for leadership priorities

team. In addition to the explicit teaming activities that TISS incorporated into the existing preservice programs, the aligned training curricula used for the APP and LAP programs increased the likelihood that TISS partners had similar approaches to leadership, and helped to lay the groundwork for effective teaming.

NYCLA first recruited team-minded individuals into the TISS program from among individuals who applied to participate in APP and LAP. Beginning in the fall prior to placement, NYCLA offered a range of opportunities (e.g., mixers, school visits) for aspiring principals and APs from these programs to learn about each other, identify strengths and weaknesses, and begin to form partnerships. Program staff provided guidance to help TISS participants identify matches between aspiring principals and aspiring APs and approved partnerships once identified. Once partnerships were developed, principal and AP teams engaged in formal opportunities to build capacity as a team through collaborative work, ranging from occasional meetings to a full-semester coresidency at a school. For example, some aspiring principals and APs were required to work on a "change project" that focused on real problems of practice from the residency school and provided opportunities to develop capacity as a team. These projects also provided TISS participants with exposure to the diagnostic tool and coaching model.

There was variation in the extent of teaming activities across years and across teams within a cohort. The first cohort of participants had already started their preservice training when the program was funded and initiated, so the preservice teaming and training support provided by NYCLA was limited. In the second year, TISS participants were given much more information about TISS prior to entering the APP and LAP programs. In addition, with more time and formative feedback from the evaluation on the first year of implementation, NYCLA greatly enhanced the preservice teaming and training activities for the next two cohorts of TISS participants. For example, some of the principal and AP teams in the later cohorts participated in coresidencies. On the other hand, for the later cohorts, NYCLA began to relax its requirements for TISS participants to have completed APP, allowing some individuals who were just beginning preservice training to be placed into schools. As a result, these individuals did not receive the full range of teaming and training exercises specific to TISS (or the entirety of their residency-based preservice training).

Coplacement of the Principal and AP Teams

As the second key component of the TISS program, TISS aimed to facilitate the coplacement (or cohiring) of principals and APs into schools as a team. The idea was that these like-minded leaders who had been codeveloped as a strong team could enter a school and drive a greater degree of change than a principal going into a school alone. Placement had traditionally focused on the hiring of principals and APs as separate endeavors, and coplacement of multiple leaders at the same time had not been a common practice. To coplace two leaders, schools had to have a concurrent vacancy, or add an AP position to the school. Principals may eventually have had an opportunity to bring in a like-minded AP, but there was a delay in when principals were granted hiring authority, and the principal would have been required to follow the formal hiring process, including gathering input from committee members. In theory, there have been other district programs (e.g., the Assistant Principal Ambassador program) that could have been used to leverage temporary appointments and residencies for coplacement, though these opportunities were not used explicitly for the purposes of coplacing leaders into schools.

According to NYCLA, when the TISS model was developed NYC DOE leadership committed to supporting coplacement of teams into schools that were preidentified as being in

need of additional support. Such opportunities would have been created through supplemental resources for turnaround schools that would create new AP positions concurrent with the principal vacancy. Yet between the time the TISS model was developed and implemented, district support for coplacement of TISS principals had waned. Instead TISS principals and APs sought positions through NYC DOE's traditional hiring process without any special accommodations. That process, described in Chapter Two, posed challenges for coplacement. To overcome these challenges, NYCLA engaged in efforts to inform district superintendents and others in the central office about the benefits of the TISS program to facilitate coplacement. NYCLA also provided the same support to TISS principals that it has long provided to its APP graduates seeking placements as principals—though the support was provided to both leaders as a team—including interview preparation, resume building, and networking opportunities with district superintendents.

At the outset, coplacement was established as a requirement for continued support from TISS in terms of the three additional coaching components of the program. As TISS entered its second year of implementation, barriers to coplacement had become increasingly prominent, and NYCLA decided to release this restriction. Beginning in the second year, TISS principals who were hired into a school as a principal were provided with coaching support regardless of whether they were coplaced with their AP partner.

Team-Based Coaching

Once TISS principals and APs were hired into schools, NYCLA provided them with team-based coaching, which aimed to build cohesion and capacity among the TISS principal and AP or other members of the leadership team. A departure from the traditional model of focusing primarily on one-on-one coaching for the principal under the district's NPS program and NYCLA's coaching program, 30 percent of TISS coaching time was intended to support the AP and/or the broader leadership team within the school as well as the principal. Coaches worked with the APs and other leaders individually and with the principal as a team, with the structure of the coaching tailored to the needs and preferences of the team. To support TISS principals and their leadership teams, TISS coaches received special training on team-based coaching strategies and met regularly to discuss the problems of practice facing their leadership teams.

Because a number of TISS principals entered schools without their AP partner, NYCLA had to adapt the focus of team-based coaching to support these principals. In these cases, NYCLA coaches first helped TISS principals to identify potential partners among existing school leaders. Once leader partner(s) were identified, the coach engaged in team-based coaching with the principal and the leader partner(s).

Extended Coaching

TISS coaching differed from traditional coaching not only in terms of the team focus but in the amount and duration of coaching support provided. TISS leadership teams were expected to receive 328 total hours of coaching over three years, more than four times the 72 hours that has been typically provided to first-year principals in NYC DOE.[2] The additional coaching provided to TISS schools allowed for more visits by the coach, with many coaches visiting on a weekly or biweekly basis in the initial months after placement to provide coaching to the principal and the AP partner (or other leaders as the model evolved). Extending the coach-

[2] Non-TISS principals could use school funds to purchase supplemental coaching support.

ing over three years ensured ongoing coaching support. NYCLA leadership reported that an opportunity to provide three years of coaching to some APP graduates under a prior grant (not connected to the TISS program or this study) had found the additional years of coaching to be helpful to these principals.

There was no change in the extended coaching component of TISS over time; it was the only program component not to evolve over the implementation period.

Needs-Focused Coaching

The final component of the TISS model was to ensure that the coaching support was guided by an extensive diagnostic process, whereby TISS leaders identified the greatest needs in the school for improvement, set goals for the school and leader development aligned with those needs, and aligned coaching to those goals. The aim of the diagnostic process was to help the leader(s) entering into a new environment to learn about the school in an intentional way and to help them identify leverage for change. New leaders sometimes enter schools without taking the time to conduct this deep dive into the school's context and begin their leadership without a clear vision as to where investments should be made in terms of principal effort and leadership development to address the school's most pressing needs. In addition, new leader coaching often addresses the most pressing need on a given day rather than being driven by an overarching set of priorities and school needs guiding the coaching. The diagnostic process helped to ensure that leaders were aware of and attending to the school's most critical needs, and TISS coaching was aligned with these identified priorities.

The diagnostic process consisted of a five-step cycle: (1) review student performance and progress data; (2) observe school practice and behaviors; (3) analyze the gathered evidence; (4) determine priorities and set short- and long-term goals; and (5) monitor progress toward goals. The process was based on the TISS Iceberg model (adapted from Goodman, 2002), whereby student performance and progress data represented the tip of the iceberg, and coaches and school leaders were then required to identify the underlying systems and structures and behaviors that support these outcomes, as well as the underlying beliefs and assumptions about what drives changes in behaviors. TISS coaches encouraged leadership teams to pull together a wide range of quantitative and qualitative data to address the diagnostic questions and inform priority/goal setting. As soon after placement was possible, the coach and principal were expected to use the diagnostic to review student performance and school practices, analyze data, and identify the systems and structures working against goals of the school. A data specialist coach was oftentimes brought on to help with the data analysis and interpretation. Once the data review process was completed, postdiagnostic conferences were held, ideally within a few months of placement into the school. These postdiagnostic conferences typically included the principal, the coach, and a NYCLA program manager, and in some cases the AP and/or other school leaders and focused on using the evidence from the diagnostic to identify goals and create action plans for achieving those goals. After the initial data review meeting, the process included a midyear conference to review progress and determine whether a change of course was necessary, as well as an end-of-year conference designed to assess progress a final time and begin planning for the following year.

Based on feedback from the initial year of implementation and with additional planning time, NYCLA made additional efforts to formalize and emphasize the diagnostic process in the second year of implementation. The formal conferences and the involvement of program managers were expanded in the second year, and TISS participants were exposed to the diagnostic to a greater degree in the preservice component.

Program Staff

There were many staff supporting the TISS program. As an extension to the coaching NYCLA had been providing to NYC DOE for a number of years, the program was able to draw on its well-regarded model for leadership coaching and tools to support coaches and principals, and a large pool of coaches who had been trained on the coaching model and were familiar with the district context. A total of 13 coaches supported TISS over the course of the program, with each coach assigned between one and three TISS principals/schools. In addition to supporting TISS participants and schools, some coaches continued to provide coaching to non-TISS coaches and engage with other NYCLA programs.

Additional professional development was necessary to equip coaches with the skills and knowledge necessary to provide enhanced coaching under the TISS model. NYCLA established a goal of at least 40 hours of TISS-specific professional development, but records indicated that coaches received significantly more hours of professional development, ranging from 55 to 135 hours. Professional development for coaches included formal activities and informal opportunities for coaches to discuss problems of practice and share coaching strategies. In addition to group professional development sessions, coaches described one-on-one support from program managers and other program leadership as valuable professional development, allowing them to work through challenges they were facing on the ground.

To supplement the support provided by NYCLA coaches, TISS leaders had access to specialist coaches with expertise in the areas of budgeting, school data analysis, instruction, English language learners, special education students, teacher evaluation, and scheduling and planning. TISS principals were able to request assistance from specialist coaches at any time, and the primary coach helped to facilitate the scheduling of coaching from these specialists. As noted previously, the data specialist coach played an important role in assessing school data as part of the diagnostic process.

Outside the coaches, the TISS program was supported by a team of at least nine NYCLA staff members who oversaw or supported the program in various ways. These included a program director, the two leads of the preservice programs, three program managers, a project manager, a research and evaluation specialist, and the CEO of NYCLA. NYCLA's Vice President of Coaching Leadership Services—the person responsible for traditional coaching prior to development of TISS—acted as the program's director. The program director was assisted by three program managers with the coaching components, with each program manager assigned a set of approximately seven TISS schools to oversee. Program managers were responsible for overseeing and supporting coaches, participating in several of the primary diagnostic activities, communicating with district superintendents around the progress of TISS leaders and needs for additional support, and assisting with various administrative aspects of the program. The directors of the preservice programs (APP and LAP) had responsibility for overseeing all of the preservice teaming and training and coordinating with those overseeing coaching. The project manager provided logistical and administrative support for the program and was responsible for collecting and developing program data and documentation. The research and evaluation specialist also helped collect and assess program data and provided formative feedback to program leaders. Finally, NYCLA's then-CEO played a central role in designing the TISS model and providing high-level oversight of the program.

Table 3.2
New TISS Participants by Year of Placement into NYC DOE

	2014–2015	2015–2016	2016–2017	Total
TISS principals hired into a school	8	14	10	32
TISS APs hired into a school	8	6	1	15

NOTE: Because of dropping, one principal who left midyear in the 2014–2015 group from analysis, the two principals switching schools (one in 2015–2016 and one in 2016–2017), and the two new TISS principals replacing former TISS principals, our principal counts and school counts differ. Our school counts in the final analytic sample included seven schools that entered the sample in 2014–2015, 15 schools that entered the sample in 2015–2016, and nine schools that entered the sample in 2016–2017.

Program Participants

The implementation and impact findings presented in this report focus on schools rather than leaders as the unit of analysis, meaning that a principal had to be placed into a school to be included in the analysis. A total of 32 principals and 15 APs from the TISS program were placed into NYC DOE schools (Table 3.2). The first group of TISS principals was hired into NYC DOE schools in the 2014–2015 academic year and was supported by the TISS program through 2016–2017. However, one of these eight principals left the district midyear, whereas the other seven continued to be supported by the program. All of the principals in the initial year were coplaced with an AP partner. In 2015–2016, additional 14 new TISS principals who were hired into NYC DOE schools and one of the principals initially placed in 2014–2015 moved to a new school. Six of the new principals were coplaced with their AP partner. These 15 principals and their APs or other leader partners were supported through 2017–2018. In 2016–2017, an additional 10 TISS principals were placed into schools, and one of the new principals placed in the prior year moved to a new school. These 11 principals and their APs or other leader partners were supported through 2018–2019.

The Evidence Base for TISS Program Components

Researchers have considered the importance of principals on school outcomes since the 1970s (Hallinger and Heck, 1996) with rigorous evaluation of how principal training programs connect to outcomes recently emerging within the empirical literature (Crow and Whiteman, 2016; Fuller and Hollingworth, 2016; Grissom, Mitani, and Woo, 2019). Several studies document the effectiveness of particular principal preparation programs in preparing novice principals who outperform other new hires in the district (e.g., Corcoran, Schwartz, and Weinstein, 2012; Gates et al., 2019a, 2019b). However, these studies did not attempt to assess the effectiveness of the various types of support built into these programs (e.g., preservice training, coaching) due to variation in program components across programs and over time (Fuller and Hollingworth, 2016; Grissom, Mitani, and Woo, 2019). As a result, there is limited evidence on the efficacy of the specific components incorporated into the TISS program. We describe a brief overview of the most relevant literature to the TISS program below (much of which was established after the development of the TISS program), including a discussion of the evidence on (1) leadership coaching, (2) leadership teaming, and (3) strategic data use, drawing from the related literature on teacher professional development when appropriate.

The Evidence on Leadership Teaming Efforts

A core element of TISS is the shared training and placement of principals and their leadership teams. The evidence on the efficacy of leadership teaming largely relies on principals' self-reported outcomes or inferred from the evidence of teacher teaming, where several studies find empirical evidence of prominent colleague "peer effects" on student achievement (Jackson and Bruegmann, 2009; Opper, 2019; Sun, Loeb, and Grissom, 2017). Based on qualitative data from participants in a well-regarded principal development program, Wang et al. (2019) find that the ability to build a coalition among existing staff in the school is a critical leadership competency, and that the program's emphasis on coalition building led them to adopt a more distributed model of leadership. Several studies also find that cohort models and other forms of cotraining of school leaders lead to greater cohesiveness and sense of preparedness (Barnett et al., 2000; Huang et al., 2012; Preis et al. 2007).

There is limited evidence on the efficacy of principal and AP coplacement, and limited evidence of district efforts to engage in coplacement. Given the importance of cultural fit on the effectiveness of new school leaders (Kowal and Hassel, 2011), the ability to start a position alongside a like-minded AP could be a boon toward establishing a culture conducive for success. On the other hand, it is unclear whether the coplacement of two new leaders would always reduce cultural barriers, because the pair's existing relationship could potentially lead to issues with cultural fit with other existing school staff. The one relevant study examined the Charlotte-Mecklenburg School District's Strategic Staffing Initiative, which allowed principals electing to transfer to a high-needs school to also bring a five member "leadership team" to their new schools and serve as the model for TISS's teaming model (Pulliam et al., 2012). Pulliam et al. (2012) found that while Strategic Staffing Initiative schools generally experienced growth in student achievement and attendance following transfer of a new principal, this growth was not significantly different from that of a selected group of comparison schools.

The Evidence on Leadership Coaching

A second core feature of the TISS program was coaching of new school leaders. Leadership coaching is a prevalent practice, with a nationally representative survey of principals finding that roughly half of surveyed principals reported receiving coaching at some point of their career (Wise and Cavazos, 2017), although another national study found that somewhat fewer principals receive mentoring support after the first year or two on the job (Johnston, Kaufman, and Thompson, 2016). Similar to the teaming literature, studies examining the effectiveness of principal coaching typically rely on principal self-reported outcomes, finding that on average principals report that access to coaching contributed positively to job performance and socioemotional well-being, though these associations appear to be strongly moderated by the quality of the principal-coach match (Alsbury and Hackmann, 2006; Crow and Whiteman, 2016; James-Ward and Salcedo-Potter, 2011; Orr and Orphanos, 2011). A randomized experiment conducted by Goff et al. (2014) found that access to principal coaching led to improvements in measures of principal leadership but no effect on teacher instructional quality. To our knowledge, no studies explicitly identify the effects of leadership coaching on student outcomes. A 2018 meta-analysis conducted by Kraft, Blazar, and Hogan found that teacher coaching resulted in positive effects on both instruction and test scores; the authors did not find significant differences in the effect of teacher coaching by program features (e.g., contact hours, virtual coaching, group training).

The Evidence on Strategic Data Use and Priority-Setting by Leaders

Another core component of TISS was the use of a data-driven diagnostic tool and process to identify school needs. The literature suggests that strategic use of data by leadership for priority setting and monitoring of progress can help to improve leadership capacity (Bryk et al., 2010; Herman et al., 2008; Murphy, 2007). Yet studies using survey data typically find low-grade subject-specific correlations between principals' reported data use and student achievement (Faria et al., 2012; Louis et al., 2010). There is some evidence that more tailored data-driven interventions are effective. For example, one study found that use of a diagnostic tool as part of a coaching program was perceived as being useful (Wang et al., 2019), and the program as a whole led to improvements in student achievement in Massachusetts and Pennsylvania (Nunnery et al., 2011; Nunnery, Ross, and Yen, 2010). Van Geel et al. (2016) found significant positive achievement effects of an intervention in the Netherlands designed to train school leaders to implement data-based decisionmaking.

CHAPTER FOUR

Study Approach

NYCLA contracted with RAND to conduct independent implementation and impact evaluations of the TISS program between 2014 and 2020. The evaluation was designed around the following research questions:

1. How was the TISS program implemented?
   a. To what degree was the program implemented as planned (i.e., with fidelity)?
   b. Were there adaptations made to the program?
   c. What were the barriers and facilitators to implementation of TISS?
2. What were the effects of TISS on schools with participating leaders relative to schools with new residency-trained principals who were not supported by TISS?
   a. Did TISS participation lead to improvements in student performance on standardized mathematics and ELA assessments?
   b. Did TISS participation lead to improvements in student attendance?
   c. Did TISS participation lead to improvements in school climate?
   d. Did TISS participation lead to improvements in principal retention?

In this section, we first briefly describe our approach to assessing implementation and effect. We conclude with a brief overview of limitations to the study. Appendix A provides additional details on the data and methods used for the study.

Research Design

Although the "gold-standard" for impact investigations is the randomized control trial, the intentional selection of participants from the APP program and the district's placement process for new principals made it infeasible to randomize principals to the TISS program and to schools. Yet we could not simply compare outcomes for TISS principals and schools to other principals and schools in NYC DOE, because there were likely to be systematic differences between schools with TISS principals and other schools in the district (Shadish, Cook, and Campbell, 2002). In particular, the TISS program called for principals to be put into the highest-needs schools, so we needed to compare their outcomes to outcomes for similarly struggling schools.

We used a three-step process to identify our comparison group. The first step was to choose a pool of principals comparable to TISS principals across two characteristics: years of experience as a principal and type of preservice training received. Because all of the TISS principals were new, first-year principals, we selected comparison schools that also had first-year

principals. In addition, because TISS program participants were all drawn from NYCLA's residency-based APP program, we needed to find a way to disentangle the effects of TISS from the effects of the APP program. To do this, we limited the pool of comparison schools to those with principals who had completed a residency-based principal preparation program, including other APP principals who did not participate in TISS, graduates from the district's LEAP and API programs, and graduates from other external residency-based preservice training programs. Although not a perfect comparison—with residency-based programs likely varying in design and effectiveness—this group of other new principals from residency-based programs served as the best possible comparison group available for the analysis. We also required that TISS and comparison principals were placed in the school (with or without coplacement of an AP) by November 15 of an academic year, and they needed to remain in the school through May 15 of that first academic year to allow sufficient time for treatment to occur. This restriction led us to drop one TISS principal from the sample who left the district midyear.

The second step was to eliminate schools that did not have sufficient data to be included in the analysis. The school must have been open for at least one year at the time of placement to ensure that preprogram outcomes (e.g., test scores, student attendance, etc.) were available for the quasiexperimental analysis process. This restriction eliminated an additional three TISS principals/schools from the analysis, resulting in a total of 28 treatment schools across the three years of placement (seven entering the sample in 2014–2015, 12 in 2015–2016, and nine in 2016–2017). There were 54 eligible comparison schools with new, residency-trained principals.

Descriptive statistics for the eligible TISS schools and the unweighted comparison schools are provided in Table 4.1. Although TISS principals were hired through the regular process rather than being explicitly placed into schools that were predesignated as "high needs," data suggest that schools with TISS principals did have characteristics suggesting higher than average risk. TISS schools had test scores that were below the district average and lower than other comparison schools with new, residency-trained principals. In addition, the populations of TISS schools were primarily made up of students from minority racial/ethnic groups (51 percent Hispanic and 37 percent Black), and the majority of students in TISS schools were living in poverty (83 percent). A greater proportion of students at TISS schools relative to comparison schools fell into these groups.

After limiting our pool of comparison principals to residency-trained principals with similar experience, and limiting the sample of schools to those with sufficient data, we needed to account for differences between the schools with TISS principals and the other new, residency-trained principals. We used a propensity score weighting approach to ensure that the comparison schools were similar to treatment schools in terms of their prior year student performance on standardized assessments. To check that the weighting was successful in creating a comparison group that was closely matched to the treatment group, we inspected the standardized mean differences of baseline scores on ELA and math assessments. As anticipated, after weighting, both baseline ELA and mathematics scores have nearly equivalent means in the TISS and weighted comparison schools, and demographic and socioeconomic characteristics of the two groups also looked similar (Table 4.1).

The small remaining differences between students in TISS principal schools and weighted comparison schools were accounted for through our analytic approach. We assessed the effect of the TISS program by comparing the school-average outcomes of treated and weighted comparison schools. We used a generalized linear model, weighted by the estimated propensity score, regressing the student outcomes on whether they had been led by a TISS principal that

Table 4.1
Descriptive Statistics for the Study Sample in the Year Prior to Principal Placement

	TISS Schools ($n = 28$)	Unweighted Comparison Group ($n = 54$)	Weighted Comparison Group ($n = 54$)
Black	0.37	0.33	0.32
Hispanic	0.51	0.44	0.47
English language learner	0.14	0.15	0.21
Students with disabilities	0.20	0.21	0.21
Poverty[a]	0.83	0.76	0.77
Standardized ELA score (baseline)	−0.30	−0.14	−0.30
Standardized math score (baseline)	−0.24	−0.12	−0.24

[a]Poverty is defined based on student family income relative to locally calculated poverty thresholds (see NYC IBO, 2015).

year and included covariates in our regression models to obtain estimates of the treatment effect (Bang and Robins, 2005, Hullsiek and Louis, 2002). Covariates included math and ELA assessment scores for the prior year, school grade configuration (e.g., high school, middle school, K–8 school), as well as other school characteristics including the proportion of students with disabilities, the proportion of English language learners, the proportion of African American students, the proportion of Hispanic students, the proportion of economically disadvantaged students, chronic absenteeism, and number of years that the principal has worked in the district. All models use robust standard errors and include cohort fixed effects.

One potential limitation of these analyses is that they did not control for differences in baseline trends for TISS schools and comparison schools prior to receiving a new principal. It is possible student outcomes in treatment schools were systematically increasing (or decreasing) prior to the start of the study in ways that differ from comparison schools. To test the sensitivity of our findings to baseline trends, we also conducted comparative interrupted time series (CITS) analyses which examine changes in outcomes over time for students in schools led by TISS principals and students in schools not led by TISS principals and explicitly account for any differences in baseline student outcome trends. These models are discussed in greater detail in Appendix A.

Data and Measures

Implementation Measures

RAND worked collaboratively with NYCLA to determine the measures and data sources used to assess implementation fidelity (Table 4.2). NYCLA requested that fidelity analysis primarily focus on the postplacement components of the program, so we were limited to a single measure of fidelity for the preservice component, completion of the APP program by the TISS principal. We characterized the fidelity of the coplacement component according to whether the TISS principal was placed with the AP she or he teamed with during preservice training.

Table 4.2
Implementation Data and Measures

Program Component	Data Source(s)	Measure(s)
Implementation of teaming, preservice training	Program tracking data	# of principals completing APP
Implementation of placement	Program tracking data	# of principals coplaced
Fidelity to team-based coaching	Program tracking data (professional development attendance sheets)	Cumulative hours of TISS-specific training for coach by end of year
	Coaching logs	Percent of yearly coaching hours that included others on team
Fidelity to extended coaching	Coaching logs	Total cumulative hours of coaching at end of Y1, Y2, Y3
Fidelity to needs-focused coaching	Diagnostic documentation	Completed the diagnostic
	Feedback document completed by principal and coach	Diagnostic data/evidence used to inform goals
	Feedback document completed by principal and coach	Coaching aligned with goals
Perceived barriers and facilitators	Interviews with principals, coaches, NYCLA leadership, superintendents	Open-ended reporting of barriers and facilitators

We examined two measures of fidelity to the team-based coaching component: coaching time devoted to team coaching across the three years and hours of TISS-specific professional development received by TISS coaches. To examine fidelity to extended coaching, we assessed the total number of hours of coaching in each year following placement. Our examination of fidelity to needs-focused coaching examined completion of the diagnostic tool/assessment designed to assess the root causes of issues within the school, use of the diagnostic assessment to determine goals, and alignment of coaching with goals. For a school to have implemented a key component with fidelity, all measures for a given component must have satisfied the required minimum thresholds for fidelity. To assess fidelity at the program level, NYCLA determined that 75 percent of all schools with TISS principals must be implementing each component with fidelity.

To assess stakeholder experiences with the implementation of the TISS program and barriers and facilitators to implementation, we conducted semistructured interviews with a range of stakeholders involved with implementation during the first two years of the grant. A total of 39 interviews were conducted, including 11 interviews with TISS principals, 14 interviews with TISS coaches, 11 interviews with TISS program leadership, and 3 interviews with superintendents. More detail on the interview sample and content of the interviews is provided in Appendix A. We analyzed interview data to identify qualitative themes related to how the program was implemented, barriers and facilitators to implementation, and stakeholder perceptions of the program.

Impact Measures

We examined the school-level effect of TISS across several different outcomes (Table 4.3). Our primary (confirmatory) outcomes of interest were student performance on standardized math and ELA assessments. For students in grades 3 through 8, these assessments included the NY

Table 4.3
Impact Data and Measures

Outcome	Data Source(s)	Measure(s)
Student achievement	Student-level district administrative data	NY State Math and ELA Test (grades 3–8), NY State High School Regents Exams (high schools)
Student attendance	Student-level district administrative data	Chronic absenteeism (absent 10% of days enrolled or more)
School climate	Publicly available school-level data	NYC School Survey (parent, teacher, and student forms)
Principal retention	Staff member-level district administrative data	Remained as NYC DOE principal, staff

State English Language Arts Test and the NY State Math Test. For high school students, these assessments included the NY State High School Regents Exams in ELA and Algebra I. We also conducted exploratory analysis of the extent to which TISS reduced chronic absenteeism, defined as being absent more than 10 percent of the days of enrollment within an academic year. School climate was measured based on the NYC School Surveys, which were administered annually to students, parents, and instructional staff. These surveys measured six dimensions of school climate, including the extent to which (i) instruction is customized, inclusive, motivating, and aligned to the Common Core; (ii) the school establishes a culture where students feel safe, supported, and challenged; (iii) teachers are committed to school success and improvement; (iv) school leadership is effective; (v) the school fosters strong family and community ties; and (vi) school staff, parents, students, and administrators trust and value each other. Finally, we explored the extent to which TISS drove increases in principal retention, which we defined as staying in the principalship in NYC DOE.

The confirmatory analysis focused on school-level average outcomes three years after the principal's initial placement. We also explored school-level average outcomes after one and two years and examined outcomes across the three cohorts of participants to gain a more nuanced understanding of outcomes and explore whether effects changed over time. Findings from these exploratory analyses are detailed in the Appendix B.

Study Limitations

There were a number of limitations to our study approach. First, with only 28 TISS schools and relatively few comparison schools with residency-trained principals, the statistical power of our analysis was limited. Small sample sizes restricted the number of covariates that could be included in matching and analysis, and we faced challenges with the stability of parameter estimates. The small sample size also limited our ability to examine the relationship between effects and key aspects of implementation or school characteristics.

Our approach to developing a comparison group may not have accounted for all of the selection issues. For comparison group principals who also received preservice training from NYCLA's APP program, there were likely unobserved differences between principals who did

and did not select into the TISS program that we were not fully able to account for. In comparing TISS principals (trained through the APP program) to principals who came from other residency-based programs, we made the assumption that there were no differences in the effectiveness of these different programs. To the degree that NYCLA's APP was more or less effective than these other preservice preparation programs, these differences on the effect of APP versus other residency-based training programs might have been included in our estimates to the effect of TISS.

Beyond these issues with selecting a good comparison group, we were limited in our ability to describe a clear intervention and compare it to a stable counterfactual. The key components of the TISS program and program activities changed substantially over time, meaning that different cohorts received varying treatments. In addition, there was variation within cohorts in the intervention received, with varying intensity in terms of preservice teaming experiences and varying postplacement teaming experiences depending on whether the principals were coplaced. We had limited data in some cases to capture this variation due to decisions at the outset of the study to focus fidelity analysis on the coaching-related components and to focus the qualitative data collection in the first two years of the program. In addition to variability in how TISS was implemented, leadership preparation and support for all principals in the district were changing during the study period, such as NYC DOE moving first-year principal coaching in-house to its NPS program rather than using NYCLA for this coaching. We had anticipated having robust data on the coaching received by comparison principals from NYCLA records and NYCLA survey data, but given that most of these comparison principals were trained through NPS we had very limited data on the coaching and support received in the program.

We also faced limitations with our ability to examine several outcome measures. NYC DOE implemented a revised version of its school survey beginning in the 2014–2015 academic year. Although we included the previous school survey scales as baseline measures in all analyses, it should be noted that the new school survey did not measure the same constructs as the previous school survey. In addition, response rates for these surveys varied across schools, and it is not possible to determine the extent to which survey respondents are representative of the school community as a whole. We were unable to examine effects on leadership quality ratings because these quality ratings were not collected on an annual basis for all principals, with wide variation in the timing of measurement that was systematically tied to principal quality.

Finally, there are limitations with the generalizability of our findings. All of the TISS schools were in NYC DOE, a district that is unique in many ways, outperformed other districts in the state, and already had a robust leadership support system in place when TISS was created. The findings are therefore difficult to generalize beyond NYC DOE.

CHAPTER FIVE

Findings on Implementation of the TISS Program

Our implementation analysis examined the degree to which the TISS program was implemented as planned (fidelity), adaptations to the program over time, and barriers and facilitators to implementation.

Implementation Fidelity

The program-wide fidelity results for the implementation of the TISS program indicate that two of the program's key components were implemented as planned, whereas the other three were not (Table 5.1). A total of 23 schools (82 percent of the sample) received TISS principals who had completed NYCLA's preservice training, and the same number of schools implemented the needs-focused component with fidelity. The team-based coaching component was implemented with fidelity at 19 schools (68 percent), whereas coplacement and extended coaching were implemented with fidelity for just 14 schools (50 percent). We provide a more detailed description of our implementation findings for each component in the following sections.

Preservice Teaming and Training

NYCLA was relatively successful in drawing most TISS principals from the APP, and this helped to ensure that the principals could benefit from the preservice components of the TISS

Table 5.1
Percentage of Schools Implementing TISS Program Component with Fidelity

	Year 1 TISS Schools (2014–2015)	Year 2 TISS Schools (2015–2016)	Year 3 TISS Schools (2016–2017)	Total
APP completion	100%	67%	89%	82%
Coplacement	100%	50%	11%	50%
Team-based coaching	71%	58%	78%	68%
Extended coaching	71%	42%	44%	50%
Needs-focused coaching	71%	92%	78%	82%
Total schools	7	12	9	28

NOTE: Numbers represent percentages of schools in the final analytic sample implementing with fidelity. Cells highlighted in green indicate that the component was implemented with fidelity at the program level, meaning that at least 75 percent of schools are implementing the component with fidelity. Cells in red indicate that the component was not implemented with fidelity at the program level.

program. After NYCLA relaxed the requirement that TISS principals had to have completed the APP, we found that five TISS principals were placed into schools without completing the preservice training, including four who had committed to participation in the APP but left early to enter the principalship, and one who was pulled from the LAP. However, completion of preservice training by principals was just one aspect of TISS's preservice training requirements, so this single measure is limited in assessing fidelity and does not capture the variability in the matching and team capacity building across cohorts and principals within cohorts. Although we were aware of substantial variation in the participation of TISS participants in various teaming activities across years and within cohorts, we did not have consistent data on preservice activities to characterize this variation in preservice experiences.

Because the preservice teaming components largely focused on building capacity between specific principal and AP pairs (as opposed to building transferrable teaming skills), the value of the preservice teaming activities for the 50 percent of principals who were not placed with an AP may have been greatly diminished. NYCLA's shift to place a greater emphasis on building broad team-building skills in the final cohort rather than focusing exclusively on preservice teaming with a specific AP may have increased the likelihood that the preservice teaming components offered value to all TISS participants regardless of whether they were coplaced.

Coplacement into NYC DOE Schools

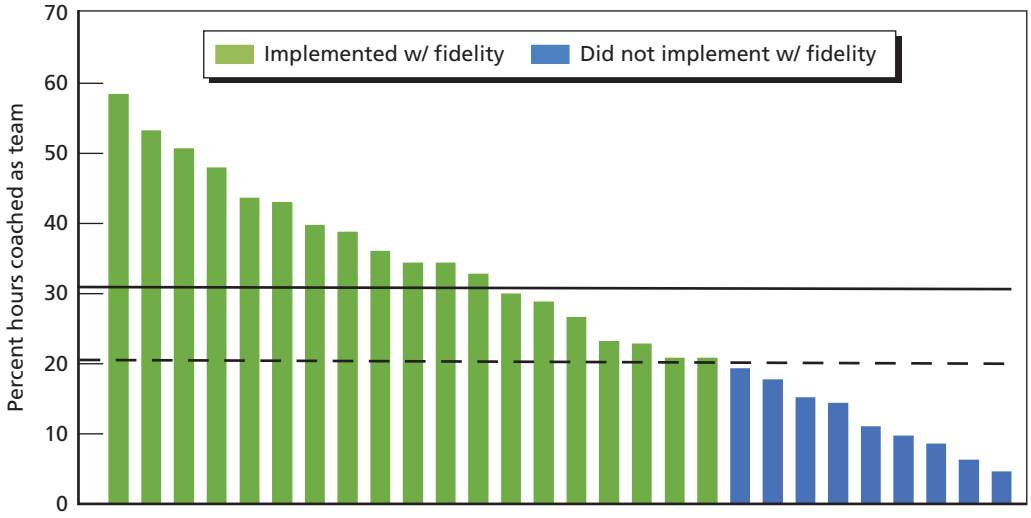
NYCLA encountered substantial challenges placing TISS participants into NYC DOE schools. The program initially aimed to place 50 teams of TISS principals and APs across the three cohorts, yet only 32 TISS principals were ultimately placed in NYC DOE schools. After recognizing that the district would not be granting hiring preferences to TISS leader teams and loosening its restriction that TISS principals be coplaced with an AP after the first cohort, fidelity to coplacement declined substantially. By year two, only 50 percent of TISS principals were coplaced with an APP, and in the third year of implementation only one TISS principal was coplaced with an AP. Across the full sample, only half of all TISS schools were led by a TISS principal and AP who were coplaced.

There were a number of factors potentially contributing to coplacement issues according to NYCLA staff and NYC DOE administrators. According to NYCLA staff, NYC DOE had initially committed to helping place TISS participants into struggling schools, but did not end up providing NYCLA with any accommodations in the hiring process. TISS principals entered the regular pipeline for hiring, and a limited number of schools likely had simultaneous openings for principals and APs in NYC DOE, leaving TISS leaders with a potentially limited pool of schools to choose from. And although there was some flexibility for superintendents (and eventually principals) to carve out new positions in the school budget, this required strong buy-in for TISS among superintendents, which the program did not necessarily have. In some cases, there were issues with the teams themselves that contributed to coplacement challenges. For example, some partnerships also faltered in the interview process, with principals and APs not able to articulate their strength as a team, or superintendents liking one partner and not the other. Finally, some of the principal and AP pairs ended up deciding to part ways prior to interviews or after placement based on incompatibility or interpersonal differences.

Team-Based Coaching

All of the TISS coaches received the targeted amount of professional development on team-based coaching, so this aspect of team-based coaching did not hinder fidelity of implementa-

Figure 5.1
Percentage of Total Coaching Hours Delivered to the Broader Leadership Team Three Years After Placement



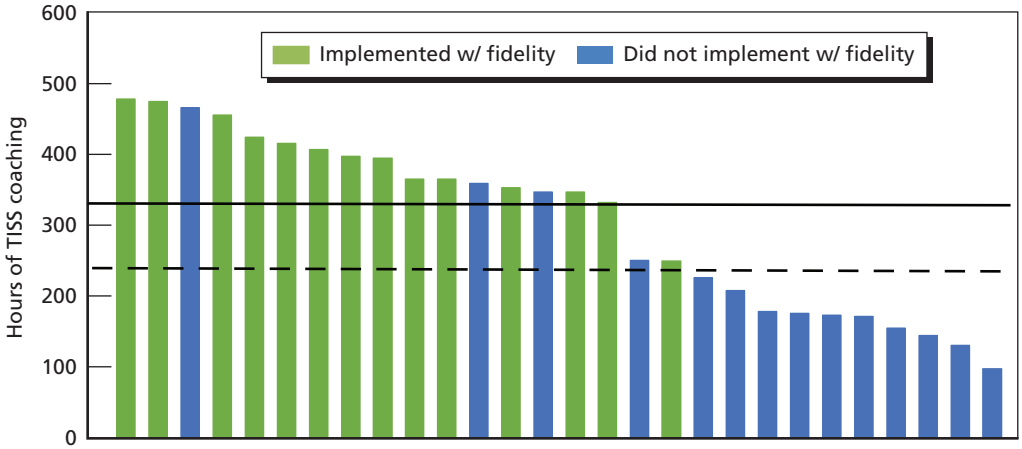
NOTE: Data come from the hourly coaching logs and records on coplacement. Each bar represents a TISS school. Values represent the percentage of total coaching hours that included others on the leadership team over three years of TISS support. The solid black line represents the stated target NYCLA set for team-based coaching. The dotted line represents the fidelity threshold.

tion. However, the program ran into challenges ensuring that all schools received the amount of team-based coaching required. The recommended amount of coaching that was specified for inclusion of others on the leadership team was 30 percent, with a threshold of 20 percent as a minimum for implementation with fidelity. The percentage of total coaching hours that included others from the leadership teams in TISS schools ranged from 5 to 58 percent (Figure 5.1). Of the 28 schools in the sample, 19 met the minimum threshold for fidelity and 12 exceed the 30 percent recommended. As shown in Table 5.1, fidelity was particularly low for schools that entered the sample in Year 2. This was when the program began to place a number of TISS principals without their AP partner, and NYCLA did not yet have a plan in place for how TISS principals might engage in team-based coaching if not placed with their partner during the second year. However, NYCLA staff had reenvisioned team-based coaching for the principals hired into schools in the third year of the TISS program, and the rebound in fidelity for the group of principals entering in the third year of implementation suggests that team-based coaching could be implemented in schools where coplacement had not occurred.

Extended Coaching

We assessed fidelity of implementation to the extended coaching component by measuring the total cumulative coaching hours received by the school at the end of each of the first three years after placement of the TISS principal. As described in Table 3.1, the targets for yearly cumulative hours were 164 by the end of Year 1, 292 by the end of Year 2, and 328 by the end of Year 3. Minimum fidelity thresholds were set at 70 percent of target hours, meaning that TISS was implemented with fidelity when coaching hours exceeded 114 hours in Year 1, 204 hours in Year 2, and 229 hours in Year 3. The total number of coaching hours over three years

Figure 5.2
Total Hours of Coaching Three Years After Placement



NOTE: Data come from the hourly coaching logs and records on coplacement. Each bar represents a TISS school in the sample. Values represent total hours of coaching over three years of TISS support. The solid black line represents the stated target NYCLA set for team-based coaching. The dotted line represents the fidelity threshold.

of TISS support varied widely by school, from 98 to 477 hours (Figure 5.2). After the third year of TISS support, 17 of the 28 study schools had leaders who had exceeded the minimum fidelity threshold of at least 229 total coaching hours over three years, and most of these schools had also exceeded the target of 328 total hours of coaching. However, four of the schools that received more than 229 years of cumulative coaching missed a fidelity threshold for hours of coaching in prior years, resulting in just 50 percent of all TISS schools at which the extended coaching portion of TISS was implemented with high fidelity (Table 5.1).

Needs-Focused Coaching

Overall, the needs-focused coaching of the TISS program—completion of a diagnostic process and use of this process for goal setting and coaching—was implemented with high fidelity, with 82 percent meeting implementation targets. In the cases where needs-focused coaching was not implemented with fidelity, it was due to the principal not completing the diagnostic at all, rather than completing the diagnostic and then not using it for the purposes of goal setting and coaching. Table 5.1 indicates that engagement with the diagnostic varied from year to year, with particularly high rates of fidelity for schools entering the sample in the second year. Interviews with program staff and participants provided further evidence of improvements in implementation after the first year. Several of the principals placed in the first year did not remember completing the diagnostic, and those who did use the diagnostic reported it to have played little or no role in determining priorities and guiding coaching. In addition, none of the coaches who were interviewed in the first year of implementation described the diagnostic as a key feature of the TISS model. In contrast, most of the stakeholders we interviewed from Cohort 2 identified needs-based coaching as a key feature of the TISS model and could articulate the value of the diagnostic in enhancing coaching and improving leadership capacity. Interview findings suggested that the higher rates of fidelity for later cohorts were driven by changes NYCLA made to emphasize and formalize this component of the model.

Adaptation of the TISS Program over Time

As noted in the initial description of the TISS program and Table 3.1, there were a number of changes that occurred to major program components over time. Regarding the preservice component, NYCLA had additional time to enhance teaming and training activities for later cohorts, and to establish expectations and build buy-in for the program, and enhanced opportunities for partnership-building. For example, NYCLA required aspiring TISS principals from later cohorts to complete extensive projects with their AP partners, with some partners completing these projects in shared residencies at schools. These structured projects exposed participants to the diagnostic and provided them with opportunities to work with teams and mentor principals to address real leadership challenges in their residency schools. In contrast, team-building activities in the first year of TISS implementation consisted of occasional meetings. Aspiring principals in later cohorts also had more exposure to TISS coaches during the preservice components, and according to program leadership, coaches, and principals, this early exposure facilitated a smoother transition to the coaching components of TISS.

When NYCLA realized that many of the principals were not going to be coplaced, TISS leaders modified some aspects of the preservice component to better support principals placed without an AP partner. During preservice training for the final cohort of TISS participants, the discussions of teaming focused to a greater degree on general teaming with all leaders in a school. These changes to how NYCLA thought about teaming also permeated the team-based coaching component; coaches worked with principals who were not coplaced with an AP to identify other leaders they might partner with during the first year of placement, and then these members of the existing leadership team were eventually brought into coaching discussions.

Finally, NYCLA modified the diagnostic process and communication around the process for later cohorts. Key changes were enhanced messaging about the importance of the diagnostic process to coaches and principals, greater use of the diagnostic in preservice training, and a more formal meeting structure built around the diagnostic during the first year of placement. Both principals and coaches reported that the more structured process helped to keep them on track with assessing the data, setting goals, and aligning coaching to those goals, and the presence of the program manager at check-in meetings was reported as underlining the importance of the process.

Facilitators and Barriers to Implementation

Conversations with coaches, principals, NYCLA leadership, and district leadership highlighted a range of factors within the context of NYCLA and NYC DOE that acted as barriers and facilitators to implementation with fidelity. We identified the following three main facilitators to the implementation of TISS:

- *Buy-in of coaches and staff:* When principals believed in the value of TISS and its approach to leadership support, TISS activities were viewed as valuable and supportive, and principals were willing to devote time and effort to the program's activities. Coaches played an important role in encouraging and supporting principal engagement, so their buy-in to the model was also important. Our interviews suggested high levels of buy-in among

coaches, with coaches acting as strong advocates of the program. In addition, the active engagement of coaches in helping to refine the TISS model was important, because many of the strategies for effective team-based coaching and needs-focused coaching were developed on the ground by coaches as they worked with TISS leadership teams.

- *Support of program staff:* Coaches spoke often of the support that NYCLA staff provided and the important role of that support in facilitating implementation. Program managers helped coaches to use the diagnostic and acted as a thought partner (or coach) to the coaches when they were struggling. They also helped to interface with the district to market the program and gather feedback on participants. Program leaders were perceived as being available as needed and regularly solicited feedback from principals, coaches, and district administrators in an effort to assess implementation and make midcourse improvements. The collaboration of NYCLA leadership overseeing the preservice training components and the coaching components was also helpful in ensuring a cohesive TISS program.
- *Flexibility of NYCLA to adapt the program:* NYCLA's flexibility allowed the program to support TISS participants in widely varying circumstances, and the willingness to adapt also helped to address early issues observed with implementation. For example, the changes to the preservice and diagnostic components were well-received according to interviewees and may have driven the higher rates of fidelity on the needs-focused coaching component. The similar rates of fidelity to team-based coaching for principals who were not coplaced suggest that TISS participants were able to receive team-based coaching despite the challenges with coplacement.

There were also several aspects of the context in NYCLA and NYC DOE that acted as barriers to successful implementation, including the following:

- *Limited understanding of the program:* Interviews with principals and coaches indicated wide variation in understanding about what TISS was among program participants in the early years of implementation. Several principals reported that they were not given advanced notice of what they had "gotten themselves into," and that this had affected their ability and willingness to engage in the program's activities. NYCLA made some adjustments for later cohorts to expand professional development and preservice training activities around TISS, and coaches reported a greatly improved understanding of TISS in later years. Yet a few principals from later cohorts reported they were ill-informed about the program and could have benefited from clearer early communication and the opportunity to "opt in" to TISS. The fact that some participants exited the preservice training components early may have limited their understanding of the program. Interviewees also suggested that better communication with key stakeholders in the district (e.g., district superintendents) from the central office may have been useful in building understanding and buy-in.
- *Limited buy-in among district stakeholders:* There was a lack of buy-in among several groups of district stakeholders. Although NYCLA leaders and district administrators both described strong support from district leadership and buy-in for TISS when the program was created, this buy-in diminished over time, and the district provided limited support for coplacement. There were also some challenges with buy-in among existing school staff. Some coaches and principals who were coplaced reported that other APs and

school staff lacked trust and were unhappy with what they viewed as a special role for the AP that was coplaced with the TISS principal. In schools where coplacement was not implemented, some TISS principals faced challenges engaging the existing school staff in teaming and team-based coaching efforts due to issues with trust and buy-in around the value of teaming and coaching.

- *Limited buy-in among some TISS participants:* Although the buy-in of coaches and some TISS participants helped to facilitate the TISS program at some schools, other TISS participants were less enthusiastic about the program. For example, several TISS principals reported regrets for having participated. These TISS participants were likely to engage less often with coaches and engage to a lesser degree with other aspects of the program.
- *Limited placement and coplacement:* Placement rates for TISS principals were lower than expected, and only half of the principals were placed with their leader partner. When coplacement failed, it became a significant barrier to the ability to implement and experience effects from other components of TISS. First, the value of shared preservice training was only realized when principal and AP partners were coplaced. Principals were likely frustrated when placed without APs they had invested substantial time building relationships with, and this may have reduced their buy-in for other aspects of TISS. Team-based coaching had to be completely reenvisioned to accommodate principals who were placed alone, and these principals and their coaches had to spend time identifying new partners and building buy-in for team-based coaching. Coaches and principals reported that this led to delays in when the additional hours of coaching could be used and lower percentages of those hours being used for team-based coaching. There were a number of factors potentially contributing to coplacement issues according to NYCLA staff and NYC DOE administrators. First, a limited number of schools happened to have simultaneous openings for principals and APs in NYC DOE, so TISS leaders may have had a more limited pool of schools to choose from. And although there was some flexibility for superintendents (and eventually principals) to carve out new positions in the school budget, this required strong buy-in for TISS, which was not the case among most superintendents. Some partnerships also faltered in the interview process, with leader partners not able to articulate their strength as a team, or superintendents liking one partner and not the other. Finally, some of the principal and AP pairs ended up deciding to part ways prior to interviews or after placement based on incompatibility or interpersonal differences.
- *Time constraints for new principals:* According to both principals and coaches, new principals faced an overwhelming number of responsibilities in their first year. TISS components required additional time from principals, APs, and other leader partners on top of the traditional leadership responsibilities. Some principals and coaches reported challenges finding time to get coaching in, and several principals reported it tough to sit down and focus during coaching sessions knowing how much else had to be done around the school. When additional leaders were brought into coaching the time constraints multiplied, and it was challenging to get leaders into coaching together. The diagnostic component was viewed as particularly time-intensive. Principals and coaches reported that time constraints were especially problematic for principals who were placed late in the summer or after the start of the school year. At least one other study of leadership coaching suggests that the time demands of these programs can be a significant challenge (Wang et al., 2019).

CHAPTER SIX

Findings on Effects of the TISS Program

In this section, we first present results on standardized achievement scores, capturing the extent to which TISS schools did or did not drive improvements in student achievement relative to similar schools three years after placement of a new residency-trained principal. We then present exploratory results that capture the extent to which TISS led to improved outcomes after three years in terms of chronic absenteeism, school climate, and principal retention relative to outcomes for schools with other residency-trained new principals.

Effects of TISS on Student Achievement

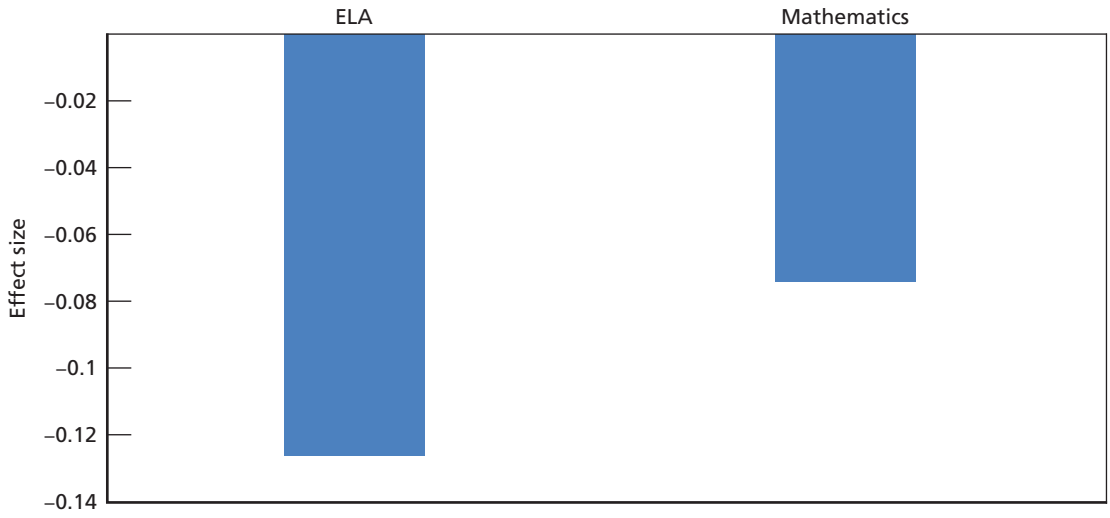
Figure 6.1 shows our estimate of the effect of the TISS program on student outcomes, including performance on ELA and math assessments three years after principal placement. The student achievement estimates represent the covariate-adjusted difference between TISS schools and weighted comparison schools in average standardized ELA and mathematics achievement scores. These estimates provide information about the extent to which principals who participated in the TISS program saw improved outcomes in the academic achievement of their students when compared with schools that had other new principals from residency-based training programs. A negative difference indicates that on average TISS schools underperformed relative to the comparison schools in terms of average achievement scores three years after principal placement. A positive difference indicates that TISS schools performed better than comparison schools on a particular outcome.

Our analysis had limited statistical power to identify meaningful effects. In both mathematics and ELA, the estimates were negative, but not statistically significantly distinguishable from zero. First- and second-year results are presented in Appendix B and show similar patterns.

Effects of TISS on Attendance Outcomes

Our analysis of student outcomes also included an attendance measure, which we measured as the reduction in the proportion of students who are chronically absent (i.e., absent for more than 10 percent of enrolled days). We compared the average chronic absenteeism rate for schools with TISS principals to the average outcome for our weighted comparison group. Findings suggest that there were statistically significant differences (at the 5 percent level) between TISS schools and the weighted comparison group in terms of chronic absenteeism three years

Figure 6.1
Third-Year Effects of TISS on Student Achievement Relative to Comparison Schools



SOURCE: NYC DOE Administrative Data (AY 2015–2016, 2016–2017, 2017–2018, 2018–2019).
NOTE: Neither estimate is statistically significant at the 5 percent level. Estimates are based on 28 treatment schools and 54 comparison schools.

after placement. Specifically, we find the rate of chronic absenteeism was 4.8 percentage points greater in schools receiving TISS principals as compared with the comparison schools. More details on this analysis are presented in Appendix A.

Effects of TISS on School Climate Outcomes

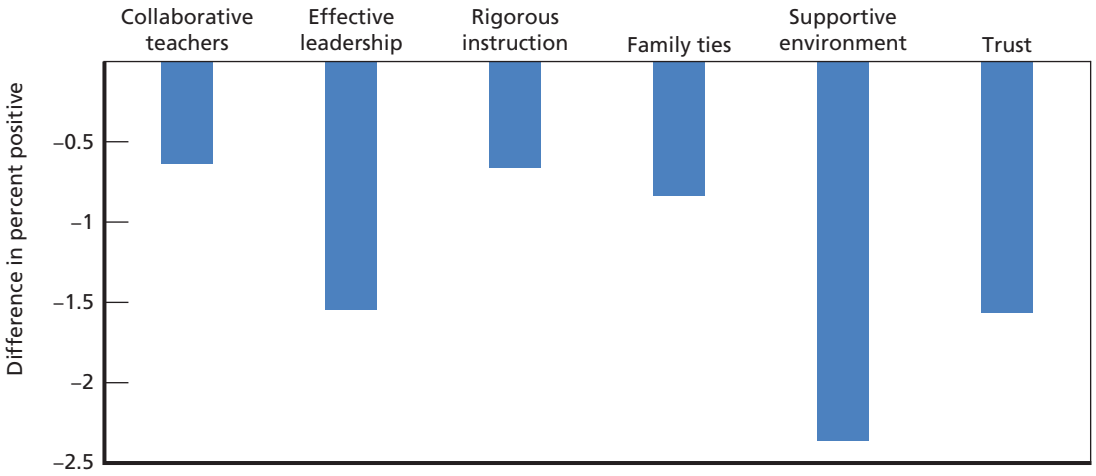
Figure 6.2 presents our estimates of the effect of TISS on school climate outcomes three years after the placement of a new principal. All school climate scales are reported on a percent positive metric. For example, a score of 90 percent can be interpreted as meaning that 90 percent of stakeholders had positive perceptions of school climate. Estimates represent the covariate-adjusted difference between the average school climate score or schools with TISS principals and the average outcome for weighted comparison schools with new residency-trained principals who had not participated in TISS.

Overall, our estimates of the effect of TISS on school climate were negative but were not statistically significant. One- and two-year results are presented in Appendix B and indicate similar patterns.

Effects of TISS on Principal Retention Outcomes

Finally, we estimated the effect of TISS on principal retention three years after initial placement. As mentioned previously, we defined retention as remaining as a principal in NYC DOE for a full academic year. To be included in the sample, both the TISS principals and the comparison principals had to be retained throughout the first year, so by design we have

Figure 6.2
Third-Year Effects of TISS on School Climate Relative to Comparison Schools



SOURCE: NYC DOE Administrative Data (AY 2015–2016, 2016–2017, 2017–2018, 2018–2019).
NOTE: None of the estimates is statistically significant at the 5 percent level. Estimates are based on 28 treatment schools and 54 comparison schools.

100 percent one-year retention. Estimates of retention after three years were positive representing an increase in retention of approximately 6 percent, but this difference was not statistically significant.

Effects of TISS by Program Implementation

As discussed in the previous chapter, there was substantial evolution over time in the implementation of the TISS program, and the program was not implemented with fidelity for many of the schools where TISS principals were placed. It is useful, therefore, to examine whether those schools where TISS was implemented with greater fidelity were more likely to experience positive effects (or less likely to experience negative effects). We conducted exploratory analysis to examine schools where principals were coplaced and schools with fidelity across a greater number of key components (at least four of the five components). It is important to note, however, that because principals could self-select into their level of participation, these analyses cannot be interpreted causally. In addition, we were underpowered to detect differences in effects with such small sample sizes.

We examined relationships between implementation and outcomes by focusing on two school-level measures: whether a principal was coplaced with their AP partner and whether TISS was implemented with fidelity for at least four of the five components. Findings from these exploratory analyses revealed no statistically or practically significant relationships between outcomes and exposure to program features. In other words, these findings suggest that schools where TISS was implemented with fidelity according to these measures fared no better or worse than schools where TISS was not implemented with fidelity (see Appendix B for details).

CHAPTER SEVEN

Discussion

In designing the TISS program, NYCLA aimed to build an innovative approach to developing and supporting leadership for struggling schools. Drawing on evidence that highlighted the importance of having a cohesive leadership team, the TISS program offered an innovative team-based approach to preparation and support for leaders, as opposed to the individual focus of most principal preparation and early career support programs. In addition, TISS aimed to provide robust coaching to participants, with more than four times the number of coaching hours offered to other new principals in NYC DOE and the use of a diagnostic process that aligned coaching with school priorities through deep inquiry and collection of data and evidence.

However, there were substantial challenges with the implementation of the TISS program, with only two of the program's five components implemented with fidelity. The failure of coplacement—a central feature of the TISS model—was a serious barrier to the program's implementation and success, because the effectiveness of the other team-based components of the program including the preservice activities and the team-based coaching hinged on fidelity to coplacement. Many factors impeded coplacement including leadership transitions and other leadership reforms in the district that diminished buy-in, limited assistance from the district with TISS leader placement, structural constraints on cohiring (i.e., lack of open slots, school budget limitations), and issues with cohesion among some teams. Many of these barriers to coplacement were outside NYCLA's control.

It became clear in the initial years of implementation that coplacement would become a major challenge and would have ripple effects on all other aspects of the program, and NYCLA was flexible and responsive in adapting its program to reenvision its teaming concept. However, these changes may have been confusing to program participants and district leadership, whose buy-in to the intensive program was critical. The program was also designed for struggling schools with particularly strong needs for support, and although TISS principals were placed in schools that on average had lower achievement, schools that some TISS principals ended up in may not have been struggling to the degree that required more comprehensive support.

Given these circumstances, it is not surprising that we did not find any evidence of improved student and school outcomes related to the TISS program. Findings suggested no statistically significant differences between TISS schools and comparison schools with other new residency-trained principals on math or ELA achievement, school culture, and principal retention outcomes, whereas TISS schools underperformed relative to comparable schools in reducing chronic absenteeism. Across a range of outcomes, time periods, and comparison groups, we found no evidence of statistically significant positive outcomes.

Beyond implementation challenges, there may be other factors that contributed to our findings on the program's effect. NYC DOE is not a typical district; it has a strong record of support around leadership development (including a long history of work with NYCLA), and evidence on student achievement indicates that the district has been outperforming similar districts in the state. As a result, comparison schools were also receiving some coaching support (as all principals in NYC DOE receive), and the contrasts in support between the treatment and comparison schools may not have been large. In another district, where the "status quo" in terms of leadership support was less developed or nonexistent, we might have expected more positive effects from leadership support interventions.

Our analytic approach was also limited in that it required comparison of TISS principals to other residency-based principals in the district to disentangle the effect of TISS from the effects of preservice preparation. If the APP participants who selected into TISS were different than other APP graduates, and if other residency-based preservice preparation programs were more effective than APP at preparing leaders, then comparing TISS participants to these other residency-trained principals may have understated the effects of the TISS program.

Whenever possible, leadership interventions should be designed in ways that align with standard hiring and staffing practices:

- *When leadership interventions are offered by external organizations, close coordination with and strong buy-in from districts are important to successful implementation, but may not be sufficient to overcoming shifting priorities:* NYCLA has long worked with NYC DOE on leadership interventions and has built strong relationships with district leadership and staff. Understanding the importance of district buy-in, NYCLA worked collaboratively with NYC DOE to design the TISS program. Despite these efforts to ensure district buy-in and coordination, changes in NYC DOE leadership and major reforms to principal pipelines in the district were taking place alongside the roll-out of TISS, leading to major unanticipated shifts in district buy-in around the TISS program and involvement in the program's implementation.
- *Flexibility and adaptation in the face of challenges with program implementation may be necessary to sustain the program but pose evaluation challenges:* The K–12 education context, particularly in large urban districts, is dynamic and organizations implementing multiyear programs to support school leaders in this environment may need to adapt program elements in response to changing circumstances and feedback from participants. In adapting, organizations face trade-offs between fidelity to the original approach on the one hand and feasibility and responsiveness to the needs of the district and target population. Although such adaptations allow the program to be sustained, they make it difficult to assess the model as originally envisioned.
- *Leadership support programs that hinge on placement decisions are risky:* Many different factors are at play in determining which schools principals end up in and what the makeup of their leadership team looks like, and most of these decisions are outside the control of organizations that partner with school districts around leadership. As a result, interventions that hinge on the placement and retention of specific principals and APs in specific schools are risky, especially when the intervention requires significant departures from standard hiring and staffing practices. Wherever possible, leadership interventions should be designed in a way that is aligned with standard hiring and staffing practices. For example, the adapted TISS model that focused on team building with existing staff in a

school was more flexible in its ability to serve principals regardless of setting and required less upfront investment, and may have been less vulnerable to diminished support from the district. A qualitative study of another leadership development and coaching program suggests that developing a leader's capacity to build coalitions among existing staff is a critical competency that should be fostered among leaders (Wang et al., 2019), suggesting that the adapted version of TISS that did not require coplacement may have been equally or more valuable.

- *Tools and resources can support coaching and may also be useful to those with more limited coaching support:* The diagnostic tool and process that were incorporated into the TISS model was one of the few components implemented with fidelity, and many of the participants found the diagnostic process to be useful. And at least one other study found diagnostic to be a useful tool for leadership support (Wang et al., 2019). NYCLA has incorporated this diagnostic into other leadership support efforts outside NYC DOE. Although we cannot determine whether this component conclusively benefited TISS participants and schools relative to comparison schools, the positive implementation evidence suggests it might be beneficial to continue to incorporate the diagnostic into leadership support programs offered by NYCLA and consider replicating the process in leadership programs offered by other organizations and districts.

In conclusion, the TISS program offered an innovative approach to early career leadership support that was designed to improve coaching and reconceptualize early career support as a team-based endeavor. Although evidence suggests that TISS did not lead to better outcomes for students and schools relative to traditional leadership support for other new residency-trained principals in NYC DOE, the findings offer important lessons learned to districts and leadership support organizations about the implementation of team-based support interventions. In addition, NYCLA leadership reports that TISS introduced some enhancements to their broader coaching model (e.g., use of the diagnostic) that are now being incorporated into support offered by NYCLA to districts and leadership support providers across the country.

APPENDIX A

Methods for the Report

Implementation Study Approach

Implementation Study Data Sources

Given limited resources for implementation analysis, we relied largely on data collected by NYCLA for the study. This included coaching hours for all coached principals, annual coaching goals and progress toward goals, documentation from the diagnostic process, professional development data, and survey data from principals who receive coaching from NYCLA. We supplemented these data with interviews with a range of stakeholders. We describe each of these data sources below.

Interviews with Stakeholders

RAND conducted interviews toward the end of Years 1 and 2 of implementation (2015 and 2016) between March and July. Individuals interviewed for the study included TISS principals, TISS coaches, NYCLA staff, and NYC DOE district superintendents. Table A.1 presents the number of interviews by interviewee type and interview year. All TISS principals in cohorts 1 and 2 who were placed in a school and received a full year of TISS coaching were invited to participate in an interview at the end of the first year of coaching. In addition, all NYCLA staff and NYCLA coaches who were involved with TISS were asked to participate in interviews. Finally, we asked NYCLA staff to identify a sample of district superintendents and other district staff who had experiences with the TISS program and TISS participants and could speak to the implementation of the program. NYCLA identified six district superintendents and a high-level district administrator whom RAND contacted for an interview.

The Year 1 interviews with NYCLA staff and coaches were conducted in person, while all other interviews were conducted by phone. Interviewees were asked about a range of topics that aligned with the research questions, including (1) understanding of the TISS program; (2) implementation of recruitment and training activities, coplacement, and coaching (including team-based, extended, and needs-based components); (3) outcomes of participation in TISS; and (4) overall perceptions and lessons learned regarding TISS. Protocols for our various stakeholder groups are provided in Appendix C.

Each interview included an interviewer and a note-taker, and detailed notes were taken during each interview. Notes were deidentified and stored securely to protect potentially sensitive data.

Coaching Time Log Data

To account for the amount of coaching for compensation purposes, coaches were required to log the time they spent coaching into Tenrox, the NYCLA timekeeping system. In addition

Table A.1
Number of Interviews Conducted by Year and Type of Interviewee

	2015	2016
First-year principals	4	7
Coaches	4	10
NYCLA staff	4	7
District superintendents	0	3
Total	12	27

to entering the time spent coaching, coaches were asked to indicate whether that coaching was provided solely to the principal, or whether other members of the school leadership team participated.

To account for the amount of coaching a principal received, we aggregated hours of coaching provided between July 1 and June 30 of a given year. We calculated total hours of coaching in a year and total hours of team-involved coaching in a year for each TISS principal in each year of participation.

NYCLA Program Tracking Data

Two types of program documentation were used to determine whether needs-based coaching activities were implemented as planned. First, the diagnostic process was documented using program manager notes at four key check-in points in the diagnostic process, including the initial diagnostic data dive, the postdiagnostic debrief, the midyear review meeting, and the end-of-year conference. This documentation was used to provide evidence that the diagnostic process was used at a particular TISS school. Second, as part of the coaching process, principals and coaches were required to document up to three goals for the academic year for the school and/or principal. These goals were documented in a "Goals/Progress" tracking sheet that was regularly updated. For each goal, the principal and coach specified the evidence used to identify that goal. At the end of the academic year, the principal and coach also reported whether (1) the goal had been "completely met"; (2) there was "significant progress"; (3) there was "some progress"; or (4) there was "no progress." These data were used to assess whether goals were informed by the evidence and whether these goals were met through coaching.

Program Documentation

We also used program documentation to describe various aspects of the TISS model. Documentation that we reviewed included the initial program proposal; training materials for principals and coaches, a description of the pre-service change project and accompanying rubric, the diagnostic tool, slides from a presentation given at the annual i3 conference, documentation related to advisory committee meetings, a needs assessment report NYCLA developed to inform the design and implementation of TISS, and survey analysis reports.

Methods

Fidelity Analysis

Fidelity measures were developed for each school in the sample, with a focus on the three coaching components of TISS. NYCLA and RAND worked collaboratively to identify measures that were used to assess fidelity, and NYCLA developed the thresholds for high implementation.

Table A.2 presents information on the fidelity metrics for each component, and we describe our processes for assessing fidelity below. First, fidelity was measured at the school level for the five key components for all schools in the impact analysis sample. Then, the percentage of schools that were implementing with high fidelity was calculated to determine program-wide fidelity. For program-wide fidelity, NYCLA considered a component to have been implemented with high fidelity if at least 75 percent of schools in the sample were high implementers of that component in a given year.

Fidelity to Teaming and Shared Training

NYCLA requested that fidelity analysis primarily focus on the postplacement components of the program, so we were limited to a single measure of fidelity for the preservice component, completion of the APP program by the TISS principal.

Fidelity to Coplacement

We assessed fidelity to coplacement according to a single measure, a 0/1 indicator of whether the TISS principal was placed with the AP she or he teamed with during preservice training.

Fidelity to Team-Based Coaching

To assess whether TISS was meeting expectations for implementation regarding team-based coaching, NYCLA identified two fidelity metrics: (1) access to coaches who were adequately trained in TISS and team-based coaching and (2) evidence that the coach was providing coaching to others on the leadership team beyond the principal. NYCLA identified the ideal amount of TISS-focused training for coaches to be 40 cumulative hours, and set 30 cumulative hours as a minimum threshold for high implementation. Internal tracking of professional development participation was used to calculate the cumulative hours of TISS-focused training. Although the fidelity metric for access to an adequately trained coach was measured on an annual basis, coaches did not need to receive training each year; they needed only to have obtained 30 cumulative hours of training over time.

Regarding the second metric, the amount of coaching provided to others on the leadership team, NYCLA established an ideal target of 30 percent of total coaching hours going to others aside from the principal. The minimum threshold for high implementation was set at 20 percent of total coaching hours. The fidelity metric was measured annually, determined by the coaching provided only in that year.

A school was considered high implementing in the area of team-based coaching if the coach and principal exceeded thresholds for both of these metrics; if they failed to meet either or both of the thresholds, then the school was not determined to be high implementing.

Fidelity to Extended Coaching

To assess whether TISS was meeting expectations for implementation regarding extended coaching, we examined total cumulative hours of coaching at the end of each year. Data on total hours of coaching were drawn from the coaching time records. TISS participants were

Table A.2
Fidelity Metrics

TISS Component	Fidelity Metric	School-Level Fidelity Threshold	Data Source
Teaming and shared training	# of principals completing APP	No threshold identified	Program tracking data
Coplacement	# of principals coplaced	No threshold identified	Program tracking data
Team-based coaching	Cumulative hours of TISS-specific training for coach by end of year	At least 30 hours (75% of ideal, 40 hours)	Program tracking data (professional development attendance sheets)
	Percent of yearly coaching hours that included others on team	At least 20% (2/3 of ideal, 30%)	Coaching logs
Extended coaching	Total cumulative hours of coaching	114 in Year 1 190 in Year 2 215 in Year 3 (70% of planned hours)	Coaching logs
Needs-focused coaching	Used the diagnostic	Some evidence of diagnostic use by principal	Diagnostic documentation
	Evidence used to inform priorities/goals	Coach and principal cite data/evidence as informing at least one of the goals set	Goals/progress worksheet
	Coaching aligned with goals	Coach and principal report that at least one goal was completely met, or that significant progress made[a]	Goals/progress worksheet

[a] This measure is not completely aligned with the fidelity metric originally designed for the program. Ideally, we would have data on principal perceptions of alignment, and NYCLA included a question on the survey that directly asked principals about this. However, due to incomplete survey data and the need to assess fidelity for all schools/principals, we had to substitute this measure.

ideally supposed to receive 164 hours of coaching by the end of their first year in the program, 292 hours of coaching by the end of Year 2, and 328 hours of coaching by the end of Year 3. NYCLA established thresholds for high implementation at 70 percent of the expected coaching hours (resulting in thresholds of 114, 204, and 229, respectively). We considered principals who met the thresholds for each of the three years as high implementing in the area of extended coaching.

Fidelity to Needs-Focused Coaching

To assess whether TISS was meeting expectations for implementation regarding needs-focused coaching, NYCLA identified three fidelity metrics. The first fidelity metric tracked whether the diagnostic tool/process was used at least once at a school. The second metric assessed whether TISS participants identified priority areas, or goals, according to data/evidence. Finally, the third fidelity metric determined whether coaching had been aligned with the identified priorities.

Initially, the plan was to use survey data from NYCLA's end-of-year coachee survey to address these fidelity metrics. Participants who responded "yes" on survey questions related to the three metrics would be identified as high implementing schools. However, given low

response rates, these data could not be used to assess fidelity. Instead, we used NYCLA program documentation related to the diagnostic process and coaching to determine fidelity.

Individuals who had diagnostic-related documentation were identified as satisfying the first needs-focused metric. The other two fidelity metrics were drawn from the goals/progress sheet. When principals set goals, they were required to also describe the evidence that supported the selection of that particular goal. If a principal reported that at least one of their identified goals was supported by data, then the second metric for high implementation was met. Finally, if a principal reported that at least one of their goals had been "met" or had "significant progress," then the third metric for high implementation was met. This metric does not exactly capture the intended measure of "coaching aligned with goals," though for goals to be satisfied, we might assume that coaching was aligned. Only when principals had accounted for all of three components of needs-focused coaching was their school considered high implementing.

Analysis of Interview Data

Although analysis of program documentation and tracking data were essential for our research question on fidelity, analysis of interview data helped to address the other implementation questions. A coding scheme was developed and refined by the analysis team based on our research questions, and notes were coded by two researchers. The coded data were analyzed to identify themes around resources (e.g., staffing, training); implementation of various study components, including teaming and preplacement training, placement into a school, coaching, and use of the diagnostic; perceptions of implementation success; perceived facilitators and barriers; and recommended changes.

Impact Analysis Approach

In this section, we provide additional details about the quasiexperimental methods used in the impact analyses. First, we describe the propensity score weighting algorithm. We then describe the statistical models used to estimate TISS program effects, including our primary model specifications and the CITS models used for the sensitivity analyses. Additional details are also provided on the outcome variables, treatment and comparison definitions, and baseline equivalence of the treatment and comparison groups. We conclude by presenting results for the confirmatory analyses that examined outcomes at three years following the placement of treatment (TISS) principals in schools as well as exploratory analyses that examined outcome at one- and two-year time points, analyses by cohort, and the CITS analyses.

Propensity Score Methods

When comparing students in TISS schools to counterparts throughout their district, selection bias poses a serious threat to the validity of inferences because schools and leaders participating in the treatment may be systematically different than those who are not (Shadish, Cook, and Campbell, 2002). To mitigate this threat, we use propensity score methods (e.g., Stuart, 2007) to create a comparison group that is as similar as possible to the treatment group based on a set of observable baseline characteristics. For these analyses, we first limited the comparison pool to include only schools receiving a new, residency-trained principals in each academic year. Subsequently, we used the following variables to create a matched comparison group:

- Placement school's prior year ELA scores
- Placement school's prior year mathematics scores
- Placement school's grade levels served (with dummy coded variables representing elementary, middle, and high schools, as well as K–8 and 6–12 schools)

Although in general, it is desirable to use a wide range of baseline variables to estimate propensity scores, because of the limited sample sizes in these analyses, we focus our propensity score estimation on a small set of variables. However, we include a wider range of variables in our impact models (see below) and in our appraisal of baseline covariate balance.

We use the R package twang (Ridgeway et al., 2014) to create weights for individuals in the comparison group so that, on average, they closely matched the treatment group. Twang uses generalized boosted regression models to estimate propensity scores. Although propensity scores are typically estimated using parametric models that are linear in the unknown parameters (e.g., logistic regression) to calculate the likelihood, or the propensity, that each school is treated given their observable characteristics, generalized boosted regression model is a nonparametric piecewise constant model that is iteratively estimated using regression trees (Setodji et al., 2017). The advantage of using a generalized boosted regression model is that it does not assume linearity, automatically accommodates interactions between covariates, and provides stable propensity score estimates even where few observations are available (Setodji et al., 2017). The twang software allows for the estimation of propensity scores and for appraising covariate balance in treatment and comparison groups. We estimated propensity scores separately within each cohort and then pooled the cohorts into a single file for analysis, following the design illustrated in Table A.3.

Analysis Methods

After generating the propensity score weights, the treatment effect of the TISS program can be obtained by comparing the outcomes of treated and weighted comparison schools. The treatment effect is estimated using a generalized least squares model, weighted by the estimated propensity score, and using sandwich-estimated standard errors to account for clustering within principal.[1] We use the following so-called "doubly-robust" model—which employs both propensity score weights and covariate adjustment—to obtain estimates of the treatment effect (Bang and Robins, 2005; Hullsiek and Louis, 2002):

$$y_{sc} = \beta_0 + \beta_1 T_{sc} + \beta_2 y_{sc0} + \boldsymbol{X_{sc}}'\lambda + \delta_c e_{sc}. \quad (1)$$

y_{sc} is the outcome for school s in cohort c. T_{sc} indicates the school's treatment assignment (0 for comparison and 1 for treatment). $\boldsymbol{X_{sc}}$ is a vector of school level characteristics, defined below. y_{sc0} is a measure of the outcome variable at baseline. δ_c is a cohort-specific fixed effect, and e_{sc} is a random effect with mean zero and variance σ^2. The effect of TISS on school outcomes is tested by testing the null hypothesis so that $\beta_1 = 0$. This model is used as the basis for our confirmatory contrasts, using data from the third posttreatment year for all cohorts.

The following preintervention covariates were included in $\boldsymbol{X_s}$ for the models examining student outcomes and principal retention:

[1] If a principal stays in a school for one full academic year and then moves to another school for another full academic year, both schools would be included in our analysis. This creates the possibility of clustering of schools within principals.

Table A.3
Matching Variables and Outcome Variables by Cohort

	Cohort 1	Cohort 2	Cohort 3
2013–2014	Match on: • ELA scores • Math scores • Grade configuration		
2014–2015		Match on: • ELA scores • Math scores • Grade configuration	
2015–2016			Match on: • ELA scores • Math scores • Grade configuration
2016–2017	Third-Year Outcomes		
2017–2018		Third-Year Outcomes	
2018–2019			Third-Year Outcomes

- School average state test scores (mathematics and ELA)
- Proportion of students who were African American
- Proportion of students who were Hispanic
- Proportion of students with disabilities
- Proportion of students with English learner status
- Proportion of students living in poverty
- Proportion of chronically absent students
- School grade-level range
- Total years of experience in the principalship

For school climate variables, we included all of these covariates in $\boldsymbol{X_s}$ and also included preintervention measures of the six school climate scales.[2]

Exploratory Analyses of First- and Second-Year Effects and Cohort-Specific Effects

We conducted additional exploratory analyses to estimate the effect of TISS after the first and second years of the study. For these analyses, we used models identical to specification detailed in Equation (1), including the same propensity score weights and covariates.

Additionally, we conducted the third-year analyses separately for each cohort. These analyses used a slightly modified version of the model in Equation (1):

$$y_{sc} = \beta_0 + \beta_1 T_{sc} + \beta_2 y_{sc0} + \boldsymbol{X_{sc}}'\lambda + e_{sc}. \quad (2)$$

[2] For the first cohort, these six scales were not administered in the baseline year. Therefore, for that cohort, three different baseline scales were used.

We estimate this model separately for each cohort ($c = 1,2,3$) to obtain cohort-specific effects. y_{sc}, T_{sc}, $\boldsymbol{X_{sc}}$, y_{sc0}, and e_{sc} are as defined above.

Exploratory Analyses of Associations Between Third-Year Effects and Fidelity of Implementation

We conducted additional exploratory analyses to estimate the extent to which impact estimates are associated with the TISS program itself and the extent to which these estimates can be attributed to low program exposure or uptake among certain TISS participants. We focused our fidelity analyses on two specific indicators: an indicator of coplacement (given the importance of this particular component for the overall success of the program and an indicator of overall high fidelity of implementation (four to five areas implemented with fidelity). Fidelity analyses are based on a modification of the models used for one-, two-, and three-year impact analyses (Equation 1):

$$y_{st} = \beta_0 + \beta_1 T_s + \beta_2 y_{s0} + \beta_3 Z_s T_s + X_s'\lambda + {}_{es}, \tag{3}$$

where all variables are as defined previously, y_{st} is the outcome for school s in time t after placement and Z_s is a measure of fidelity. The effect of participating in TISS but reporting no fidelity of implementation or coplacement is tested based on β_1. The difference between this effect and the effect of participating in TISS programming with complete fidelity of implementation is tested based on β_3. To obtain an estimate of the program had it been fully implemented for all participants, we use the linear composite of the estimated parameters $\beta_1 + \beta_3$.

Comparative Interrupted Time Series Analysis Methods

As a sensitivity test, we also conducted CITS analyses using the propensity-weighted schools for the achievement outcomes. We used the propensity score weighted linear model given in Equation (1) as our main specification because we did not have sufficient historical data for all variables to run the CITS models. This allowed us to use a simplified modeling framework with a common statistical model for all analyses. The CITS analysis controls for baseline trends for two baseline years and estimates the extent to which differences before and after the implementation of an intervention can be attributed to the intervention rather than to other factors:

$$y_{tsc} = \delta_s + \delta_t + \tau T_{stc} + \gamma_s' t + e_{tsc}. \tag{4}$$

In this model, y_{tsc} is the outcome at time t for school s in cohort c, which importantly now includes two preplacement years in the regression. y_{tsc} is a function of a school-specific fixed effect δ_s, a time-specific fixed effect δ_t, and a 3×1 vector of treatment indicators T_{stc} that indicates how long school s in cohort c had been treated in year t. τT_{stc} then represents three interaction terms that provide estimates of year-specific effects. Note that, unlike Equations (1) and (2), these models do not employ baseline demographics as covariates. We also include a school-specific linear time trend $\gamma_s' t$, which controls for differential baseline trends. We also ran traditional difference-in-difference specifications that did not include the school-specific linear time trends and found similar results. Finally, the residual errors are given by e_{tsc}, which are clustered at the school level in the analysis.

Our key parameters of interest are contained in τ, which provide estimates of how much scores changed over time in TISS schools after placement beyond the change that non-TISS school experience in receiving a new residency-trained principal.

Sample

Details on Sample Exclusion and Inclusion Criteria

In this section, we provide some additional details on how the treatment and comparison conditions were defined. As described in the main report, we define a school as treated if a TISS principal is assigned to that school for one full academic year, which we define as having started in a school by November 15 of a given academic year and remaining in the school until May 15 of the same academic year. If a principal vacates a position prior to the completion of one academic year, that school will not be considered as treated and will not be eligible to be identified as a comparison school.[3] If, however, a principal is assigned to a school and remains the principal of record for one full academic year, that school will be considered treated, even if the principal vacates that position after that first year is complete. If the principal is reassigned to another NYC DOE school, then that new school would be considered treated if (1) the principal remains the principal of record for one full academic year and (2) outcomes would be available for analysis in the study time frame. In the event that a TISS principal vacates a school after the completion of an academic year, and another TISS principal is placed into that same school, that school is considered treated and included (as a single case) in our analyses as a member of the initial treatment cohort.

To have a consistent criteria for both treatment and comparison schools, a school is only eligible to be identified as a comparison school if (1) the school's principal entered the principalship in the same cohort as the treated principals and has served in the school for at least one full academic year; (2) the school's principal completed a residency-based leadership training program; and (3) that school is not treated at any point during the time frame of the study. For example, a school that is a potential control unit for Cohort 1 (because that school had a new non-TISS principal for Year 1 would be excluded from the pool of potential controls if that school was assigned a TISS principal in Year 2 or 3. If a principal leaves a school before the end of the first school year and leaves the district altogether, that school would be removed from the analyses.

Baseline Equivalence of Treatment and Comparison Groups

NYC DOE provided data on all public schools for the academic years 2013–2014 through 2017–2018. After restricting the data set to eligible treatment and comparison schools, there were 28 treatment schools and 54 comparison schools.

The characteristics of these schools are presented in Table A.4. All of the variables presented were measured at baseline, that is, prior to the appointment of a TISS principal. For schools in the Cohort 1 sample, this baseline reflects data from 2013 to 2014 academic year. For schools in the Cohort 2 sample, this baseline reflects data from 2014 to 2015 academic year. For schools in Cohort 2 sample, this baseline reflects data from 2015 to 2016 academic year.

In Table A.4, it is evident that, prior to adjusting for propensity score, characteristics of the treatment and comparison group schools had substantial differences. The columns labeled as SMD display the standardized mean differences between the two groups. What Works Clearinghouse criteria define standardized mean differences greater than 0.25 standard deviations as evidence that treatment and control groups are not equivalent. Many of the SMDs in the first two columns of Table A.4 are quite large, and, in general, the TISS schools are lower

[3] There was one TISS principal in Cohort 3 that did not meet the criteria for treatment.

achieving, have higher minority enrollment, have higher proportions of economically disadvantaged students, and have higher rates of chronic absenteeism than the comparison schools.

Table A.4 also shows the improvement in baseline equivalence after applying propensity score weights to the comparison pool. Many of the variables with large differences prior to weighting show dramatic improvements in balance. For example, when compared with the unweighted sample, TISS principals were entering schools with much lower average ELA

Table A.4
Descriptive Statistics for Three Cohorts in the Year Prior to Principal Placement

	Before Propensity Score Weighting			After Propensity Score Weighting		
	Other ($n=54$)	TISS ($n=28$)	SMD	Other ($n=54$)	TISS ($n=28$)	SMD
Black	0.33 (0.25)	0.37 (0.23)	0.16	0.32 (0.24)	0.37 (0.23)	0.11
Hispanic	0.43 (0.24)	0.51 (0.23)	0.34	0.47 (0.23)	0.51 (0.23)	0.09
English language learner	0.15 (0.17)	0.14 (0.16)	−0.04	0.21 (0.26)	0.14 (0.16)	−0.17
Students with disabilities	0.21 (0.08)	0.20 (0.06)	−0.14	0.21 (0.09)	0.20 (0.06)	−0.08
Chronic absenteeism	0.31 (0.18)	0.35 (0.13)	0.27	0.32 (0.14)	0.35 (0.13)	0.14
Poverty	0.76 (0.18)	0.83 (0.12)	0.49*	0.77 (0.18)	0.83 (0.12)	0.21
ELA (baseline)	−0.14 (0.50)	−0.30 (0.40)	−0.34	−0.30 (0.55)	−0.30 (0.40)	0.00
Math (baseline)	−0.12 (0.52)	−0.24 (0.42)	−0.25	−0.24 (0.50)	−0.24 (0.42)	0.00
Collaboration	82.15 (9.05)	83.05 (9.10)	0.1	82.27 (8.83)	83.05 (9.10)	0.04
Effective leadership	78.74 (11.75)	80.14 (10.17)	0.13	78.57 (12.33)	80.14 (10.17)	0.07
Rigorous instruction	83.41 (8.06)	83.52 (7.32)	0.01	83.23 (8.27)	83.52 (7.32)	0.02
Family ties	84.47 (6.63)	81.81 (8.91)	−0.35	84.08 (6.41)	81.81 (8.91)	−0.14
Supportive environment	80.65 (9.53)	78.24 (8.72)	−0.26	80.94 (9.15)	78.24 (8.72)	−0.15
Trust	86.82 (8.23)	87.62 (5.97)	0.11	86.88 (8.43)	87.62 (5.97)	0.05

NOTE: Prior to 2014–2015, NYC DOE administered a different version of the school survey. For this reason, information from the Cohort 1 schools is not included in the baseline estimates for collaboration, effective leadership, rigorous instruction, family ties, supportive environment, or trust. For these characteristics, other $N=34$, TISS $N=21$. Poverty is defined based on student family income relative to locally calculated poverty thresholds (see NYC IBO, 2015).

Abbreviation: SMD, standardized mean difference. * $p<.05$.

and mathematics scores than non-TISS new principals; with weighting they are now nearly equivalent. For all variables, the standardized mean differences between treatment and control groups are less than 0.25 standard deviations, making them equivalent as per What Works Clearinghouse standards. Using this threshold of standardized mean differences less than 0.25, Table A.4 shows that, after weighting, the treatment and control groups are equivalent on all baseline observed covariates.

Measures

Academic Achievement and Chronic Absenteeism

We used NY State assessment scores in ELA and mathematics as measures of achievement. For students in grades 3–8, these assessments include the NY State English Language Arts Test and the NY State math Test. This data was provided to RAND by the NYC DOE for all students enrolled in NYC public schools for the school years between 2012–2013 and 2018–2019.

For elementary and middle schools, school scores were created in three steps. First, we standardized individual student scores into z-scores within grade level and subject using city-wide means and standard deviations, which we calculated from student-level administrative data for all students enrolled in NYC public schools in a given school year. Second, we aggregated these standardized scores by grade and school, so that each school had a set of school-level scores for each grade level (e.g., an elementary school would have a school-level third-, fourth-, and fifth-grade scores). Third, we formed weighted averages (weighted by the number of students in each grade) across all grade levels within a school to form a single achievement score for each subject. For elementary and middle schools, students in grades 3–8 were included in the school averages.

High school students were assessed using the NY State High School Regents Exams in ELAs and Algebra I. In high schools, students often take the Algebra I Regents exams more than one time during the academic year. Because of this, we took a student's score as their highest score achieved during the year. For ELA, taking the exam multiple times was less common, and so, after consultation with individuals with knowledge of the district testing policy, we took scores on the June administration as the score of record. School scores were then created by standardizing individual student scores within district. For high school exams, we standardized individual student scores into z-scores separately for each Regents Exam using city-wide means and standard deviations, which we calculated from student-level administrative data for all students enrolled in NYC public schools in a given school year.

For chronic absenteeism, district administrative data contain information about both the number of days enrolled and the number of days absent. Based on this information, we constructed a variable showing the proportion of enrolled days that a student was absent. Consistent with district policy, students missing more than 10 percent of enrolled days were flagged as chronically absent. School-level chronic absenteeism was constructed by aggregating to the school level across all students in the school in a given year.

Key descriptive statistics for these three student outcome measures are provided in Table A.5.

School Climate

We used six scales from the NYC School Survey as outcome measures of school climate. The NYC School Survey has been administered annually to all parents, teachers, and students in grades 6–12 since 2014–2015. The six scales we used are described in Table A.6.

Table A.5
Descriptive Statistics for the Third-Year Student Outcomes in Treatment and Comparison Schools

	N	Mean	SD
Math	82	−0.250	0.488
ELA	82	−0.253	0.464
Chronic absenteeism	82	0.358	0.160

SOURCE: NYC DOE Administrative Data (AY 2016–2017, 2017–2018, 2018–2019).

Table A.6
Survey Scales from the NYC School Survey

Scale	Description
Rigorous instruction	Instruction is customized, inclusive, motivating, and aligned to the Common Core. High standards are set in every classroom. Students are actively engaged in ambitious intellectual activity and developing critical thinking skills.
Supportive environment	The school establishes a classroom and school culture where students feel safe, supported, and challenged by their teachers and peers.
Collaborative teachers	Teachers are committed to the success and improvement of their classrooms and schools. They have the opportunity to participate in professional development within a culture of respect and continuous improvement.
Effective school leadership	Principals lead by example and nurture the professional growth of teachers and staff, developing and delivering the instructional and social-emotional support that drives student achievement.
Strong family-community ties	School leadership brings resources from the community into the school building by welcoming, encouraging, and developing partnerships with families, businesses, and community-based organizations.
Trust	Everyone works toward the shared goal of improving student outcomes, preparing students for success in school and beyond. Across the school community, there is respect. School staff, parents, students, and administrators value each other.

SOURCE: NYC DOE, webpage, undated-d.

Scores for each of these scales were constructed following the Technical Guide, published annually by the NYC DOE (NYC Department of Education, webpage, undated-d). Question-level percent positive scores are first calculated for each survey question (where positive responses are defined as those in the favorable half of response options). These question-level scores are averaged up to form measure-level scores, which are in turn averaged to form overall scale scores. Table A.7 describes values for each of the six scales.

Three-Year Principal Retention

We used administrative data from NYC DOE on principal service history to create a dichotomous indicator of three-year retention in the principalship. Principals were assigned a value

Table A.7
Descriptive Statistics for the Third-Year School Climate Outcomes in Treatment and Comparison Schools

	N	Mean Percent Positive	SD
Rigorous instruction	82	74.16	7.96
Family ties	82	88.71	5.88
Supportive environment	82	71.89	10.01
Trust	82	86.54	7.10
Collaboration	82	83.22	7.38
Effective leadership	82	84.96	8.42

SOURCE: NYC DOE administrative data (AY 2015–2016, 2016–2017, 2017–2018).
NOTE: Summary statistics are based on percent positive responses averaged to form scale scores.

of 1 if they remained in a principal position three years after initial placement, and a value of 0 otherwise. Across all principals, the average three-year retention rate was 87.9 percent.

Fidelity of Implementation of Program Elements

Above we provided a detailed description of how fidelity measures were created for the five key components of the TISS program. We selected two measures of implementation fidelity to incorporate into the impact analysis to assess relationships between implementation and impact:

1. Fidelity of implementation across most key components: We calculated a count of the number of key components of TISS that were implemented with fidelity at each school and assigned a 1 to schools where at least four of the five key components were implemented with fidelity, whereas individuals in schools with three or fewer key components implemented with fidelity were coded as a 0.
2. Coplacement: Given the reported importance of coplacement as supporting successful implementation across multiple key components, we thought it would be valuable to separately examine its relationship with effects.

APPENDIX B

Additional Findings and Robustness Checks

Confirmatory and Exploratory Impact Estimates

Below we present our estimates for our three-year student achievement outcomes, our confirmatory outcomes analysis. We also provide estimates for our wide range of exploratory outcomes and analyses, including chronic absenteeism, school culture measures, principal retention, one- and two-year (interim) outcomes, and analyses by cohort.

Third-Year Estimates Detailed in the Main Report

Table B.1 provides estimates of the effect of TISS on student achievement, absenteeism, and principal retention three years after placement. Table B.2 provides estimates of the effect of TISS on school climate responses three years after placement. As described in the report, results were negative and statistically significant for student achievement in ELA and four of our six school climate measures, indicating that placement of a TISS principal rather than a non-TISS principal led to lower scores on state assessments and worse climate measures.

First- and Second-Year Outcomes

Table B.3 provides estimates for our student and school outcomes one and two years after placement. We found negative statistically significant effects on student achievement in

Table B.1
Third-Year Impact Estimates for TISS Program Participation on Academic Outcomes and Chronic Absenteeism

Outcome	Estimate	Standard Error
Student achievement		
ELA	−0.128	0.067
Mathematics	−0.071	0.053
Reduced chronic absenteeism	−0.049*	0.024
Principal retention	0.063	0.073

NOTE: Not shown in this table are the coefficients for variables representing baseline characteristics. Standard errors are clustered at the principal level. * signifies that estimates were statistically significant at the $p < 0.05$ level.

Table B.2
Third-Year Impact Estimates for TISS Program Participation on School Climate

Outcome	Percent Positive	Standard Error
School climate		
Collaborative teachers	−0.638	2.180
Effective leadership	−1.539	2.663
Rigorous instruction	−0.662	2.304
Family ties	−0.835	1.702
Supportive environment	−2.352	2.271
Trust	−1.557	2.392

NOTE: Not shown in this table are the coefficients for variables representing baseline characteristics. Standard errors are clustered at the principal level. None of the estimates were statistically significant at the $p < 0.05$ level.

Table B.3
One- and Two-Year Impact Estimates for TISS Program Participation on All Outcomes

Outcome	After One Year Est (SE)	After Two Years Est (SE)
Student achievement		
ELA	−0.022 (0.051)	−0.204 (0.067)**
Mathematics	−0.022 (0.044)	−0.092 (0.056)
Reduced chronic absenteeism	0.007 (0.016)	−0.021 (0.022)
School climate		
Collaborative teachers	−2.698 (2.935)	−0.971 (2.342)
Effective leadership	−6.421 (3.729)	−1.570 (2.759)
Rigorous instruction	−1.659 (2.376)	−0.964 (1.938)
Family ties	−1.988 (1.467)	−0.562 (1.425)
Supportive environment	−2.884 (1.996)	−2.689 (2.580)
Trust	−4.114 (2.649)	−1.679 (1.973)

NOTE: Not shown in this table are the coefficients for variables representing baseline characteristics. ** signifies that estimates were statistically significant at the $p < 0.01$ level.

Table B.4
Third-Year Associations of TISS Effects with Fidelity of Implementation

	Estimates (SE)		
	TISS	TISS* Fidelity of Implementation	Implied Effect at Full Fidelity
Student achievement			
ELA	−0.053 (0.061)	−0.136 (0.088)	−0.189
Mathematics	−0.012 (0.053)	−0.107 (0.074)	−0.119
Reduced chronic absenteeism	−0.019 (0.03)	−0.054 (0.034)	−0.073
School climate			
Collaborative teachers	−0.737 (3.183)	0.177 (3.932)	−0.560
Effective leadership	−1.204 (3.742)	−0.601 (3.655)	−1.804
Rigorous instruction	0.876 (3.258)	−2.756 (4.083)	−1.880
Family ties	−0.863 (2.22)	0.049 (2.323)	−0.814
Supportive environment	0.001 (3.402)	−4.217 (4.327)	−4.216
Trust	−1.791 (3.404)	0.419 (3.637)	−1.372

NOTE: Not shown in this table are the coefficients for variables representing baseline characteristics. Standard errors are clustered at the principal level. None of the relationships were statistically significant at the $p < 0.05$ level.

ELA after two years, indicating that students at TISS schools did not perform as well on state assessments as students at comparison schools. Effects on school culture measures were not statistically significant but were always negative, suggesting placement of TISS principals was leading to worse school climate responses.

Third-Year Associations of Effects with Fidelity of Implementation

Table B.4 provides information of the relationships between high fidelity of implementation and TISS effects. The estimates presented in the first column of the table represent the effect of a TISS principal with low implementation fidelity (fidelity on 3 or fewer program features). The estimates in the second column represent the difference effect between a school where TISS was implemented with fidelity across most components (four or five) and a school where TISS was implemented with fidelity across three or fewer components. Positive estimates would suggest that fidelity across four or five components was either less harmful or more beneficial. There are no statistically significant estimates in Table B.4, suggesting that there is no evidence that schools where TISS was implemented with fidelity across most components performed any better or worse than TISS schools with fidelity across fewer components. The implied effects at full fidelity are all negative in direction, suggesting that even with high fidelity, placement of TISS principals was leading to worse student and school outcomes.

Table B.5
Associations Between Third-Year TISS Effects and Coplacement

	Estimates (SE)		
	TISS	TISS*Coplacement	Implied Effect at Full Coplacement
Student achievement			
ELA	−0.086 (0.069)	−0.089 (0.098)	−0.174
Mathematics	−0.013 (0.064)	−0.122 (0.073)	−0.135
Reduced chronic absenteeism	−0.043 (0.032)	−0.011 (0.039)	−0.055
School climate			
Collaborative teachers	0.427 (3.129)	−2.431 (3.106)	−2.004
Effective leadership	−2.404 (3.795)	1.974 (3.725)	−0.430
Rigorous instruction	1.946 (3.419)	−5.95 (4.181)	−4.003
Family ties	−2.221 (2.295)	3.161 (2.195)	0.940
Supportive environment	0.582 (3.155)	−6.693 (3.569)	−6.111
Trust	−0.929 (3.336)	−1.432 (2.815)	−2.361

NOTE: Not shown in this table are the coefficients for variables representing baseline characteristics. Standard errors are clustered at the principal level. None of the relationships were statistically significant at the $p < 0.05$ level.

Table B.5 provides similar information of the relationship between coplacement and TISS effects. There are no statistically significant estimates in Table B.5, suggesting that there is no evidence that schools with coplaced TISS principals performed any better or worse than those schools without coplaced TISS principals. The implied effects at full fidelity are generally negative in direction, suggesting that TISS schools with coplacement were underperforming comparison schools.

Results of Comparative Interrupted Time Series Analyses for Baseline Trends

Table B.6 provides estimates based on the CITS analyses. Similar to the findings from our primary model specification, none of these estimates are statistically significant. The estimates for math and chronic absenteeism are similar to the estimates from the primary specifica-

Table B.6
Comparative Interrupted Time Series Design Estimates of Program Participation on Academic Outcomes and Reduced Chronic Absenteeism

Outcome	Est (SE)
Student achievement	
ELA	0.028 (0.160)
Mathematics	−0.053 (0.125)
Reduced chronic absenteeism	−0.021 (0.039)

NOTE: Not shown in this table are the coefficients for variables representing baseline characteristics. None of the relationships were statistically significant at the $p < 0.05$ level.

tion in both magnitude and direction, though the standard errors are considerably larger. For ELA, there is a change in sign (here the estimate is positive), suggesting that accounting for the baseline achievement trends in ELA may be important. However, this estimate is also not statistically significant and is quite small in a practical sense (less than three-hundredths of a standard deviation).

APPENDIX C

Interview Protocols

Principal Interview Protocol

The TISS Model

1. Can you tell us a little bit about the TISS program and what you see as the main features?

Recruitment and Matching

2. How did you first hear about the TISS program?
3. Why did you decide to participate in the TISS program?
4. Can you tell us about the process to match you with a leader partner?
    a. How did the matching happen?
    b. Can you tell us about the interaction you had with your leader partner prior to being placed in a school?
    c. Were you satisfied with the process?

Placement

5. How did you identify and obtain your current position?
    a. How long did it take to find a good match/good position?
    b. What role did NYCLA provide?
    c. What support did the district provide?
    d. What challenges did you encounter?
    e. Was it easier or harder than you expected?
6. Were you placed with your leader partner? If not, why?

Coaching and Diagnostic

7. Can you tell us about the coaching and how that works?
    a. How do you communicate with your coach (e.g., in person, by phone, by email, at meetings)?
    b. How often do you meet with the coach?
    c. Who typically initiates the meetings?
    d. How structured are the interactions with your coach? What do you discuss? Why? What do you do during the meetings?
    e. How often do you meet with the coach alone? With others?
    f. When you do meet with others, who typically joins?

8. Do you find your interactions with the coach to be useful? Why or why not?
   a. Do you think that the amount of interaction is sufficient?
   b. Do you think the level of structure is appropriate?
9. Have you encountered any challenges with the coaching?
10. Did you use the diagnostic at all this year? In what ways?
    a. How did the diagnostic affect your decisionmaking?
    b. How did the diagnostic affect your interaction with your coach?
    c. Do you feel that the school diagnostic was helpful? In what ways?
    d. Were there any aspects of the school diagnostic process that you felt were not helpful?

Context

11. Do you get leadership support from other sources?
    a. District superintendents?
    b. Other sources?
12. How aligned is TISS coaching with the support you receive from other sources?
    a. How aligned is TISS coaching with your evaluation?

Immediate Outcomes

13. Do you think you have benefited from your participation in TISS? Why or why not?
14. How is your relationship with your leadership team?
    a. How is your relationship with your TISS leader partner?
    b. How is your relationship with other leaders in the school?
    c. Do you feel adequately supported by your leadership team?
    d. Do you feel that TISS has had an effect on the support you receive from your leadership team? The level of cohesion?
    e. What challenges have you encountered with your leadership team?
15. Has TISS played a role in how supported you feel?
    a. What aspects of TISS are most important in providing you support?
16. How do you feel that the TISS program has affected your practice as a principal?

Reflections and Feedback

17. Do you have any recommendations on how TISS could improve its program?
18. Do you think every new principal should receive TISS? Why or why not?
19. Do you think the TISS approach could be useful in other districts?

Coach Interview Protocol

The TISS Model

1. Can you tell us a little bit about the TISS program and what you see as the main features?
2. How does coaching under the TISS program differ from the traditional coaching that first-year principals typically receive?

Selection and Training

3. How did you learn about the opportunity to become a TISS coach?
4. What process did you go through to become a TISS coach?
5. What training have your received?
    a. When did the training(s) occur?
    b. What did the training(s) cover?
    c. How did the training differ from other coaching training you have received?
    d. Do you have any suggestions for how the training could be improved?

Coaching and Diagnostic

6. Can you tell us about the day-to-day aspects of TISS coaching?
    a. How do you communicate with the principal and/or leadership team (e.g., in person, by phone, by email, at meetings)?
    b. How often do you meet with the principal?
    c. Who typically initiates the meetings?
    d. How structured are the interactions? What do you discuss? Why? What do you do during the meetings?
    e. How often do you meet with the principal alone? With others on the leadership team?
    f. When you do meet with others on the leadership team, who typically participates?
    g. What information do you record about your coaching interactions and how do you log it?
    h. *(For coaches with Cohort 1 principals)* Are there differences in the coaching in Years 1 and 2?
7. We have heard about some unusual cases such as principals placed without a leader partner and principals who were placed without going through the full preservice training. Has coaching for these TISS principals differed in important ways?
    a. Did you adapt your coaching in specific ways for these principals?
    b. For principals without leader partners, were there efforts around teaming with any of the other schools' staff?
    c. For principals who did not receive the full preservice training, how did they learn about all of the components of TISS?
    d. Do you feel that these principals will be affected by the program differently?
8. How do you feel that the coaching and diagnostic use have gone?
    a. Do you think that the amount of interaction is sufficient? Has the additional time been useful?
    b. How do you feel that the team aspect of coaching has gone?
    c. *(For coaches with Cohort 1 principals)* How has been Year 2 coaching compared with Year 1 coaching?
    d. What has worked best about the coaching?
    e. Have you encountered any challenges with the coaching?
9. How does the school diagnostic process work?
    a. Can you explain the process?
    b. How did the diagnostic affect your coaching?
    c. Do you feel that the school diagnostic was helpful? In what ways?
    d. Were there any aspects of the school diagnostic process that you felt were not helpful?

Context

10. What type of support do you receive from NYCLA?
    a. Probe on staff, logistical, training, technology
    b. What is the quality of that support?
11. Do you have opportunities to provide feedback to NYCLA? Are staff responsive?
12. How is your coaching affected by other support that principals are receiving?
    a. From district superintendents?
    b. From networks?
13. How aligned is your coaching with the support the other support principals receive?
14. How aligned is your coaching with the principals' evaluation?

Reflections and Feedback

15. Do you think that TISS has affected your ability to support principals? In what ways?
16. Do you think that TISS has affected principal practice? In what ways?
17. Have there been other benefits of TISS for principals and schools?
18. Do you have any recommendations on how TISS could improve its program?
19. Do you think the TISS approach could help improve education in urban schools? In what ways?
20. Do you think every new principal should receive TISS? Why or why not?
21. Do you think that TISS may be more helpful for some principals than for others? Why?

NYCLA Staff Interview Protocol

Introduction

1. What role have you played in designing and implementing TISS?
2. Who else at NYCLA is involved with implementing TISS, and what roles do they play?
    a. Will you change the team next year in any way?

History/Overview

3. Where did the idea for the TISS program come from?
    a. Was there any data to support the need for the type of support provided by the TISS program?
    b. Who was involved in designing the program?
4. What are the core, non-negotiable elements of the TISS model?
    a. What makes the TISS model different from traditional coaching first-year principals receive?
5. How did you decide on the specific aspects of TISS?
    a. Core components
    b. Restricting participants to residency program graduates
    c. Teaming prior to placement
    d. Placement in high needs schools
    e. Commitment to stay in school for 3 years
6. What were the original goals of TISS? How have those goals changed over time and why?

Implementation

7. How were principals and leader partners chosen to participate in TISS?
8. How were principals and leader partners matched?
    a. Were you satisfied with the results of the matching?
    b. What worked about the matching process? What did not work?
    c. Are you planning to modify the matching process in any way?
    d. Did principals and leader partners interact prior to placement?
9. How were principals and leader partners placed?
    a. Were you satisfied with the results of the placement?
    b. What worked about the placement process? What did not work?
    c. Are you planning to modify the placement process in any way?
    d. (In Years 3–5) How do you plan to overcome the challenges you faced with the prior cohorts?
10. How were coaches recruited and selected for the program?
    a. What skills and background were you looking for in candidates for the TISS coach position? Was that different from other coaching positions with NYCLA?
11. What type of training did the coaches receive?
    a. When did the training(s) occur?
    b. What did the training(s) cover?
    c. How did the training differ from the typical training coaches receive?
    d. How much are coaches expected to be consistent versus tailoring to local needs?
    e. Will coaches receive regular training, or just when they first join TISS?
    f. Do you plan to make changes to the training next year?
12. How does the school diagnostic aspect work?
    a. How was the school diagnostic designed?
    b. How is the school diagnostic expected to affect the coaching principals receive?
    c. How is the school diagnostic expected to affect principal practice?
13. How do you feel that the coaching is going?
    a. What aspects are working well? What aspects are not working as well?
    b. What challenges have you faced? What are you doing to overcome these challenges?
14. How do you know whether the program is being implemented as intended?

Outcomes

15. What do you see as the immediate effects of TISS on principals and leadership teams?
16. How do you think the program works to increase the support the principal receives?
17. How do you think the program works to improve principal practice?
18. How do you envision that improved support and improved principal practice will lead to effects on student achievement?

Context

19. What role does the NYC DOE play in the implementation of TISS?
    a. How do you communicate with the district?
    b. Who do you work with in the district?
    c. Is NYC DOE supportive of the TISS program?

20. What challenges have you encountered with the district (e.g., union contracts, performance evaluation structures)?
    a. What happens when these conflicts occur?
    b. How are you working to alleviate them?
21. How is the TISS program aligned with other types of support principals receive?
    a. From district superintendents (evaluation)?
    b. From networks?
22. Who is threatened by your program or in opposition to your model (e.g., other principals, unions, universities)?
23. Are there any state or district policy barriers to implementing your model?

Reflections and Feedback

24. To what extent have the goals of the program been met to date? To what extent have goals been exceeded?
25. Do you think that TISS could be successful in any district? Why or why not?
26. Do you think that TISS could be useful for any first-year principal? What principals or schools do you think might benefit more from the TISS program?
27. What are the primary facilitators of the success of the program?
28. What are the primary impediments to the success of the program?
29. If you knew then what you know now, is there anything that you would have done differently in designing TISS?

NYC DOE Administrator Interview Protocol

Background

1. Can you please describe your role as a district superintendent in NYC DOE? (We understand this is undergoing some change.)
    a. How long have you been a district superintendent?
    b. What is the role of the district superintendent in identifying principals for placement and/or schools in need of a new principal?
    c. What is the role of the district superintendent in matching principals to schools?
    d. What is the role of the district superintendent in supporting newly placed principals?
    e. What is the role of the district superintendent in providing ongoing support?
2. What is the nature of your interaction with the (NYCLA)?
    a. What programs offered by NYCLA are you aware of?
    b. Have you worked with participants of each of these programs?
    c. With whom at NYCLA, how often, and on what issues do you interact?
    d. Have you ever participated in any of NYCLA's programs?

Leadership Development Pipeline Context

3. As a district superintendent, what internal and external resources are available to you to hire, oversee, and support principals?
    a. Principal preparation programs
    b. Coaching programs to support newly placed principal programs

   c. Ongoing mentorship and development of principals and leadership staff
   d. Other programs to develop support leadership capacity in NYC DOE
4. How has the role of external partners like NYCLA changed in recent years, if at all?
5. To what degree do you view coaching for new principals as important to supporting leadership capacity in NYC DOE?
6. How satisfied are you with the options you have for providing support to new principals?
   a. How satisfied are you with the first-year coaching that NYCLA provides to principals?

TISS Program

7. What is your understanding of NYCLA's TISS program and the services it provides?
   a. In what ways is the program intended to support improved leadership capacity in the district?
8. To what extent have you interacted with the leadership teams participating in TISS in 2014 and 2015?
   a. Have you been directly involved in interviewing TISS teams for open positions?
   b. Have you ever placed a TISS team or TISS principal in a position in your district?
9. Please describe your views on the value of the various aspects of the TISS program:
   a. Intentional pairing and codevelopment of leaders as a team in preservice training
   b. Coplacement of leadership teams into schools
   c. Increased and sustained coaching for principals beyond Year 1
   d. Inclusion of the broader leadership team in coaching
   e. Intentional use of evidence to set priorities and target coaching through a diagnostic tool

Reflection/Wrap-Up Questions

10. What features of TISS are most/least valuable to supporting the capacity of district leadership?
11. What do you see as the facilitators/barriers to successfully implementing a program like TISS?
12. Are there changes you had recommend to improve the implementation and effectiveness of the TISS program?
   a. Changes to the program
   b. Changes to district policies
13. If another district was planning to develop a program similar to TISS, what recommendations would you make?
   a. Regarding the design of specific elements of the program?
   b. Regarding how the district can best support and incorporate the program into its broader strategy for leadership development and management?
14. Is there anything else that you would like to share with us or would like us to convey to NYCLA? This can be off the record if you prefer, in which case we would not share this information with NYCLA.

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