EDUCATION AND LABOR

Preparing School Leaders for Success

Evaluation of New Leaders' Aspiring Principals Program, 2012–2017: Appendixes

Susan M. Gates, Matthew D. Baird, Christopher Joseph Doss, Laura S. Hamilton, Isaac M. Opper, Benjamin K. Master, Andrea Prado Tuma, Mirka Vuollo, Melanie A. Zaber

Sponsored by New Leaders

For more information on this publication, visit www.rand.org/t/RR2812

Published by the RAND Corporation, Santa Monica, Calif.

Preface

The mission of New Leaders is "to ensure high academic achievement for all children, especially students in poverty and students of color, by developing transformational school leaders and advancing the policies and practices that allow great leaders to succeed" (New Leaders, undated-b). In 2014, the RAND Corporation published an evaluation of New Leaders' Aspiring Principals program based on the outcomes of approximately 400 New Leaders principals; these principals completed the program between 2002 and 2011 and had been placed as principals prior to school year 2011–2012 in ten current or former partner districts (Gates et al., 2014a). A follow-on effort evaluated New Leaders' Aspiring Principals program as experienced by program graduates placed as principals in the 2013–2014, 2014–2015, 2015–2016, and 2016–2017 school years in partner districts. This follow-on work was funded through a five-year U.S. Department of Education Investing in Innovation (i3) Validation Grant to New Leaders (under grant number U411B120026), which began in 2013 and ended in 2019.

These appendixes provide supplemental detail about the analyses and findings presented in *Preparing School Leaders for Success: Evaluation of New Leaders' Aspiring Principals Program, 2012–2017* (Gates et al., 2019). This material will be of interest to technically oriented readers who seek more information about the information presented in the main report. Appendix A provides profiles of New Leaders partner districts. Appendix B contains detailed information on our analysis of school-level outcomes. Appendix C presents technical details about our analysis of student achievement outcomes using student fixed-effects models. Appendix D describes our analysis of principal retention. Appendix E provides details about our analysis of correlations between Aspiring Principals program competency metrics and outcomes.

This study 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, financial literacy, and decisionmaking. This study was sponsored by New Leaders. For more information about the organization, please visit www.newleaders.org.

More information about RAND can be found at www.rand.org. Questions about this report should be directed to susan_gates@rand.org, and questions about RAND Education and Labor should be directed to educationandlabor@rand.org.

Contents

Abbreviations

ASD	Achievement School District
BCPS	Baltimore City Public Schools
CLC	Chicago Leadership Collaborative
CMO	charter management organization
CMS	Charlotte-Mecklenburg Schools
CPS	Chicago Public Schools
DC PCSB	District of Columbia Public Charter School Board
DCPS	District of Columbia Public Schools
ELA	English language arts
ELL	English language learner
ESL	English as a second language
i3	Investing in Innovation
LGDS	Leadership Growth and Development System
LSC	local school council
NYC DOE	New York City Department of Education
OPSB	Orleans Parish School Board
OUSD	Oakland Unified School District
PGCPS	Prince George's County Public Schools
RSD	Recovery School District
SCS	Shelby County Schools
SY	school year
WWC	What Works Clearinghouse

Appendix A. Profiles of New Leaders Partner Districts

In this appendix, we first summarize and compare the ten New Leaders partner districts' principal-pipeline activities and then provide structured profiles of each of the districts. These profiles and information are based on a review of publications and district websites and also gathered through interviews conducted with district officials during the evaluation. The information in these profiles is correct as of the 2017–2018 school year; it is possible that some of the conditions we describe have changed after that date. The profiles are intended to help readers understand the context in which each district's New Leaders partnership took place, including goals that districts had for engaging in the partnership and the presence of other principal-pipeline activities. As we noted in the main report, we received reviews of these profiles from eight of the ten districts, and we made changes to address any factual errors that district reviewers identified. One of the districts did not have any feedback, and we were unable to reach district leaders in New Orleans to verify their profile.

Principal-Pipeline Activities Across the New Leaders Partner Districts

We define *principal-pipeline activities* as the guidelines or procedures that a district has in place to specify what effective school leadership looks like, identify potential principal candidates, select and place candidates into principal positions, and support and evaluate sitting principals. We organize these activities into the six categories listed in Table A.1. The table specifies the information that we aimed to capture for each category of activities for each of the ten districts, when available. In Table A.2, we present each district's principal-pipeline activities as of winter 2017 and, when possible, include information about when particular procedures or programs were first developed, implemented, or redesigned. Three of the school districts in this study participated in The Wallace Foundation's Principal Pipeline Initiative: Charlotte-Mecklenburg Schools (CMS), New York City Department of Education (NYC DOE), and Prince George's County Public Schools (PGCPS) (see Turnbull et al., 2016, for more information about that initiative).

Table A.1. Categories of Principal-Pipeline Activities

	Leader Standards	Pre-Service Preparation	Selective Hiring and Placement	Support	Supervision	Evaluation
Information captured under each category	• Is there written guidance, standards, policies, or a framework to define effective school leadership or school leader competencies? • Were standards developed by the district or the state? • Are district standards aligned to state standards, district hiring procedures, training, or evaluation?	• How many and what type of pre-service preparation options are available for aspiring principals? • Are options run by the district office or by external organizations, such as New Leaders or universities? • How long has the district partnered with New Leaders?	• Does the district have a selective candidate pool? A selective candidate pool is a districtwide process used to determine and assess eligibility for the principalship. • Does the selection process into the candidate pool involve interviews, competency assessments, or both? • What is the process for placement into a specific school opening?	• Does the district offer professional development or mentoring/coaching specifically for novice principals? • What support is available for more-experienced principals?	• Who supervises principals? • What is the ratio of supervisors to principals?	• Does the district have a principal evaluation system or process? • Was evaluation developed by the district or state? • Does the evaluation system measure student performance, professional practice, or both? • Is evaluation aligned to state evaluation policies? • Is principal performance tied to incentives or pay?

Table A.2. Principal-Pipeline Activities Across the Ten New Leaders Partner Districts

District	Leader Standards	Pre-Service Preparation	Selective Hiring and Placement	Support	Supervision	Evaluation
Baltimore City Public Schools (BCPS)	• District-developed framework in 2013 • Aligned with evaluation tool	• District-run program launched in 2013–2014, includes training and coaching • Ongoing New Leaders partnership began in 2005	• Selective candidate pool • Selection process involves competency assessment and interviews • School placement process includes a community panel interview	• Ongoing professional development provided by the Instructional Leadership Department	• Instructional Leadership executive directors supervise, evaluate, and provide support for principals • They work with principals in geographically determined networks of schools	• District-developed evaluation tool in 2013–2014, aligned with leadership standards • Evaluates student growth and professional practice
Charlotte-Mecklenburg Schools (CMS)	• District-developed competencies • Aligned with state standards	• Partnership with four university-based programs • New Leaders partnership from 2009 to 2014	• Selective candidate pool redesigned in 2013–2014 • Selection process involves competency assessment and interviews • School placement process includes review by school committee	• District-run support program for novice principals during their first five years, includes coaching, ongoing professional development, and partner-based professional development	• Community superintendents supervise, evaluate, and provide support for principals • They oversee between 11 and 33 schools in seven geographically determined areas	• State-developed evaluation indicators and instrument, which assesses student growth and professional practice
Chicago Public Schools (CPS)	• District revised its leadership competencies in 2013 • Aligned to school and principal evaluation systems	• Partnership with ten principal-preparation programs, most are university based • All partner programs include residencies, mentoring, and are aligned to CPS principal competencies • Ongoing New Leaders partnership began in 2001	• Selective candidate pool redesigned in 2015 • Selection process involves competency assessment and interviews • Local school councils interview candidates for specific school openings	• The Department of Principal Quality organizes professional development for first-year principals and plans to extend these opportunities to principals in their second and third years • Two programs were launched in 2015 to support high-performing principals	• Network chiefs supervise, evaluate, and provide ongoing support to principals in their networks • The district is divided into 13 geographically based networks	• District-developed principal evaluation • Evaluates student growth and professional practice • Complies with state evaluation policy • Aligned to CPS principal competencies

District	Leader Standards	Pre-Service Preparation	Selective Hiring and Placement	Support	Supervision	Evaluation
D.C. public charter schools	• Leader standards are the responsibility of individual charters and networks of charters	• Some schools and charter management organizations (CMOs) have ongoing partnerships with New Leaders	• Responsibility of schools or CMOs	• Responsibility of schools or CMOs • University-based charter and public school principal professional development program launched in 2017	• Responsibility of schools or CMOs	• Responsibility of schools or CMOs
District of Columbia Public Schools (DCPS)	• District leadership framework developed in 2010–2011	• District-run 30-month fellowship for aspiring principals launched in 2013 • Coursework provided in partnership with university and leadership academy • New Leaders partnership from 2003 to 2014; resumed in 2018	• Selective principal candidate pool • Selection process involves competency assessment and three rounds of interviews • School placement includes community panel interviews	• District-run orientation for new principals during the summer • One-year mentorship for novice principals • District-run leadership academy sessions for experienced principals	• Instructional superintendents supervise, evaluate, and provide ongoing support to principals in their clusters of schools • Superintendents support a caseload of 14 principals	• District-developed principal evaluation system implemented in 2010 • Performance tied to bonuses
New Orleans Recovery School District (RSD)	• Leader standards are the responsibility of individual charters and networks of charters	• No districtwide pre-service partnerships • New Leaders partnership from 2007 to 2015	• Responsibility of schools or CMOs	• Responsibility of schools or CMOs	• Responsibility of schools or CMOs	• Evaluation varies by school or CMO • Schools can elect (but are not required) to use an evaluation system designed by the state
New York City Department of Education (NYC DOE)	• District school leader standards revised in 2013 • Aligned to school quality framework and principal evaluation tool	• Partnership with several university and nonprofit programs between 2011 and 2015 • District-run program with internship started in 2014 • New Leaders partnership for	• Selective principal candidate pool redesigned in 2013 • Selection process includes competency assessment • School placement process includes interviews with a	• First-year principals are provided with supports, including a one-on-one coach, summer institute, and conferences • Ongoing support for experienced principals provided by the Office of Leadership	• Superintendents, with the help of principal leadership facilitators, supervise, evaluate, and provide support to principals • Executive superintendents oversee community and high school superintendents, as	• District-developed evaluation tool in 2013 • Evaluates student learning and professional practice measures • Aligned to school leader standards

District	Leader Standards	Pre-Service Preparation	Selective Hiring and Placement	Support	Supervision	Evaluation
		Aspiring Principals program from 2001 to 2015 • Ongoing partnership with specific charter schools authorized by NYC DOE for Emerging Leaders participants	school-level committee and a designee of the superintendent		well as geographically based support centers	
Oakland Unified School District (OUSD)	• District leadership framework developed in 2013	• Three partnerships with training providers, two universities and New Leaders • Ongoing New Leaders partnership began in 2003	• Selection process for individual openings includes competency assessment and interviews with district leaders and school-level committee	• New and experienced principals receive support through their network superintendents • The district launched a leader feedback tool in 2015 (it may become evaluation tool)	• Network superintendents supervise, evaluate, and provide support to principals • Each superintendent oversees a caseload of ten principals	• Formal evaluation through district-specific, union-approved process • Evaluates principals' own performance and growth goals
Prince George's County Public Schools (PGCPS)	• District-developed leadership standards • Aligned to principal training, evaluation, and support systems, as well as state standards	• Worked with five providers from 2007 to 2014 • District-run residency-based program started in 2012 • New Leaders partnership from 2007 to 2014	• Selective principal candidate pool • Selection process involves competency assessment and interviews • School placement includes interviews with school committee	• Mentoring for new principals • Yearly summer leadership institute for new and experienced principals • Ongoing professional development through Office of Talent Development	• Assistant superintendents supervise, evaluate, and provide support to principals	• District-developed, standards-based evaluation system • Evaluates student growth and professional practice

District	Leader Standards	Pre-Service Preparation	Selective Hiring and Placement	Support	Supervision	Evaluation
Shelby County Schools (SCS)	• State-developed leadership standards adopted in 2011 • Aligned to state's principal evaluation rubric	• Several partnerships, including New Leaders and district-run program (launched in 2015) • Ongoing New Leaders partnership began in 2005	• Selective principal candidate pool • Selection process involves competency assessment and interviews • School placement includes interviews with community panel and district superintendent	• Some pre-service training partners provide support for their participants in new principal positions • Districtwide summer learning sessions, recurring Instructional Leader Support Weeks during the school year and one-on-one and small-group coaching support	• Instructional Leadership directors supervise, evaluate, and provide support to principals, including one-on-one coaching and professional development	• State-mandated evaluation system • Evaluates professional practice and student achievement and growth

Conditions in New Leaders Partner Districts

Districts' principal-pipeline activities had the potential to influence the residency experience, the number of individuals placed as principals in schools, the schools in which they were placed, and the working conditions they experienced when they became principals. These factors might also be affected by district conditions beyond their pipeline activities. In this section, we describe several aspects of the district context that could influence the quality of training, availability of placements, and working conditions faced by New Leaders residents or principals and, in turn, the effects achieved. Specifically, we briefly describe how the ten districts, in which individuals who completed the Aspiring Principals program were placed as principals between school year (SY) 2012–2013 and 2016–2017, implemented pre-service preparation, selective hiring, support for novice principals, and evaluation. The ten districts are: Baltimore City Public Schools (BCPS) in Maryland, CMS in North Carolina, Chicago Public Schools (CPS) in Illinois, D.C. public charter schools, District of Columbia Public Schools (DCPS), New Orleans Recovery School District (RSD), NYC DOE, Oakland Unified School District (OUSD) in California, PGCPS in Maryland, and Shelby County Schools (SCS) in Tennessee.[1] We include more-detailed profiles of each of these ten districts and their principal-pipeline activities later in this appendix.

Training Principals

In the past ten years, many New Leaders partner districts have worked to develop partnerships with other principal-preparation programs, as well as to build capacity to train principals. In most cases, individual participants bear some or all of the costs associated with attending these other partner programs. Six districts in our study had partnerships with programs other than New Leaders during our study period. For example, CPS works with a total of ten principal-preparation programs, all of which include residencies. Relatedly, five districts developed their own principal-preparation programs. The earliest was PGCPS, which launched its own program in 2012. Baltimore and DCPS adopted their own programs in 2013, NYC DOE in 2014, and SCS in 2015. Individual charter schools or charter management organizations (CMOs) in D.C. or New Orleans might have had their own partnerships with other principal-preparation programs.

[1] CMS, DCPS, New Orleans, the NYC DOE, and PGCPS initiated shifts in their partnerships with New Leaders in 2014 or 2015 (for example, reducing the focus on aspiring principals and expanding the focus on teacher leaders or principal supervisors) but are included in our study because the Aspiring Principals program graduates were placed as principals during our study period. In August 2011, the Western District of Tennessee Court ruled in the case *Board of Education of Shelby County, Tennessee v. Memphis City Board of Education* that Memphis City Schools would cease to exist at the end of SY 2012–2013. Consequently, Memphis City Schools became a part of SCS and operated under SCS's charter.

Principal Selection

As described in Chapter Two of the main report, New Leaders' Aspiring Principals program was one of the first to use a rigorous and selective process to create a pool of highly qualified principal candidates. Over time, seven New Leaders partner districts developed their own selective hiring process resulting in the development of candidate pools. Selection into the candidate pools usually involved competency assessments and several rounds of interviews. The three exceptions are OUSD, which had developed a rigorous application process for individual opening; RSD; and D.C. public charter schools, where individual charter schools have the autonomy to institute their own selection processes.

Supporting Novice Principals

Many New Leaders partner districts also launched support processes for new principals. Five districts provided targeted support for new principals for at least a year in the form of mentoring, coaching, or ongoing professional development opportunities: CMS developed a support program for novice principals during their first five years; CPS organized professional development for first-year principals; DCPS provides one-year mentorship for new principals; the NYC DOE supported new principals through one-on-one coaching; and PGCPS had a mentoring system for new principals.

Principal Evaluation

Eight New Leaders partner districts had implemented principal evaluation processes. Six of these developed their own evaluation tools and procedures, while two used state-mandated evaluation tools. In D.C. and New Orleans, individual charter schools or CMOs were allowed to use their own evaluation systems. Six of the eight districts with systemwide evaluation processes assessed principals on student growth and learning, as well as professional practice.

New Leaders Partner District Profiles

Baltimore, Maryland: Baltimore City Public Schools

Overview of District Context During the New Leaders Partnership

As of SY 2017–2018, BCPS oversees 177 schools and programs and has a $1.3 billion budget. Although district enrollment increased slightly between 2009 and 2015, it declined from 84,976 in 2015 to 80,592 in 2017 because of residential mobility and population changes in the city of Baltimore (BCPS, 2017a, 2017c). U.S. Census Bureau data show that Baltimore's population fell by more than 6,700 people, as the number of people leaving the city doubled between July 2015 and July 2016 (BCPS, 2017c). In addition, the number of births in Baltimore has declined yearly, from 9,757 in 2006 to 8,526 in 2016, which has led to smaller kindergarten cohorts (Maryland Department of Health, 2016).

The school enrollment decline between 2015 and 2017 led to a reduction in state funding for BCPS, which in turn led to reductions in the school district workforce (BCPS, 2017b). The BCPS workforce declined by 860 full-time employees (8.7 percent) between 2015 and 2017 (BCPS, 2017c). The reductions affected district office staff, administrators, teachers, and other school staff, such as librarians and counselors (ABC2 News, 2017).

As of 2017, BCPS was grappling with additional challenges: The district closed three low-performing or underutilized traditional public schools during the summer of 2017, with an additional closure planned for the summer of 2018 (BCPS, 2017b).

As of SY 2017–2018, there were a total of 34 charter schools that serve more than 14,000 students in the city of Baltimore (Santelises, Jones, and Alvarez, 2017). Although charter schools operate independently from BCPS, the district approves new charter school applications, annually reviews charter schools' operations and performance, and manages a centralized recruiting and hiring system for school leaders in charter and traditional public schools (BCPS, 2017a, undated-e).

From 2012 to 2017, BCPS was led by four district superintendents. In 2016, the district developed a new strategic plan. *Building a Generation: City Schools' Blueprint for Success* focuses district efforts on student wholeness, literacy, and staff leadership. The plan frames effective school leadership as essential for school improvement and emphasizes the district's goals to strategically staff school leaders to match skill and experience with school communities and create a pipeline of strong school leaders (BCPS, 2017a).

District Goals for the Partnership with New Leaders

The partnership between BCPS and New Leaders began in 2005, when about 50 percent of Baltimore principals were close to retirement age. The initial goal of the partnership was to fill upcoming principal vacancies (Gates et al., 2014a). In our 2014 interview, a BCPS leader expressed that New Leaders had successfully helped the district place candidates in open positions. More than ten years later, the goal of the partnership has changed from creating a candidate pool to ensuring that new principals are qualified instructional leaders who can serve in the district's most-challenging schools. According to a district interviewee, New Leaders has "a heavy footprint in Baltimore," with the current partnership being "not just about the leaders but [about] what they are doing; it's a driver, not just about operations but instructional leadership."

In addition to creating a pipeline of strong candidates, the partnership has aimed to increase the district's own capacity to select and prepare aspiring principals. BCPS worked with New Leaders to develop the district's own pipeline initiative, which has been operating since the 2013–2014 school year. As explained by a district leader in 2014, New Leaders gave the district "additional capacity to ensure candidates are well screened and well developed." While the interviewee did not yet have enough data to know exactly how effective the partnership has been, he noted high satisfaction overall, that New Leaders principals stayed in leadership roles for a

long time, and that many of them were in schools that were "gaining momentum, making gains constantly, offering their expertise to take things to scale and close district [achievement] gaps."

District Principal-Pipeline Activities

Leader Standards

In 2013, BCPS developed the School Leader Framework and Rubric, which outlines leader standards and informs the district's principal evaluation tool. The framework emphasizes four "core values" for effective leadership: instructional leadership, capacity building, vision and engagement, and strategic leadership (BCPS, undated-a).

Pre-Service Preparation

BCPS partners with New Leaders to provide the Aspiring Principals program, as well as the Emerging Leaders program, for district staff. The Growing Great Leaders initiative is a third pre-service preparation option that is run by BCPS and was created in partnership with Noyce Foundation, New Leaders, Education Resource Strategies, and TNTP. The initiative aims to create a talent pool of potential school-based administrators by identifying potential school leaders who are already working within BCPS and providing it with experiences and development opportunities that build the skills needed to become effective principals. Participants who meet selection criteria (e.g., a record of strong instructional practice) receive leadership training during the summer and then receive one-on-one coaching from the principals at their schools throughout the school year. A pilot of the Growing Great Leaders program was launched in SY 2013–2014 at nine schools and then implemented at the district level in SY 2015–2016 (BCPS, 2014a, 2014b).

Selective Hiring and Placement

Within the BCPS Office of Human Capital, the director of school leader effectiveness helps with the recruitment and retention of school leaders and manages the Growing Great Leaders initiative (BCPS, undated-c). As mentioned, the district began the initiative to create a pipeline of school administrators within BCPS. Candidates who successfully complete the program can become eligible for inclusion into the district's assistant principal and principal candidate pool. Participation in Growing Great Leaders, however, is not required to apply to the candidate pool.

Selection into the pool requires the completion of an application and successful participation in a competency assessment that involves completing exercises in data analysis, observing instruction, and providing feedback, as well as an interview. Applicants for both public charter and BCPS positions need to successfully complete the competency assessment for inclusion in the candidate pool (BCPS, 2010).

Once in the pool, aspiring principals can apply to school-specific openings. If selected for an interview at a public school, candidates are interviewed by a school community panel and subsequently by district leaders (BCPS, 2010). Final placement decisions are approved by both the superintendent, who also interviews the candidate, and the school board. The selection

process for charter school principals varies from school to school, but final approval by the chief academic officer, superintendent, and school board is also required.

On-the-Job Support, Supervision, and Evaluation (Coaching, Mentoring)

The Instructional Leadership Department in the Schools Office is in charge of building, sustaining, and overseeing the capacity of instructional school leaders (BCPS, undated-f). The department organizes monthly principal meetings and provides professional development opportunities throughout the year. For example, in 2014, principals could participate in the Leadership Talent Development Initiative. Over four sessions, principals learned best practices in talent management so that they could effectively identify, retain, and develop leadership among talented staff in their schools (BCPS, 2014a). Growing Great Leaders also supports participating principals and assistant principals through monthly sessions on effective coaching, mentoring, and management strategies to develop teacher leaders in their schools (BCPS, 2014a).

In addition to professional development, the district has a system of career pathways that encourages school leaders' career advancement through four stages: standard, professional, transformational, and distinguished. Movement from one stage to the next involves a review by a committee and a higher salary. The pathway stages are part of the district's contract with the Public School Administrators and Supervisors Association that delineates and rewards educators' progression toward positions of leadership that strengthen schools' capacity to improve all students' performance (BCPS, undated-d).

School principals are evaluated using a tool developed by BCPS, the School Leader Effectiveness Evaluation, that was piloted during SY 2012–2013 and was implemented districtwide during SY 2013–2014. The tool—which is aligned with the Educational Leadership Policy Standards, adopted by the National Policy Board for Educational Administration in 2008—was designed to identify principals' strengths and areas for improvement so that school leaders can reflect on—and district leaders can appropriately support—school leaders' ongoing professional growth. The evaluation assesses two main performance areas: (1) principals' professional practice, as measured by the Leadership Framework and Rubric and the 360 Feedback Survey, and (2) student growth, as measured by a school's ability to meet student learning objectives set by the principal and a school performance measure of student achievement on state tests (BCPS, undated-d).

Charlotte, North Carolina: Charlotte-Mecklenburg Schools

Overview of District Context During the New Leaders Partnership

As of SY 2017–2018, CMS serves more than 147,000 students in 176 public schools in the city of Charlotte and the surrounding towns within Mecklenburg County. CMS has a $1.4 billion operating budget and offers an extensive range of magnet programs in 47 of its schools (CMS, 2017a). CMS had four superintendents between 2012 and 2018.

Student enrollment in CMS increased from 141,171 students in 2012 to 147,359 in 2017 (CMS, undated-d). Given increases in enrollment, overcrowding at several schools, and the need for renovations in buildings constructed in the 1950s, the district announced plans in 2017 to replace seven school buildings, renovate 12 schools, and open ten new schools. Five new schools were planned to open during the 2017–2018 school year: one elementary, one K–8, one middle and high school, and two high schools (CMS, undated-b).

Although public school choice was limited in Mecklenburg County at the beginning of the New Leaders partnership in 2009, the number of charter schools increased from 12 in the 2012–2013 school year to 25 in the 2016–2017 school year (Gates et al., 2014a; "Charlotte-Area Charter Schools," 2016). The increase in the number of charter schools in the county is partly due to a state-level decision in 2011 to lift a cap on the number of charter schools in the state (Gates et al., 2014a). During the same time period, enrollment at Mecklenburg County charter schools increased from 8,281 to 16,959 students (Helms, 2017).

In 2014, CMS developed a strategic plan (*Strategic Plan 2018: For a Better Tomorrow*) that identifies six key goals for the district: (1) maximize academic achievement; (2) recruit, develop, retain, and reward a premier workforce; (3) cultivate community partnerships; (4) promote a culture of safety, high engagement, cultural competency, and customer service; (5) optimize district performance and accountability; and (6) inspire and nurture learning and creativity (CMS, 2014).

To achieve the district's second goal, the plan outlines several objectives for leadership development, including providing job-embedded professional learning for aspiring leaders and creating programs to develop leaders prepared to turn around achievement in underperforming schools (CMS, 2014). CMS was one of six school districts in the United States and one of three in our study that received funding from The Wallace Foundation to support the development of a district principal pipeline starting in 2011.

District Goals for the Partnership with New Leaders

CMS partnered with New Leaders from 2009 until 2014. The CMS leaders we interviewed in 2013 and 2014 reported that the partnership was intended to provide the district with candidates for the principalship who were equipped to effectively lead high-need schools. Because of the district's focus on building its internal principal-pipeline capacity, the partnership was not continued beyond 2014. District officials reported that CMS continued to track several graduates of the New Leaders program who remain in the district.

District Principal-Pipeline Activities

Leader Standards

As part of the district's principal-pipeline initiative funded by The Wallace Foundation, CMS developed its own framework for school leader "competencies, skills and beliefs" (CMS, undated-g). The framework is aligned with the state's school leader standards, as required by North Carolina, and the district's pre-service training options, talent pool processes, and job

support systems and the state's school leader evaluation tool (Turnbull et al., 2013). The CMS leadership framework includes the following: believing in children; building relationships and influencing others; establishing a culture of high expectations, instructional leadership, integrity, stamina, initiative, and persistence; and strategic decisionmaking and problem-solving, as well as talent management and development.

Pre-Service Preparation

Between 2012 and 2017, CMS worked with five different providers of pre-service training for aspiring school principals: New Leaders and four programs at local universities. These were Leaders for Tomorrow at Winthrop University, School Executive Leadership Academy at Queens University, the University of North Carolina at Charlotte's Aspiring High School Principals Program, and Wingate's Educational Leadership Program. The four university-based programs vary in length from 14 months to two years and offer a combination of classes, North Carolina licensure preparation, experiential learning, and residencies or internships (CMS, undated-g).

Selective Hiring and Placement

CMS redesigned its talent pool processes during the 2013–2014 school year with the goal of effectively identifying candidates who demonstrate the competencies, skills, and beliefs outlined in the district's school leadership framework. Aspiring principals need to complete an application, submit recommendations, and participate in both an online interview and an in-person interview to be selected into the assistant principal or principal talent pools (CMS, undated-g). Once the candidates are placed in the talent pool, they may apply to open positions. The final selection process involves a school selection committee and a final decision from the superintendent (CMS, undated-a).

On-the-Job Support, Supervision, and Evaluation

All districts in North Carolina are required to use an instrument developed by the North Carolina Department of Public Instruction to evaluate principals and assistant principals. The instrument uses a student growth measure and seven standards to assess principals: strategic leadership, instructional leadership, cultural leadership, human resource leadership, managerial leadership, micropolitical leadership, external development leadership, and student achievement leadership. In addition to the state's instrument, CMS developed indicators that identify behaviors that principal supervisors should look for when conducting evaluations. Principal evaluations are conducted by community superintendents, who oversee schools in nine geographically determined learning communities (Corcoran et al., 2013). In 2018, CMS changed the number of learning communities to six and principal-supervisor ratio to around 29, with a team that supports principals, including an executive director, a curriculum coordinator, and a community administrator.

New principals receive ongoing support during their first four years on the job through the district's principal induction program. First- and second-year principals meet with a coach and

other novice principals for professional development meetings. Second-year principals participate in a time management program focused on increasing time spent on instructional leadership. During their third year, principals attend Queens University's Educational Leadership Institute, which focuses on learning about different leadership styles and how they apply to running a school, as well as change management. The final year involves ongoing professional development and completing a capstone project offered through a partnership with the Center for Intentional Leadership (CMS, undated-g).

Chicago, Illinois: Chicago Public Schools

Overview of District Context During the New Leaders Partnership

CPS is the third-largest district in the United States, with a total of 646 schools, more than 300,000 students, and a $5.7 billion budget. CPS oversees 500 district-run schools, 122 charter schools,[2] nine contract schools,[3] and 15 schools that serve specific populations of students, such as those with significant diverse learning needs (Board of Education of the City of Chicago, undated; Board of Education of the City of Chicago and CPS, 2017; Perez and Dardick, 2017).

From 2012 to 2018, CPS has had six different CEOs. In addition to changes in leadership, the district has experienced budget difficulties since 2013 because of a $1 billion deficit. The deficit led CPS to make significant budget cuts during the 2013–2014 school year by closing 49 schools and laying off more than 1,000 employees, including central office administrators, school administrators, and teachers (Ahmed-Ullah and Geiger, 2013; Ahmed-Ullah, Chase, and Secter, 2013). CPS reduced the budget deficit to $269 million in 2017 through additional school closures and workforce reductions between 2014 and 2017 (Board of Education of the City of Chicago and CPS, 2013, 2017). Workforce cuts continued in the 2017–2018 school year, when CPS eliminated 600 support staff positions and 356 teachers (WGN and Rebik, 2017).

CPS enrollment declined from 408,601 in 2006 to 371,382 in 2017. The enrollment declines have been driven primarily by declining birth rates in both Chicago and the rest of Illinois.[4] Although school assignment in CPS is primarily residency based, students can apply to attend a different traditional public school if space is available. Furthermore, from 2012 to 2017, charter school numbers increased from 96 to 122. However, the growth in enrollment in charter and contract schools decelerated in 2015 and 2016, and enrollment decreased from 60,413 students in 2016–2017 school year to 60,093 in 2017–2018 school year. (Board of Education of the City of Chicago and CPS, 2017; CPS, 2017a; Illinois Network of Charter Schools, 2015).

[2] Charter schools in Chicago are managed by independent organizations but authorized and held accountable to district and state standards by the Chicago Board of Education, the governing body of CPS.

[3] Contract schools are managed by independent contractors under a CPS contract.

[4] The number of births in Illinois and Chicago in 2006 were 180,503 and 45,843, respectively. In 2015, those numbers were 158,101 and 39,269 (Illinois Department of Public Health, 2007, 2016).

In 2016, CPS developed a three-year vision that lays out the district's plans to achieve academic progress, financial stability, and integrity. The plan delineates how the district will achieve academic progress through a number of initiatives, including improving administrator preparation and retention. The strategies for achieving better administrator preparation and retention are recruiting the best teacher leaders to become assistant principals, preparing assistant principals as future leaders, supporting local school councils (LSCs) in selecting strong principals, and improving mentoring for aspiring and early-career principals. The vision plan highlights the district's Chicago Principal Partnership, which strives to attract, develop, support, and retain effective school leaders (CPS, 2016d). Members of the partnership include a variety of organizations, such as New Leaders, the Chicago Public Education Fund, charter school networks, and local universities (Chicago Principal Partnership, undated). These efforts build on a basis of success from earlier in the decade. A study released in 2017 that looked at the test scores of third through eighth graders between 2009 and 2014 found that the rate of growth in student achievement was higher in CPS than in nearly all other school districts in the country and substantially greater than the average across the United States (Reardon and Hinze-Pifer, 2017)—results that district leaders and other experts have linked to school leadership (Strauss, 2018).

District Goals for the Partnership with New Leaders

CPS created the Chicago Leadership Collaborative (CLC) in 2011 to create a pipeline of highly qualified school leaders. As a part of the CLC, CPS partnered with a variety of pre-service principal-preparation programs, including New Leaders, with the goal of increasing the number of qualified candidates in the district's principal candidate pool (Gates et al., 2014a). Our interview with a CPS leader in 2016 and 2017 suggests that New Leaders has successfully prepared principal candidates who can pass the district's eligibility process to form part of the pool. The interviewee identified data use and strategic planning as strengths that differentiate New Leaders graduates from those of other programs. However, the interviewee felt that New Leaders graduates tended to enact school changes too quickly and could improve their relational or political skills. Overall, CPS leaders had positive perceptions of New Leaders and New Leaders principals. As the interviewee noted in 2016, "They have been a true value added."

District Principal-Pipeline Activities

Leader Standards

In 2015, CPS revised its five core leadership competencies and aligned these with the CPS Framework for Success (undated) and the district's principal evaluation system (CPS, undated, 2015). The five competencies are

- champions teacher and staff excellence through continuous improvement to develop and achieve the vision of high expectations for all students
- creates powerful professional learning systems that guarantee learning for all students

- builds a culture focused on college and career readiness
- empowers and motivates families and the community to become engaged
- relentlessly pursues self-disciplined thinking and action (CPS, 2015).

Pre-Service Preparation

The CLC is an ongoing partnership between CPS and, as of 2017, ten principal development programs. The CLC programs include master's degree programs at local and state universities, as well as one program offered through a partnership between Teach for America and Harvard University, doctoral programs at the University of Illinois at Chicago and National Louis University, and New Leaders' Aspiring Principals program. In CLC programs, candidates participate in residencies and receive mentoring from a select group of high-performing principals in CPS. On-the-job training through the internship is focused on developing the CPS principal competencies (CPS, 2017b).

Selective Hiring and Placement

The CPS principal eligibility process was redesigned in 2015 to identify a pool of qualified candidates who have leadership experience related to the CPS principal competencies. The process involves an online application, the assessment of a candidate's leadership skills (such as providing instructional feedback), and an in-person interview (CPS, 2016c, 2017e).

Once in the candidate pool, aspiring principals apply to district-posted open positions and go through a school-specific application process. At most CPS schools, the LSC is responsible for hiring principals and renewing their contracts. Most LSCs have a multistep selection process that involves a resume review, one to three rounds of interviews, and a final "candidate forum." During a candidate forum, LSCs invite parents, teachers, and other community members to an event that allows them to ask questions of each finalist. LSCs have the authority to award four-year renewable contracts to selected principals (CPS, 2017f).

In 2016, CPS and the Chicago Public Education Fund launched the Chicago Principal Partnership to create a new effort to support all stakeholders in accelerating and improving principal quality. The partnership has members—representatives from the education, nonprofit, and philanthropic communities—with actionable data to attract, support, and keep great principals in Chicago's public schools (CPS, 2016a). The partnership was created as a recommendation from the Chicago Public Education Fund's Principal Quality Working Group, which has highlighted principal retention as an important issue to address within CPS (Masterson, 2016). A 2015 survey, conducted by the Chicago Education Fund, found that nearly half of district principals left their schools between 2013 and 2015 and that 60 percent of Chicago principals leave before the end of their fifth year (Chicago Public Education Fund, 2015).

On-the-Job Support, Supervision, and Evaluation (Coaching, Mentoring)

In 2003, CPS created the Office of Principal Preparation and Development as a branch of its human resources department. This office is now the Department of Principal Quality, under the

Office of Network Support, and is charged with identifying, developing, supporting, evaluating, and retaining strong principal leaders (CPS, 2017b).

In compliance with the state of Illinois's Performance Evaluation Reform Act, CPS principal evaluation is standards based and incorporates both student growth indicators and professional practice ratings. To assess principal practice, CPS uses a rubric that outlines the standards that principals need to meet to demonstrate mastery of the district's five core leadership competencies (CPS, 2015a). Principal evaluation is conducted by CPS network chiefs through two formal observations. Network chiefs are certified as principal evaluators by the Illinois State Board of Education. After the observations, evaluators provide feedback and set improvement goals with the principals (CPS, 2015b). In addition to conducting evaluations, network chiefs provide ongoing professional development and support to principals in their networks.

The Department of Principal Quality organizes professional development for first-year principals and plans to extend these opportunities to principals in their second and third years during 2018 (according to a CPS interview we conducted in 2017). Furthermore, since 2015, CPS runs two programs aimed at supporting high-performing principals. The first is the District's Independent Schools Principal Program, which provides high-performing principals with more operational autonomy and less district oversight. The program doubled in size during the 2016–2017 school year, bringing the total of Independent Schools Principals to 54 principals (CPS, 2017d; Masterson, 2016). The second program is a partnership among CPS, the Chicago Education Fund, and Northwestern University, which provides a yearly cohort of up to 30 principals with 12 months of executive leadership development. In addition, participants receive a leadership evaluation, participate in coaching, and attend monthly meetings with CPS leaders. Participants make a commitment to continue to lead in CPS for at least three years (CPS, 2016a; Chicago Public Education Fund, undated).

Washington, D.C.: District of Columbia Public Charter Schools

Context Overview During the New Leaders Partnerships

In the Washington, D.C., region, New Leaders collaborates with specific D.C. charter schools and CMOs.

With the District of Columbia Public Education Reform Amendment Act of 2007, the D.C. education sector was reorganized, and the District of Columbia Public Charter School Board (DC PCSB) became the sole authorizer and overseer of D.C. charter schools (Gates et al., 2014a). As of SY 2017–2018, DC PCSB oversees 120 public charter schools in the D.C. area, which are operated by 66 nonprofits (DC PCSB, 2017c). The combined operating budgets for D.C. charter schools in 2017 was $723 million (D.C. Office of the Chief Financial Officer, 2016).

Enrollment in D.C. charter schools has grown yearly since 2011, from 29,366 to 43,429 students in the 2017–2018 school year. Four new charter schools opened in 2017–2018, and three new ones are approved to open during the 2018–2019 school year (DC PCSB, 2017c). The share of students in the D.C. area who attend charter schools has also increased, from 39.2 percent in SY 2011–2012 to 46.1 percent in SY 2016–2017 (DC PCSB, 2017c).

DC PCSB is the only government agency in D.C. with the authority to approve charter schools, oversee schools while in operation, and revoke school charters if they fail to meet their performance goals (DC PCSB, 2017c).

As a charter school authorizer and overseer, DC PCSB does not have a strategic plan for all charter schools in D.C. but rather focuses on ensuring that new charter schools are opened only by strong applicants and that existing charters' performance is evaluated rigorously while revoking licenses for charters that fail to meet standards (DC PCSB, 2017b). However, DC PCSB does have a systemwide platform to provide online resources for school leaders, including information about financial oversight, the performance management framework used to annually review schools, and D.C. school policies, such as those related to security, emergency, and health services. DC PCSB also announces job opportunities, including school leader positions, at all D.C. charters on one central website (DC PCSB, 2017d).

Goals for the Partnerships with New Leaders

Given New Leaders' collaboration with specific D.C. charter schools and CMOs rather than a systemwide partnership with DC PCSB, we did not interview DC PCSB representatives; therefore, we do not have data on system goals.

Principal-Pipeline Activities

Leader Standards

DC PCSB does not provide systemwide guidance on standards for school leaders or other school employees. DC PCSB provides its schools and CMOs with the autonomy to establish their own educator and leader standards, as long as the schools and CMOs meet student achievement standards.

Pre-Service Preparation

A variety of charter schools and CMOs in D.C. collaborate with New Leaders to hire graduates from the Aspiring Principals program, as well as to provide residency opportunities for program participants (according to our interview with a charter school principal in 2013 and our interview with a CMO managing director in 2016). DC PCSB does not provide systemwide pre-service training, nor does it have a candidate pool.

Selective Hiring and Placement

Candidate pool, hiring, and placement procedures for aspiring charter school leaders are the responsibility of each school or CMO. The only systemwide resource is the online portal that is run by DC PCSB that all charter schools can use to announce job opportunities, including those for principals (DC PCSB, 2017d).

On-the-Job Support, Supervision, and Evaluation (Coaching, Mentoring)

DC PCSB runs meetings with charter school leaders three times a year. Meetings are intended to provide opportunities for the presentation and discussion of systemwide policies, such as accountability procedures and guidance related to the performance management framework, the primary tool used by DC PCSB to annually assess schools' academic performance (DC PCSB, 2017e).

Although the specific measures that compose the performance management framework vary by school level, the same five domains of performance are used for all schools: school environment, mission-specific goals, student progress, student achievement, and gateway outcomes (i.e., student measures that predict long-term outcomes, such as college readiness). The framework does not include an evaluation of teacher or school leader performance (DC PCSB, 2016), because that is a charter-level responsibility. Schools and their CMOs are uniquely responsible for assessing school leader performance, as well as for providing continuing professional development and support for principals. However, as of 2017, both DC PCSB and DCPS partnered with a professional development program at Georgetown University that is open to both public and charter school principals in D.C. The 11-month master's degree program for school principals comprises coursework and short residencies at other participating principals' schools. The first cohort had ten public charter and ten DCPS principals. Most of the cost for their participation in the program is covered jointly by Georgetown and the Walton Family Foundation in partnership with the DC Public Education Fund (Georgetown University, 2017).

Washington, D.C.: District of Columbia Public Schools

Overview of District Context During the New Leaders Partnership

DCPS operates 115 schools, with a $910 million budget. Student enrollment in the district has increased steadily since the 2011–2012 school year, from 45,191 to 48,555 students in the 2016–2017 school year (DCPS, 2017b; Stein, 2016). Between 2012 and 2017, DCPS has been led by two chancellors and one interim chancellor.

Because of steady enrollment growth, the DCPS budget has also increased from 2012 to 2017. Furthermore, the district has focused on increasing the proportion of the budget that goes directly to schools. A 2017 district press release reports that the budget for schools has increased by 28 percent, from $500 million in 2012 to $635 million in 2017 (DCPS, 2017c; Stein, 2016).

With the District of Columbia Public Education Reform Amendment Act of 2007, public charter schools were removed from DCPS oversight, and a separate entity, DC PCSB, was created (Gates et al., 2014a). As of 2017–2018, DC PCSB oversaw 120 public charter schools in the D.C. area (DC PCSB, 2018). More information about DC PCSB is included in a separate profile.

In 2017, DCPS released a five-year strategic plan that set out the following priorities for the district: promote equity, empower its people, ensure excellent schools, educate the whole child, and engage families. As part of its efforts to empower people, the district plans to strengthen school leadership development (DCPS, 2017a). Furthermore, starting in 2007, DCPS worked on

improving all of its human capital policies and practices with a talent initiative. A 2016 report about this initiative outlines the policies that DCPS instituted to improve principal pre-service preparation, selection, hiring, evaluation, and support (DCPS, 2016b). We provide further detail about the district's talent initiative in the section on the district's principal-pipeline activities.

District Goals for the Partnership with New Leaders

DCPS initiated a partnership with New Leaders in 2003, and there have been ongoing interactions since that time. Specifically, from 2003 to 2014, DCPS and New Leaders partnered on the Aspiring Principals program, and in 2018, they resumed a partnership to support sitting principals. The partnership's initial goal was to fill upcoming principal vacancies because of retirement (Gates et al., 2014a). However, the goals of the partnership evolved as the district developed its own capacity, with assistance from New Leaders, to train aspiring leaders and created its own principal pipeline program in 2013. Hence, New Leaders' work with DCPS has shifted to focusing on the development of teacher leaders. The district leaders we interviewed in both 2013 and 2014 indicated satisfaction with New Leaders' ability to meet the changing needs of the district and support building the district's own capacity to develop school leaders. Both interviewees reported that, with the establishment of their own districtwide principal pipeline, there was not a need to work with New Leaders at that time on the Aspiring Principals Program. In 2018, the district engaged with New Leaders for customized support of a cohort of secondary school principals.

District Principal-Pipeline Activities

Leader Standards

As part of a talent initiative that began in 2007, DCPS developed a leadership framework during the 2010–2011 school year, which outlines six leadership standards with corresponding strategies, practices, and indicators. The six leadership framework standards are instruction, talent, school culture, operations, family and community, and personal leadership. The framework was revised in 2015 with the input of instructional superintendents, principals, and central office staff members. The standards are aligned with IMPACT, the district's evaluation system for teachers and principals (DCPS, 2016a).

Pre-Service Preparation

DCPS created the Mary Jane Patterson Fellowship for aspiring principals in 2013, with the goal of creating a pipeline for effective school leaders. The fellowship provides pre-service training through a 30-month program that involves coursework, a yearlong paid residency, and coaching during participants' first year as principals. Applicants to the fellowship must be current DCPS employees, have five years of pedagogical experience, and hold a master's degree. Coursework for the program is provided in partnership with Georgetown University and NYC Leadership Academy (DCPS, undated).

Selective Hiring and Placement

The district's talent initiative also involved the creation of a recruitment team, within the Office of Talent and Culture, dedicated to searching for prospective candidates for school leader positions. As of 2016, the team has a database of more than 2,000 prospective candidates, both within and outside DCPS. Furthermore, DCPS created a selective principal candidate pool for aspiring principals (DCPS, 2016b).

Selection into the principal candidate pool occurs through a rigorous multistep process. After completing an extensive online application process, candidates participate in three rounds of interviews designed to assess instructional leadership skills. The interview process includes exercises for evaluating instruction and providing teacher feedback. The final interview is conducted by the DCPS chancellor, who approves final selection into the principal candidate pool (DCPS, 2016b).

Once in the candidate pool, aspiring principals are eligible to participate in community panel interviews for school-specific vacancies. A school's community panel is generally composed of parents, faculty, staff, and students. Based on the panel's recommendations, the chancellor makes final placement decisions (DCPS, 2016b).

On-the-Job Support, Supervision, and Evaluation (Coaching, Mentoring)

Along with the development of the leadership framework, DCPS implemented a new principal evaluation system in 2010 called IMPACT. The evaluation system rates principals based on quantifiable measures of student progress, including performance on standardized tests and an assessment of principal practice indicators aligned with the leadership framework's six standards. For the latter, DCPS created a rubric that instructional superintendents use to complete mid-year and end-of-year evaluations (DCPS, 2016a).

Principal evaluation ratings are tied to a performance-based compensation system that was introduced in 2010, as well as to the length of principal contract renewals. Principals who are rated as "highly effective" receive bonuses of up to $30,000 (DCPS, 2016a). Principals who do not meet certain performance standards are not eligible to receive three-year appointments, and receive one-year appointments instead (DCPS, 2016a).

In addition to conducting evaluations, instructional superintendents provide support and feedback to principals in their cluster of schools and organize monthly meetings to provide professional development and updates about district initiatives and programs. Superintendents' caseload was reduced from about 30 to 14 as part of the district's talent initiative. Aside from superintendent support, all principals participate in district-run Leadership Academy sessions that provide ongoing professional development on school leadership (DCPS, 2016b).

DCPS organizes a principal orientation over the summer to introduce new school leaders to district priorities, initiatives, and procedures. Novice principals are also supported by principal partners throughout their first year on the job. Principal partners receive an annual stipend and professional development to build their coaching and mentoring skills (DCPS, 2016b).

New Orleans, Louisiana: Recovery School District

Overview of District Context During the New Leaders Partnership

In 2007, at the beginning of the partnership with New Leaders, RSD oversaw 28 charter schools and directly ran 34 public schools in New Orleans (Brinson et al., 2012). By 2014, RSD had converted all of its directly run schools into charter schools (Babineau, Hand, and Rossmeier, 2017). In the 2016–2017 school year, RSD oversaw 49 charter schools, with a student population of 27,500; that made up 56 percent of the total public school student population in New Orleans (RSD, 2017). The number of RSD schools in New Orleans decreased from 57 in 2014 to 49 in 2017 as a result of closures because of low school performance or underenrollment, school consolidations, and the transfer of successful schools back to the Orleans Parish School Board (OPSB; Dreilinger, 2015, 2016, 2017; RSD, 2015, 2017). The Louisiana legislature voted to transition all New Orleans RSD schools to OPSB oversight during 2018 (Prothero, 2016).

New Orleans is the school district with the highest percentage of students attending charter schools in the United States (Babineau, Hand, and Rossmeier, 2017). More than 90 percent of public school students in New Orleans attend a charter affiliated with either RSD or OPSB. RSD has oversight of 49 charter schools, and OPSB directly manages four traditional public schools and oversees 37 charters (OPSB, 2017; RSD, 2017). Students in New Orleans can apply to and attend any public school in the city regardless of where they live through a centralized online application system; this includes the majority of RSD and OPSB schools (Babineau, Hand, and Rossmeier, 2017).

RSD funds school operations through both the state and local portions of the state's Minimum Foundation Program formula, as well as federal funding normally eligible to students and schools. RSD operations are funded through a payment of 1.75 percent of schools' per-pupil revenue (Smith, 2012). The total federal, state, and local revenue for RSD schools in the 2015–2016 school year was $401 million (Louisiana Department of Education, 2016). However, unlike other school districts, RSD does not publish yearly budget plans. In 2016, all OPSB and RSD schools adopted the same differentiated funding formula. The formula provides greater funding for students who require more-individualized support (Babineau, Hand, and Rossmeier, 2017).

RSD CMOs, schools, and independent charter schools have school-level or CMO-level autonomy over curricula, staffing, operations, and budget allocations. The following are the only districtwide policies that are shared among all RSD charters and with OPSB schools: state-mandated accountability and student performance standards, standardized expulsion processes, wraparound services for chronically truant students, and differentiated per pupil funding. The autonomy of RSD charters did not change after the unification with OPSB in 2018 (Babineau, Hand, and Rossmeier, 2017).

The RSD mission is to "transform academically struggling schools to ensure all students have access to an excellent public education" by "working with "high-quality charter schools" in a "decentralized system of autonomous charter schools" (RSD, 2016). Given the autonomy that

charter schools have within RSD, the district does not have an overarching strategic plan or initiatives that affect all schools, including those related to hiring, supporting, and evaluating principals.

District Goals for the Partnership with New Leaders

New Leaders worked with RSD and local CMOs from 2007 to 2016 to train principals to turn around some of New Orleans's highest-need schools after Hurricane Katrina (Gates et al., 2014a). Throughout the partnership, New Leaders supported RSD in a variety of ways, including serving in an advisory role during the development of a new teacher evaluation system. The district leader we interviewed in 2013 reported that the New Leaders partnership helped RSD schools increase student achievement and identified the following strengths of the Aspiring Principals program: instructional leadership, data-driven instruction, and adaptive leadership. Although New Leaders was one of few pre-service principal-preparation programs in the district in 2007, our interviewee noted an increasing number of local options.

District Principal-Pipeline Activities

Leader Standards

In 2011, the Louisiana State Board of Elementary and Secondary Education adopted the Interstate School Leaders Licensure Consortium's Performance Expectations and Indicators for Educational Leaders as the Louisiana state standards for educational leaders. These standards specify leader performance expectations and corresponding indicators in six areas: (1) vision, mission, and goals; (2) teaching and learning; (3) managing organizational systems and safety; (4) collaborating with families and stakeholders; (5) ethics and integrity; and (6) the education system (Louisiana Department of Education, 2011). Although schools and school districts in Louisiana are strongly encouraged to use the state standards, there is no formal requirement to do so. Furthermore, as a school district composed mainly of charter schools, RSD provides its schools and CMOs with the autonomy to establish their own educator and leader standards as long as they meet state-mandated student achievement standards.

Pre-Service Preparation

RSD partnered with New Leaders from 2007 to 2016 to fill a large number of principal vacancies in the district. As of our latest interview with an RSD leader in 2013, there are no other formal partnerships between RSD and pre-service preparation programs. Local options for aspiring principals are Columbia University's Summer Principals Academy in New Orleans, two programs in educational leadership at the University of New Orleans, and a KIPP program that prepares principals to serve in KIPP charter schools.

Selective Hiring and Placement

Hiring and placement policies are specific to individual charter schools or to their CMOs.

On-the-Job Support, Supervision, and Evaluation (Coaching, Mentoring)

During the 2012–2013 school year, Louisiana implemented a new evaluation system for teachers and school leaders, Compass. Educators are evaluated based on both student outcome scores and an assessment of professional practice. School leader professional practice is assessed, during two site visits, via the leader evaluation rubric (Louisiana Department of Education, 2017a, 2017b). The rubric is aligned with Louisiana's school leader standards and evaluates leaders in three domains: school vision, school culture, and instruction (Louisiana Department of Education, 2014). RSD charter schools can elect, but are not required, to use Compass.

New York City, New York: New York City Department of Education

Overview of District Context During the New Leaders Partnership

The NYC DOE is the largest school district in the United States, with 1.1 million students in more than 1,800 schools and a $24.3 billion operating budget (NYC DOE, 2017a).

The number of charter schools operating in New York City increased from 159 in the 2012–2013 school year to 227 in the 2017–2018 school year. During the same period, charter school enrollment increased from 60,000 to more than 100,000 students. In SY 2017–2018, students enrolled in charter schools constituted 10 percent of all students attending New York City public schools (New York City Charter School Center, 2017a). The NYC DOE is one of three charter school authorizers, or state-sanctioned bodies with the power to oversee and renew charter schools, in New York City. The other two are the State University of New York (SUNY) Charter Schools Institute and the New York State Education Department (NYSED) Charter School Office (NYC DOE, 2017e). In SY 2016–2017, the NYC DOE served as the authorizing body for 45 charter schools, SUNY for 134, and NYSED for 48 (New York City Charter School Center, 2017b). As in 2017, two-thirds of NYC charter schools shared space with other schools in NYC DOE buildings. Schools sharing space occupy separate areas of a building while sharing certain common spaces, such as the cafeteria, gymnasium, auditorium, library, and playground (NYC DOE, 2017e).

Between 2012 and 2018, the NYC DOE has had three senior leaders or chancellors. The 2014 change in leadership was accompanied by 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, p. 2). The central tool for achieving this goal is the Framework for Great Schools, a tool aimed at assessing schools' strengths and weaknesses to build school capacity. The framework focuses on the following six elements deemed necessary for improving schools: rigorous instruction, collaborative teachers, supportive environment, strong family-community ties, effective leaders, and trust (NYC DOE, 2015).

The vision plan also lays out the importance of giving principals independence over budget and human resources as well as providing customized, one-stop district support for school leaders (NYC DOE, 2015). Hence, the district restructured the school and school leader support

system in 2015 by replacing the 55 network teams, each of which provided support to about 30 schools, with a geographically based support center model.[5] The new structure consists of eight support centers, each with a superintendent and a six-person team, that provide "one-stop" support to a larger number of schools in the areas of instruction, operations, special education, and student services, such as health and safety.

In addition to the restructuring of the school support system, the district launched other initiatives related to principal hiring and training. Since 2014, principals in the NYC DOE are required to have at least seven years of full-time pedagogic experience (NYC DOE, 2017c). Between 2011 and 2015, the district also worked with The Wallace Foundation to develop a principal pipeline. The NYC DOE is one of six school districts in the country and one of three in our study that received funding from The Wallace Foundation for this purpose.

District Goals for the Partnership with New Leaders

The NYC DOE partnered with New Leaders on the Aspiring Principals program from 2001 to 2015, with the goal of increasing the candidate pool to fill principal vacancies (Gates et al., 2014a), and continues to partner with specific public charter schools authorized by the NYC DOE whose leaders participate in the Emerging Leaders program. The district leaders we interviewed between 2014 and 2016 spoke highly of New Leaders, expressed satisfaction with the partnership's progress toward their initial goal, and identified the following strengths of its programs: high-quality classes that are better aligned to leadership practice than university programs, specialization in preparing principals to lead the highest needs schools, and the organization's willingness to align programs to NYC DOE needs. Furthermore, district leaders expressed learning from New Leaders and improving their own capacity to train aspiring principals. As a district leader that we interviewed in 2014 noted, "In some ways, Emerging Leaders has been a model for us. We developed our own program with the same idea in mind, develop a cadre of teacher leaders for the aspiring principal program; [we] took the idea from them."

While NYC DOE leaders spoke highly of the New Leaders programs and the achievements of its graduates, they explained that the partnership ended during SY 2014–2015 for such reasons as cost and a preference for a new district-run aspiring principal program.

District Principal-Pipeline Activities

Leader Standards

During the 2013–2014 school year, the NYC DOE revised its school leader standards as part of its efforts to align principal evaluation procedures with the district's Framework for Great Schools, the guidelines for reviewing school quality. The district created a principal quality review rubric that maps out the principal competencies associated with the district's indicators of

[5] The exception is schools that are part of Affinity Groups and receive support through outside organizations.

school quality (NYC DOE, 2013b; Turnbull et al., 2016). The rubric, which guides principal hiring and evaluation, consists of ten indicators of principal effectiveness that assess the following: curriculum, pedagogy, instructional assessment, positive learning environment, high expectations, leveraging resources, teacher support and supervision, goals and action plans, teacher teams and leadership development, and monitoring and revising systems.

Pre-Service Preparation

Between 2011 and 2015, the NYC DOE partnered with several university programs and nonprofit organizations to provide pre-service training for aspiring leaders. The programs were aligned with school leader district standards, included internship components, and had a common application process (Turnbull et al., 2016). District partners that provided pre-service preparation were Bank Street Principals Institute, the Marxe School of Public and International Affairs at Baruch College, New Leaders, Aspiring Principals Program at New York City Leadership Academy, and the Relay Graduate School of Education. However, several of these partnerships ended during the 2014–2015 school year, when the NYC DOE began prioritizing participation in its in-house pre-service training program, the Leaders in Education Apprenticeship Program (LEAP). LEAP is a yearlong residency for teacher leaders and assistant principals with master's degrees. The program consists of an intensive set of courses during the summer, weekly classes, and a one-year internship at the aspiring principal's home school (Turnbull et al., 2013, 2016).

Selective Hiring and Placement

In December 2013, the NYC DOE launched a redesigned principal candidate pool process that aligns with the district's principal-quality rubric and includes performance assessments of the aspiring principal's competencies related to the ten indicators of principal quality. Candidates with a New York state school leader license and who meet a minimum score are eligible for inclusion in the candidate pool. In addition to revising its candidate pool requirements, the district created a leader tracking system that compiles candidates' records of experiences and achievements to make it easier for superintendents to review applications and place principals in schools (NYC DOE, 2017d; Turnbull et al., 2013, 2016).

Once in the candidate pool, principals can apply to open positions in the district. District superintendents select between three and five applicants from the pool, who are then interviewed by a school-level committee made up of school staff, parents, and a designee of the superintendent. The committee uses a rating sheet to assess all interviewed candidates and makes recommendations to the superintendent, who then makes a final hiring decision (NYC DOE, 2015).

On-the-Job Support, Supervision, and Evaluation (Coaching, Mentoring)

As mentioned, a new principal evaluation system was introduced during the 2013–2014 school year that aligns with the district's system for evaluating school quality. The new system evaluates principal effectiveness using both a measure of leadership practice, based on the district's principal quality review rubric (outlined in the "Leader Standards" section) and a

measure of student learning. In addition, the district created a complementary principal practice observation tool that outlines how evaluators can measure the ten indicators in the principal-quality rubric (NYC DOE, 2017b).

Evaluators assess principal practice during supervisory visits. Principals receive a minimum of two visits per school year, at least one of which is announced in advance. Superintendents serve as evaluators for at least one of the required visits, but "principal leadership facilitators" can also conduct visits (NYC DOE, 2017b). The district has worked to increase consistency in using the evaluation rubric during evaluation simulations. Simulations consist of reviewing videos and artifacts and assembling evidence to rate each indicator of leadership practice (Turnbull et al., 2016). Principals who receive low ratings in their evaluations receive a principal improvement plan for the following school year and additional supervisory visits (NYC DOE, 2017b).

Oakland, California: Oakland Unified School District

Overview of District Context During the New Leaders Partnership

OUSD runs 87 public schools, which serve 36,900 students, and has a budget of $790.9 million. The district is also the charter authorizer for 35 charter schools in Oakland, which serve 13,219 students (OUSD, 2017b).

Enrollment in district-run public schools decreased from 37,147 in the 2014–2015 school year to 36,668 in 2016–2017, with a slight increase to 36,900 in SY 2017–2018. In contrast, enrollment in charter schools increased from 11,034 to 13,219 during the same period. The number of OUSD-authorized charter schools also increased from 32 in SY 2014–2015 to 35 in SY 2017–2018 (OUSD, 2016, 2015a, 2014, 2013). Relatedly, students in Oakland could also attend nine Alameda County–authorized charters in SY 2017–2018 and one charter school authorized by the Alameda Unified School District. As with other districts with decreasing enrollment, OUSD closed a number of public schools between 2012 and 2014, including five elementary schools (although one reopened as a county-authorized charter school), an alternative education middle school, and a special education school. The district also merged six small high schools into two. Between 2012 and 2018, the district had five superintendents, including two serving as interim.

Budget deficits were a challenge for the district during both the 2016–2017 and the 2017–2018 school years. As of 2017, the budget deficit was $15 million, and the district anticipated facing a $12 million deficit in the 2018–2019 school year. The deficit is attributed in part to lower enrollment than expected and cost increases for special education services (Monroe, 2017). Moreover, the district continues to pay off a $100 million loan made by the state in 2003 because of financial insolvency (Anthony, 2017). Since the 2003 bailout, the state of California monitors district finances and in 2017 made it clear that OUSD needs to make significant changes to its budget to prevent future state receivership (Tafolla, 2017). Thus, fiscal vitality was the first priority for the district during the 2017–2018 school year. To balance the budget, the district approved a plan to cut central office spending by $10 million (OUSD, 2017a). The plan includes

staff reductions in central office and school support and management positions (Anthony, 2017). Furthermore, as of SY 2017–2018, the district was planning additional reductions in the SY 2018–2019 budget to replenish reserve and other funds for activities, such as ongoing facility maintenance and to cover rising costs, particularly for retirement benefits.

In 2015, OUSD released a five-year plan focused on three priorities: effective talent programs, district accountability, and quality community schools. The plan outlines district goals related to effective talent programs, such as the recruitment of qualified educators, the development of all educators as leaders, and the retention of effective employees (OUSD, 2015c).

In 2011, the district began work on the Leadership Growth and Development System (LGDS). The system is composed of a framework for effective leadership practice and a model for professional learning and evaluation. The specific components of the system are outlined in "District Principal-Pipeline Activities." During the 2015–2016 school year, the district implemented a pilot of the LGDS feedback tool (OUSD, 2017c).

District Goals for the Partnership with New Leaders

OUSD partnered with New Leaders at the beginning of a wave of principal retirements in 2003, with the goal of developing a strong pipeline of principal candidates for the district (Gates et al., 2014a). This has continued to be one of the main goals of the partnership, but New Leaders has also expanded its work in the district to provide principal supervisor training for network superintendents and to support the district's capacity to align instruction with the Common Core. The OUSD leaders, interviewed in 2013, 2016, and 2017, expressed satisfaction with New Leaders' support in establishing a candidate pool and its flexibility in accommodating changes in the district.

District Principal-Pipeline Activities

Leader Standards

As part of the creation of the LGDS, principals participated in a leadership task force to develop a principal framework that outlines the leadership practice dimensions of effective school leaders. The framework was last revised in 2015 and has six dimensions of leadership practice: equity, visionary change, healthy relationships and culture, community and family partnerships, effective operations and organization, and instruction and learning. The framework also outlines principal and school-level indicators of effective leadership practice in all six dimensions (OUSD, 2015c).

Pre-Service Preparation

OUSD has three main partnerships to provide pre-service preparation for aspiring principals. The first is the ongoing partnership with New Leaders. The other two are with the Principal Leadership Institute at the University of California, Berkeley, and the Administrative Credentialing Program at California State University, East Bay. Neither of the university-based

programs offers residency training. According to an interview with OUSD in 2013, although district officials reported organizing recruitment events for aspiring principals in collaboration with all three pre-service preparation programs, OUSD does not run any of its own pre-service principal preparation or induction programs. Because of the financial challenges faced by OUSD, the district has sometimes struggled to fund aspiring principals' participation in pre-service training.

Selective Hiring and Placement

OUSD posts open school leadership positions on the district website, through which eligible candidates can submit applications. The selection process entails an initial interview with OUSD leaders and a subsequent "performance-based" interview during which candidates are asked to demonstrate their skills through different activities, such as analysis of school data and role-playing scenarios. If a candidate is successful during these two interviews, he or she is then invited to a third interview with school-specific hiring committees made up of teachers, parents, staff, and community members. The district superintendent makes the final decision based on the recommendation of a school's hiring committee (OUSD, 2012).

The district interviewees (from 2013, 2016, and 2017) indicated that OUSD faced a number of challenges as it strove to fill all vacancies with highly qualified individuals. According to these interviewees, the New Leaders partnership is the primary districtwide effort focused on identifying potential school leaders and creating a talent pool.

On-the-Job Support, Supervision, and Evaluation (Coaching, Mentoring)

OUSD piloted a leader evaluation and feedback tool during the 2015–2016 school year. The tool is part of the LGDS and is based on assessing principal practice on the six dimensions of the principal framework. During the pilot implementation, network superintendents used the tool to assess principal effectiveness during quarterly observations and provided feedback during a mid-year and a summative review. As of 2017, the tool had not been used to formally evaluate principals but as a way of providing feedback and additional support for principals who needed to improve certain dimensions of their practice (OUSD, 2015c).

Official evaluation of principals follows the procedure outlined in the contract between OUSD and the Oakland school administrators' union. Through the formal evaluation process, principals set performance and growth goals in collaboration with their network superintendent. In addition to assessing the achievement of their goals, network superintendents evaluate principal performance through the use of an appraisal worksheet that outlines principal practices that exceed, meet, approach, or fail to meet expectations in five areas: organizational vision and planning for increasing student achievement, instructional program management, human resource management and professional learning community development, financial and resource management, and community engagement and communications. Based on their ratings, network superintendents provide mid-year and end-of-year feedback to principals and submit reviews to the human resources department. The contract with the principals' union ended in June 2017, and

it is unclear at this time whether the formal evaluation process will be replaced with the LGDS evaluation tool (OUSD and United Administrators of Oakland Schools, 2014).

In 2015, the district reduced network superintendent's school caseload from 25 to ten by assigning deputy network superintendents to supervise half the schools in each network, with the goal of providing better supports for schools and school leaders. The district partnered with New Leaders in 2015 to provide training for superintendents to improve their ability to develop school leaders (according to an OUSD interview in 2016). In 2018, the district reduced the number of networks from seven to five and eliminated the deputy network superintendent positions.

Prince George's County, Maryland: Prince George's County Public Schools

Overview of District Context During the New Leaders Partnership

PGCPS serves more than 130,000 students in 208 schools and has a budget of $1.8 billion. PGCPS student enrollment has increased steadily since SY 2012–2013, from 123,741 students to 130,322 students during the 2017–2018 school year. Student enrollment growth in PGCPS mirrors trends across school districts in the state of Maryland since 2009 (PGCPS, 2013, 2014a, 2015, 2016, 2017a). Although PGCPS experienced high leadership turnover during the early years of the New Leaders partnership, the district has only had two chief executive officers from 2012 to 2018.

The school choice environment in Prince George's County is limited, with only 11 operating charter schools in the county as of the 2017–2018 school year. The first charter schools in the county began operating during the 2005–2006 school year, but growth was slow between 2012 and 2017, with only four new charter school openings. Although charter schools operate independently, PGCPS approves new charter school applications and reviews charter schools' performance (PGCPS, 2017c; Wiggins, 2012).

The school district's 2016–2020 strategic plan was developed with the goal of preparing all students to graduate ready for college or careers of their choice (PGCPS, 2015b). The plan has five strategic focus areas: academic excellence, high-performing workforce, safe and supportive environments, family and community engagement, and organizational effectiveness. Two strategies are outlined for ensuring that the district has a high-performing workforce: (1) optimizing recruitment, retention, hiring, and succession planning and (2) aligning staff development to system goals. However, PGCPS is one of six school districts in the country, and one of three in our study, that received a multiyear grant from The Wallace Foundation in 2011 to develop or strengthen principal-pipeline activities.

District Goals for the Partnership with New Leaders

PGCPS partnered with New Leaders from 2007 to 2014 and aimed to increase the number of quality leaders in the districts. During the same period, the district worked with a variety of other partners to strengthen the principal pipeline (Gates et al., 2014a). We interviewed two PGCPS leaders in 2013 and 2014, both of whom reported that New Leaders had provided crucial support in improving their principal candidate pool and that New Leaders graduates stood out as some of

their strongest candidates in terms of instructional leadership and improving student achievement. During the 2012–2013 school year, the district launched its own pre-service training program, and our 2014 interviewee reported that the district was prioritizing participation in its own program rather than external programs, because of cost and other considerations.

District Principal-Pipeline Activities

Leader Standards

PGCPS developed its own leadership standards in 2012 to ensure that school leaders have the skills and strengths to effectively improve students' college- and career-readiness (Turnbull et al., 2016). The standards are aligned to the Professional Standards for Education Leaders (formerly known as Interstate School Leaders Licensure Consortium Standards), the National Board Standards for Principals, and Maryland's indicators for effective principal leadership. The eight leadership standards are (1) set high expectations for achievement; (2) set standards to ensure that schoolwide instructional and achievement goals are met; (3) monitor effective instructional practices; (4) build a shared vision, foster shared goals, and communicate high performance standards; (5) demonstrate a commitment to excellence, equity, and innovation; (6) demonstrate strong internal leadership in the areas of personnel and resource management; (7) demonstrate strong external leadership in the areas of community engagement, communication, and advocacy; and (8) demonstrate knowledge and effective use of technology and data analysis. As part of their work with The Wallace Foundation, PGCPS aligned its pre-service preparation, hiring process, and evaluation and support systems to the eight leadership standards (PGCPS, 2017a).

Pre-Service Preparation

Throughout its partnership with New Leaders from 2007 to 2014, PGCPS also worked with the National Institute for School Leadership (NISL), the Leadership Education for Aspiring Principals Program, the Pre-Leadership Academy, the University of Virginia's Turnaround Specialist Program, and the School Leaders Network to provide pre-service training to aspiring principals (PGCPS, 2013, 2014a, 2015, 2016a, 2017a). In 2012, PGCPS partnered with NISL to create its own pre-service preparation program, the Aspiring Leaders Program for Student Success (ALPSS). The residency-based program is aligned to the district's principal recruitment, selection, training, and support systems. ALPSS is open to PGCPS assistant principals with no unsatisfactory evaluations who possess appropriate state certification (PGCPS, 2017a). The first cohort of assistant principals participated in the program during the 2012–2013 school year.

Selective Hiring and Placement

Through its work with The Wallace Foundation between 2011 and 2015, PGCPS created a selective candidate pool for aspiring principals and redesigned its hiring procedures. Selection into the candidate pool depends on eligible candidates' successful completion of initial

interviews and participation in a series of job-simulation exercises designed to assess instructional leadership skills (Turnbull et al., 2016). The process is aligned with the district's principal standards. When vacancies open up, school community members, including employees and parents, are involved in creating a school leadership profile that is then used by a hiring committee to identify qualified candidates from the pool. Final decisions are made by the CEO based on committee recommendations (PGCPS, 2014b). Furthermore, PGCPS developed the Leader Tracking System to gather and present data to inform hiring and placement procedures (Turnbull et al., 2016).

On-the-Job Support, Supervision, and Evaluation (Coaching, Mentoring)

In addition to redesigning hiring procedures, PGCPS developed a standards-based evaluation system for principals that has both measures of student growth and professional practice, as required by the state (Turnbull et al., 2016). As part of the evaluation system, the district designed an administrator evaluation tool to assess principal practice on the eight leadership standards. Supervisors assess principal performance based on evidence from school site visits, timeliness in systems operations, reports from others, personal observations, school documents, and school projects activities. Principal supervisors provide feedback and coaching in addition to conducting evaluations (PGCPS, 2016b).

The district runs the New Principals' Mentoring Program that matches novice with veteran principals. Through face-to-face meetings, online discussions, phone conversations, and interschool visitations, veteran principals coach their mentees in the effective implementation of instructional programs and supervision of school staff. Furthermore, novice principals are trained by staff in the School and Leadership Development Office on instructional leadership, district policies, and budgetary procedures (PGCPS, 2017a).

In addition to providing a range of continuing professional development courses for administrators, the Office for Talent Development runs the yearly, mandatory Summer Leadership Institute, which is a two- to three-day training program for principals, assistant principals, and central office administrators. The institute focuses on training in skills and strategies for specific district initiatives, with the goal of ensuring that the school system makes continuous gains in student achievement (PGCPS, 2017a).

Memphis, Tennessee: Shelby County Schools

Overview of District Context During the New Leaders Partnership

SCS educates more than 111,500 students in 201 schools with a $1.36 billion budget (SCS, 2018).[6] SCS runs 150 traditional public schools and oversees the performance of 51 SCS-

[6] In August 2011, the United States Court ruled that Memphis City Schools would cease to exist at the end of SY 2012–2013. Consequently, Memphis City Schools became a part of SCS and operated under SCS's charter. Following the merger, in July 2013, six suburban cities in Shelby County approved the creation of their own

authorized charter schools. However, students in Shelby County also attend a growing number of public schools that are not part of SCS but are located within the county: 34 schools in the six autonomous municipal school districts, 29 Achievement School District[7] (ASD) schools, and a newly authorized charter school.

SCS enrollment has declined from approximately 140,000 in SY 2013–2014 to 111,500 in SY 2017–2018 (SCS, 2016, 2018). The decrease in enrollment results primarily from attrition out of SCS to either newly created municipal districts within Shelby County or ASD schools. ASD student enrollment has grown from 3,748 students in 2013–2014 to an estimated 10,761 in the 2017–2018 school year (SCS, 2016).

Between 2015 and 2017, SCS closed three traditional public schools and four charter schools because of underenrollment and/or low performance. The district authorized the opening of six new SCS-authorized charter schools in the 2017–2018 fiscal year. Enrollment in charter schools since 2015 has increased from approximately 12,000 students to more than 15,000 students (SCS, 2016).

SCS revenues are closely linked to enrollment. While the state's allocation for public schools in Shelby County was estimated to increase for 2017–2018 relative to fiscal year 2016–2017, the allocation for SCS (excluding ASD and municipal schools) declined because of enrollment decreases. The district expects to face financial challenges in the years to come as five federal grants will end September 2018 resulting in a decline of $6.2 million in federal funds and other local revenues will decrease because of the expiration of the seven-year, $90 million grant from the Bill and Melinda Gates Foundation.[8] To address future revenue declines, the district's 2017–2018 budget emphasizes the need to improve student recruitment and retention through innovative academic options such as the District's Innovation Zone[9] (iZone) and Empowerment Zone[10] (SCS, 2016).

In 2015, SCS established a ten-year strategic plan "Destination 2025," with the goal of

---

municipal school districts independent of SCS (SCS, 2017a).

[7] Tennessee established ASD to turn around "persistently" low-performing schools across the state. Specifically, ASD was charged with the mission to move schools from the bottom 5 percent in the state to the top 25 percent in the state within five years. Students who are zoned to a school in the ASD or a school in the bottom 5 percent are qualified to attend an ASD school. ASD has charter school authorizing power, meaning it is allowed to match failing schools that once belonged to the school district with charter operators (ASD, 2017).

[8] The Gates Foundation's Teacher and Leader Effectiveness (TLE) grant helped the district redesign how it hires, places, evaluates, supports, and pays teachers as well as develop principals as instructional leaders (SCS, 2016).

[9] In 2012, SCS created the iZone to improve schools ranked in the bottom 5 percent. The iZone has been one of SCS's most successful initiatives since being established in 2012 under a state law allowing more flexibility and the use of federal money to improve chronically underperforming public schools. In SY 2017–2018, the number of iZone schools increased from 21 to 23.

[10] SCS introduced a second model called the Empowerment Zone in SY 2016–2017 with a focus on schools between the 6th and 10th percentiles in the state. The Empowerment Zone will include six schools in the Whitehaven community—a community with several schools in the bottom 10 percent of schools in the state.

improving the quality of public education and creating a more knowledgeable, productive workforce. The plan is focused on achieving the following by 2025: "80 percent of seniors will be on track to learn in a postsecondary classroom or enter the workforce straight out of high school; 90 percent of students will earn their high school diploma on time; and all college or career ready students will enroll in a postsecondary opportunity" (SCS, 2016). The strategic plan has five priorities that support the 80/90/100 College and Career Readiness goals: (1) strengthen early literacy; (2) improve post-secondary readiness; (3) develop teachers, leaders, and central office to drive student success; (4) expand high-quality school options; and (5) mobilize family and community partners (SCS, 2016).

As outlined in the strategic plan, developing leaders is part of the district's third priority for improving students' college and career readiness. The district's current budget plan reflects this priority as it includes increasing professional development for school leaders around standards as well as implementing a new performance-based compensation system to attract and retain school leaders. SCS's interest in developing school leaders is also evident in the iZone priorities, which include both hiring "highly effective" school leaders that can achieve "ambitious student achievement goals" and "empowering" principals by providing them with greater autonomy in school staffing and resource allocation decisions (SCS, 2016, p. 35).

District Goals for the Partnership with New Leaders

Memphis City Schools partnered with New Leaders in 2004 to fill a large number of upcoming principal vacancies and to develop a pool of qualified candidates (Gates et al., 2014b). In 2013, when Memphis City Schools merged with SCS, the New Leaders partnership continued as the district struggled with high principal turnover. The partnership has evolved throughout the years and, as of 2017, includes training both teacher leaders and aspiring principals with a particular focus on preparing candidates for turnaround schools.

The SCS leaders that we interviewed in 2014, 2016, and 2017 expressed satisfaction with New Leaders work in the district and the quality of their candidates. They identified the following strengths of New Leaders graduates: can use data to improve instruction, have a strong understanding of standards, are change agents within their schools, and share school improvement strategies with other schools. SCS leaders also described New Leaders as an important partner in strengthening the district's own capacity to train and support school leaders. The district leaders that we interviewed in 2016 and 2017 also talked about the development of both their in-house training programs and new external partnerships. As our 2017 interviewee notes, "Our relationship with New Leaders for over ten years speaks volumes. It has been a pillar of support and they have produced leaders who have transformed schools. But there is now more competition in this sector and New Leaders needs to keep up with the trend and other partners. There are some others that seem to be gaining traction."

District Principal-Pipeline Activities

Leader Standards

SCS policy on effective school leadership aligns with both Tennessee Instructional Leadership Standards, adopted in 2011 and revised in 2015, and the state's Tennessee Educator Acceleration Model (TEAM, 2017) for school administrators, an evaluation rubric used to assess school principals throughout the state (more details below). SCS policy on effective leadership states that, "effective school leaders are responsible for creating a school environment that sets high expectations for students and staff; selecting effective teachers to meet the individual needs of the school; making academic programming decisions that foster student learning; and promoting a safe and secure teaching and learning environment" (Shelby County Board of Education, 2015b, p. 1).

Pre-Service Preparation

SCS identifies both attracting and retaining effective school leaders as an important challenge for the district given competition from the neighboring municipal districts and ASD (SCS, 2015, 2016). The district retains 88 percent of its top-performing principals. While some top-performing principals leave their positions because of internal promotions, others report leaving for opportunities outside the district. The district's 2016 annual report echoes this concern and highlights the need to identify and prepare aspiring school leaders (SCS, 2015, 2016).

SCS has partnered with New Leaders since 2004 to select and train aspiring school leaders (SCS, 2015, 2016). Between 2015 and 2017, SCS developed its own program and new partnerships to strengthen its principal candidate pool. In 2015, SCS developed a "grow our own" approach for leadership development and launched the Lead Up program to provide leadership training to 30 selected assistant principals and/or Professional Learning Community[11] coaches. SCS also partnered with TNTP to create ShelbyPLUS, a districtwide program launched in the summer of 2016 aimed at creating a steady pipeline of qualified principals. The program was designed to identify and provide training for top-performing assistant principals for principal roles (SCS, 2015, 2016). However, as of 2018, the program was no longer running (ShelbyPLUS, undated).

Selective Hiring and Placement

SCS has a Department of Schools and Leadership, which is tasked with hiring principals as well as providing principal support and supervision. The department developed a selective candidate pool. The selection process into the pool includes a variety of tasks such as data analysis, writing a school improvement plan, and conducting teacher observations

[11] Through the Teacher and Leader Effectiveness program, the district developed coaching positions to improve instruction across schools. The Lead Up program selected some of these coaches to participate in training for aspiring principals (SCS, 2017).

(district leader interview, 2017). Once selected into the pool, applicants apply to school openings. The school application process involves three steps: (1) an initial selection of candidates by the Department of Schools and Leadership; (2) a community panel interview, and (3) an interview with the assistant superintendent.

On-the-Job Support, Supervision, and Evaluation

The Department of Schools and Leadership is composed of a team of Instructional Leadership Directors (ILDs) that serve over 170 schools. ILDs work one-on-one with principals to improve instructional leadership, form professional learning networks, design professional development with principals, and collaborate with other units in the central office to provide necessary resources to improve school leadership. The department provides districtwide summer learning sessions, recurring Instructional Leader Support Weeks during the school year, and one-on-one and small-group coaching support. In addition, ILDs ensure understanding and fidelity of the implementation of the Tennessee Educator Acceleration Model (TEAM) for school administrators (SCS, 2015, 2016, 2017).

The TEAM Administrator Evaluation Rubric is a multiple-measure administrator evaluation system that combines self-reflection, rubric-based observation practice ratings, school staff input, and student data. The effectiveness rating is calculated using a formula that is 50 percent qualitative and 50 percent quantitative. The quantitative component includes a 35 percent growth measure and a 15 percent achievement measure (Grissom, Blisset, and Mitani, 2018; TEAM, 2017).

The Department of Schools and Leadership also oversees the Teacher and Leader Effectiveness Program, which focuses on attracting, developing, and retaining highly effective educators. The program, funded by several grants including one from the Gates Foundation, included the creation of a competitive compensation system to attract and retain both teachers and school leaders. The compensation system was designed during the 2015–2016 school year and its full implementation is planned for the coming years (SCS, 2015, 2016, 2017).

Appendix B. Analysis of School-Level Outcomes

In this appendix, we present an analysis designed to estimate the difference in student outcomes between a school receiving a New Leaders principal and a school receiving a non–New Leaders principal. We use aggregated, school-level data to compare (1) student attendance and performance on standardized tests of reading and mathematics of K–8 schools that received New Leaders principals with (2) the same outcomes for K–8 schools in the same district that received a new principal in the same year who was not trained by New Leaders. This ensures that districtwide changes will not affect the estimates. It is possible, however, that even schools in the district that did not receive a New Leaders principal were affected by the program. For example, these schools might have been able to choose a better principal than they otherwise would have because the New Leaders program reduced the demand for principals in the district. It is also possible that non–New Leaders principals learned from their colleagues who were trained by New Leaders. In addition, because many districts had adopted other pipeline activities, some of which involved training or standards similar to those of New Leaders, it is possible that non–New Leaders principals developed competencies or had experiences similar to those of the New Leaders principals. These positive spillovers minimize the distinction between treated schools and control schools, which would lead to an underestimate of the true effect of New Leaders.

We looked for differences in measures of achievement on mathematics and English language arts (ELA) standardized tests and student attendance. This analysis differs from the student-level analysis presented in Appendix C in that estimates are not derived from students who were in the same school as the New Leaders principal transitioned into or out of the position, nor is it derived from students who switched between schools that were led by New Leaders principals and those that were not. Instead, we use a matching approach to compare outcomes of observationally similar schools within a district in the years after New Leaders principals were placed in schools.

As noted in Chapter Three, we did not estimate the association between New Leaders principals and student outcomes in high schools because of the low number of high schools that hired New Leaders principals in any given cohort. We also caution against making strong causal claims from these results. Although we matched on, and control for, some of the biggest predictors of the outcomes of interest, the identifying assumption for a causal claim would be that all other unobservable characteristics are also controlled for in these models. Because the data allow us to match only on the year prior to receiving a principal, we cannot account for trends in the outcome variable over time. Nor can we guarantee that our models completely account for other unobservable characteristics, such as the neighborhood of the school and the financial and human capital resources of the school.

Data and Sample

To execute this analysis, we linked program data from New Leaders to student-level district data from our partner districts. Program data from New Leaders include yearly placement data and the year in which the principals experienced the New Leaders training residency. Data from schools in our partnering districts include student-level demographics, standardized test score data, attendance records, instances of dropout, total years of experience as a principal for the leader of the school, and school level (K–8 or high school). Student test scores were standardized by subject, grade, and year separately for all districts, and all student-level data were aggregated to the school level. This analysis includes data from the following nine partners: BCPS, CMS, CPS, DC PCSB, DCPS, NYC DOE, OUSD, PGCPS, and SCS. We were unable to obtain data from New Orleans because of statewide limitations on data access.

Schools were marked as "treated" the year they first received a New Leaders–trained principal who was a part of Cohort 12 or later. Treated schools remained treated in perpetuity even if the principals left to capture any lingering effects of their tenure as principal. Therefore, these estimates are akin to an "intent-to-treat" association between hiring a New Leaders principal and student outcomes. Any school that is led by a New Leaders principal trained in Cohorts 1–11 were not marked as treated. Instead, we include an indicator for ever having been led by such principals as a control in our models. Finally, we create cohorts of treated schools based on the year they first received a New Leaders principal. For example, all schools that first received a New Leaders principal in SY 2013–2014 (the first possible year of placement for Cohort 12 principals) were considered one cohort; all schools that first received a New Leaders principal in SY 2014–2015 were considered a second cohort, and so on. Note that these cohorts do not necessarily align with the New Leaders training cohorts, because some principals were not placed in the school year immediately following the completion of their New Leaders residency. For each cohort, a set of possible comparison schools consisted of K–8 schools in the same district that also received a new principal in the same year, except that the principal was not trained by New Leaders. After establishing the treatment and possible control sample for each combination of school cohort, school year, and district, we employed a nearest-neighbor matching approach to identify observationally similar control schools.

Methodology

For the nearest-neighbor matching approach, we separately matched each treatment school to candidate control schools using each baseline outcome variable to identify observationally similar control schools for each treatment school. In executing this approach, we identified a pool of potential control schools for each cohort of treated schools, as described in the "Data and Sample" section. We then calculated two types of weights. After calculating the appropriate weights, we pooled the sample across districts and estimated the relationship between New Leaders principals and outcomes.

In each weighting scheme, we identified control schools within a caliper of 0.25 standard deviations of each treatment school. When matching to each individual treatment school, control schools were given equal weight. Because we were matching with replacement, a school could serve as a control school for many treatment schools. A control school's final weight was the sum of its weights across matched treatment schools. In the first weighting scheme, each treatment school was given a weight of 1, and control schools were weighted such that their sum for each treatment school equaled 1. Equation B.1 illustrates this approach:

$$w_{jd} = \sum_i \frac{m_{ijd}}{M_{id}} (j = 1, 2, \dots, J) and\ w_{id} = 1\ (i = 1, 2, \dots, I), \quad \text{(B.1)}$$

where the subscript *j (j = 1, 3, . . . , J)* represents a control school subscript, *i (i = 1, 2, . . . , I)*, represents a treatment school, and subscript *d* represents a district. Further, m_{ijd} is an indicator variable defined for each combination of *i* and *j*, such that it equals 1 if control school *j* is matched with treatment school *i* and 0 otherwise. M_{id} represents the total number of control schools matched to a treatment school in a district. Therefore, $\frac{m_{ijd}}{M_{id}}$ represents the weight a control school is given for a treatment school in a district. If five schools were matched to a treatment school, then $\frac{m_{ijd}}{M_{id}} = \frac{1}{5}$ for each matched control school; if four schools were matched to a treated school, then $\frac{m_{ijd}}{M_{id}} = \frac{1}{4}$ for each matched control school, and so on. Because we matched with replacement, the same control school could be used for more than one treatment school. Therefore, w_{jd} is the sum of all the weights of a control school across all their matched treatment schools in a district. Regressions that use this method will therefore weight results by the number of treatment schools. Districts that have a closer relationship with New Leaders and hire more principals, or larger districts that have more schools in which to hire New Leaders principals, will contribute to estimates to a greater extent.

An alternative approach was to weight each district equally in the regression analysis. In this scheme, treatment schools were no longer given a weight of 1 but rather were given a weight such that the sum of the treatment weights sums to 1 in each district. Control weights were rescaled such that the sum of a treatment school's control schools summed to the new treatment weight. Equation B.2 illustrates this approach:

$$\omega_{jd} = \frac{w_{jd}}{I_d}\ and\ \omega_{id} = \frac{w_{id}}{I_d}. \quad \text{(B.2)}$$

Here, ω_{jd} represents the alternative weight for a control school, ω_{id} represents the alternative weight for a treatment school, and I_d represents the total number of treatment schools in each district. The new weights are the original weights divided by the number of treatment schools in each district. Thus, with this approach, each district will receive an equal weight in the regression analysis.

After each cohort of treatment schools was matched to the cohort of control schools within a district, we pooled across districts. We then estimated the effect of the New Leaders program on each outcome of interest in each outcome year separately for each cohort of schools. Equation B.3 illustrates this approach:

$$Y_{sd} = \beta_0 + \beta_1 New\ Leaders_{sd} + \boldsymbol{X_{sd}}\boldsymbol{\beta}_2 + \varepsilon_{sd}. \quad \text{(B.3)}$$

Here, Y_{sd} is the outcome of interest (math score, ELA score, or attendance) in school *s*, in district *d*; $New\ Leaders_{sd}$ is an indicator for the school being led by a New Leaders principal; and $\boldsymbol{X_{sd}}$ is a vector of baseline school-level characteristics. $\boldsymbol{X_{sd}}$ includes all outcomes of interest in the baseline year, an indicator for ever having been led by a New Leaders principal trained in Cohorts 1–11, a continuous measure of principal tenure, and an indicator for a new principal. All regressions also were weighted by the appropriate nearest-neighbor-matching weight. By including baseline measures of the outcome and the nearest-neighbor-matching weight, we present doubly robust estimates of the outcome of interest. We ran separate regressions on each school cohort and estimated effects three years after the New Leaders principals were placed in the schools. We provide one overall estimate of the effect of New Leaders in each outcome year by taking the meta-analytic average of across cohorts. We used a fixed-effects meta-analysis approach, which assumes a constant treatment effect across cohorts of New Leaders principals and weights by the inverse of the variance of the estimates. The latter point means that more weight is given to cohort estimates that are more precise.

We report only the meta-analytic average of the effect of the New Leaders program across all cohorts three years after the principal was placed. As reported in our pre-analysis plan, New Leaders, supported by past experience and an emerging consensus in the literature, is interested in the effect of program after at least three years of placement. The theory behind this decision is that it takes time for principals to settle into the role and for any consequential decisions made by principals to trickle down to the teacher and student levels. Any changes in student outcomes in the first year or two may not be indicative of the true effect of a principal because of any overall shocks to student achievement that occurred because of the disruption a change in school leadership may cause, an adjustment period, and the need for time for decisions to produce their anticipated effects. Further, we choose not to present four-year results because only the first cohort of principals was in schools long enough to contribute to these estimates. The number of principals in any one cohort is relatively small, thus producing noisy and imprecise estimates.

In the end, we present two estimates, because of the two weighting strategies, for each of the three domains (mathematics achievement, ELA achievement, and attendance). To avoid type I error, we take estimates within each domain and use the Benjamini-Hochberg technique to correct for two tests of significance as recommended by the What Works Clearinghouse (WWC, 2017). The results by cohort and for all other years are available on request.

Baseline Equivalence

We checked for baseline equivalence on each outcome of interest for each cohort of treated and comparison schools, in the school year prior to the start of treatment. We produced doubly robust estimates of the effect of the New Leaders program by including matching weights in regressions and by controlling for baseline measures of the outcome variable. In addition, we included baseline controls for the other academic and attendance outcomes of interest, an indicator if the school was previously led by a New Leaders principal trained in Cohorts 1–11, a continuous measure of the tenure of the principal,[12] and an indicator for new principals.

This matching approach ensured baseline equivalence on the biggest predictor of the outcome of interest (the baseline measure of the outcome) and controlled for other key variables. However, as with all matching estimators, we were unable to ensure that all unobserved characteristics of the schools are accounted for with this method. For example, if New Leaders principals were more likely to be placed in schools where student outcomes have been trending downward because the district thought they were more likely than other candidates to be successful, then our estimates would be biased downward. The opposite scenario is also possible. Similarly, if unobserved characteristics of the neighborhood or resources available to the school were not fully accounted for by the baseline measure of the outcome and controls, our results may be biased. We therefore view these results as robust associations estimated after accounting for the biggest predictors of the outcomes.

Before presenting results, we first illustrate that each weighting procedure produced balance on the outcome of interest in the baseline line year. Differences in baseline covariates were calculated by regressing the outcome in the year before a cohort of schools received a New Leaders principal on an indicator for receiving a New Leaders principal in the next year and weighted by the appropriate matching weights. Baseline equivalence regressions contained the same sample of treatment and control schools as outcome regressions and employ the same matching weights. The mathematics and ELA test scores are standardized in the baseline and outcome years. The attendance measure is in percentage points.

Table B.1 shows the baseline balance for each outcome, for each cohort, and each weighting strategy. Cohorts 1 and 2 are only shown because they are the cohorts that contribute to the estimates of the effect of New Leaders principals three years after placement.

[12] The tenure of the principal is not collinear with the years of treatment because of principal mobility and turnover within the three-year window.

Table B.1. Baseline Balance of Covariates, for K–8 Schools, by Cohort and Weighting Scheme

	(1) Mathematics	(2) *N*	(3) ELA	(4) *N*	(5) Attendance	(6) *N*
Panel A: Weighted by treatment schools						
Cohort 1	–0.024 (0.066)	121	–0.005 (0.047)	128	0.000 (0.004)	74
Cohort 2	–0.018 (0.064)	105	–0.025 (0.073)	112	0.000 (0.004)	78
Panel B: Equal weights for districts						
Cohort 1	–0.012 (0.065)	121	0.016 (0.047)	128	0.000 (0.004)	74
Cohort 2	–0.025 (0.061)	105	–0.047 (0.079)	112	0.000 (0.004)	78

NOTES: All regressions include nearest-neighbor matching weights. Matches were made based on outcome within a caliper of 0.25 standard deviations. Cohort 1 is composed of all post–Investing in Innovation (i3) New Leaders principals placed in schools in SY 2013–2014. Cohort 2 is composed of all post-i3 New Leaders principals placed in schools in 2014–2015. Comparison schools are schools within the same district that received new non–New Leaders principals in the same year. Mathematics and ELA are expressed in effect sizes, and attendance is expressed in percentage points.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Of the 12 tests of baseline equivalence, none is significant to the 10 percent level or less. Table 4.6 in the main body shows the baseline equivalence when using a fixed-effects meta-analytic average across cohorts. As in our meta-analytic average of the outcomes, this technique weights the point estimates by the inverse of the variance. All outcomes are well balanced, with each point estimate small and insignificant.

Results

Table B.2 is a re-creation of Table 4.1 in the main body of the report. Results indicate that New Leaders principals are associated with increases in student achievement in mathematics and potentially in ELA. When weighting by the number of treated schools, New Leaders principals are associated with an increase in mathematics achievement by 0.089 standard deviations (or 3.55 percentiles) and ELA achievement by 0.057 standard deviations (or 2.27 percentiles). We found no detectable associations with attendance. When giving each district equal weight, student achievement in mathematics still increases by 0.082 standard deviations (or 3.26 percentiles), although the estimate on student achievement in reading is now an insignificant 0.045 standard deviations. Once again, no effect is detected on attendance. All significant effects

are robust to correcting for two-hypotheses tests. Without this correction, the 0.045 standard deviation increase in reading scores when giving each district equal weight would be significant at the 10 percent level.

Table B.2. Meta-Analytic Averages of the Effect of New Leaders Principals on Student Outcomes in K–8 Schools, by Weighting Strategy

	(1) Math	(2) ELA	(3) Attendance
Panel A: Weighted by treatment schools			
New Leaders effect after three years	0.089*	0.057*	0.004
	(0.029)	(0.025)	(0.003)
New Leaders effect after three years, in percentile points	3.55*	2.27*	N/A
	(1.20)	(1.00)	
p-value	0.003	0.024	0.151
Benjamini-Hochberg threshold	0.025	0.025	0.025
Panel B: Equal weights for districts			
New Leaders effect after three years	0.082*	0.045	0.003
	(0.029)	(0.025)	(0.003)
New Leaders effect after three years, in percentile points	3.26*	1.81	N/A
	(1.18)	(1.01)	
p-value	0.006	0.074	0.400
Benjamini-Hochberg threshold	0.050	0.050	0.050
N (schools)	226	240	152

NOTES: N/A = not applicable. Meta-analytic averages combine the effects of principals placed in SYs 2013–2014 and 2014–2015. Individual cohort estimates were are calculated using nearest-neighbor matching with replacement with a caliper of 0.25 standard deviations of the outcome variable at baseline. Two weights were calculated. The first gives each treatment school a weight of 1, and the second weights each treatment school such that their sum equals 1 in a district. In addition to matching weights, cohort-specific models include baseline measures of all outcome variables, an indicator for ever being led by a New Leaders principal trained before Cohort 12, a continuous measure of principal tenure, and an indicator for being a new principal. Standard errors in cohort-specific models were clustered by school. The meta-analytic average includes fixed effects and employed the inverse of the variance of the cohort estimate as weights. Math and ELA results are presented in effect size units and percentiles. Attendance results are presented in percentage points.
* indicates significance is robust to the Benjamini-Hochberg correction for two-hypothesis tests.

Table B.3 presents the cohort-specific estimates used in the meta-analytic averages presented in the main body of the report. Cohort 2 is mostly driving the associations with achievement. When weighting by the number of treatment schools, both ELA and mathematics outcomes are associated by the placement of Cohort 2 principals, and none is related to the placement of Cohort 1 principals. When giving each district equal weight, Cohort 2 is associated only with ELA achievement, and Cohort 1 is associated only with mathematics scores. Once again, all of the significant results are robust to the Benjamini-Hochberg correction for multiple-hypothesis testing. Also, *p*-values were corrected for four-hypothesis tests to account for the two weighting schemes applied separately to two cohorts within each domain.

Table B.3. Three-Year Effects of New Leaders Principals on Student Outcomes in K–8 Schools, by Cohort and Weighting Scheme

	(1) Math	(2) *N*	(3) ELA	(4) *N*	(5) Attendance	(6) *N*
Panel A: Weighted by treatment districts						
Cohort 1	0.050		–0.002		0.007	
	(0.042)	121	(0.037)	128	(0.004)	74
Cohort 1 in percentile points	2.000		–0.068		N/A	
	(1.68)		(1.46)			
p-value	0.235		0.963		0.117	
BH threshold	0.050		0.050		0.025	
Cohort 2	0.132*		0.090*		0.002	
	(0.044)	105	(0.035)	112	(0.004)	78
Cohort 2 in percentile points	5.24*		3.57*		N/A	
	(1.74)		(1.38)			
p-value	0.004		0.013		0.660	
Benjamini-Hochberg threshold	0.013		0.025		0.050	
Panel B: Equal weights for districts						
Cohort 1	0.090*		0.009		0.01	
	(0.039)	121	(0.037)	128	(0.005)	74
Cohort 1 in percentile points	3.60*		0.345		N/A	
	(1.57)		(1.47)			
p-value	0.024		0.815		0.037	
Benjamini-Hochberg threshold	0.025		0.038		0.013	
Cohort 2	0.071		0.100*		–0.004	
	(0.046)	105	(0.035)	112	(0.005)	78
Cohort 2 in percentile points	2.82		3.97*		N/A	
	(1.82)		(1.38)			
p-value	0.125		0.005		0.348	
Benjamini-Hochberg threshold	0.038		0.013		0.038	

NOTES*:* All regressions include nearest-neighbor matching weights. Matches were made based on outcome in the baseline year within a caliper of 0.25 standard deviations. All regressions also control for baseline measures of math, ELA, attendance, dropout, pre-i3 "treated" status, and principal tenure. Standard errors are clustered by district-school. Cohort 1 is composed of all post-i3 New Leaders principals placed in schools in SY 2013–2014. Cohort 2 is composed of all post-i3 New Leaders principals placed in schools in SY 2014–2015. Comparison schools are schools within the same district that received new non–New Leaders principals in the same year. Math and ELA results are presented in effect sizes and percentile points. Attendance results are presented in percentage points.
* indicates robust to the Benjamini-Hochberg correction for four-hypothesis tests.

Finally, Table B.4 presents statistics on the underlying number of students contributing to the school-level estimates. For each cohort of schools and for each outcome in the baseline and outcome years, we present the number of students in the analytic sample and the number of students eligible to have an outcome. For the academic achievement in mathematics and ELA

measures, the number of eligible students is restricted to students in grades 3 through 8. For the attendance measure, all students in schools are eligible. We then calculate the proportion of eligible students who have a valid outcome and are in the analytic sample. We call this proportion the *representativeness* of the analytic sample because it provides a measure of how representative the analytic sample is of the total population students who can contribute to the estimate. Table B.4 reports that the representativeness at the cohort-year outcome level ranges from 90 to 96 percent. When combining cohorts, the representativeness rages from 92 to 94 percent. All these proportions are within the bounds set forth by the WWC (2017).

Table B.4. Sample Size and Representativeness by Cohort and Outcome

	(1)	(2)	(3)	(4)	(5)	(6)
	Math		ELA		Attendance	
	Baseline	Year 3	Baseline	Year 3	Baseline	Year 3
Cohort 1 schools	121	121	128	128	74	74
Cohort 1 students in sample	42,828	43,290	45,615	46,684	41,744	43,066
Cohort 1 students eligible	44,650	47,359	48,275	51,162	44,238	45,626
Percentage of eligible students in sample	96	91	94	91	94	94
Cohort 2 schools	105	105	112	112	78	78
Cohort 2 students in sample	32,501	33,020	34,407	36,749	41,313	42,544
Cohort 2 students eligible	35,777	35,719	38,087	40,010	44,799	45,393
Percentage of eligible students in sample	91	92	90	92	92	94
Total schools	**226**	**226**	**240**	**240**	**152**	**152**
Total students in sample	**74,985**	**76,310**	**80,022**	**83,433**	**83,057**	**85,610**
Total students eligible	**80,427**	**83,078**	**86,362**	**91,172**	**89,037**	**91,019**
Percentage of total eligible students in sample	**94**	**92**	**93**	**92**	**93**	**94**

Appendix C. Student Achievement Outcomes Using Student Fixed-Effects Analysis

The analysis presented in this appendix addresses the question of whether New Leaders principals have a measurably different effect on individual students during the period they attend schools led by New Leaders principals. In other words, it addresses the question—what is the impact on a student of attending a school led by a New Leaders principal rather than a school led by a non–New Leaders principal? This question can be studied rigorously by looking at the change in outcomes for students who experience both treated and untreated schools distinct from any effects New Leaders principals may have on who chose to attend their schools. This variation in individual students' experiences happens when students move from one school to another (e.g., through advancement from elementary to middle school), as well as when a New Leaders principal joins or leaves a school. The analysis follows a single stable cohort of treatment and comparison schools. We explore the impact on a student attending a school led by a New Leaders principal rather than a school led by a non–New Leaders principal on student achievement and attendance rates. We used data from the 2012–2013 school year to the 2016–2017 school year. We used all cohorts of New Leaders principals who completed their residency after SY 2011–2012.

We note that this analysis helps provide additional insight into the results from the school-level analysis but is not directly comparable (i.e., as a sensitivity check) for a number of reasons. First, the research question is different. The effect on individual students is not the same as the effect on the schools, given that school outcomes change from both shifts in students' outcomes and shifts in the composition of students. Second, the samples are not the same. The student-level approach includes only students observed more than once (given the student fixed-effects approach). Second, it is identified based on changes in student assignments to schools with or without New Leaders principals, which can happen from changes in the principal within the school or from moving into or out of schools with stable principal assignments, such as would happen from moving locations or advancing from elementary to middle school. The school-level analysis is based only on changes in principal assignment, on the other hand. For these reasons, we use this analysis to help answer the alternative research question, recognizing that not only is the approach different but the underlying research question and samples are different.

Research Methods and Data Summary

Student Achievement

To analyze the effect of New Leaders on student-level achievement among elementary and middle schools (grades 3–8 for all districts but OUSD, which has test scores for grades 2–8), we

used a student fixed-effects estimator that relies on variation in outcomes for students during years when they are in schools with New Leaders principals versus years they are in schools not led by New Leaders principals. For high schools (grades 9–12), many districts administered the only tests in a single grade, so we could not consistently use the fixed-effects estimator. Instead, we included eighth-grade test scores as a student-level control variable. All models also controlled for school fixed effects and several demographic variables. For the analysis of achievement in K–8 schools, the demographic variables were primarily at the school level (e.g., fraction of the school eligible for the free and reduced-price lunch program). Those can vary from year to year. The time-invariant student demographic variables are not included for the K–8 analysis, given the presence of student fixed effects, but are included for the high school analysis, which does not include student fixed effects, as discussed above. When New Leaders principals are placed in new schools with no previous data, we cannot control for school fixed effects for that specific school but can still control for student fixed effects.

We estimated the fixed-effects regressions for each district separately. We were particularly careful to account for the growth trajectory of principals with more experience by controlling for principal tenure within the school and district. We included as many relevant covariates as available in each district regression.

The estimation strategy and model specifications followed that of Gates et al. (2014a) and is described in detail in the appendix to that report (Gates et al., 2014b). This updated analysis uses different years of outcomes, as well as the later cohorts of New Leaders principals that have been placed since those studies. In the prior work, we examined models that estimated how the treatment effect of having a New Leaders principal varied depending on the number of years a student attended a school led by a New Leaders principal (student exposure), as well as a model that allowed the effect to vary depending on the number of years the New Leaders principal had been placed in the school (principal experience). This report focuses on the second modeling approach, which allows the effect on students to vary by the number of years of New Leaders principal experience. The regression for grades 2–8 is given by Equation C.1:

$$Y_{ist} = \theta_1 D_{1st} + \theta_2 D_{2st} + \theta_3 D_{3st} + \beta X_{ist} + \psi C_{st} + \alpha_i + \lambda_t + \eta_s + \varepsilon_{ist}. \quad \text{(C.1)}$$

Y_{ist} is the student achievement on standardized tests for student *i* in school *s* in year *t.* D_{1st}, D_{2st}, and D_{3st} are indicator variables for school *s* in year *t* of having a New Leaders principal in his or her first, second, or third *or more* years, respectively, serving as principal in the school and are the treatment indicators of interest. If a school did not have a New Leaders principal in a given year for any reason, each of these indicator variables takes a value of 0. Thus, identification of the effect comes from students who have changes in the New Leaders status of their principals over time, either from changes in principal assignments or from transitions of the students between schools. We estimate the models separately by outcome, subject, and district and then aggregate up to outcome by subject results by taking the student-weighted and equal-weighted averages, as described below. X_{ist} captures (potentially) time-varying student-level

characteristics, such as free and reduced-price lunch status or limited English-proficiency status. Time-invariant characteristics, such as race and gender, are not identified in the student fixed-effects regression. C_{st} captures time-varying school characteristics, such as racial and free and reduced-price lunch eligibility composition, number of students, and tenure of principal. Principal tenure is expressed using indicator variables for first year, second year, third year, fourth year, fifth year, and sixth or more years to account for the nonlinear trajectory of the effect of principal experience on student achievement. α_i indicates student-level fixed effects, which capture the inherent ability of students and other unobservable but time-invariant factors that may influence their achievement. λ_t represents a set of control variables for the school year, to allow for shifts in policies that affected all students in a given district. η_s represents school fixed effects, allowing us to separate out the contribution that the new New Leaders principals make from the inherent performance of their schools (implicitly, by contrasting performance under the new principal versus performance under the prior principal in the same school). ε_{ist} represents unobserved factors that affect the outcome.

The identification of the treatment effect is based on comparing the change in scores for students who switched from having a non–New Leaders principal to having a new principal who is New Leaders–trained against the change in scores for the other students, controlling for other factors, or moving from having a New Leaders principal to not having one, which might happen when transitioning from elementary to middle school. Where we could control for principal tenure (for all but PGCPS), the comparison is stronger, contrasting the change in scores for the treated students to the change in scores for students who are in schools with new, non–New Leaders principals.

For grades 9–12, given the inconsistent outcome data patterns, and to maximize the number of valid observations, when examining standardized test achievement as the outcome, our model (Equation C.2) used eighth-grade test scores as a control for ability:

$$Y_{ist} = \phi Y_{is8} + \theta_1 D_{1st} + \theta_2 D_{2st} + \theta_3 D_{3st} + \beta X_{ist} + \psi C_{st} + \lambda_t + \eta_s + \varepsilon_{ist}. \qquad \text{(C.2)}$$

We were also interested in estimating the effect of the New Leaders program for each school. We did so by using the specification in Equation C.1, but instead of including $\theta_1 D_{1st} + \theta_2 D_{2st} + \theta_3 D_{3st}$, we interacted each with each treated school—i.e., $\sum_{s\ with\ NL\ principals} \phi_{1s} D_{1st} + \phi_{2s} D_{2st} + \phi_{3s} D_{3st}$. Estimating separate treatment effects for each New Leaders principal allowed us to examine the degree of heterogeneity that is collapsed in the aggregate effect estimates, as well as investigate how program and participant characteristics correlate with success in the improving student outcomes. For the latter, the methodology is described below. We looked only at principals in grades 2–8 schools because of the smaller number of New Leaders principals in high schools and the slight variations in methodology. We only evaluated individual treatment effects for schools for which we observed student achievement in the year

prior to the placement of the New Leaders principal, so as to be able to separate out the treatment effect from the school effect.

Attendance

We also investigated the impact of having a New Leaders principal on students' attendance. We followed the same methodology as for student achievement in grades 2–8 (Equation C.1). Given that attendance rates were observed for each grade in high school as well, we followed the same methodology across all grade levels.

Correlation of Treatment Effects and Program Characteristics

After estimating principal-level treatment effects for New Leaders principals placed in schools with grades 2–8, we examined how these effects correlate with New Leaders program characteristics. Here, we urge caution in attributing causal interpretation to any of this analysis. Because we lack a research design that supports causal inferences for this research question, any relationship we observed might be attributable to other factors for which we were unable to control. For example, New Leaders principals who performed well in the training may be assigned to schools where they are more likely to succeed, inflating the correlation between performance in the training and the effects on student achievement.

We have around 350 estimated principal effects for which we can link program characteristics. Given that the principal-specific treatment effect estimates and the predictors of interest are often continuous, we used linear regression to understand the relationship between the two. For each program and trainee variable of interest, we regressed the principal-level treatment effect (in percentiles) on the characteristic, as well as district fixed effects. The district fixed effects ensure that we are not just capturing differences in district effects, especially for characteristics that are fully implemented (or not) for a given district. Further, given that we are using estimated treatment effects as the dependent variable, we weighted the regression by the inverse of the squared standard error of the treatment effects for the schools. This puts more weight in the regression for principals who have treatment effects that are more precisely estimated. We report the coefficient and standard error, as well as the R-squared from the regression. Although we report significance levels to contrast relative precision, we again urge caution in overinterpretation of these results. We did not control for multiple hypotheses, nor did we account for the estimation error arising from the first stage of estimating the treatment effects. Doing either of these things would reduce the significance of each coefficient reported. However, the significance levels are helpful in contrasting which coefficients are estimated more precisely than others, in general.

Student Outcomes Results

Results for Student Achievement, Elementary and Middle Schools

Table C.1 presents the average of the effect of having a New Leaders–trained principal across the nine districts for grades 2–8, for a third-year or later New Leaders principal. We present both the equal weights for districts average and the treated student–weighted average. There, the weights are based on the number of treated students in each district in the regression sample. The treatment effects were estimated in standard deviations of student achievement. However, to aid interpretation, we converted these to percentile gains from the median.

We found positive results when using the equal weights for districts average. While not presented here, the results were smaller in the first and second years of placement, such that while the first-year effects are universally negative (although only statistically significant for reading and equal-weights average, and small in all cases), the effects for the third year are larger, positive, and statistically significant for both subjects using the equal-weights average and modestly sized for mathematics using the treated student–weighted average.

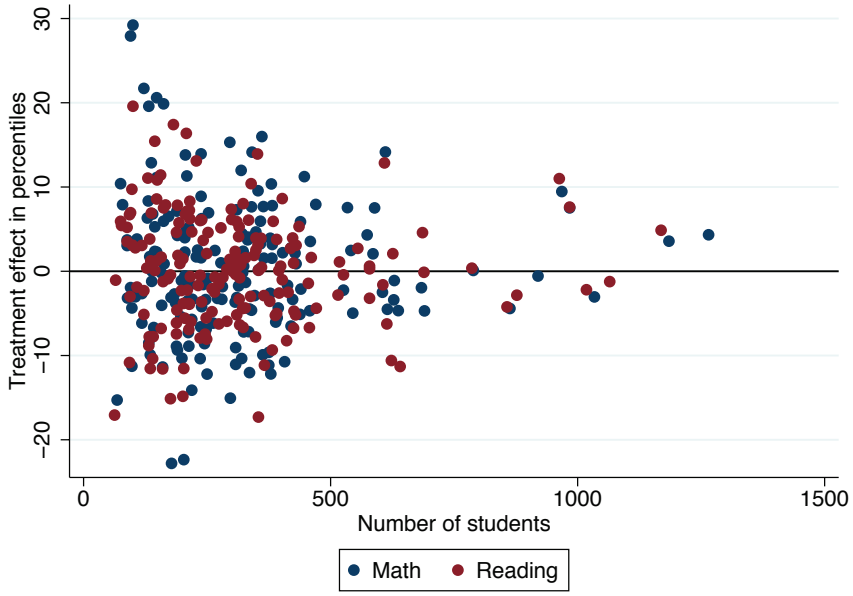
Table C.1. Aggregate Achievement Treatment Effects for Third Year and Later After Principal Placement, Grades 2–8

Weighting Method	Treatment Effect	Math	Reading
Equal weights for districts	Effect (student standard deviation)	0.139***	0.097***
	Standard error	0.033	0.032
	Effect (percentile)	4.929	3.391
Weighted by treatment students	Effect (student standard deviation)	0.031	–0.001
	Standard error	0.037	0.033
	Effect (percentile)	1.222	–0.038

NOTE: See Table A.1 for sample sizes.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Next, we examined the distribution of treatment effects across schools. For this analysis, which included only principals in grades 2–8, we further restricted estimating by-school treatment effects to schools with at least 15 student observations. Because we are using school fixed effects, we could identify only school-level treatment effects for schools that have in at least one year a non–New Leaders principal and at least in one year a New Leaders principal. This allowed us to separate out the portion of student achievement growth attributable to the new principal versus school and community characteristics. Imposing this restriction yielded around 350 schools that contributed to this analysis. Figure C.1 presents the results, contrasting the effect size with the size of the school. Overall, there was a wide dispersion of treatment effect sizes, with some quite large and some quite small. There seems to be no systematic relationship between school size and treatment effects, except for the finding that the variance of treatment effects is higher for smaller schools.

Figure C.1. Treatment Effects, by School Size and Subject, Grades 2–8



Student Achievement, High Schools

Estimation for grades 9–12 was more difficult because in some districts, students do not take an exam every year. This necessitated a change in estimation strategy as described above (using eighth-grade test scores as baseline controls), leading to more students with missing data. These estimates were often based on the subset of students for whom we observed both a post-treatment score and a pre-treatment eighth-grade score. Table C.2 presents the results. Most cases were not statistically significant, although, for the equal weights for districts average, we found positive and statistically significant findings in reading for the third year and later. Although not presented here, there are no strong differences between first, second, and third year and later.

Table C.2. Aggregate Achievement Treatment Effects, High School

Weighting Method	Treatment Effect	Math	Reading
Equal weights for districts	Effect (student standard deviation)	–0.245	0.350***
	Standard error	0.261	0.063
	Effect (percentile)	–8.357	9.434
Weighted by treatment students	Effect (student standard deviation)	–0.127	–0.022
	Standard error	0.152	0.039
	Effect (percentile)	–4.964	–1.121

NOTE: See Table A.1 for sample sizes.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Results for Attendance

We report the effects of exposure to New Leaders principals on attendance in Table C.3 for the third- and later-year effects. The results were positive for elementary and middle school and negative for high school, although statistically significant only for the equal-weights average. While not reported, the equal-weights average was statistically significant and positive for the first- and second-year effects, as well as the weighted-by-treatment-student average for the second-year effect.

Table C.3. Attendance Treatment Third- and Later-Year Effects

	Weighting Method	Number of Treated Districts	Number of Treated Schools	Number of Treated Students	Estimate	Standard Error
Preschool through grade 8	Equal weights for districts	9	42	18,518	0.004**	0.002
	Weighted by treatment students	9	42	18,518	0.001	0.002
High school	Equal weights for districts	5	3	2,222	–0.011***	0.006
	Weighted by treatment students	5	3	2,222	–0.008	0.007

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

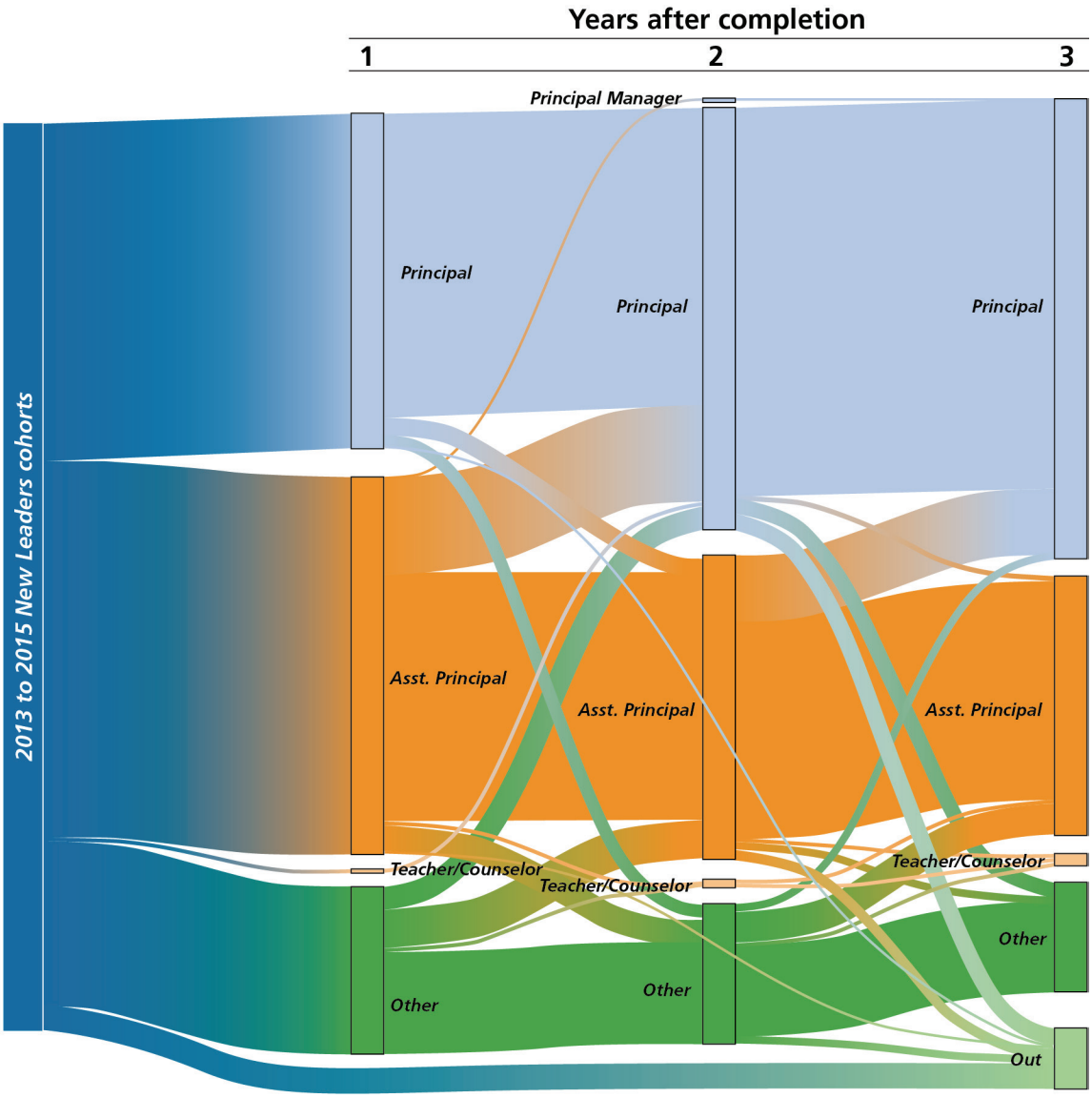
Appendix D. Analysis of Principal Retention

Between the 2013–2014 and 2017–2018 school years, New Leaders placed 350 new Aspiring Principals program graduates in educational positions. Of those, 129 (37 percent) were hired as principals in their first placement, and 159 (45 percent) were hired as assistant principals. Another 49 (14 percent) were hired in supervisory or district roles, and three (less than 1 percent) returned to teaching as their first position after the Aspiring Principals program. The remainder of graduates were hired in other school-affiliated positions. By their third placement, 195 (56 percent) Aspiring Principals program graduates had served as principal, and 318 (91 percent) had served as either assistant principal or principal. Although all of these roles contribute to the educational system, the analysis that follows will focus on the program graduates placed as principals, excluding assistant principals, during their first placement as principal.

Figure D.1 depicts the first three years of position placements for 244 New Leaders principals (2012–2013 cohort to 2014–2015 cohort) after completing the Aspiring Principals program. The left-most bar indicates that the starting point for all program completers was the Aspiring Principals program. The next bar indicates the program completers' placement in the school year after they completed the program. More-recent cohorts were excluded, as they lack three years of placement data. Placements were coded as "principal" (dean, functional principal, principal of record, or principal in planning), "assistant principal," "teacher/counselor," "other" (any other school- or district-based placement), and "out" (unemployed, unknown, or no record). The figure depicts the pathways into and out of the principalship for these New Leaders. The thickness of the bands is proportional to the number following each path. Note that New Leaders principals remaining in the same position type are not necessarily remaining in the same school or district.

Figure D.1 indicates that about one-third of Aspiring Principals program graduates became principals in the first school year after completing the program. A slightly larger share became assistant principals. Most of the others moved into another district-level position. It is rare for program completers to return to teaching. The diagram indicates that between the first and second year after program completion, about one-quarter of those who were originally hired as assistant principals moved into a principalship, and about one-third of those who assumed another district position moved into either a principalship or an assistant principalship.

Figure D.1. Initial and Subsequent Roles over Three Years for the Aspiring Principals Program Graduates, 2013–2015 Cohorts



NOTE: The thickness of bands represents the proportion of graduates taking each path over time.

Data

New Leaders Data

This analysis makes use of principal placement data from New Leaders. These data contain, for each individual who has gone through a New Leaders program, a unique contact identifier, demographic information (race/ethnicity, gender, age), the name of the placement institution (school or district), the placement role (e.g., principal, assistant principal, teacher), and the start and stop (if applicable) dates for that role. These transaction data are converted to a panel data

set, where each individual has an observation in each year denoting his or her current placement institution and role.

District Data

Each of the nine school systems in this analysis also provided a panel data set with information on the principal in each school in each year, including the current principal's tenure. Most districts (with the exception of BCPS) provided either a scrambled identifier or a full name, such that principals could be linked over time across schools, allowing for a retention analysis of non–New Leaders principals and the identification of a suitable comparison group. The school systems also provided school-level and student-level data, including test scores, demographics, grades served, and subgroup identifiers (e.g., English language learners [ELLs], students with disabilities). See Table D.1.

Table D.1. Number of Newly Placed Principals in Each Year (Observed)

	All Principals				New Leaders			
	2013	2014	2015	2016	2013	2014	2015	2016
BCPS	5[a]	4[a]	5[a]	6[a]	5	4	5	6
CMS	18	22	31	20	1	1	5	3
CPS	71	41	35	49	11	10	5	13
DC PCSB	N/A	N/A	39	33	N/A	N/A	9	5
DCPS	24	11	22	24	3	5	2	4
NYC DOE	196	201	158	168	8	10	3	5
OUSD	12	24	11	17	0	3	6	2
PGCPS	14	19	17	28	8	2	5	6
SCS	24	98	36	12	8	10	7	3

[a] Baltimore principals who are not New Leaders are unidentifiable, as there are no district identifiers.

Note that while New Leaders principals continued to be placed in 2017 (and 2018), their retention is not yet observable, so they are excluded from this analysis. DC PCSB was able to provide only snapshots (2014–2017) of principal assignments without tenure data. To identify new principals in this district, we looked at changes within schools between years. Since no data were available prior to 2014, we could not identify new principals in that year.

Sample Selection

The primary analysis is limited to principals in their first (observed) year in a district for the years beginning fall 2013 to fall 2016. Any principals with tenure greater than one year at the point of first observation were dropped. The resulting set of principals was matched with school data and matched with New Leaders data. Only complete cases (where the school and its students were in the district data) were kept.

For some analyses, a subsample of this group is used. When investigating the role of demographic characteristics, program type, and program standards, only those principals who participated in the New Leaders program are used. For the analysis using program standards, we remove one additional cohort (the 2012 cohort, placed in fall of 2013) from our analysis, as the program standards changed between the 2012 and 2013 cohorts. Thus, this analysis uses newly placed New Leaders principals from 2014 to 2016 (appearing in placement and retention data from 2014 to 2017).

Key Measures

The primary outcomes of interest are retention in position and retention in the district, for years two, three, four, and five following placement (year one). These measures are created for those who could remain in their position or district for that length of time. That is, a principal who was first placed in 2014 will have values for retention for years two (2015), three (2016), and four (2017), but will not have a value for five-year retention. A principal who was first placed in 2016 will have a value for two-year retention only. Note that this means that the sample for whom three- and four-year retention is defined is smaller than that of two-year retention. However, three-year retention is not conditioned on two-year retention outcomes—a principal first hired in 2014 who left before 2015 will be designated as 0 for two-, three-, and four-year retention.

To capture the differences in school population served, the base models control for racial and ethnic composition of the student body, the prior year's average mathematics and reading scores (standardized), and school structure (elementary, middle, or high school and school size).

Methods

This analysis explores the relationship among retention and principal characteristics, participation in the New Leaders program, and school and district characteristics. We analyze whether principals who entered their first principal placement after the New Leaders program were more likely to remain in their principalship or in the district in the following years. Because principals were not randomly assigned to schools (as discussed in Chapter Four), it is possible that New Leaders principals were categorically placed in easier or more difficult school contexts. We control for observable school characteristics, but results should not be interpreted as causal.

Linear probability models (ordinary least squares with a binary dependent variable) are used as the primary means of analysis for ease of interpretation, although the results are generally robust to logit specifications.

WWC standards for teacher retention require demonstrating baseline equivalence in several domains.[13] The first domain is experience, and the analysis that follows meets this requirement by construction, as we consider only principals in their first placement. Baseline equivalence

[13] At time of publication, there was no protocol for principal retention.

additionally must be demonstrated for academic performance (domain two), and school disadvantage (domain three). Table D.2 depicts the relevant comparisons. Although the effect size differences for reading and English language learners are greater than the acceptable threshold (0.05), they fall within the allowable threshold for statistical adjustment (0.05 to 0.25 in absolute value). Because these covariates are included in all regression models comparing New Leaders principals with unaffiliated principals, we meet this WWC requirement. The protocol also outlines acceptable evaluable outcomes, recommending in-school, in-district, and in-profession retention. The first two are used in this analysis; the last is not evaluable without an interdistrict universal principal identifier.

Table D.2. Mean and Effect Size Comparison for WWC-Relevant Domains

	New Leaders Principal Mean	Unaffiliated Principal Mean	Effect Size Difference (standard deviation)
Reading test scores (lag, standardized)	–0.145	–0.083	0.138
Math test scores (lag, standardized)	–0.120	–0.101	0.039
English language learners (school, %)	0.189	0.174	–0.074

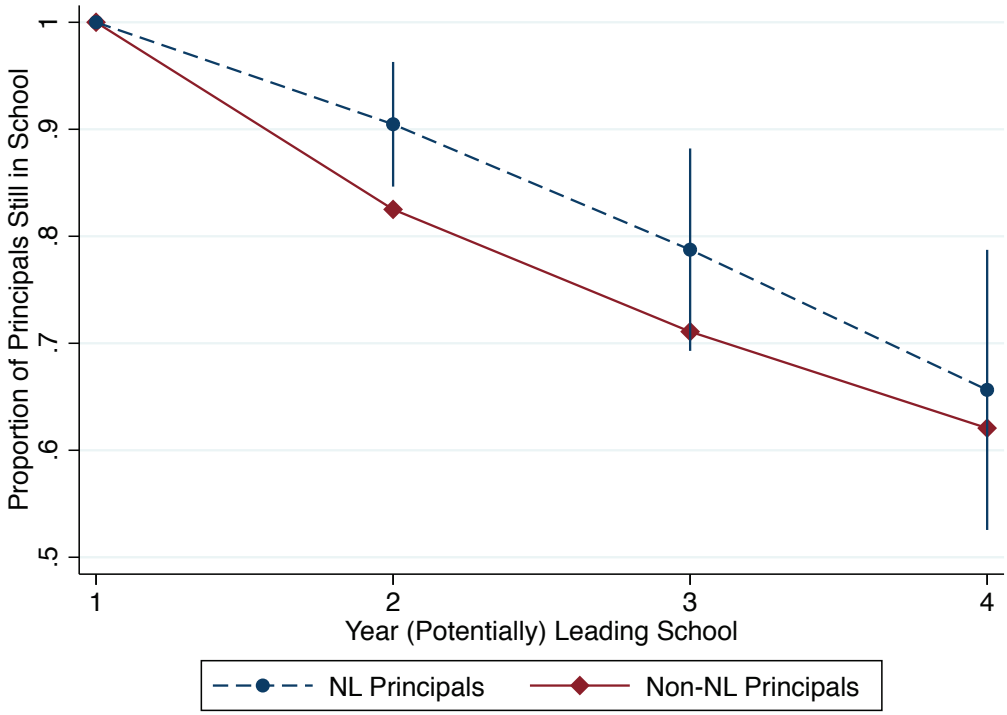
Results

Principal Retention

Table D.3 gives the results of a series of regressions modeling retention in position, controlling for school and district characteristics. The sample in these models is all principals who are observationally new in the data (i.e., tenure in the district is less than or equal to 1); this includes both New Leaders principals and those who were prepared through other programs. After controlling for school characteristics, newly placed New Leaders principals are approximately 8 percentage points more likely to remain in their position for a second year ($p <$ 0.01) and third year. This result is shown in Figure D.2, which plots the average retention rates among non–New Leaders principals with the maroon diamonds and solid line. It also plots the estimated retention rates between New Leaders and non–New Leaders principals, after adjusting for differences in the types of schools and districts that they serve in, which are shown by the blue dots and dashed line. The difference between the blue dots and maroon diamonds

correspond to the point estimates in Table D.3, with the vertical lines illustrating the 95 percent confidence interval of this difference.

Figure D.2. Differential Retention of New Principals in Position



NOTE: NL = New Leaders.

Additionally, principals who are placed in elementary schools are significantly more likely to return for second, third, and fourth years, as are principals in schools with high mathematics test scores and a low percentage of white students. Note that we cannot observe the reason for failures in retention—departures may be due to the principal wanting to leave or the district believing another position to be more suitable. While we can detect moves within a district to a principalship at another school, we cannot observe changes to other positions, such as principal supervisory positions or district leadership positions, for any principals unaffiliated with New Leaders.

Table D.3. Analysis of the Average Impact of New Leaders Principals, 2013–2016

	(1)	(2)	(3)	(4)	(5)	(6)
	Retained in Year 2		Retained in Year 3		Retained in Year 4	
Elementary school	0.0954***	0.0926***	0.121***	0.117***	0.100**	0.0977**
	(0.0248)	(0.0248)	(0.0351)	(0.0356)	(0.0463)	(0.0472)
Middle school	–0.0122	–0.0134	–0.0669**	–0.0671**	–0.0553	–0.0564
	(0.0215)	(0.0215)	(0.0321)	(0.0324)	(0.0433)	(0.0438)
Large school	0.0159	0.0169	0.00993	0.0105	–0.0123	–0.0120
	(0.0269)	(0.0268)	(0.0357)	(0.0357)	(0.0475)	(0.0476)
% ESL	0.0417	0.0372	0.0880	0.0831	0.0784	0.0791
	(0.0574)	(0.0571)	(0.0863)	(0.0861)	(0.107)	(0.108)
Lag math (standardized)	0.117**	0.112*	0.179**	0.171**	0.219**	0.213**
	(0.0583)	(0.0583)	(0.0742)	(0.0744)	(0.100)	(0.100)
Lag reading (standardized)	0.0223	0.0274	–0.0762	–0.0691	–0.0705	–0.0649
	(0.0645)	(0.0645)	(0.0779)	(0.0783)	(0.107)	(0.107)
% white (students)	–0.290***	–0.277***	–0.216***	–0.200***	–0.154	–0.147
	(0.0647)	(0.0643)	(0.0759)	(0.0762)	(0.0969)	(0.0977)
New Leaders		0.0796***		0.0769		0.0364
		(0.0297)		(0.0483)		(0.0669)
CMS	–0.0311	0.0367	–0.0182	0.0476	–0.132	–0.100
	(0.0365)	(0.0427)	(0.110)	(0.116)	(0.171)	(0.181)
CPS	–0.0433	0.0207	0.0772	0.140	0.123	0.152
	(0.0265)	(0.0337)	(0.106)	(0.113)	(0.160)	(0.170)
DC PCSB	–0.469***	–0.407***	–0.581***	–0.525***		
	(0.0733)	(0.0774)	(0.124)	(0.129)		
DCPS	–0.121**	–0.0585	–0.151	–0.0926	–0.334	–0.315
	(0.0482)	(0.0573)	(0.126)	(0.130)	(0.205)	(0.209)
NYC DOE	–0.0567**	0.0199	0.0460	0.119	0.0151	0.0486
	(0.0229)	(0.0362)	(0.101)	(0.110)	(0.157)	(0.168)
OUSD	–0.194***	–0.122*	–0.298**	–0.227	–0.352*	–0.321*
	(0.0653)	(0.0706)	(0.134)	(0.140)	(0.181)	(0.189)
PGCPS	–0.155***	–0.0979**	–0.158	–0.106	–0.217	–0.193
	(0.0438)	(0.0432)	(0.118)	(0.120)	(0.174)	(0.180)
SCS	–0.436***	–0.374***	–0.465***	–0.405***	–0.477***	–0.448***
	(0.0503)	(0.0540)	(0.108)	(0.114)	(0.161)	(0.169)
Constant	0.944***	0.867***	0.770***	0.696***	0.723***	0.689***
	(0.0397)	(0.0507)	(0.105)	(0.113)	(0.161)	(0.171)
Observations	1,061	1,061	774	774	518	518
R-squared	0.199	0.203	0.249	0.251	0.219	0.220

NOTES: Robust standard errors are in parentheses. ESL = English as a second language.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Baseline retention rates vary considerably by district for both retention in one's position and retention in one's district. Districts may differ in their policies about moving principals between schools—some may move successful principals, and some may move unsuccessful principals. They may also differ in their incentives to retain principals within the district. For this reason, we present any result comparing New Leaders and non–New Leaders principal retention with district fixed effects, which will account for these underlying differences.

It may be important to compare New Leaders and non–New Leaders principal retention separately for each district. These results are presented in Table D.4, where the eight rows of coefficient estimates (on terms interacting New Leaders with each school district) report the differences between New Leaders and non–New Leaders principal retention for each district.

Note that we did not include a noninteracted New Leaders variable, so the reported coefficients reflect the district-specific differences in retention and not the differential retention rates relative to an omitted district. Table D.5 shows the same results but now measures retention with an indicator function that measures whether principals stay within the district, rather than staying in their initial role.

Table D.4. Analysis of the District-Specific Impact of New Leaders Principals, 2013–2016

	(1) Year 2	(2) Year 3	(3) Year 4
Elementary	0.0914***	0.117***	0.100**
	(0.0248)	(0.0353)	(0.0470)
Middle school	–0.0137	–0.0635*	–0.0478
	(0.0216)	(0.0326)	(0.0441)
Large school	0.0123	0.000520	–0.0242
	(0.0272)	(0.0360)	(0.0477)
% ESL	0.0570	0.113	0.0948
	(0.0585)	(0.0872)	(0.109)
Lag math (standardized)	0.107*	0.155**	0.196*
	(0.0593)	(0.0762)	(0.103)
Lag reading (standardized)	0.0359	–0.0516	–0.0533
	(0.0655)	(0.0803)	(0.109)
% white (students)	–0.270***	–0.185**	–0.114
	(0.0651)	(0.0770)	(0.0994)
New Leaders x CMS	0.0660	–0.000326	–0.152
	(0.0416)	(0.143)	(0.343)
New Leaders x CPS	0.0523**	–0.0324	–0.0450
	(0.0208)	(0.0706)	(0.0891)
New Leaders x DC PCBS	–0.0691	–0.157	
	(0.174)	(0.159)	
New Leaders x DCPS	–0.192	0.00171	–0.172
	(0.128)	(0.189)	(0.281)
New Leaders x NYC DOE	0.140***	0.0323	–0.112
	(0.0344)	(0.139)	(0.181)
New Leaders x OUSD	–0.0199	0.0596	0.202
	(0.211)	(0.308)	(0.311)
New Leaders x PGCPS	0.195***	0.299**	0.0983
	(0.0558)	(0.127)	(0.195)
New Leaders x SCS	0.247**	0.241**	0.256*
	(0.104)	(0.121)	(0.146)
Observations	1,042	761	510
R-squared	0.8799	0.7963	0.7250

NOTES: All columns also contain a fixed effect for each district. Robust standard errors are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table D.5. Linear Probability Model of Retention in District, Newly Placed Principals, 2013–2016

	(1) Year 2	(2) Year 3	(3) Year 4
Elementary school	0.0488**	0.0544*	0.0516
	(0.0231)	(0.0320)	(0.0433)
Middle school	–0.0176	–0.0622**	–0.0540
	(0.0203)	(0.0294)	(0.0406)
Large school	–0.0238	–0.0149	–0.0432
	(0.0236)	(0.0336)	(0.0451)
% ESL	0.0884*	0.132*	0.176*
	(0.0483)	(0.0761)	(0.101)
Lag math (standardized)	0.0494	0.131*	0.0480
	(0.0527)	(0.0692)	(0.0998)
Lag reading (standardized)	0.0467	–0.0603	0.0459
	(0.0590)	(0.0738)	(0.106)
% white (students)	–0.226***	–0.206***	–0.178*
	(0.0639)	(0.0771)	(0.100)
New Leaders x CMS	0.0427	–0.0712	–0.341
	(0.0332)	(0.139)	(0.363)
New Leaders x CPS	0.0334*	0.0273	0.0371
	(0.0175)	(0.0477)	(0.0611)
New Leaders x DC PCSB	0.0115	–0.198	
	(0.171)	(0.166)	
New Leaders x DCPS	–0.107	–0.00560	0.0448
	(0.120)	(0.194)	(0.308)
New Leaders x NYC DOE	0.0959***	–0.0141	–0.161
	(0.0212)	(0.143)	(0.198)
New Leaders x OUSD	–0.0584	0.0110	0.134
	(0.202)	(0.300)	(0.306)
New Leaders x PGCPS	0.181***	0.312***	0.158
	(0.0539)	(0.113)	(0.184)
New Leaders x SCS	0.218**	0.272**	0.167
	(0.101)	(0.124)	(0.153)
Observations	1,042	761	510
R-squared	0.902	0.8246	0.766

NOTES: All columns also contain a fixed effect for each district. Robust standard errors are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Principal Characteristics

When limiting to New Leaders principals alone, we see similar predictive factors. As shown in Table D.6, those with a first placement in an elementary school are more likely to remain in that position than those with a first placement in a middle school or high school. African American New Leaders principals are slightly less likely to remain in their position than other New Leaders principals, but this relationship is absorbed by district fixed effects.

Table D.6. Linear Probability Model of Retention in Position, Newly Placed New Leaders, 2013–2016

	(1)	(2)	(3)	(4)
	Retained in Year 2		Retained in Year 3	
Female	0.0289	0.0195	–0.0412	–0.0471
	(0.0580)	(0.0528)	(0.104)	(0.104)
Black	–0.103*	0.0303	–0.0705	0.116
	(0.0587)	(0.0669)	(0.0997)	(0.135)
Hispanic	0.0575	0.0931	0.180	0.170
	(0.0990)	(0.0907)	(0.205)	(0.193)
Emerging Leaders	0.0274	0.0271	0.0667	–0.0144
	(0.0745)	(0.0735)	(0.150)	(0.157)
Recent resident	0.00702	–0.0287	0.00955	0.0900
	(0.0620)	(0.0591)	(0.105)	(0.111)
Elementary school	0.102	0.0599	0.315***	0.267**
	(0.0629)	(0.0568)	(0.118)	(0.116)
Middle school	0.0275	–0.0729	0.0639	–0.0617
	(0.0531)	(0.0537)	(0.0936)	(0.0989)
Lag math (standardized)	0.219	0.222	0.400	0.344
	(0.150)	(0.137)	(0.278)	(0.267)
Lag reading (standardized)	–0.0892	–0.0470	–0.365	–0.270
	(0.150)	(0.141)	(0.282)	(0.278)
District fixed effects	No	Yes	No	Yes
Observations	136	136	94	94
R-squared	0.098	0.355	0.129	0.328

NOTE: Standard errors are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Program Standards

New Leaders principals are measured on five broad standards while they are in the program, as described in Chapter Three. The five standards are Personal Leadership, Instructional Leadership, Cultural Leadership, Adult and Team Leadership, and Operational Leadership. Each column of Table D.7 reflects the results of five separate regressions modeling retention as a function of the standardized measure in each category. Scores on the Personal Leadership standard have the strongest association and significance, increasing the probability of remaining in one's position and in one's district by approximately 13 percentage points per standard deviation. Scores on the Instructional Leadership standard do not significantly relate to retention. Scores on the remaining standards relate to retention, but the relationships are only statistically significant at the 10 percent level.

Table D.7. Relationship Between New Leaders Standards and Retention (Five Separate Models)

	(1)	(2)	(3)	(4)
	Same Position in Year 2		Same District in Year 2	
Personal Leadership	0.128**	0.137*	0.135***	0.133**
	(0.0602)	(0.0714)	(0.0470)	(0.0513)
Instructional Leadership	0.0690	0.0675	0.0524	0.0452
	(0.0716)	(0.0860)	(0.0588)	(0.0651)
Cultural Leadership	0.105*	0.109	0.117**	0.109*
	(0.0604)	(0.0777)	(0.0475)	(0.0569)
Adult and Team Leadership	0.110	0.111	0.112*	0.120*
	(0.0690)	(0.0874)	(0.0552)	(0.0638)
Operational Leadership	0.0928	0.137*	0.102*	0.141**
	(0.0725)	(0.0780)	(0.0582)	(0.0557)
Controls				
New Leaders demo	Yes	Yes	Yes	Yes
District fixed effects	No	Yes	No	Yes
Observations	37	37	37	37

NOTES: Coefficients in each column are from five independently run models of retention. Demographic controls are indicators for African American, Hispanic, and female. New Leaders standards are normalized; coefficients are for a 1 standard deviation increase in the standard. Standard errors in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Although these standards can be investigated individually, they likely have significant overlap. Scores on the five standards were decomposed into three orthogonal factors, such that each factor is unique. Regression results relating these factors to retention outcomes are shown in Table D.8. The Human Capital factor (composed of the Instructional Leadership and Adult and Team Leadership standards) does not significantly relate to retention in the principalship. The Cultural Capital factor strongly relates to in-district and in-position retention, although this relationship is weakened somewhat by district fixed effects. A 1 standard deviation increase in this factor raises the probability of retention by between 7 and 10 percentage points. This factor is composed of Standards 3 and 5 (Cultural Leadership and Operational Leadership), which were marginally significant in the previous model of standards. The Personal Leadership factor (composed only of the Personal Leadership standard) does not significantly relate to retention (with or without fixed effects). While the Personal Leadership standard was significant when modeled alone, its unique components do not significantly relate to retention, suggesting that its prior predictive power was due to characteristics common to other standards.

Table D.8. Relationship Between Factors of Standards and Principal Retention

	(1)	(2)	(3)	(4)
	Same Position in Year 2		Same District in Year 2	
Female	–0.103	–0.0403	–0.0561	0.0174
	(0.0969)	(0.124)	(0.0591)	(0.0527)
Black	0.0990	0.0299	–0.00489	–0.0601
	(0.100)	(0.138)	(0.0613)	(0.0590)
Hispanic	0.273*	0.251	0.188**	0.158*
	(0.150)	(0.180)	(0.0913)	(0.0768)
Human Capital factor	0.0475	0.0582	0.0261	0.0259
	(0.0559)	(0.0683)	(0.0341)	(0.0291)
Cultural Capital factor	0.0928**	0.0807*	0.100***	0.0933***
	(0.0407)	(0.0467)	(0.0249)	(0.0199)
Personal Leadership factor	0.0208	0.0349	0.0275	0.0167
	(0.0486)	(0.0623)	(0.0296)	(0.0266)
District fixed effects	No	Yes	No	Yes
Observations	35	35	35	35
R-squared	0.189	0.384	0.413	0.783

NOTE: Standard errors are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Limitations

As mentioned, principals are not randomly assigned to schools. As shown in Table D.2, new principals tend to be placed in schools with lower test scores, and New Leaders principals are even more likely to be placed in such schools than new principals unaffiliated with the program. We control for these observable differences, but there may be additional nonobservable differences between the schools served by New Leaders and non–New Leaders principals that affect the results.

We approached this analysis from the viewpoint that all other things being equal, districts would prefer that a newly appointed principal remain in a school for at least three years. From this perspective, higher retention for two or three years is a positive outcome for the district that reflects favorably on the quality of the principal. However, the true story is inevitably more complex. A principal could choose to leave or be dismissed for being poorly matched or unsuited to principalship. Alternatively, a principal could be reassigned by the district, even when performing well in a school, because the district sees a greater need elsewhere (including in a supervisory position).

Finally, we are observationally limited to the district context as that is how principal IDs are assigned. If a principal leaves the district but remains a principal, we cannot observe this. If a principal who is not affiliated with New Leaders has prior experience outside the district, we cannot observe this. Because we can make this distinction for New Leaders principals, the New Leaders principal sample is weakly more inexperienced than the non–New Leaders comparison group. If less experienced principals are less likely to persist in principalship, we will bias our estimate of the New Leaders program downward, understating the relationship between New Leaders principals and retention. If more-experienced principals are more likely to be placed in more-challenging schools, and the challenging nature of these schools is independent of student

body composition and test scores, we will bias our estimate of the New Leaders program upward, overstating the relationship between New Leaders principals and retention.

Appendix E. Analysis of Correlations Between New Leaders' Aspiring Principals Program Competency Metrics and Outcomes

One current approach in principal-preparation programs is to measure candidates on several dimensions of practice and use the results of those observations to inform a decision as to whether to endorse that principal as ready to lead a school. This strategy to improve the supply of leaders will be effective only if programs are able to identify, measure, and cultivate those knowledge areas and skills that improve student outcomes.

This analysis sought to gain a deeper understanding of the measures employed by New Leaders in its Aspiring Principals program. First, the analysis examined the extent to which the constructs that New Leaders measures capture distinct aspects of participants' performance or practice. Second, we investigated whether scores on these measures are related to student outcomes, such as attendance and performance on standardized tests. Evidence that New Leaders is able to identify and measure the skills and knowledge that raise student achievement can inform other programs' strategies for training principals, as well as districts' approaches to screening candidates. This evidence can also inform the design of state and local policies to support improved training and screening of principals.

The New Leaders Context

The measures that New Leaders developed and employs in its residency program are designed to measure residents' progress toward five broad standards. Within each standard are finer-grained measures called "concepts." Table E.1 lists each standard and its corresponding concepts. Concepts are further divided into even more fine-grained measures called "competencies." Competencies are the specific actions that candidates are expected to display and master. Throughout the residency year, candidates are formally evaluated on the competencies by multiple stakeholders. The number of times a candidate is evaluated on a competency and the context in which those evaluations take place vary from competency to competency. At the end of the year, however, each candidate is given a weighted average of all the observations for each competency.

New Leaders identifies its candidates through two main pathway programs: the Emerging Leaders program and the National Recruitment and Admissions program. Both programs have standards that align with those of the Aspiring Principals program. However, the recruitment programs do not use identical competencies to the Aspiring Principals program. We therefore used these measures exclusively as a control for baseline performance in each standard.

Table E.1. New Leaders' Aspiring Principals Program Standards and Concepts

Standard	Concepts	Definition
1. Personal Leadership	• Reflective practice and continuous improvement • Communication and interpersonal relationships • Vision and mission for the school • Managing change	A candidate's ability to improve his or her own practice and articulate a mission for the school.
2. Instructional Leadership	• Pedagogy and instructional practices • Data-driven instruction • Observations and supervision of instruction • Standards-based planning • Curriculum assessments and scope and sequence	A candidate's ability to articulate standards for instructional practice and ensure that those standards are being met by the staff.
3. Cultural Leadership	• Equity and cultural competence • Urgency and building schoolwide efficacy • Systems, routines, behaviors, and codes of conduct • Family engagement	A candidate's ability to foster a culture focused on equity and a productive working and learning environment.
4. Adult and Team Leadership	• Performance management • Leadership development • Professional development	A candidate's ability to manage the professional development and leadership development in a school.
5. Operational Leadership	• Diagnostic and strategic planning • Facilities, operations, budget, and partnerships	A candidate's ability to leverage the physical capital and resources in the building in a strategic manner.

Data

This analysis merged the Aspiring Principals program data with administrative data from partner districts. The Aspiring Principals program data contained demographic information on New Leaders principals, including which pathway they attended before the Aspiring Principals program, number of years of experience as a teacher, gender, race/ethnicity, whether their residency was in a charter school, and whether their residency was in a school led by a former Aspiring Principals program graduate. The Aspiring Principals program data also contained each principal's scores at the competency, concept, and standard levels.

The individual competencies, concepts, and standards changed from year to year as New Leaders refined their measures. Year-to-year changes in measures were minimal beginning with the 2013–2014 school year. From SYs 2013–2014 to 2015–2016, 34 competencies remained the same, and only three competencies were added in the 2015–2016 school year. Some competencies, however, moved between concepts and standards. To construct measures that were comparable across years, we restricted the sample to candidates in residency during the 2013–2014 through 2015–2016 school years, which corresponded to Cohorts 13 through 15 of the Aspiring Principals program. Further, we analyzed the 34 competencies that remained stable across all cohorts. Finally, we used the organization of the competencies, concepts, and standards in SY 2015–2016 to create a template and rearranged the measures in previous years to match that template.

Candidates from these cohorts were eligible to be placed into districts as principals the year after their residency. The earliest cohort in our data, Cohort 13, was placed in the 2014–2015

school year. We therefore gathered administrative data from the districts that partnered with New Leaders during the 2014–2015 through 2016–2017 school years. As long as the principal remained in the district, we observed his or her yearly school placement. We concentrated our analysis on the relationship between the measures and student attendance and student performance on mathematics and reading standardized tests. Table E.2 presents each partnering district and the number of principals who participated in the Aspiring Principals program working in each district each year. Across all districts, there are 72 unique principals who participated in the Aspiring Principals program.

Table E.2. Number of Principals Who Participated in New Leaders' Aspiring Principals Program in Partnering Districts per Year

District	2014–2015	2015–2016	2016–2017	Total	Unique Principals
BCPS	5	9	14	28	14
CMS	1	1	1	3	1
CPS	10	15	22	47	26
DC PCSB	1	1	3	5	3
DCPS	0	0	2	2	2
NYC DOE	1	5	5	11	5
OUSD	5	7	9	21	11
PGCPS	5	5	6	16	7
SCS	0	3	3	6	3

Methods

Aspiring Principals Program Measures

Our analyses looked at the relationship between two broad classes of measures and student outcomes. The first class is the average scores principals received in each of the five standards depicted in Table E.1. To obtain these measures, we averaged the competency scores within each concept to obtain a concept average. We then averaged the concept scores within each standard to obtain the standard average. Analyzing these measures is a test of whether the broad, raw standards provided by New Leaders are related to policy-relevant student outcomes. In addition, we employ exploratory factor analysis to determine whether the competency measures represent five distinct constructs, as envisioned by New Leaders. Exploratory factor analysis examines the patterns in the data to determine how many distinct constructs are likely underlying those data. Additionally, we applied the varimax rotation to yield orthogonal factors. This results in a standardized measure for each independent construct. Table E.3 illustrates the results of the factor analysis. The competency-level measures fall along three dimensions that are tied to the New Leaders standards. The first factor is composed of competencies in Standards 2

(Instructional Leadership) and 4 (Adult and Team Leadership). We dub this factor the "Human Capital" factor because the underlying competencies judge a principal's ability to improve different aspects of the school staff's human capital. The second factor is composed of competencies in Standards 3 (Cultural Leadership) and 5 (Operational Leadership). We dub this factor the "Cultural Capital" factor because the underlying competencies judge a principal's ability to improve the school environment. Finally, the third factor is exclusively composed of the competencies in Standard 1 (Personal Leadership). Thus, we dub this factor the "Personal Leadership" factor.

Table E.3. Factors and Factor Components of Competency-Level Measures

Factor Name	Standards in the Factor
1. Human Capital	Standards 2 and 4
2. Cultural Capital	Standards 3 and 5
3. Personal Leadership	Standard 1

Relationship Between Measures and Outcomes

This analysis explored the relationship between the Aspiring Principals program measures and student outcomes of interest. We analyzed whether principals who were rated more highly on the Aspiring Principals program measures were also associated with higher levels of students' attendance and higher levels of student achievement on state standardized tests of reading and mathematics. One challenge with this analysis is that principals were not randomly assigned to schools. If a more highly rated principal was more attractive on the job market, he or she may have chosen to lead a higher-functioning school, resulting in a positive relationship between the measures and students' outcomes. Conversely, if a more highly rated principal was thought to have the potential to transform schools, he or she might have been chosen to lead struggling schools, resulting in a negative relationship between the measures and outcomes.

We address this challenge by looking at the relationship between the Aspiring Principals program measures and student outcomes within the context of a value-added model. Specifically, we used models of the following form (Equation E.1):

$$Y_{ipsdt} = \beta_0 + \beta_1 M_p + \boldsymbol{Y_{ipsdt-1}\beta_2} + \beta_3 PreAPP_p + \boldsymbol{\beta_4 X_p} + \boldsymbol{\beta_5 C}_{ipsdt} + \boldsymbol{S}_{psdt}\boldsymbol{\beta}_6 + \tau_t + \delta_g + \alpha_c + \gamma_d + \varepsilon_{ipsdt}, \quad \text{(E.1)}$$

where Y_{ipsdt} is the math, ELA, or attendance outcome of student *i*, in school *s,* led by New Leaders principal *p,* in district *d,* in year *t.* M_p is the New Leaders standard measure or factor of competency-level measures provided by the New Leaders program. All three factors are placed in a single regression because they are orthogonal; however, standards are individually placed in separate regressions, $\boldsymbol{Y_{ipsdt-1}}$ is the student's lagged academic or attendance outcome. When analyzing math and ELA outcomes, lagged scores of *both* subjects are included. When analyzing

attendance outcomes, lagged measures of attendance are included. $PreAPP_p$ is the principal's score on standards from the recruitment pathway. These measures are only roughly aligned to program measures, M_p, and are used to control for baseline principal ability on similar dimensions of practice. We present results with and without this control. $\boldsymbol{X_p}$ represents time-invariant principal characteristics, such as recruitment pathway, whether principals passed the Emerging Leaders program screening process, years of experience as a teacher, gender, race/ethnicity, whether their residency was in a charter school, and whether their residency was in a school led by a New Leaders principal from a previous cohort. $\boldsymbol{C}_{ipsdt}$ represents child-level covariates, such as race/ethnicity, gender, whether the child repeated a grade, whether the child is old for a grade, and whether the child is classified as an ELL. $\boldsymbol{S_{psdt}}$ represents school-level covariates, such as enrollment; school level; race/ethnicity; and the average number of children who repeated a grade, are old for their grade, are classified as an ELL, and are male. Finally, τ_t represents year fixed effects, δ_g represents grade fixed effects, α_c represents New Leaders principal cohort fixed effects, and γ_d represents district fixed effects. Standard errors are clustered by district.

This model accounts for student and principal sorting to schools based on observable characteristics. In particular, controlling for lagged measures of the outcome can reduce a significant amount of bias because lagged measures are highly correlated to future measures. Including child- and school-level covariates accounts for additional bias not accounted for by the lagged measures, including some peer effects in the schools. Including principal characteristics accounts for some bias generated by the sorting of principals to schools based on those observable characteristics. Grade fixed effects remove any average relationship between the grades in a school and student outcomes, and time fixed effects remove any common yearly shock to student outcomes. Cohort fixed effects account for any systematic differences in training or principal quality between New Leaders principal cohorts. Finally, district fixed effects compare variation in measures across principals placed in schools in the same district by accounting for average differences across districts. District fixed effects are important because they account for differences among districts, such as the local labor market. The model described by Equation E.1 is akin to the model employed by Grissom, Blissett, and Mitani (2018) when they explored the relationship between supervisor ratings of principals and student outcomes. While these value-added measures lessen selection bias, they cannot completely account for all selection, as they do not adjust for unobservable student characteristics or the selection of school personnel, such as teachers, to schools.

Results

Table E.4 shows the relationship between the Aspiring Principals program measures and outcomes. Columns 1–3 do not include controls for pre–Aspiring Principals program measures, and columns 4–6 do include the controls. Table 4.3 in the main body of the report corresponds to

columns 4–6. Inclusion of the pre–Aspiring Principals program measures has little effect on the point estimates.

Looking at column 4 reveals that improvement in some Aspiring Principals program measures translates to increased achievement in ELA. A 1 standard deviation increase in the Human Capital factor translates to a 0.035 standard deviation (1.37 percentile) increase in ELA scores ($p < 0.01$). The Human Capital factor of competencies is composed of Standards 2 and 4. Looking at the individual standards shows that a 1 standard deviation increase in those standards is associated with a 0.025 (0.99 percentile; $p < 0.10$) and a 0.044 (1.76 percentile; $p < 0.05$) standard deviation increase in ELA scores, respectively. No other standard or factor is significantly related to ELA. Overall, the factor- and standard-level results support each other. In each case, the effect size in percentiles shows the average change in student position on the distribution of the outcome. For example, the 1.37 percentile change in ELA outcomes means a student would move from the 50.00th to the 51.37th percentile of the distribution.

A similar pattern is seen in the associations between the measures and student achievement in math. Once again, the Human Capital factor is significantly related to math achievement. A 1 standard deviation increase in that factor corresponds to a 0.045 standard deviation (1.79 percentile) increase in math scores. Once again, Standards 2 and 4 are driving that result. A 1 standard deviation increase in Standard 2 is correlated with a 0.028 standard deviation (1.10 percentile) increase in math scores ($p < 0.10$), and a 1 standard deviation increase in Standard 4 is associated with a 0.30 standard deviation increase (1.19 percentile; $p < 0.050$) in mathematics achievement. Neither any other standard nor factor 2 is significantly related to mathematics achievement. Factor 3 has a significant negative relationship with mathematics achievement. Looking at Standard 1, which that composes that factor, the point estimate is slightly smaller and insignificant. Collectively, these results indicate a possible negative relationship between those skills and mathematics achievement.

Finally, the same pattern is seen in attendance outcomes. A 1 standard deviation increase in the Human Capital factor is related to a 0.5 percentage point increase in attendance ($p < 0.05$), or 0.90 additional days of school. This relationship is driven only by Standard 2, where a 1 standard deviation increase corresponds to a 0.6 percentage point increase in attendance, or 1.08 additional days of school. No other standard or factor is significantly associated with higher attendance. Overall, the results indicate that the Human Capital factor, composed of the Instructional Leadership and Adult and Team Leadership standards, is most robustly related to student outcomes.

Table E.4. Relationship Between New Leaders Measures and Student Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)
	ELA	Math	Attendance	ELA	Math	Attendance
	No Pre–Aspiring Principals Program Measures			Pre–Aspiring Principals Program Measures		
Panel A: Factors of competencies						
Factor 1 (Human Capital)	0.038***	0.042**	0.005***	0.035***	0.045**	0.005**
	(0.010)	(0.014)	(0.001)	(0.010)	(0.014)	(0.002)
Factor 2 (Cultural)	–0.006	–0.020	0.003	–0.003	–0.022	0.003
	(0.011)	(0.019)	(0.002)	(0.011)	(0.016)	(0.002)
Factor 3 (Personal Leadership)	–0.003	–0.017**	0.000	–0.004	–0.016**	0.000
	(0.015)	(0.006)	(0.001)	(0.014)	(0.006)	(0.002)
Panel B: Standards (in separate regressions)						
Standard 1 (Personal Leadership)	0.008	–0.010	0.003	0.004	–0.010	0.003
	(0.018)	(0.007)	(0.003)	(0.015)	(0.008)	(0.003)
Standard 2 (Instructional Leadership)	0.027*	0.027*	0.005**	0.025*	0.028*	0.006**
	(0.014)	(0.014)	(0.002)	(0.012)	(0.014)	(0.002)
Standard 3 (Cultural Leadership)	0.010	0.004	0.003	0.010	0.004	0.003
	(0.014)	(0.011)	(0.002)	(0.012)	(0.011)	(0.002)
Standard 4 (Adult and Team Leadership)	0.047*	0.030**	0.005*	0.044**	0.030**	0.005
	(0.021)	(0.013)	(0.002)	(0.017)	(0.012)	(0.003)
Standard 5 (Operational Leadership)	0.026	0.011	0.004	0.024	0.012	0.004
	(0.019)	(0.013)	(0.002)	(0.018)	(0.012)	(0.003)
Baseline ELA and math scores	X	X		X	X	
Baseline attendance			X			X
Pre–Aspiring Principals program score				X	X	X
Observations	28,489	28,489	51,803	28,489	28,489	51,803

NOTES: Standard errors are clustered at the school level. New Leaders principal covariates are the pre-residency recruitment pathway, an indicator for passing the Emerging Leaders program screening, years of experience as a teacher, gender, race/ethnicity, an indicator for the residency occurring in a charter school, and an indicator for the residency occurring in a school led by a New Leaders principal from a previous cohort. Student covariates are fixed effects for grade, an indicator for having repeated a grade, classification as an ELL, student race/ethnicity, gender, and an indicator for being old for the grade. School covariates are school enrollment, school level, and school-level averages of race/ethnicity, gender, English language classification, students repeating a grade, and students old for their grade. All models also include cohort, year, and district fixed effects. Factors were made from underlying competency data.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Controlling for New Leaders Characteristics

In our preferred specification, we control for principals' background characteristics, such as race/ethnicity, previous teaching experience, recruitment pathways, gender, and type of school in which they completed their residency. Theoretically, it is ambiguous as to whether New Leaders principal characteristics should be included in the models. The goal of these analyses is to understand whether the New Leaders program can, in practice, help identity competencies and skills that are correlated to student outcomes. On one hand, this question may be best answered by excluding New Leaders principal characteristics if we are only concerned with the predictive utility of ratings in isolation. On the other hand, if principal characteristics are independently predictive of student outcomes because of factors other than principals' observable skills, controlling for those observable characteristics may both be practical in practice and improve the predictive accuracy of the ratings.

Table E.5 presents associations between the principal characteristics and student outcomes in the student value-added framework. Note that these models include all elements of the full value-added specification, except the principal ratings. Column 1 shows that for reading outcomes, principals with more prior teaching experience tend to be associated with worse ELA outcomes, while black principals tend to be associated with positive ELA scores. In looking at the mathematics outcomes (column 2 of Table E.5), the positive association between black principals and scores remains, but the relationship with prior teaching is no longer evident. Also, in math outcomes only, principals who were recruited through the National Recruitment and Admissions program tended to produce better outcomes. All relationships are significantly muted when looking at attendance outcomes in column 3, with prior teaching experience only marginally significantly and negatively correlated with attendance. Overall, these results indicate that these characteristics of principals are predictive of school performance independent of New Leaders ratings.

Table E.6 shows the sensitivity of the relationship between ratings and student outcomes to the inclusion or exclusion of principal covariates. Panel A presents results on the factors of competencies, and panel B presents the results on individual standards. Columns 1 through 3 show specifications that do not include principal covariates, and columns 4 through 6 show our preferred specification that includes principal covariates. Looking at panel A, without the principal characteristics, the effects of the Human Capital factor on ELA and math achievement drop by a little less than half. While the relationship with ELA scores remains marginally significant at the 10 percent level, the relationship with math scores disappears. The relationship with attendance, however, is robust across model specifications. Meanwhile, the negative relationship of the Personal Leadership factor with math remains. The point estimate is similar to our preferred specification at –0.18, although it is insignificant because of substantially larger standard errors. The same pattern is evident when looking at standards in panel B. ELA and math point estimates on the Instructional Leadership and Adult and Team Leadership standards are reduced by about half and become insignificant. The relationship between the Instructional

Leadership standard and attendance is reduced by about one-third and remains significant at the 10 percent level. In models 4–6, the coefficients for race, teaching experience, and pathway (not shown) remain similar but are slightly larger when included as control variables.

Table E.5. Relationship Between New Leaders Covariates and Outcomes

	(1) ELA	(2) Math	(3) Attendance
Pre–Aspiring Principals program score	0.021	–0.005	–0.001
	(0.015)	(0.015)	(0.001)
National Recruitment and Admissions pathway	0.029	0.047***	–0.005
	(0.016)	(0.013)	(0.006)
Passed Emerging Leaders program screening	–0.005	–0.051	–0.003
	(0.027)	(0.035)	(0.003)
Years of prior teaching experience	–0.008***	–0.009	–0.001*
	(0.002)	(0.006)	(0.000)
Female	0.008	–0.020	0.007
	(0.029)	(0.040)	(0.004)
Black	0.068***	0.043**	–0.003
	(0.013)	(0.017)	(0.005)
Hispanic	0.007	0.009	–0.003
	(0.041)	(0.035)	(0.002)
Other	0.032	0.028	0.002
	(0.039)	(0.060)	(0.004)
Residency in charter school	–0.003	0.016	–0.001
	(0.018)	(0.031)	(0.004)
Residency in school led by New Leaders–trained principal	0.013	0.016	0.002
	(0.035)	(0.036)	(0.003)
Baseline ELA and math scores	X	X	
Baseline attendance			X
Observations	28,489	28,489	51,803

NOTES: Standard errors are clustered at the school level. All models include student covariates, school covariates, cohort fixed effects, year fixed effects, and district fixed effects. Student covariates are fixed effects for grade, an indicator for having repeated a grade, classification as an ELL, student race/ethnicity, gender, and an indicator for being old for the grade. School covariates are school enrollment, school level, and school-level averages of race/ethnicity, gender, English language classification, students repeating a grade, and students old for their grade. Factors were made from underlying competency data.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

As previously discussed, New Leaders principal characteristics predict student outcomes even when used in isolation. Pre–Aspiring Principals Program ratings are generally not predictive, and as previously demonstrated in Table E.4, including those pre-ratings as controls does little to change the associations between program ratings and outcomes. However, controlling for prior years of teaching, race, and recruitment pathway does cause a change in program rating point estimates between models 1–3 and 4–6. To some extent, New Leaders ratings may be biased in their assessment of the skills of residents as a function of race, pathway, or teaching experience. However, these principal characteristics are also predictive of principal performance independently, presumably on dimensions that New Leaders ratings simply do not

pick up on. Our preferred models include these controls to account for their independent effects on performance or sorting to schools. Including both principal characteristics and ratings provides optimal utility for predicting principal performance.

Table E.6. Relationship Between Ratings and Outcomes, With and Without New Leaders Covariates

	(1)	(2)	(3)	(4)	(5)	(6)
	Without New Leaders Covariates			With New Leaders Covariates		
	ELA	Math	Attendance	ELA	Math	Attendance
Panel A: Factors of competencies						
Factor 1 (Human Capital)	0.020*	0.024	0.005**	0.035***	0.045**	0.005**
	(0.009)	(0.013)	(0.002)	(0.010)	(0.014)	(0.002)
Factor 2 (Cultural Capital)	–0.003	0.002	0.001	–0.003	–0.022	0.003
	(0.011)	(0.024)	(0.001)	(0.011)	(0.016)	(0.002)
Factor 3 (Personal Leadership)	–0.010	–0.018	–0.000	–0.004	–0.016*	0.000
	(0.013)	(0.014)	(0.001)	(0.014)	(0.006)	(0.002)
Panel B: Standards (in separate regressions)						
Standard 1 (Personal Leadership)	–0.001	–0.004	0.002	0.004	–0.010	0.003
	(0.018)	(0.025)	(0.002)	(0.015)	(0.008)	(0.003)
Standard 2 (Instructional Leadership)	0.011	0.010	0.004*	0.025*	0.028*	0.006**
	(0.014)	(0.016)	(0.002)	(0.012)	(0.014)	(0.002)
Standard 3 (Cultural Leadership)	–0.001	0.004	0.002	0.010	0.004	0.003
	(0.011)	(0.016)	(0.002)	(0.012)	(0.011)	(0.002)
Standard 4 (Adult and Team Leadership)	0.026	0.020	0.004	0.044**	0.030**	0.005
	(0.018)	(0.018)	(0.002)	(0.017)	(0.012)	(0.003)
Standard 5 (Operational Leadership)	0.006	0.006	0.003	0.024	0.012	0.004
	(0.016)	(0.023)	(0.002)	(0.018)	(0.012)	(0.003)
Baseline ELA and math scores	X	X		X	X	
Baseline attendance			X			X
Pre–Aspiring Principals program score				X	X	X
New Leaders principal covariates				X	X	X
Observations	28,489	28,489	51,803	28,489	28,489	51,803

NOTES: Standard errors clustered at school level. All models include student covariates, school covariates, cohort fixed effects, year fixed effects, and district fixed effects. Student covariates are fixed effects for grade, an indicator for having repeated a grade, classification as an ELL, student race/ethnicity, gender, and an indicator for being old for the grade. School covariates are school enrollment, school level, and school level averages of race/ethnicity, gender, English language classification, students repeating a grade, and students old for their grade. Factors were made from underlying competency data.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Robustness Check

One threat to the validity of our findings may be the endogeneity of the lagged student outcomes when principals are leading a school for more than one year. In such cases, the lagged student outcome of the second year of the principal's tenure will be the student outcome of the first year. If the principal improved student achievement, our models will be controlling for this effect. We could therefore be penalizing principals who promote growth in student achievement in the later years of their tenure. The opposite is also a possibility if the principals reduce student growth in their schools.

To address this concern, we perform a robustness check in which the student lagged scores and attendance rates are their scores or attendance rates in the year before being exposed to the New Leaders principal. In the first year of a principal's tenure in a school, this is merely the score or attendance rate of the previous year. If a principal remains in the school for a second or third year (in our sample, three years is longest-possible tenure), then we use that same lagged score from the first year. In this way, all lagged scores control for achievement before exposure to the principals.

Table E.7 presents the results. For ease of comparability, columns 1 through 3 provide the original estimates from our preferred specification, and columns 4 through 6 utilize the alternative lagged-outcome approach. All results are qualitatively the same. Looking at the ELA and math results reveals that the factor estimates are almost identical. The estimates on the New Leaders standards are also very similar. However, slightly smaller point estimates and slightly larger standard errors eliminate the marginal significance of the Instructional Leadership standard and make the Adult and Team Leadership standard only marginally significant to math achievement. Looking at the attendance outcomes shows that point estimates are slightly larger such that the relationship between the Human Capital factor and attendance becomes more significant, and the Adult and Team Leadership standard becomes significantly related to attendance. Overall the evidence points to a possible slight downward bias of the attendance estimates and upward bias of the ELA and math achievement estimates. However, these slight differences do not affect our overall inferences.

Table E.7. Relationship Between New Leaders Measures and Student Outcomes by Lagged-Score Approach

	(1)	(2)	(3)	(4)	(5)	(6)
	One-Year Lag for All Students			Lag of Year Prior to Principal Entering School		
	ELA	Math	Attendance	ELA	Math	Attendance
Panel A: Factors of competencies						
Factor 1 (Human Capital)	0.035***	0.045**	0.005**	0.033**	0.044**	0.006***
	(0.010)	(0.014)	(0.002)	(0.011)	(0.015)	(0.002)
Factor 2 (Cultural Capital)	–0.003	–0.022	0.003	–0.007	–0.023	0.003
	(0.011)	(0.016)	(0.002)	(0.011)	(0.016)	(0.002)
Factor 3 (Personal Leadership)	–0.004	–0.016**	0.000	–0.004	–0.016**	0.002
	(0.014)	(0.006)	(0.002)	(0.013)	(0.006)	(0.002)
Panel B: Standards (in separate regressions)						
Standard 1 (Personal Leadership)	0.004	–0.010	0.003	0.001	–0.011	0.005
	(0.015)	(0.008)	(0.003)	(0.013)	(0.008)	(0.003)
Standard 2 (Instructional Leadership)	0.025*	0.028*	0.006**	0.022	0.027	0.006**
	(0.012)	(0.014)	(0.002)	(0.013)	(0.015)	(0.002)
Standard 3 (Cultural Leadership)	0.010	0.004	0.003	0.008	0.003	0.004
	(0.012)	(0.011)	(0.002)	(0.010)	(0.011)	(0.003)
Standard 4 (Adult and Team Leadership)	0.044**	0.030**	0.005	0.041**	0.029*	0.007**
	(0.017)	(0.012)	(0.003)	(0.016)	(0.013)	(0.003)
Standard 5 (Operational Leadership)	0.024	0.012	0.004	0.022	0.011	0.005
	(0.018)	(0.012)	(0.003)	(0.016)	(0.012)	(0.003)
Baseline ELA and math scores	X	X		X	X	
Baseline attendance			X			X
Pre–Aspiring Principals program score	X	X	X	X	X	X
Observations	28,489	28,489	51,803	28,489	28,489	51,803

NOTES: Standard errors are clustered at the school level. New Leaders principal covariates are pre-residency recruitment pathway, an indicator for passing the Emerging Leaders program screening, years of experience as a teacher, gender, race/ethnicity, an indicator for the residency occurring in a charter school, and an indicator for the residency occurring in a school led by a New Leaders principal from a previous cohort. Student covariates are fixed effects for grade, an indicator for having repeated a grade, classification as an ELL, student race/ethnicity, gender, and an indicator for being old for the grade. School covariates are school enrollment, school level, and school level averages of race/ethnicity, gender, English language classification, students repeating a grade, and students old for their grade. All models also include cohort, year, and district fixed effects. Factors were made from underlying competency data.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Bibliography

ABC2 News, "City Schools to Layoff 115 Staff Members by June 30," June 1, 2017. As of September 20, 2017: http://www.abc2news.com/news/region/baltimore-city/city-schools-to-lay-off-115-staff-members-by-june-30

Achievement School District, "What We Stand For," undated. As of October 18, 2017: http://achievementschooldistrict.org/about/

Ahmed-Ullah, N. S., J. Chase, and B. Secter, "CPS Approves Largest School Closure in Chicago's History," *Chicago Tribune*, May 23, 2013. As of October 31, 2017: http://articles.chicagotribune.com/2013-05-23/news/chi-chicago-school-closings-20130522_1_chicago-teachers-union-byrd-bennett-one-high-school-program

Ahmed-Ullah, N. S., and K. Geiger, "CPS to Lay Off 1,036 Teachers," *Chicago Tribune*, July 19, 2013. As of October 31, 2017: http://articles.chicagotribune.com/2013-07-1Septembernews/chi-cps-more-layoffs-coming-20130718_1_pension-reform-cps-new-teachers-contract

Alford, A., "A Dozen Years of Change in PGCPS Governance Structure," Prince George's County Advocates for Better Schools, May 18, 2015. As of February 13, 2018: https://pgcabs.org/2015/05/18/a-dozen-years-of-changes-in-pgcps-governance-structure/

Anthony, L., "Oakland School Board Poised to Make Millions in Cuts," ABC 7 News, November 27, 2017. As of December 1, 2017: http://abc7news.com/education/oakland-school-board-poised-to-make-millions-in-cuts/2704271/

Babineau, K., D. Hand, and V. Rossmeier, "The State of Public Education in New Orleans 2016–17," Cowen Institute for Public Education Initiatives, Tulane University, February 2017. As of November 6, 2017: https://tulane.app.box.com/s/ddngdxbtar9kkn21szyzi6gsplslwqn3

Baker, A., "New York City Teachers Vote for Raise and a Nine-Year Contract," *New York Times*, June 3, 2014. As of November 28, 2017: https://www.nytimes.com/2014/06/04/nyregion/new-york-city-teachers-vote-to-approve-9-year-contract.html

Baltimore City Public Schools, "City Schools School Leader Framework and Rubric," undated-a. As of September 20, 2017: https://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/7994/School%20Leader%20Framework.pdf

———, “Effective School Leaders,” undated-b. As of September 20, 2017: http://www.baltimorecityschools.org/employees/effective_school_leaders

———, “Human Capital Office,” undated-c. As of September 20, 2017: http://www.baltimorecityschools.org/Page/22072

———, “Measuring Effectiveness: The School Leader Effectiveness Evaluation,” undated-d. As of September 22, 2017: http://www.baltimorecityschools.org/Page/21847

———, “School Leadership Opportunities,” undated-e. As of September 20, 2017: http://www.baltimorecityschools.org/site/Default.aspx?PageID=24359

———, “Schools Office,” undated-f. As of September 20, 2017: http://www.baltimorecityschools.org/Page/28480

———, “Application Process for Principal Candidates,” last updated May 28, 2010. As of January 25, 2018: http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/18/Part_A.pdf

———, “Leadership Development Course Catalogue: SY 14–15,” 2014a. As of September 20, 2017: http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/7994/Leadership%20Development%20Course%20Catalogue%202014_15.pdf

———, “Growing Great Leaders: School Leadership Development 2014–2015 Overview for Potential Participants,” April 2014b. As of September 20, 2017: http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/9038/Growing%20Great%20Leaders%20Participant%20Overview%20April%202014%20%20.pdf

———, *Building a Generation: City Schools’ Blueprint for Success*, 2017a. As of September 20, 2017: http://engage.baltimorecityschools.org/wp-content/uploads/2017/08/08222017_Blueprint_Booklet_Web.pdf

———, *School Closures and Building Surplusing*, January 13, 2017b. As of September 20, 2017: http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/8057/PDF/20170113-FinalClosureSurplusReport.pdf

———, *City Schools Financial Recovery Plan 2017*, August 1, 2017c. As of September 20, 2017: http://www.boarddocs.com/mabe/bcpss/Board.nsf/files/APTMY758A2A9/$file/Financial%20Recovery%20Plan-%2007.31.17.pdf

———, "District Profile—Spring 2018," 2018. As of June 14, 2018: http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/8048/999-DistrictProfile.pdf

BCPS—*See* Baltimore City Public Schools.

Benjamini, Y., and Y. Hochberg, "Controlling the False Discovery Rate: A Practical and Powerful Approach to Multiple Testing," *Journal of the Royal Statistical Society, Series B (Methodological)*, Vol. 57, No. 1, 1995, pp. 289–300.

Berlin, J., "Chicago Teacher Strikes: When, How Long and the Reasons Why," *Chicago Tribune*, March 31, 2016. As of October 31, 2017: http://www.chicagotribune.com/news/local/breaking/ct-chicago-teacher-strikes-timeline-20160331-htmlstory.html

Béteille, T., D. Kalogrides, and S. Loeb, "Stepping Stones: Principal Career Paths and School Outcomes," *Social Science Research*, Vol. 41, No. 4, July 2012, pp. 904–919.

Board of Education of the City of Chicago, "About the Chicago Board of Education," undated. As of October 31, 2017: http://www.cpsboe.org/about

Board of Education of the City of Chicago and Chicago Public Schools, *Chicago Public Schools Approved Budget 2013–2014*, 2013. As of October 31, 2017: https://cps.edu/finance/FY14Budget/Documents/FY2014ApprovedBudgetBook.pdf

———, *Chicago Public Schools Proposed Budget 2017–2018*, 2017. As of October 31, 2017: http://cps.edu/fy18budget/documents/FY18_BudgetBook_amended.pdf

Bowie, L., "Some Critics Call for Thornton's Ouster as Leader of Baltimore Schools," *Baltimore Sun*, February 25, 2016. As of September 13, 2017: http://www.baltimoresun.com/news/maryland/education/bs-md-thornton-leadership-20160217-story.html

Bradley, B., "CPS CEO Forrest Claypool Announces His Resignation," WGN9 News, December 8, 2017. As of January 15, 2018: http://wgntv.com/2017/12/08/cps-ceo-forrest-claypool-stepping-down/

Branch, G. F., E. A. Hanushek, and S. G. Rivkin, *Estimating the Effect of Leaders on Public Sector Productivity: The Case of School Principal*, Washington, D.C.: National Bureau of Economic Research, 2012.

Brinson, D., L. Boast, B. Hassel, and N. Kingsland, *New Orleans–Style Education Reform: A Guide for Cities—Lessons Learned, 2004–2010*, New Orleans, La.: New Schools for New Orleans, January 2012. As of November 6, 2017:

http://educatenow.net/wp-content/uploads/2012/02/New_Orleans_Style_Reform_A_Guide_For_Cities.pdf

Burkhauser, S., *Hello, Goodbye: Three Perspectives on Public School District Staff Turnover*, dissertation, Santa Monica, Calif.: The Frederick S. Pardee RAND Graduate School, RGSD-357, 2015. As of December 11, 2018: https://www.rand.org/pubs/rgs_dissertations/RGSD357.html

Burkhauser, S., S. M. Gates, L. S. Hamilton, and G. S. Ikemoto, *First-Year Principals in Urban School Districts: How Actions and Working Conditions Relate to Outcomes*, Santa Monica, Calif.: RAND Corporation, TR-1191-NLNS, 2012. As of December 11, 2018: https://www.rand.org/pubs/technical_reports/TR1191.html

Burnette, D., "Shelby County Closes Three Memphis Schools, Moves Students from Three Others," *Chalkbeat*, March 31, 2015. As of October 18, 2017: https://tn.chalkbeat.org/posts/tn/2015/03/31/shelby-county-closes-three-memphis-schools-moves-students-from-three-others/

CBS San Francisco, "Oakland School Board Names New Superintendent," CBS San Francisco and Bay Area, May 22, 2017. As of December 1, 2017: http://sanfrancisco.cbslocal.com/2017/05/11/oakland-school-board-new-superintendent-kyla-johnson-trammell/

"Charlotte-Area Charter Schools," *Charlotte Observer*, August 31, 2016. As of October 27, 2017: http://www.charlotteobserver.com/living/living-here-guide/article99112047.html

Charlotte-Mecklenburg Schools, *Charlotte-Mecklenburg Schools Principal Pipeline Initiative*, undated-a. As of October 20, 2017: http://edtrust.org/wp-content/uploads/2014/11/A-League-of-Their-Own.pdf

———, *Charlotte-Mecklenburg Schools 2017 Capital Funding Request*, Charlotte, N.C., undated-b. As of October 27, 2017: http://www.cms.k12.nc.us/mediaroom/Documents/CMS%20Capital%20Funding%20Needs.pdf

———, "Did You Know?" undated-c. As of October 20, 2017: http://www.cms.k12.nc.us/mediaroom/aboutus/Pages/Didyouknow.aspx

———, "Enrollment Data," undated-d. As of February 2, 2018: http://www.cms.k12.nc.us/cmsdepartments/StudentPlacement/PlanningServices/Pages/Enrollmentdata.aspx

———, "History of CMS," undated-e. As of October 20, 2017: http://www.cms.k12.nc.us/mediaroom/aboutus/Pages/History.aspx

———, "Principal and Assistant Principal Talent Pools," undated-f. As of October 20, 2017: http://www.cms.k12.nc.us/Jobs/Pages/AssistantPrincipalandPrincipalTalentPoolspage.aspx

———, "Principal Pipeline Initiative," undated-g. As of October 20, 2017: http://www.principalpipeline.com/index.cfm

———, *Strategic Plan 2018: For a Better Tomorrow*, Charlotte, N.C., 2014. As of October 27, 2017: http://www.cms.k12.nc.us/mediaroom/Documents/StrategicPlan2018%20rev%20063016.pdf

———, *Fast Facts*, Charlotte, N.C., 2017a. As of October 20, 2017: http://www.cms.k12.nc.us/mediaroom/Documents/CMS%202017-2018%20Fast%20Facts.pdf

———, *2017–2018 Proposed Budget Request*, Charlotte, N.C., May 9, 2017b. As of October 20, 2017: http://www.cms.k12.nc.us/mediaroom/Documents/Budget%20Book%202017-2018%20Proposed%20Budget%20Request.pdf

Cheney, G. R., and J. Davis, *Gateways to the Principalship: State Power to Improve the Quality of School Leaders*, Washington, D.C.: Center for American Progress, 2011.

Cherone, H., "Here's What Chicago Teachers Won and Lost in Contract Deal," DNA Info News, October 14, 2016. As of October 31, 2017: https://www.dnainfo.com/chicago/20161014/gladstone-park/cps-chicago-public-schools-teachers-union-strike

Chicago Principal Partnership, "Meet Our Partners," undated. As of October 31, 2017: https://chicagoprincipals.org/who-we-are/

Chicago Public Education Fund, "Chicago Principals Fellowship," undated. As of October 31, 2017: http://thefundchicago.org/our-work/principal-fellowships/chicago-principals-fellowship/

———, *Chicago's Fight to Keep Top Principals: 2015 School Leadership Report*, November 2015. As of November 1, 2017: http://chicagotonight.wttw.com/sites/default/files/article/file-attachments/Chicago%27s%20Fight%20to%20Keep%20Top%20Principals.pdf

Chicago Public Schools, *The Next Generation: Chicago's Children, Chicago Public Schools 2013–2018 Action Plan*, Chicago, undated. As of October 31, 2017: http://cps.edu/pages/actionplan.aspx

———, *CPS Performance Standards for School Leaders Rubric with Critical Attributes*, Chicago, 2015a. As of October 31, 2017: http://cps.edu/principalevaluation/Documents/PrincipalEvaluationRubric.pdf

———, "Principal Evaluation: Principal Practice," last modified November 25, 2015b. As of October 31, 2017: http://cps.edu/principalevaluation/Pages/PrincipalPractice.aspx

———, "The Chicago Principal Partnership Launches to Help Ensure Every Public School in Chicago Is Led by a Strong Principal," 2016a. As of November 1, 2017: http://cps.edu/News/Press_releases/Pages/PR1_11_03_2016.aspx

———, "CPS Leadership," 2016b. As of October 31, 2017: http://cps.edu/leadership/Pages/leadership.aspx

———, *Principal Eligibility Process Overview and FAQ*, Chicago, 2016c. As of October 31, 2017: http://cps.edu/PrincipalQuality/Documents/OverviewInstructionsFAQs.pdf

———, *Success Starts Here: Three-Year Vision, 2016–2019*, Chicago, 2016d. As of October 31, 2017: http://cps.edu/sitecollectiondocuments/cpsvision.pdf

———, "CPS Finalizes District Enrollment for 2017–18 School Year," 2017a. As of January 15, 2018: http://www.cps.edu/News/Press_releases/Pages/PR1_10_20_2017.aspx

———, "Department of Principal Quality," 2017b. As of October 31, 2017: http://cps.edu/PrincipalQuality/Pages/PQ.aspx

———, "Department of Principal Quality: Chicago Leadership Collaborative," 2017c. As of October 31, 2017: http://cps.edu/PrincipalQuality/Pages/Pipeline.aspx

———, "Department of Principal Quality: Independent School Principals (ISP)," 2017d. As of October 30, 2017: http://cps.edu/PrincipalQuality/Pages/ISP.aspx

———, "Principal Eligibility Assessment Process Application," 2017e. As of October 31, 2017: http://cps.edu/PrincipalQuality/Pages/Eligibility.aspx

———, "Principalship: Principal Candidates," 2017f. As of October 31, 2017: http://cps.edu/PrincipalQuality/Pages/Principalship.aspx

Chicago Teachers Union, "Parent, Teacher Protest Today in Push for Classroom Funding, Against Budget Cuts," press release, May 18, 2017. As of October 31, 2017: https://www.ctunet.com/media/press-releases/parent-teacher-protest-today-in-push-for-classroom-funding-against-budget-cuts

CMS—*See* Charlotte-Mecklenburg Schools.

Coelli, M., and D. A. Green, "Leadership Effects: School Principals and Student Outcomes," *Economics of Education Review*, Vol. 31, No. 1, 2012, pp. 92–109.

Copland, M., and B. Boatright, *Leadership for Transforming High Schools*, Seattle: University of Washington Center for Teaching and Policy, 2006.

Corcoran, A., M. Casserly, R. Price-Baugh, D. Walston, R. Hall, and C. Simon, *Rethinking Leadership: The Changing Role of Principal Supervisors*, Washington, D.C.: Council of Great City Schools, 2013.

Cox, E., "State to Investigate Allegations of Grade Tampering in Prince George's County Schools," *Baltimore Sun*, June 28, 2017. As of February 13, 2018: http://www.baltimoresun.com/news/maryland/education/bs-md-pg-graduation-rate-investigation-20170628-story.html

CPS—*See* Chicago Public Schools.

Darling-Hammond, L., M. LaPointe, D. Meyerson, and M. T. Orr, *Preparing School Leaders for a Changing World: Lessons from Exemplary Leadership Development Programs*, Stanford, Calif.: Stanford University, 2007.

D.C. Office of the Chief Financial Officer, "2017 GB0 District of Columbia Public Charter School Board," in *FY 2017 Proposed Budget and Financial Plan Congressional Submission*, Washington, D.C., 2016. As of December 18, 2018: https://cfo.dc.gov/node/1148646

DC PCSB—*See* District of Columbia Public Charter School Board.

DCPS—*See* District of Columbia Public Schools.

Desravines, J., J. Aquino, and B. Fenton, *Breakthrough Principals: A Step-by-Step Guide to Building Stronger Schools*, San Francisco, Calif.: Jossey-Bass, 2016.

District of Columbia Public Charter School Board, *The Performance Management Framework Overview*, Washington, D.C., 2016. As of December 26, 2017: http://www.dcpcsb.org/sites/default/files/The%20Performance%20Management%20Framework%20Overview%20for%20web%202.12.16.pdf

———, "DC PCSB Staff," 2017a. As of December 27, 2017: http://www.dcpcsb.org/accreditation/dc-pcsb-staff

———, *DC PCSB 2017 Annual Report*, Washington, D.C., 2017b. As of December 26, 2017: http://www.dcpcsb.org/report/pcsb-annual-reports

———, "The Facts," 2017c. As of December 27, 2017: https://data.dcpcsb.org/stories/s/g9zq-zkq5

———, "Job Opportunities," 2017d. As of December 26, 2017: http://www.dcpcsb.org/job-opportunities

———, "Leading a School," 2017e. As of December 26, 2017: http://www.dcpcsb.org/leading-a-school

District of Columbia Public Schools, "The Mary Jane Patterson Fellowship for Aspiring Principals," undated. As of December 15, 2017: https://dcps.dc.gov/page/%0Bmary-jane-patterson-fellowship-aspiring-principals

———, *School Leaders IMPACT: The District of Columbia Public Schools Effectiveness Assessment System for School-Based Personnel*, Washington, D.C., 2016a.

———, *We the People: 2016 Report on DCPS Educators*, Washington, D.C., 2016b. As of December 15, 2017: https://dcps.dc.gov/page/we-people-2016-report-dcps-educators

———, "A Capital Commitment: 2017–2022," 2017a. As of December 15, 2017: https://dcps.dc.gov/capitalcommitment

———, "DCPS Fast Facts," 2017b.

———, "DC Public Schools Releases Budget Priorities for Fiscal Year 2018," April 4, 2017c. As of December 15, 2017: https://dcps.dc.gov/release/dc-public-schools-releases-budget-priorities-fiscal-year-2018

Dreilinger, D., "New Orleans Has . . . How Many Public Schools This Year?" *Times-Picayune*, October 21, 2015. As of November 6, 2017: http://www.nola.com/education/index.ssf/2015/10/new_orleans_school_number.html

———, "New Orleans Has . . . How Many Schools in 2016–17?" *Times-Picayune*, December 14, 2016. As of November 6, 2017: http://www.nola.com/education/index.ssf/2016/08/new_orleans_schools_2016-17.html

———, "New Orleans School Lineup: What's Closing, What's Opening This Fall," *Times-Picayune*, August 2, 2017. As of November 6, 2017: http://www.nola.com/education/index.ssf/2017/08/new_orleans_school_lineup_2017.html

Dunn, A., "Former CMS Superintendent Heath Morrison Takes Job in Private Sector," *Charlotte Observer*, February 3, 2015. As of October 27, 2017: http://www.charlotteobserver.com/news/local/education/article9507674.html#storylink=cpy

"Examiner Local Editorial: Competition, Not Takeover, Is Key to Turnaround at Prince George's County Schools," *Washington Examiner*, March 19, 2013. As of February 13, 2018: http://www.washingtonexaminer.com/examiner-local-editorial-competition-not-takeover-is-key-to-turnaround-at-prince-georges-county-schools/article/2524819

Fuller, E. J., and L. Hollingworth, "Questioning the Use of Outcome Measures to Evaluate Principal Preparation Programs," *Leadership and Policy in Schools*, Vol. 17, No. 2, 2018, pp. 167–188.

Fuller, E. J., L. Hollingworth, and B. An, "The Impact of Personal and Program Characteristics on the Placement of School Leadership Preparation Program Graduates in School Leader Positions," *Educational Administration Quarterly*, Vol. 52, 2016, pp. 643–674.

Gates, S. M., M. D. Baird, C. Joseph Doss, L. S. Hamilton, I. M. Opper, B. K. Master, A. Prado Tuma, M. Vuollo, and M. A. Zaber, *Preparing School Leaders for Success: Evaluation of New Leaders' Aspiring Principals Program, 2012–2017*, Santa Monica, Calif.: RAND Corporation, RR-2812-NL, 2019. As of January 22, 2019: http://www.rand.org/pubs/research_reports/RR2812.html

Gates, S. M., L. S. Hamilton, P. Martorell, S. Burkhauser, P. Heaton, A. Pierson, M. D. Baird, M. Vuollo, J. J. Li, D. C. Lavery, M. Harvey, and K. Gu, *Preparing Principals to Raise Student Achievement: Implementation and Effects of the New Leaders Program in Ten Districts*, Santa Monica, Calif.: RAND Corporation, RR-507-NL, 2014a. As of December 29, 2015: http://www.rand.org/pubs/research_reports/RR507.html

———, *Preparing Principals to Raise Student Achievement: Implementation and Effects of the New Leaders Program in Ten Districts—Appendix*, Santa Monica, Calif.: RAND Corporation, RR-507/1-NL, 2014b. As of December 29, 2015: http://www.rand.org/pubs/research_reports/RR507z1.html

Georgetown University, "First-Ever DC Public Schools-Charter Principal Program Launches Through EML Program," 2017. As of December 27, 2017: https://msb.georgetown.edu/newsroom/news/first-ever-dc-public-schools-charter-principal-program-launches-through-eml-program

George W. Bush Institute, *A Framework for Principal Talent Management*, Dallas, Tex., October 2016.

Goldring, R., and S. Taie, *Principal Attrition and Mobility: Results from the 2012–13 Principal Follow-Up Survey*, Washington, D.C.: National Center for Education Statistics, 2014.

"Graphic: Timeline of Chicago Public Schools CEOs," *Chicago Tribune*, 2015. As of October 31, 2017: http://www.chicagotribune.com/chi-cps-ceo-history-timeline-gfx-20150602-photogallery.html

Green, E. L., "Baltimore Schools' CEO to Be Replaced by Former Academics Chief," *Baltimore Sun*, May 3, 2016. As of September 8, 2017: http://www.baltimoresun.com/news/maryland/education/bs-md-thornton-out-20160503-story.html

Grissom, J. A., and B. Bartanen, "Principal Effectiveness and Principal Turnover," *Education Finance and Policy*, advance online publication, 2018. As of November 30, 2018: https://www.mitpressjournals.org/doi/abs/10.1162/edfp_a_00256

Grissom, J. A., R. S. Blissett, and H. Mitani, "Evaluating School Principals: Supervisor Ratings of Principal Practice and Principal Job Performance," *Educational Evaluation and Policy Analysis*, Vol. 40, No. 3, 2018, pp. 446–472.

Grissom, J. A., D. Kalogrides, and S. Loeb, "Using Student Test Scores to Measure Principal Performance," *Educational Evaluation and Policy Analysis*, Vol. 37, 2015, pp. 3–28.

Grissom, J. A., and S. Loeb, "Triangulating Principal Effectiveness: How the Perspectives of Parents, Teachers and Assistant Principals Identify the Central Importance of Managerial Skills," *American Educational Research Journal*, Vol. 48, No. 5, 2011, pp. 1091–1123.

Grissom, J. A., S. Loeb, and B. Master, "Effective Instructional Time Use for School Leaders: Longitudinal Evidence from Observations of Principals," *Educational Researcher*, Vol. 42, No. 8, 2013, pp. 433–444.

Grissom, J. A., H. Mitani, and D. S. Woo, "Principal Preparation Programs and Principal Outcomes," *Educational Administration Quarterly*, advance online publication, 2018, pp. 1–43.

Harris, E. A., and M. Fernandez, "Is Richard Carranza Ready to Run America's Biggest School System?" *New York Times*, March 18, 2018. As of June 13, 2018: https://www.nytimes.com/2018/03/18/nyregion/carranza-new-york-schools-chancellor.html?action=click&module=RelatedCoverage&pgtype=Article&region=Footer

Helms, A. D., "More Meck Families Choose Charters, but CMS Still Dominates the School Choice Market," *Charlotte Observer*, February 22, 2017. As of October 27, 2017: http://www.charlotteobserver.com/news/local/education/article134232234.html

Hensley, S. B., "DC Public Schools Chancellor Announces Departure," *Washington's Top News*, June 29, 2016. As of December 15, 2017: https://wtop.com/dc/2016/06/dc-public-schools-chancellor-announces-departure/

Herman, Rebecca Epstein, Susan M. Gates, Aziza Arifkhanova, Andriy Bega, Emilio Chavez-Herrerias, Eugeniu Han, Mark Harris, Jennifer Tamargo, and Stephani Wrabel, *School Leadership Interventions Under the Every Student Succeeds Act: Evidence Review—Updated and Expanded*, Santa Monica, Calif.: RAND Corporation, RR-1550-3-WF, 2017. As of August 10, 2018: http://www.rand.org/pubs/research_reports/RR1550-3.html

Hutchins, D. J., J. L. Epstein, and S. B. Sheldon, *How Do Principals' Reports of Leadership Practices Reflect UEF Categories, Levers, and Concepts?* Baltimore, Md.: Johns Hopkins University, 2012.

Illinois Department of Public Health, *2006 Illinois Resident Births by County and Plurality*, Springfield, 2007. As of January 15, 2018: http://www.dph.illinois.gov/sites/default/files/publications/2006-multiple-il-resident-births.pdf

———, *Live Births by Resident County and Plurality, Illinois Residents, 2015*, Springfield, 2016. As of January 15, 2018: http://dph.illinois.gov/sites/default/files/publications/Multiple-Births-by-County-2015.pdf

Illinois Network of Charter Schools, "Charter Enrollment Growth," 2015. As of January 15, 2018: https://www.incschools.org/tableau/?post=32&type=enrollment_facts&index=2-1

Kaufman, Julia H., Susan M. Gates, Melody Harvey, Yanlin Wang, and Mark Barrett, *What It Takes to Operate and Maintain Principal Pipelines: Costs and Other Resources*, Santa Monica, Calif.: RAND Corporation, RR-2078-WF, 2017. As of June 13, 2018: http://www.rand.org/pubs/research_reports/RR2078.html

Kebede, L. F., "Hopson Wants to Invest in Memphis Teacher Raises, Student Supports, Struggling Schools," *Chalkbeat*, March 13, 2017. As of October 18, 2017: https://www.chalkbeat.org/posts/tn/2017/03/13/hopson-wants-to-invest-in-memphis-teacher-raises-student-supports-struggling-schools/

Larsen, E., M. Clifford, M. Lemke, D. Chambers, and A. Swanlund, *Following the Leaders: An Analysis of Graduate Effectiveness from Five Principal Preparation Programs*, Dallas, Tex.: George W. Bush Institute, 2016a.

———, *Developing Leaders: The Importance—and the Challenges—of Evaluating Principal Preparation Programs*, Dallas, Tex.: George W. Bush Institute, 2016b.

Leithwood, K., K. S. Louis, S. Anderson, and K. Wahlstrom, *How Leadership Influences Student Learning: A Review of the Evidence Linking Leadership to Student Learning*, New York: The Wallace Foundation, 2004.

Levin, S., "Oakland Teachers Reach Tentative Contract Agreement with Salary Increases, Seniority Rights," *East Bay Express*, May 14, 2015. As of December 1, 2017: https://www.eastbayexpress.com/SevenDays/archives/2015/05/14/oakland-teachers-reach-tentative-contract-agreement-with-salary-increases-seniority-rights

Louisiana Department of Education, *Bulletin 125—Standards for Educational Leaders in Louisiana*, Louisiana Administrative Code, March 2011. As of November 8, 2017: https://www.teachlouisiana.net/Prospect.aspx?PageID=501

———, *Louisiana Leader Performance Evaluation Rubric*, 2014. As of November 8, 2017: https://www.louisianabelieves.com/docs/default-source/key-compass-resources/2014-2015-compass-leader-rubric.pdf?sfvrsn=14

———, *Annual Financial Report 2015–16*, 2016. As of November 8, 2017: http://www.louisianabelieves.com/resources/library/financial-data

———, "Compass New Evaluator Training 2017–2018," 2017a. As of November 8, 2017: http://www.louisianabelieves.com/docs/default-source/key-compass-resources/2017-2018-compass-new-evaluator-training.pdf?sfvrsn=4

———, "Compass Updates 2017–2018 Implementation," 2017b. As of November 8, 2017: http://www.louisianabelieves.com/docs/default-source/key-compass-resources/2017-2018-district-compass-updates.pdf?sfvrsn=4

———, "News Release: Recovery School District Aligns Organization and Leadership with Statewide Strategy," March 16, 2017c. As of November 8, 2017: https://www.louisianabelieves.com/newsroom/news-releases/2017/03/16/recovery-school-district-aligns-organization-and-leadership-with-statewide-strategy

Marimow, A. E., "D.C. Public School Teachers Approve New Contract," *Washington Post*, September 9, 2017. As of December 15, 2017: https://www.washingtonpost.com/local/education/dc-public-school-teachers-approve-new-contract/2017/09/09/6d22c6ae-958b-11e7-8754-d478688d23b4_story.html?utm_term=.ff86460dd098

Maryland Department of Health, *Maryland Vital Statistics Annual Report 2016*, 2016. As of June 12, 2018: https://health.maryland.gov/vsa/Documents/2016_AnnualReport.WebVersion.pdf

Marzano, R., T. Waters, and B. McNulty, *School Leadership That Works: From Research to Results*, Alexandria, Va.: ASCD, 2005.

Masterson, M., "CPS Looks to Recruit, Retain Quality Principals Through New Partnership," WTTW Chicago, November 3, 2016. As of November 1, 2017: http://chicagotonight.wttw.com/2016/11/03/cps-looks-recruit-retain-quality-principals-through-new-partnership

Matos, A., "Antwan Wilson Confirmed as Chancellor of DC Public Schools," *Washington Post*, December 20, 2016. As of December 15, 2017: https://www.washingtonpost.com/local/education/antwan-wilson-confirmed-as-chancellor-of-dc-public-schools/2016/12/20/be7a4aa4-c6ce-11e6-bf4b-2c064d32a4bf_story.html?utm_term=.75693c85db5b

———, "For the First Time, a DC Charter School Has Voted to Create a Teachers Union," *Washington Post*, June 16, 2017. As of December 26, 2017: https://www.washingtonpost.com/local/education/for-the-first-time-a-dc-charter-school-has-voted-to-create-a-teachers-union/2017/06/16/935f1a1e-52bc-11e7-b064-828ba60fbb98_story.html?utm_term=.3b4a738f5723

"Memphis City Schools Superintendent Kriner Cash Resigns," *Memphis Business Journal*, January 11, 2013. As of February 15, 2018: https://www.bizjournals.com/memphis/blog/morning_call/2013/01/memphis-city-schools-superintendent.html

Miller, A., "Principal Turnover and Student Achievement," *Economics of Education Review*, Vol. 36, No. C, 2013, pp. 60–72.

Monroe, K., "Oakland USD 2016–17 First Interim Report Letter," Alameda County Office of Education, January 17, 2017. As of December 1, 2017: https://drive.google.com/file/d/0BxMqlDlfSN03UURIcFJsbUlzNjg/view

New Leaders, "Leadership Practice Improvement (LPI)," undated-a.

———, "Our Mission," undated-b. As of December 10, 2018: http://www.newleaders.org/about/

———, *New Leaders Urban Excellence Framework*, New York, 2011.

———, *Transformational Leadership Framework*, New York, 2016.

———, *Selection Standards*, 2017. As of December 18, 2018: https://newleaders.org/wp-content/uploads/2018/02/FY18SelectionStandards.pdf

New York City Charter School Center, "Charter School Enrollment and Trends," 2017a. As of November 28, 2017: http://www.nyccharterschools.org/sites/default/files/resources/Charter-Enrollment-Trends.pdf

———, "NYC Charter School Facts 2017–2018," 2017b. As of November 28, 2017: http://www.nyccharterschools.org/sites/default/files/resources/NYC-Charter-Facts.pdf

New York City Department of Education, "Mayor Elect De Blasio Appoints Carmen Fariña as Schools Chancellor," December 30, 2013a. As of January 7, 2019: http://proxy.nycboe.org/NR/rdonlyres/C955EF12-EBBC-4B41-AF8D-20597C55DF0C/0/StrongSchoolsStrongCommunities_NYCDOE.pdf

———, *2013–14 Quality Review Rubric*, New York, 2013b.

———, *Strong Schools, Strong Communities: A New Approach to Supporting New York City's Public Schools and All of Our Students*, New York, 2015. As of November 28, 2017: http://proxy.nycboe.org/NR/rdonlyres/C955EF12-EBBC-4B41-AF8D-20597C55DF0C/0/StrongSchoolsStrongCommunities_NYCDOE.pdf

———, "About Us," 2017a.

———, *Field Guide for the 2017–18 Principal Performance Review: A Guide for Principals and Evaluators*, New York, 2017b.

———, “Initiatives for Strong Schools, Strong Communities,” 2017c.

———, “Principal Candidate Pool,” 2017d.

———, *2017–18 Charter School Directory*, New York, 2017e. As of November 28, 2017: https://newyorkcitydepartmentofeducati.app.box.com/s/aymaralizkov11uwbzikmrz2xk9qu2j6

Ni, Y., L. Hollingworth, A. Rorrer, and D. Pounder, “The Evaluation of Educational Leadership Preparation Programs,” in M. D. Young and G. M. Crow, eds., *The Handbook of Research on the Education of School Leaders*, 2nd ed., New York: Routledge, 2017, pp. 285–307.

Oakland Unified School District, “School Leadership Recruitment,” 2012.

———, *Fast Facts 2013–14*, Oakland, Calif., 2013. As of December 1, 2017: https://drive.google.com/drive/u/0/folders/0B6QEqRqzjxxzOGllWlBUS2d2ZXc

———, *Fast Facts 2014–15*, Oakland, Calif., 2014. As of December 1, 2017: https://drive.google.com/drive/u/0/folders/0B6QEqRqzjxxzOGllWlBUS2d2ZXc

———, *Fast Facts 2015–16*, Oakland, Calif., 2015a. As of December 1, 2017: https://drive.google.com/drive/u/0/folders/0B6QEqRqzjxxzOGllWlBUS2d2ZXc

———, *Pathway to Excellence: 2015–2020 Strategic Plan*, Oakland, Calif., 2015b. As of December 1, 2017: https://www.ousd.org/domain/3

———, *2015–16 OUSD Leadership Growth and Development System Handbook*, Oakland, Calif., 2015c. As of December 1, 2017: https://docs.google.com/viewerng/viewer?url=https://www.ousd.org//cms/lib/CA01001176/Centricity/Domain/3423/2015-16+LGDS+Handbook.pdf

———, *Fast Facts 2016–17*, Oakland, Calif., 2016. As of December 1, 2017: https://drive.google.com/drive/u/0/folders/0B6QEqRqzjxxzOGllWlBUS2d2ZXc

———, “Budget Prioritization 2017–18,” 2017a. As of December 1, 2017: https://www.ousd.org/Page/15885

———, *Fast Facts 2017–18*, Oakland, Calif., 2017b. As of August 27, 2018: https://drive.google.com/file/d2018vKVTDbTxKOTlnQGSZmITyiuNI-1Am_R/view

———, “Leadership Growth and Development System Overview,” 2017c. As of December 1, 2017: https://www.ousd.org/domain/3423

Oakland Unified School District and United Administrators of Oakland Schools, “Agreement Between Oakland Unified School District and United Administrators of Oakland Schools (UAOS) for the Period July 1, 2014–June 30, 2017,” 2014. As of December 1, 2017:

https://ousd.legistar.com/LegislationDetail.aspx?ID=3089769&GUID=838C5501-A7DD-4F72-AA73-0DF4C7F7752E&Options=ID|Text|&Search=UAOS

Orleans Parish School Board, "2018 General Fund Budget," June 15, 2017. As of November 8, 2017: http://opsb.us/wp-content/uploads/2012/10/170524_Budget-Book_v35.pdf

OPSB—*See* Orleans Parish School Board.

Orr, M. T., and S. Orphanos, "How Graduate-Level Preparation Influences the Effectiveness of School Leaders: A Comparison of the Outcomes of Exemplary and Conventional Leadership Preparation Programs for Principals," *Educational Administration Quarterly*, Vol. 47, 2011, pp. 18–70.

OUSD—*See* Oakland Unified School District.

Perez, J., "Chicago Teachers Union: No Confidence Vote in CPS Chief Also Aimed at Mayor," *Chicago Tribune*, May 24, 2017. As of October 31, 2017: http://www.chicagotribune.com/news/local/breaking/ct-karen-lewis-chicago-teachers-confidence-vote-met-20170523-story.html

Perez, J., and D. Dardick, "CPS Proposes $5.7 Billion Budget, Including $269 Million in Help from City," *Chicago Tribune*, August 11, 2017. As of October 31, 2017: http://www.chicagotribune.com/news/local/politics/ct-chicago-public-schools-city-funding-met-0812-20170811-story.html

PGCPS—*See* Prince George's County Public Schools.

Pounder, D. G., and R. Merrill, "Job Desirability of the High School Principalship: A Job Choice Theory Perspective," *Educational Administration Quarterly*, Vol. 37. No. 2, 2001, pp. 25–57.

Pounder, D., Y. Ni, K. Winn, S. Korach, A. Rorrer, and M. D. Young, *Findings from the 2016 Inspire-Graduate (G) Survey*, Charlottesville, Va.: University Council for Educational Administration, 2016.

Prince George's County Public Schools, *2013 PGCPS Bridge to Excellence Master Plan Annual Update*, Upper Marlboro, Md., 2013. As of December 8, 2017: http://www.pgcps.org/masterplan/

———, *2014 PGCPS Bridge to Excellence Master Plan Annual Update*, Upper Marlboro, Md., 2014a. As of December 8, 2017: http://www.pgcps.org/masterplan/

———, *Administrative Procedure 4113: Principal Selection Process*, Upper Marlboro, Md., 2014b. As of December 8, 2017: https://drive.google.com/file/d/0BzaqNq4behBDWm5TT3NxXzVtTkE/edit

———, *2015 PGCPS Bridge to Excellence Master Plan Annual Update*, Upper Marlboro, Md., 2015a. As of December 8, 2017: http://www.pgcps.org/masterplan/

———, *PGCPS Strategic Plan 2016–2020*, Upper Marlboro, Md., 2015b. As of January 10, 2019: https://www.pgcps.org/strategic-plan/

———, *2016 PGCPS Bridge to Excellence Master Plan Annual Update*, Upper Marlboro, Md., 2016a. As of December 8, 2017: http://www.pgcps.org/masterplan/

———, "Principal Evaluation," Office of Employee Performance and Evaluation, 2016b. As of December 7, 2017: http://www.pgcps.org/employeeperformanceandevaluation/index.aspx?id=220914

———, *2017 PGCPS Bridge to Excellence Master Plan Annual Update*, Upper Marlboro, Md., 2017a. As of December 8, 2017: http://www.pgcps.org/masterplan/

———, "Chief Executive Officer," 2017b. As of December 8, 2017: http://www.pgcps.org/ceo/

———, "List of All Schools by School Type," 2017c. As of December 8, 2017: http://www.pgcps.org/list-of-schools-by-type/

Prothero, A., "All New Orleans Schools Set to Return to Local Oversight," *Education Week*, May 12, 2016. As of November 7, 2017: https://www.edweek.org/ew/articles/2016/05/12/all-new-orleans-schools-set-to-return.html

Rangel, V. S., "A Review of the Literature on Principal Turnover," *Review of Educational Research*, Vol. 88, No. 1, 2018, pp. 87–124.

Reardon, S., and R. Hinze-Pifer, *Test Score Growth Among Chicago Public School Students, 2009–2014*, Stanford, Calif.: Center for Education Policy Analysis, 2017.

Recovery School District, *2014 Annual Report*, Shreveport, La., 2015. As of November 6, 2017: http://lrsd.entest.org/2015%20RSD%20Annual%20Report.pdf

———, *2015 Annual Report*, Shreveport, La., 2016. As of November 6, 2017: http://lrsd.entest.org/2015%20RSD%20Annual%20Report.pdf

———, *2016 Annual Report*, Shreveport, La., 2017. As of November 6, 2017: http://lrsd.entest.org/RSD%202016%20annual%20report%20updated%203_27_17.pdf

Rojas, R., "Dennis Walcott, Former Schools Chancellor, Is Named CEO of Queens Library," *New York Times*, March 1, 2016. As of November 28, 2017: https://www.nytimes.com/2016/03/02/nyregion/dennis-walcott-former-schools-chancellor-is-named-ceo-of-queens-library.html

RSD—*See* Recovery School District.

Santelises, S. B., T. Jones, and A. Alvarez, "Public Charter Schools Policy: Compliance Report Review of SY 2015–16," presentation to the Baltimore City Board of School Commissioners, May 23, 2017. As of September 20, 2017: http://www.baltimorecityschools.org/cms/lib/MD01001351/Centricity/Domain/8783/2017_IHB_Charter_Policy_Compliance_SY15-16.pdf

School Leaders Network, *Churn: The High Cost of Principal Turnover*, Hinsdale, Mass., 2014.

Shelby County Board of Education, *Destination 2025: Shelby Schools Annual Report*, Columbiana, Ala., 2015a. As of October 18, 2017: http://www.scsk12.org/2025/

———, *Effective School Leadership Policy*, Columbiana, Ala., 2015b. As of October, 27, 2017: http://www.scsk12.org/policy/files/files/4000%20Personnel/4050%20Effective%20School%20Leadership.pdf

Shelby County Schools, *Destination 2025: Annual Report 2016*, Columbiana, Ala., 2016. As of October 18, 2017: http://www.scsk12.org/2025/

———, *District Budget: Fiscal Year 2017–2018*, Columbiana, Ala., 2017. As of October 18, 2017: http://www.scsk12.org/finance/files/2016/FY17 DISTRICT BUDGET_FINAL 101416.pdf

———, "Shelby County Schools by the Numbers," 2018. As of August 15, 2018: http://www.scsk12.org/

ShelbyPLUS, "Shelby Plus Is No Longer Active," undated. As of February 16, 2018: http://shelbyplus.org/welcome

Smith, N., *The Louisiana Recovery School District: Lessons for the Buckeye State*, Thomas B. Washington, D.C., Fordham Institute, 2012. As of November 6, 2017: http://files.eric.ed.gov/fulltext/ED528943.pdf

Stein, P., "DC Schools Budget Emphasizes Alternative High Schools and Programs," *Washington Post*, February 16, 2016. As of December 15, 2017: https://www.washingtonpost.com/local/education/dc-schools-budget-emphasizes-alternative-high-schools-and-programs/2016/02/16/8fccfdac-d4d3-11e5-9823-02b905009f99_story.html?utm_term=.8da8d5a59515

Stein, P., and E. Brown, "DC Schools Chancellor Kaya Henderson to Step Down, Leaving Legacy of Progress," *Washington Post*, June 29, 2016. As of December 15, 2017: https://www.washingtonpost.com/local/education/dc-schools-chancellor-kaya-henderson-to-step-down-leaving-legacy-of-progress/2016/06/29/1189e7e6-3df8-11e6-80bc-d06711fd2125_story.html?utm_term=.4bdff2cd1804

Strauss, V., "To Learn About Improving Urban Public Schools, We Should Study Chicago: Yes, Chicago," *Washington Post*, February 9, 2018. As of December 20, 2018: https://www.washingtonpost.com/news/answer-sheet/wp/2018/02/09/to-learn-about-improving-urban-public-schools-we-should-study-chicago-yes-chicago

Tafolla, M., "Opinion: Strong Leadership Needed to Fix Oakland School Finances," *Mercury News*, November 14, 2017. As of December 1, 2017: http://www.mercurynews.com/2017/11/14/opinion-strong-leadership-needed-to-fix-oakland-school-finances/

Tennessee Educator Acceleration Model, "Administrator Evaluation," 2017. As of October 18, 2017: http://team-tn.org/evaluation/administrator-evaluation/

Tennessee State Board of Education, *Learning Centered Leadership Policy: Appendix C Tennessee Instructional Leadership Standards*, 2015. As of October 18, 2017: http://team-tn.org/wp-content/uploads/2013/08/TILS_5.101.pdf

Tobias, S. P., and J. Shorman, "A Wichita High School with 12 Assistant Principals? Kobach's Claim Is Not True" *Wichita Eagle*, September 12, 2018. As of December 4, 2018: https://www.kansas.com/news/local/education/article218190440.html#storylink=cpy

Toth, S., "Maxwell Welcomed 'Home' as Prince George's Schools' CEO," *Baltimore Sun*, June 28, 2013. As of December 7, 2017: http://www.baltimoresun.com/news/maryland/howard/laurel/ph-ll-maxwell-superintendent-0704-20130704-story.html

Tucker, J., "Oakland Schools Chief Antwan Wilson Takes Job in Washington, DC," *SF Gate*, November 22, 2016. As of December 15, 2017: http://www.sfgate.com/bayarea/article/Oakland-schools-superintendent-takes-new-job-in-10630171.php

Turnbull, B. J., L. M. Anderson, D. L. Riley, J. R. MacFarlane, and D. K. Aladjem, *The Principal Pipeline Initiative in Action*, Vol. 5 of *Building a Stronger Principalship*, Washington, D.C.: Policy Studies Associates, 2016. As of November 28, 2017: https://eric.ed.gov/?id=ED570472

Turnbull, B. J., D. L. Riley, E. R. Arcaira, L. M. Anderson, and J. R. MacFarlane, *Six Districts Begin the Principal Pipeline Initiative*, Vol. 1 of *Building a Stronger Principalship*, Washington, D.C.: Policy Studies Associates, July 2013.

WGN and D. Rebik, "CPS Lays Off More Than 950 Staff, Including 356 Teachers; New Budget Delayed," WGN News, August 7, 2017. As of October 31, 2017: http://wgntv.com/2017/08/07/cps-lays-off-950-including-356-teachers/

What Works Clearinghouse, *Procedures Handbook, Version 4.0*, October 2017. As of November 30, 2018: https://ies.ed.gov/ncee/wwc/Docs/referenceresources/wwc_procedures_handbook_v4.pdf

Wiggins, O., "Charter Schools Grow in Prince George's County," *Washington Post*, February 21, 2012. As of December 8, 2017: https://www.washingtonpost.com/local/education/charter-schools-grow-in-prince-georges-county/2012/02/15/gIQADtaCRR_story.html?utm_term=.9cfd98be8c3b

Winn, K., D. Pounder, C. Groth, S. Korach, A. Rorrer, and M. D. Young, *Findings from the 2017 Inspire Leaders in Practice (LP) Survey*, Charlottesville, Va.: University Council for Educational Administration, 2018.

WWC—*See* What Works Clearinghouse.