



RESEARCH REPORT

How Principals Affect Students and Schools

A Systematic Synthesis of Two Decades of Research

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Glossary

education specialist degree. An advanced professional degree designed to provide focused expertise in education leadership or another area beyond the master’s level.

exclusionary discipline. School disciplinary actions that remove students from their usual educational setting. These actions include in-school suspension, out-of-school suspension, and expulsion.

grey literature. Research produced by organizations that is published outside traditional commercial or academic outlets. Grey literature includes reports, working papers, and technical documents produced by governments, research firms, and other entities that are not published in academic journals though they are often still subject to some form of peer review.

in-school suspension. A form of student discipline that temporarily keeps students in school and engaged in schoolwork but isolates them from other students.

longitudinal data. Data that follow the same units (e.g., schools, principals) over multiple years. Also referred to as panel data.

multiple-measure educator evaluation. A system for rating the performance of an educator, such as a teacher or principal, that combines more than one performance metric. These metrics most often are a rubric-based measure of practice (e.g., classroom observations for teachers, leadership practice ratings for principals) and a measure derived from the achievement of the students the educator serves, such as a test score growth measure.

out-of-school suspension. A form of student discipline that temporarily removes students from school and school activities.

panel data methods. A category of statistical tools that rely on data on the same units repeated over time.

phenomenology. A discipline in philosophy concerned with studying how phenomena are consciously experienced from the first-person point of view.

principal. The head or person with the most authority in a K–12 school. In this report, we distinguish principals from other school leaders, such as assistant principals.

Professional Standards for Educational Leaders (PSEL). A set of 10 standards that were released in 2015 by the National Policy Board for Educational Administration. The earlier version of the PSEL were the Interstate School Leaders Licensure Consortium (ISLLC) Standards. Through professional associations, supporting institutions, and policy, the standards are expected to influence leadership

practices and, ultimately, leadership outcomes. Member organizations include the American Association of Colleges for Teacher Education, American Association of School Administrators, Council for the Accreditation of Educator Preparation, Council of Chief State School Officers, National Association of Elementary School Principals, National Association of Secondary School Principals, National Council of Professors of Educational Administration, National School Boards Association, and University Council for Educational Administration.

quasi-experimental designs. A class of research approaches that aim to infer causal relationships in the absence of random assignment by comparing units that receive a treatment with a suitable comparison group, with some strategy for accounting for the process by which units are assigned to a treatment or control group.

standard deviation. A way to measure the width of a distribution. Larger values mean that there is more variation in the values a variable takes on.

value-added measures. Metrics derived from statistical models of student test score growth over time that aim to capture the contribution of a schooling input, such as teachers or principals.

Foreword

In 1999, The Wallace Foundation’s board of directors decided to make what it called a “big bet” on school leadership. At that time, the principalship was not widely seen as crucial in school improvement. The board found this odd. Leadership is critical in nearly every other sector of society—from business to the military, from religion to higher education. They reasoned education leadership might not be getting the attention it deserved.

Since then, leadership *has* received more attention as an essential ingredient in efforts to improve schools and student learning. A review the foundation commissioned about what was known about the impact of leadership on student learning contributed to this understanding. Published in 2004, *How Leadership Influences Student Learning* found that leadership was second only to teaching among in-school factors that affect student learning—with investments in strengthening it likely to be cost-effective. This report (downloaded more than 800,000 times from the Wallace website) helped pave the way for a growing consensus that improving the training and support of principals is worthwhile.

Since then, what we know about school leadership has continued to evolve, with more experience, more research, and new research methods. For that reason, in 2019, Wallace commissioned a new review of the evidence base about the link between leadership and learning. (We also commissioned separate reviews we plan to publish later in 2021 on assistant principals and on the preparation and professional development of principals.)

The findings of this new review, *How Principals Affect Students and Schools: A Systematic Synthesis of Two Decades of Research*, are striking.

The research team of Jason A. Grissom of Vanderbilt University, Anna J. Egalite of North Carolina State University, and Constance A. Lindsay of the University of North Carolina at Chapel Hill concludes that, based on research since 2000, the impact of an effective principal has likely been *understated*, with impacts being both greater and broader than previously believed: greater in the impact on student achievement and broader in affecting other important outcomes, including teacher satisfaction and retention (especially among high-performing teachers), student attendance, and reductions in exclusionary discipline.

The conclusions about student achievement are based in part on six studies that rely on longitudinal data that allow researchers to track over time the impact of a given principal as he or she moves to different schools and the impact of different principals on the same school. These panel data,

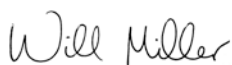
unavailable in 2004, help researchers gain a better grasp of the contributions of effective principals, an inherent challenge given that leadership’s impact on students occurs indirectly through teachers and other school personnel.

Importantly, equity occupies a central and timely place in the team’s recommendations for practice and policy—based on principals’ impact on particular groups of students and on the changing demographics of the nation’s student body, which are not yet reflected in the pool of men and women currently in the principalship.

The report makes other contributions, as well. Synthesizing quantitative and qualitative studies, the researchers identify four principal practices that are linked to effective outcomes, as well as three foundational skills. The four practices, which together provide a rounded portrait of principal activities, are high-leverage instructional activities, building a productive culture and climate, facilitating collaboration and learning communities, and the strategic management of personnel and resources. Identifying these practices and skills was important, as they allow us to not only better specify the *impact* of an effective principal but to know what he or she *does* to be effective. These insights can, in turn, help make efforts to strengthen leader preparation, training, and support more feasible and effective.

Research evidence is not a silver bullet. Its use, as the scholar Sandra Nutley reminds us, is a varied and complex phenomenon. But there is no doubt it can help us better understand problems and develop potential solutions. Systematic syntheses like this one—using a careful and transparent set of criteria to identify which research to include—can offer particularly robust assessments of the state of knowledge at a given time.

Leaders do not create value directly. They deliver results indirectly, by enabling others to achieve more. It is normally impossible to separate the contributions of the leader and the team members. This suggests that, rather than thinking in terms of either/or, we need a balance of investments in developing great principals and great teachers. In that spirit, we hope this report will be helpful to practitioners, policymakers, and others who are working to improve equitable outcomes for more young people.



Will Miller

President, The Wallace Foundation

Executive Summary

Over the past two decades, the policy landscape and the research landscape of school leadership have experienced major shifts. High-stakes accountability, multiple-measure teacher evaluation systems, heightened policy attention to educational equity, and other changes have altered expectations for what leaders need to know, how they spend their time, and the outcomes—both *what* and *for whom*—they pursue. In the world of school leadership research, new datasets and methodological advances have opened up new possibilities for measuring what leaders know and do. Longitudinal datasets that track large numbers of schools and principals over time allow researchers to better establish and understand the causal chains that link leadership to student learning and other outcomes, such as by examining how a school’s performance changes when a new principal takes the helm.

This report summarizes what researchers have learned about the connection between school leadership and student achievement and other outcomes in the United States since 2000, picking up roughly where Leithwood and coauthors (2004) left off in their influential Wallace Foundation–commissioned school leadership research review. That report famously concluded that “leadership is second only to classroom instruction among all school-related factors that contribute to what students learn at school” (Leithwood et al. 2004, 5), helping the field understand the importance of school leaders and successful leadership. But the principalship Leithwood and colleagues considered is different from the one we examine, as is the research base from which they could draw. In this report, we revisit, question, and extend these earlier conclusions to provide new direction for practice, policy, and research in school leadership.

We ask three main questions. First, who are public school principals, and how have their characteristics changed over the past two decades? Second, how much do principals contribute to student achievement and other school outcomes? Finally, what drives principals’ contributions? That is, what are effective principals’ characteristics, skills, and behaviors?

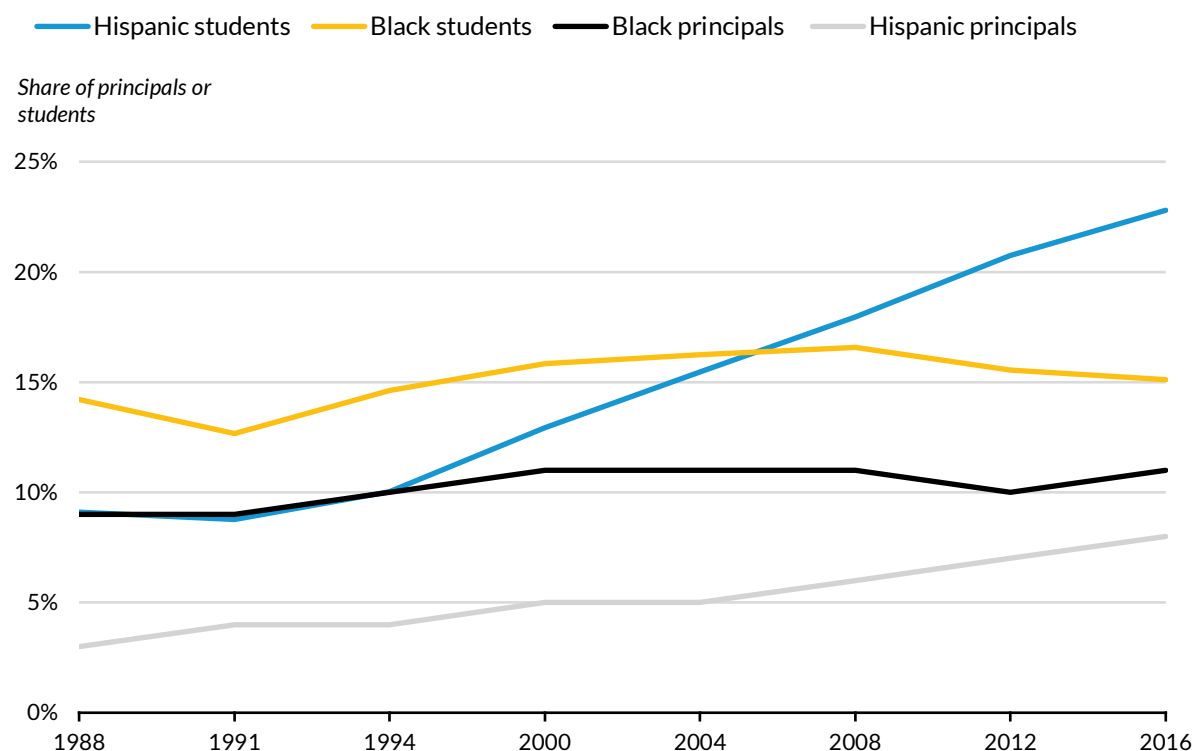
How Has the Principalship Changed?

To answer the first question, we first survey the shifting landscape of the principalship over the past few decades, documenting evolutions in federal, state, and local policy (e.g., test-based accountability, increased emphases on engagement with instruction) that have changed the principal’s role. We then analyze nationally representative data collected primarily by the National Center for Education

Statistics at the US Department of Education since the 1987–88 school year. We document three key changes: (1) the principalship has become markedly more female, (2) principals’ level of experience has fallen on average and especially in high-need schools, and (3) despite dramatic changes in the racial and ethnic composition of students, racial and ethnic diversity in school leadership has moved only slightly, creating growing racial and ethnic gaps between principals and the students they serve (figure ES.1). Despite their growing presence in public elementary and secondary classrooms, Hispanic and Black students experience the largest principal representation gap. In comparison to their white peers, students of color are less likely to encounter a principal who shares their ethnicity.

FIGURE ES.1

Gaps in Principal Representation for Black and Hispanic Students



Source: Authors’ calculations from the Schools and Staffing Survey/National Teacher and Principal Survey and the Common Core of Data.

Note: The y-axis shows the share of principals and students in each racial or ethnic group.

Answers to the second and third questions draw on a systematic review of high-quality studies connecting school leaders to student and teacher outcomes. We conducted a systematic search of empirical research studies and “grey literature” sources that yielded more than 4,800 studies. Applying criteria to screen for relevance and rigor, we winnowed this set to 395 studies employing quantitative

and qualitative methods, which we full-text coded. After further assessment of the methods, appropriateness of conclusions to those methods, and relevance from this coding, we ultimately synthesized 219 studies.

The Size of Principal Effects

School leadership matters for a host of important school outcomes, including student achievement (as measured by standardized tests), but gauging the size of this impact requires careful analysis. To quantify how much principals contribute to student achievement and other outcomes, we focus on the subset of six rigorous studies that applied panel data methods (i.e., statistical methods for making plausibly causal inferences using data that follow the same schools and principals over multiple years) to measure such effects. Across six studies of data from more than 22,000 principals in four states and two urban school districts, principals matter substantially. We find that a 1 standard deviation increase in principal effectiveness increases the typical student's achievement by 0.13 standard deviations in math and 0.09 standard deviations in reading. To translate this result, we estimate that the impact of replacing a below-average elementary school principal (i.e., one at the 25th percentile of effectiveness) with an above-average principal (i.e., at the 75th percentile) would result in an additional 2.9 months of math learning and 2.7 months of reading learning each year for students in that school. Effects of this replacement in math would be larger than more than two-thirds of educational interventions compiled in a recent review, and the effects in reading would be larger than about half of interventions (Kraft 2020).

To put the magnitude of these impacts in context, we can compare them with estimates of teacher impacts, as measured by studies employing similar methods (Hanushek and Rivkin 2010). This comparison shows that the impact of having an effective principal on student achievement is nearly as large as the effect of having a similarly effective teacher (or, more precisely, the effect on student achievement of a principal at, say, the 75th percentile of the distribution of principal effectiveness is nearly as large as that of a teacher at the 75th percentile of the teacher effectiveness distribution).

Across six rigorous studies estimating principals' effects using panel data, principals' contributions to student achievement were nearly as large as the average effects of teachers identified in similar studies. Principals' effects, however, are larger in scope because they are averaged over all students in a school, rather than a classroom.

Of course, this comparison of principal impacts to teacher impacts is not an “apples-to-apples” one because principals' effects on students come largely through their effects on teachers, including how principals hire, retain, develop, and encourage teachers and create appropriate conditions for teaching and learning. For an individual student, exposure to strong teaching is paramount; a student learns more in a school with an effective principal in part because the principal makes it more likely the student gets that exposure. For a school as a whole, however, the effectiveness of the principal is more important than the effectiveness of a single teacher. Principals affect all 483 students in the typical elementary school, whereas teachers affect 21 students in the average elementary school classroom. Given the scope of principal effects, we conclude that Leithwood and coauthors' (2004) judgment about school leadership being among the most important school-related factors that contribute to student learning holds up. In fact, the importance of school principals may not have been stated strongly enough in prior work, particularly from the perspective of state and district leaders and policymakers seeking to move the needle on student achievement. Indeed, it is difficult to envision an investment in K–12 education with a higher ceiling on its potential return than improving school leadership.

Principals really matter. Indeed, it is difficult to envision an investment with a higher ceiling on its potential return than a successful effort to improve principal leadership.

A caveat to this conclusion is that it is based on just six studies, conducted in just a few states and districts, which may not be representative. We need replication of these findings across school levels (these six studies use data primarily from elementary and middle schools) and in different contexts, which can allow for investigation of the conditions under which leader effects are smaller or larger.

Who the principal of a school is matters for outcomes beyond achievement. For example, studies show that some principals are more effective than others at reducing absenteeism and chronic absenteeism. Principals vary in their likelihood of meting out exclusionary discipline (e.g., suspensions). Some are more successful at retaining teachers, including more effective teachers. Moreover, we find that supervisor and teacher ratings of the effectiveness of principals' practices can predict student achievement growth and other outcomes. This finding suggests that the overall impact of an effective principal can be linked to observable behaviors. That is, *how* principals approach school leadership directly affects schools' outcomes.

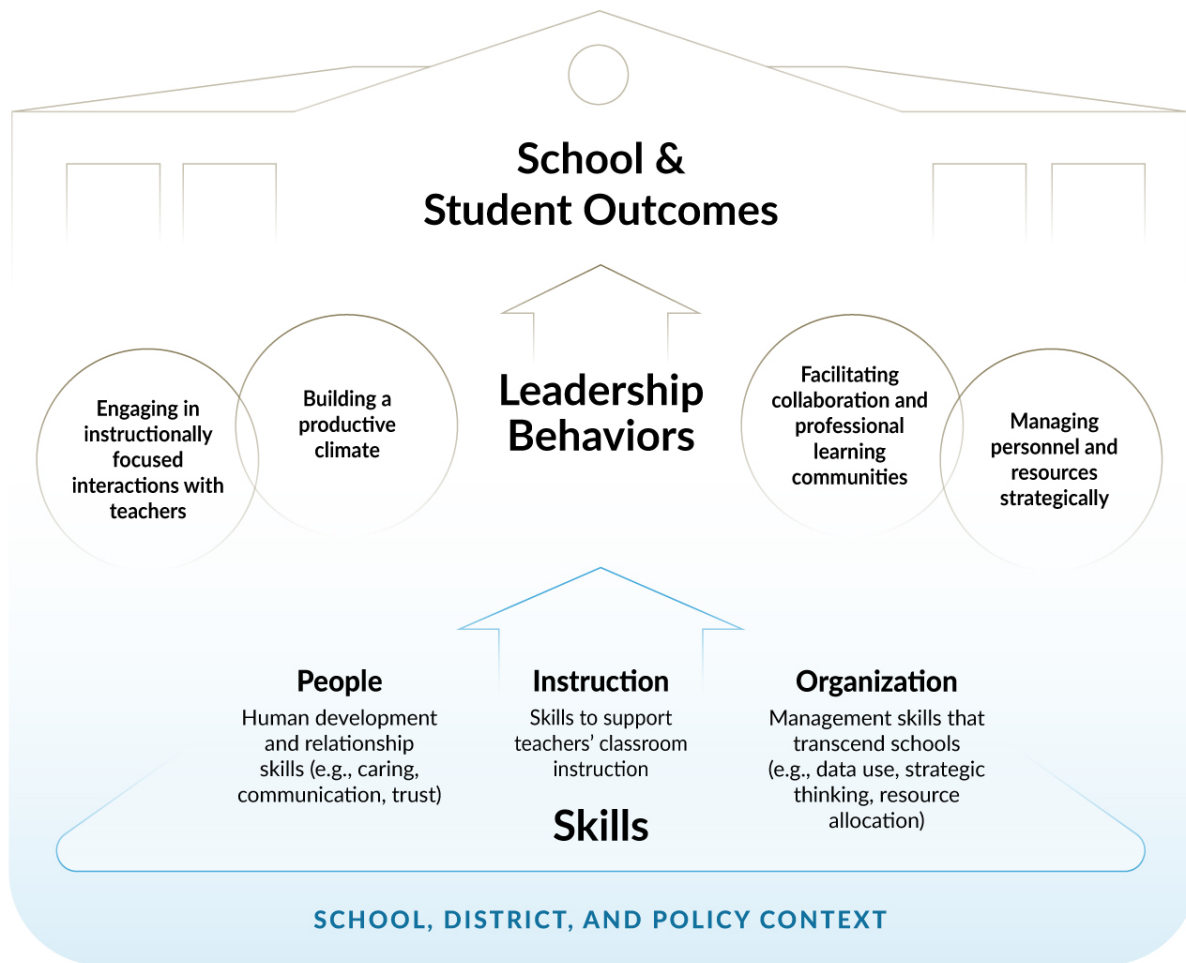
What Drives Principals' Contributions?

These observations motivate our investigation of drivers of principals' impacts on their schools. From the large, diverse body of research we synthesize, which includes both quantitative and qualitative studies, we identify three overlapping realms of skills and expertise that school leaders need to be successful: *instruction*, *people*, and *the organization*. We then describe how these skills and expertise manifest in four classes of behaviors that the best-available research suggests produce positive school outcomes. These behaviors fall under the following categories:

- **Engaging in instructionally focused interactions with teachers.** Forms of engagement with teachers that center on instructional practice, such as teacher evaluation, instructional coaching, and the establishment of a data-driven, school-wide instructional program to facilitate such interactions.
- **Building a productive school climate.** Practices that encourage a school environment marked by trust, efficacy, teamwork, engagement with data, organizational learning, and continuous improvement.
- **Facilitating productive collaboration and professional learning communities.** Strategies that promote teachers working together authentically with systems of support to improve their practice and enhance student learning.
- **Managing personnel and resources strategically.** Processes around strategic staffing and allocation of other resources.

FIGURE ES.2

Principal Skills and Behaviors to Improve School Outcomes



From an equity perspective, we find that principals can have important impacts on key populations, including low-income students and students and teachers of color. These impacts can occur through direct channels (e.g., by how they manage student disciplinary actions) or through indirect channels (e.g., by working with teachers to implement culturally responsive teaching practices, by hiring greater numbers of teachers of color who are influential for students of color). Principals of color may be high-leverage actors in this regard, as they appear especially likely to have positive impacts on both students of color and teachers of color. We draw upon the growing, largely qualitative literature on leadership for equity to illuminate the approaches and strategies equity-focused principals use to affect schools serving historically marginalized student populations.

An additional finding is that principal turnover tends to negatively affect not just student achievement but other outcomes, such as teacher retention and school climate. Principal turnover is

higher in schools serving larger proportions of low-income students, low-achieving students, and students of color, suggesting that principal turnover often may reinforce existing inequities among schools. Yet we also uncover evidence that not all principal turnover has negative effects on schools. In cases where districts replace an ineffective principal with a more effective one, impacts may even be positive, though this case does not appear to be typical.

Implications for Policymakers, Practitioners, and Researchers

We conclude with implications of our findings. Foremost, our results on the importance of principals' effects suggest the need for renewed attention to strategies for cultivating, selecting, preparing, and supporting a high-quality principal workforce. The payoffs to successful strategies appear very large for student learning and for other important outcomes, such as student attendance and teacher turnover. Preservice preparation programs, pipeline initiatives, and in-service learning opportunities can have more positive impacts by focusing on high-leverage practice areas, such as instructionally focused interactions with teachers (e.g., feedback, coaching), building strong relationships and collaborative cultures, and strategic personnel management (e.g., hiring, placing, and retaining effective teachers). The evidence also argues for continued reorientation of the work of school principals toward educational equity and for school districts to prioritize the needs of increasingly diverse student backgrounds, both in hiring and retaining effective leaders for high-need schools and in ensuring that leaders from diverse backgrounds have equitable access to principal roles. On this last point, the benefits of principal racial and ethnic diversity suggest the need for new policies and initiatives aimed at increasing the number of principals of color.

Lastly, we highlight broad concerns about the state of research on school principals. Although this research asks many important questions, our evidence review suggests that studies of school principals too often are marked by methodological and reporting limitations that undermine their conclusions. This review argues for major investment in data collection and capacity building around high-quality research practices and methods if the field is to provide clear, systematic direction for leadership policy and practice.

Summary of Key Findings

In sum, we found the following:

1. Effective principals are at least as important for student achievement as previous reports have concluded—and in fact, their importance may not have been stated strongly enough.
2. Principals have substantively important effects that extend beyond student achievement.
3. Effective principals orient their practice toward instructionally focused interactions with teachers, building a productive school climate, facilitating collaboration and professional learning communities, and strategic personnel and resource management processes.
4. Principals must develop an equity lens, particularly as they are called on to meet the needs of growing numbers of marginalized students.
5. Effective principals are not equitably distributed across schools.
6. Principals are becoming more racially and ethnically diverse, but representation gaps with students are growing, which is concerning, given the payoffs to principal diversity.
7. Research on school principals is highly variable, and the field requires new investment in a rigorous, cohesive body of research.

1. Introduction

School leadership matters for school outcomes, including student achievement. This assumption has become commonplace since the publication of the highly influential Wallace Foundation–commissioned report by Leithwood and colleagues in 2004. Policymakers and researchers often quote the report’s main conclusion that “leadership is second only to classroom instruction among all school-related factors that contribute to what students learn at school” (Leithwood et al. 2004, 5).

Leithwood and coauthors (2004) drew this conclusion from a review of the research on school leadership through approximately 2000. Our report asks what we have learned about school leadership since then.

This report is timely for at least two reasons. First, the education policy landscape has changed in the past two decades, which has had important implications for school leadership. These changes include the following:

- the widespread adoption of high-stakes accountability systems that focus on student achievement
- attention to racial and ethnic disproportionality in exclusionary discipline practices
- an increased focus on leaders’ engagement with instruction
- the spread of public and private school choice options
- the adoption of common standards for student learning in most states
- state and district investment in educator evaluation systems based on multiple measures of educator performance
- heightened attention to equity as a stand-alone policy and professional goal, often assessed by focusing on diverse learners, including Black, Indigenous, or other students of color

These changes have shifted the principal’s role, altering expectations for what leaders need to know, how they spend their time, and the outcomes with which they must be concerned. For example, the ubiquitous adoption of teacher evaluation systems that are based on multiple performance measures has required a deeper understanding of effective instruction, shifted principals’ workdays toward observing instruction and providing feedback, and focused their attention on rubric-based observation metrics and test score growth in their teachers’ classrooms (Grissom and Youngs 2016; Neumerski et al. 2018). As another example, attention to the achievement of students of color, students

from low-income families, students with special educational needs, and English learners in the accountability systems mandated by No Child Left Behind has brought focus to learning gaps among student subgroups. This attention has heightened the focus in school leadership on equity and cultural responsiveness, reflected in the prominence of these topics in the recently adopted Professional Standards for Educational Leaders (National Policy Board for Educational Administration 2015). Presumably, these new expectations have changed leaders' approaches to student equity and the skills required to pursue it successfully. Such changes affect how we define and understand leadership effectiveness.

Second, the research landscape has changed. Administrative data systems have enabled longitudinal analyses that permit researchers to quantify the impacts of school principals and to do so in ways that better account for school context. As state educational agencies have upgraded their data systems to link and track students and employees longitudinally, education leadership scholars have taken advantage of advanced research methodologies that permit causal inference. Such techniques can better account for sources of bias that may have affected results and interpretations in prior studies. By comparing the same school's performance under different principals, these methods allow a better test of each principal's effectiveness. This point is significant. Before 2000, most quantitative studies linking leadership to student achievement relied on cross-sectional datasets (i.e., data that look at just one point in time) with limited accounting for factors that the field has come to understand matter for student learning. Thus, when researchers observed leadership skills or practices that correlated with high achievement, often what they were really observing were leadership practices associated with advantaged students. And because researchers might have observed only one principal per school, they would not have been able to separate the performance of the principal from the school's typical performance. This possibility implies that recent studies employing a higher standard of evidence may lead us to update some conclusions that the field has long held about the impact of an effective leader and the channels through which impacts are realized. Qualitative leadership research has seen significant advances as well, with greater attention to sampling, data collection, and data analysis approaches (Knapp 2017).

Twenty years of growth in school leadership research warrants taking stock. We begin by investigating how principal characteristics have changed. We then synthesize research from the past two decades on the size of principal effects on student outcomes and the mechanisms through which school principals most effectively promote student learning.¹ For these syntheses, we conducted a systematic and comprehensive literature search that produced 4,800 research documents. After

months of screening, coding, and close reading, we narrowed this set to 219 studies employing both quantitative and qualitative approaches, on which the conclusions in this report are based.

The research questions we address are as follows:

- How has the principalship changed over the past two decades? What changes have occurred in the policy and school contexts in which principals work, and how have the characteristics of principals themselves shifted over time?
- How much do principals contribute to student achievement and other school outcomes?
- What drives principals' contributions? What are effective principals' characteristics, skills, and behaviors?

In answering these questions, we describe how effective leadership practices intersect with policy contexts and local conditions for learning. We consider whether the effects of leadership practices vary according to the students a leader serves. This consideration requires attention to equity. Leaders' pursuit of equity (which we define as *the fair, just, and nondiscriminatory treatment of all students, the removal of barriers, the provision of resources and supports, and the creation of opportunities with the goal of promoting equitable outcomes*) requires specific skills, orientations, and behaviors. We aim to highlight studies of the myriad ways equity-oriented principals can help diverse learners—including Black, Indigenous, and other students of color; low-income students; students with special educational needs; and English learners—feel valued and experience success.

Chapter 2 summarizes recent changes in the policy landscape that influence principals' work. We discuss major policy trends at the local, state, and federal levels, such as the widespread adoption of high-stakes accountability systems, which have affected principals' understanding of their jobs. Chapter 3 uses nationally representative data collected by the US Department of Education to describe key changes in the characteristics of principals since 1987–88. School principals today are significantly more likely to be female and are less experienced, especially in high-need schools. Especially noteworthy, we document that America's principals have become only slightly more racially and ethnically diverse even as this diversity among elementary and secondary school students has increased dramatically, resulting in a large gap in the racial and ethnic characteristics of students and their principals. This representation gap has implications for principals who are charged with creating inclusive and responsive school communities where diverse families feel welcome and safe. It also challenges policymakers to find solutions to a growing diversity challenge in school leadership.

We then turn to the research synthesis. In chapter 4, we document the details of our methodological approach. We describe our systematic searches of journal databases and grey literature sources, documenting how we screened and processed the initial yield to identify the final set of studies on which this knowledge synthesis relies.

In chapter 5, we summarize the highest-quality quantitative studies that have isolated the direct impact of principals on student outcomes. Over the past 20 years, education research has benefited substantially from federal and state investments in longitudinal data collection systems that track students and educators over time and link them for evaluation or research purposes. Studies of school principals have begun to take advantage of these data to rigorously estimate the impact of principals on various student outcomes, including test scores, school attendance metrics, and discipline outcomes. **Based on these studies, we conclude that principals have large effects on student learning, approaching even the effects of individual teachers. Replacing a principal at the 25th percentile in effectiveness with one at the 75th percentile can increase annual student learning in math and reading by almost three months, annually.** We also document important principal impacts on other school outcomes, such as student attendance and teacher turnover. These results confirm, reinforce, and even magnify what many people in the field have long argued about the important and influential impacts of school principals.

Replacing a principal at the 25th percentile in effectiveness with one at the 75th percentile can increase annual student learning in math and reading by almost three months.

Chapters 6 and 7 synthesize research on drivers of principals' contributions—that is, what distinguishes the leaders who drive these important student and school outcomes. In chapter 6, we summarize research on principal racial, ethnic, and gender diversity; principal turnover; and principal characteristics, and what the evidence says about how these factors relate to student outcomes. Chapter 7 turns to principals' skills and behaviors that produce these outcomes. Based on our systematic assessment of the evidence, we conceptualize three sets of skills: instruction, people, and the organization. Next, we describe how these skills form the foundation for four categories of behaviors in which effective principals engage. We label these behaviors as *engaging in instructionally focused interactions with teachers, building a productive school climate, facilitating collaboration and professional learning communities, and managing personnel and resources strategically*. We also discuss principals'

practices in promoting equity. We conclude with a discussion of interventions aimed at improving principal leadership.

Chapter 8 reflects on the state of the evidence and summarizes our suggestions for school leadership research, generally. The research base in educational leadership is highly variable in approach, topic, and rigor. Although we note contributions from a wide range of both quantitative and qualitative scholars, there is substantial variation in the specific methodologies scholars use and the rigor with which they are applied. Furthermore, limitations in the types and scope of data that are routinely collected in this area directly influence the set of research designs that are even possible to use. We also find few examples of quantitative studies designed to replicate earlier findings, which relegates reproducibility to a background concern even though it could be valuable as a tool to prioritize school reforms that are repeatedly successful across multiple, diverse contexts.

Finally, chapter 9 ties together the major lessons we learned and charts a path forward. We emphasize that Leithwood and coauthors' (2004) conclusion that school leaders are second only to teachers among factors influencing student achievement holds up to new scrutiny with more compelling evidence and may not have been stated strongly enough. We summarize efforts made to describe, quantify, and unpack the ways effective principals are helping students, measuring outcomes across various domains, not just test scores. We also draw attention to the holes in our collective knowledge base around education leadership. These gaps include research questions that have been investigated in the past but are worth reconsideration in an age of greater data availability and methodological advances. There are also new research questions that are prompted for the first time by our analysis of the changing demographic characteristics of principals. We conclude with recommendations for moving forward and specific avenues through which these goals might be accomplished.

2. The Policy Context of School Leadership since 2000

The policy landscape of school leadership has undergone considerable changes in the past two decades, driven by major education policy developments at the federal, state, and local levels. We start with an overview of relevant changes under the Bush and Obama administrations, paying close attention to the implications of these developments for the role of the principal. In particular, we focus on the spread of high-stakes accountability systems and investments in multiple-measure educator evaluation systems. We then describe concurrent trends brought about by state and local policy developments and priorities, including an increased focus on engagement with instruction, the spread of public and private school choice options, and heightened attention to equity as a stand-alone policy and professional goal. Below, we discuss these trends in greater detail.

Broad Changes in Federal Education Policy

Since 2000, three phases of evolution in federal education policy have forced a recalibration of the school principal's role: No Child Left Behind (NCLB) under President Bush, Race to the Top and NCLB waivers under President Obama, and the passage of the Every Student Succeeds Act (ESSA), also under President Obama. The emphasis on high-stakes school accountability in all these policies has made student achievement the goal of school improvement efforts, creating a cultural norm and expectation among school leaders that all students can learn. Accountability changes have also dramatically altered school leaders' roles by increasing leadership time that must be devoted to the management of testing, focusing leaders' attention on managing school personnel toward specific metrics, imposing accountability sanctions for previously overlooked subgroups, and encouraging stakeholders to focus on school performance judged by external benchmarks without necessarily increasing school resources and capabilities. The evolution from NCLB to ESSA changed the policy context for schools in important ways beyond making school accountability central as well.

No Child Left Behind was signed into law on January 8, 2002. The thousand-page reauthorization of the Elementary and Secondary Education Act marked a new era in federal oversight of school reform by mandating standardized testing in grades three through eight and once in high school, and it highlighted student subgroup performance, which had not previously been a stand-alone metric of school success. The changes NCLB ushered in changed states' data collection practices, introduced a wave of

accountability pressure, and brought new dimensions to the principal's role by applying quantitative metrics—derived from student test scores, attendance, and graduation rates—to determine whether schools were making “adequate yearly progress.” As a result, school administrators faced altered incentives that changed, for example, how they focused time and other resources on tested subjects and grade levels (Dee, Jacob, and Schwartz 2013; Grissom, Kalogrides, and Loeb 2017). Principals also experienced higher levels of job stress and a higher turnover rate (Mitani 2018). In defining consequences to accompany accountability, NCLB created new access to school choice and defined new approaches to reforming low-performing schools. Also important is that a portion of the \$56.2 billion in federal funding for education inspired by NCLB was earmarked for state education agencies to develop longitudinal data systems that track students, teachers, and administrators over time. A benefit of this capacity-building investment has been the availability of such data for research. Longitudinal data extend the rigor and range of potential quantitative research designs that are open to education leadership scholars, allowing them to answer policy-relevant questions with greater confidence in the causal implications of their findings and paving the way for a helpful policy-to-practice feedback loop.

Under President Obama, federal education policy took a new direction. Funded by a little over \$4 billion from the American Recovery and Reinvestment Act, Race to the Top represented an attempt to stimulate innovation through a competitive grants program that offered both federal dollars and political cover for ambitious education reforms at the state and local levels. After the program was announced in July 2009, many states adopted common standards, revised assessment tools, implemented or further developed statewide longitudinal data systems, brought new strategies to low-performing schools, and reformed teacher and school leader evaluation in pursuit of grant dollars (Derthick and Rotherham 2012; Howell 2015; Mehta and Teles 2011). Such policy changes were reinforced by the conditions attached to federal waivers from the requirements of No Child Left Behind, first issued in early 2012, which pushed even more states to adopt rigorous learning standards and implement more intensive educator evaluation systems. In pushing educator evaluation and encouraging states to attach compensation, tenure, and other job outcomes to evaluation, the Obama administration extended a school accountability focus in federal policy to more directly focus on accountability for teachers and leaders.

Changes have continued under the Every Student Succeeds Act (ESSA), which promised a return to more local control by relaxing many expectations of Race to the Top and NCLB waivers (McGuinn 2019). States gained greater flexibility in defining subgroup sizes for accountability purposes, choosing measures of school quality, and exploring more flexible improvement strategies for the lowest-performing schools to implement. Yet the law continued a focus on test score-based measures to hold

schools accountable, and under ESSA, many states sustained investment in high-stakes educator evaluation based on test score growth, classroom observations, and other metrics (Close, Amrein-Beardsley, and Collins 2019). ESSA also calls attention to equity by, for example, requiring states to report resource gaps between schools (Cook-Harvey et al. 2016).

Changing Education Policy Context at the State and Local Levels

The shifts in federal mandates and incentives directly influenced policy developments at the state and local levels that affected school leadership, with common policy changes flowing from Washington, DC, to individual districts across the nation. Among these developments, the widespread implementation of educator evaluation systems based on multiple measures of performance has represented perhaps the largest shift in school principals' roles. This shift has taken place alongside changing expectations for principals to engage with classroom instruction. Other developments at the state and local level include the spread of public and private school choice options and heightened attention to equity as a stand-alone policy and professional goal.

Multiple-measure educator evaluation systems join ratings of educators' practices with test score-based measures of performance—and, sometimes, other measures, such as student surveys—to provide a more comprehensive look at effectiveness than what a single measure can provide (Grissom and Youngs 2016; Master 2014). Nearly all states had implemented such systems for teachers by 2016 (Steinberg and Donaldson 2016), basing teacher evaluation ratings primarily on classroom observations scored with standardized rubrics and student growth measures calculated from state tests. Implementation of teacher evaluation typically coincided with reform to leader evaluation as well, with new systems enshrining expectations for principals' practices in standardized rubrics and combining scores from those rubrics with school-level measures of student achievement and growth (Grissom, Blissett, and Mitani 2018). Teacher evaluation reform likely has had more impact on principals than changes to their own evaluations, however, because of the large role principals play in teacher evaluation implementation. Principals and their leadership teams not only conduct classroom observations, score them, and track scores over the year but provide feedback and plan for professional development for teachers based on what they observe. Potential benefits of more systematic classroom observations using rubrics include greater transparency for teachers (Measures of Effective Teaching 2013) and heightened confidence for principals in grounding personnel decisions in evidence of performance (Goldring et al. 2015). Putting principals in classrooms regularly and providing them tools

for assessing and discussing instruction also has helped move principals' roles beyond general notions of instructional leadership to more specific practices around assessing instruction, providing feedback and coaching, and supporting teachers' professional learning. But the focus on being in classrooms takes time away from other leadership tasks and may contribute to greater burnout (Neumerski et al. 2018). And many school districts may not have the infrastructure and supports in place to ensure that principals can leverage the data that multiple-measure evaluation systems produce for sound decisionmaking (Grissom et al. 2017).

Another influential state policy development with implications for principals is the expansion of school choice. In the public sector, choice can take the form of open-enrollment policies within or between districts, charter schools, magnet schools, early colleges, and other options beyond a student's zoned neighborhood school. An estimated 19 percent of US students exercise one of these forms of school choice (Wang, Rathbun, and Musu 2019); adding students using vouchers to access private schools would make this share even higher. Among forms of choice, recent enrollment growth in public charter schools has been especially pronounced. Nationally, charter school enrollments jumped by almost a quarter of a million students (up 11 percent) between 2012–13 and 2013–14 (US Department of Education 2018). Charter schools now number approximately 7,000 and serve 3.2 million students, or 6 percent of all US students (David and Hesla 2018). A question central to policy debates surrounding this growth has been the impact on neighboring district schools. Charter schools may serve as laboratories of innovation, from which district school leaders find inspiration for practices to transfer into the traditional public school setting (Bambrick-Santoyo 2012). At the same time, principals may struggle as they find themselves operating in a competitive arena for the first time, changing how they think about promoting their school and communicating its success stories (Jabbar 2015a). A related phenomenon is that access to private school choice by way of vouchers, tax credit scholarships, and education savings accounts has also expanded, with approximately 539,000 students accessing private schools through publicly funded programs in 2019–20 (EdChoice 2020). Collectively, these changes may have heightened a sense of competition between schools (Kasman and Loeb 2013), created an education marketplace in areas where school choice is widespread (Jabbar 2015b), and directed principals' attention to more intentionally and more explicitly communicating the ways they are meeting students' and families' needs.

A third notable policy change is that the field of education leadership faces a heightened focus on cultural responsiveness and equity, which we define as *the fair, just, and nondiscriminatory treatment of all students, the removal of barriers, the provision of resources and supports, and the creation of opportunities with the goal of promoting equitable outcomes*. These values are prominent in the recently adopted

Professional Standards for Educational Leaders (National Policy Board for Educational Administration 2015). This focus affects leaders' practice by directing their attention toward new data points describing achievement levels and growth metrics for underrepresented students and by attracting attention and increased pressure from stakeholders and advocates for diverse learners. Principals may find themselves paying closer attention to racial and ethnic disproportionality in exclusionary discipline practices, for example. Equity might be assessed by examining subgroup outcomes for diverse learners and by measuring changes in previously underused measures, including suspensions, expulsions, and attendance data, in addition to student test scores (Skiba et al. 2014).

Collectively, national, state, and local changes to the education policy context have affected how we define and understand leadership effectiveness. School principals have directed their attention to new metrics, focusing on standardized measures of student achievement in math and reading. Performance pressures they face have been extended to include accountability for groups that were not previously emphasized. Internal and external stakeholders have focused on test score growth metrics, instructional leadership has evolved to include data collection for high-stakes teacher evaluation decisions, and the increased pressure to meet external benchmarks has not always been accompanied by increases in support to build capacity to meet common challenges.

Many of the policy changes described in this chapter have been informed by demographic shifts in public elementary and secondary schools over recent decades. In the next chapter, therefore, we describe notable trends in the demographic characteristics of America's students and principals from 1988 to 2016. Together, these dual contextual developments of policy and demographic changes are helpful to bear in mind as we synthesize and unpack what has been learned since 2000 about the relationship between principals and student achievement.

3. Changes in the Principal Workforce from 1988 to 2016

This descriptive analysis places the principalship in the context of population trends from 1988 to 2016. Combined with recent policy developments, demographic shifts affecting public elementary and secondary students and leaders have altered the environment in which principals operate. Before we can make sense of the research literature, we need to understand who is being studied and the contexts in which they serve. In this section, we describe almost three decades of demographic trends, which have affected who principals are and where they work.

Data Sources and Methods

We use nationally representative data from the nation's most authoritative source on school principals, collected by the National Center for Education Statistics at the US Department of Education. This source is principal survey data from the Schools and Staffing Survey (SASS), which collects information about school principals from a nationally representative sample of traditional public and charter schools. Data collection occurred in 1988, 1991, 1994, 2000, 2004, 2008, and 2012. Starting with the 2016 survey, the SASS was redesigned and renamed the National Teacher and Principal Survey (NTPS). We use appropriate weights provided by SASS/NTPS when creating summary statistics to ensure the statistics we report are representative of school principals across the US.

These data are merged with school-level information from the Common Core of Data (CCD). The CCD is the National Center for Education Statistics' primary database on public schools. We made use of CCD data on student demographics for the years represented in our survey.

Using these data sources, this chapter tracks changes in key characteristics of traditional public and charter school principals, including their demographics (e.g., gender, race, or ethnicity), experience levels in the principalship and prior positions (e.g., years spent as teachers), tenure in their schools, and education levels. We also examine these characteristics by key school contextual variables. Private school principals are excluded.

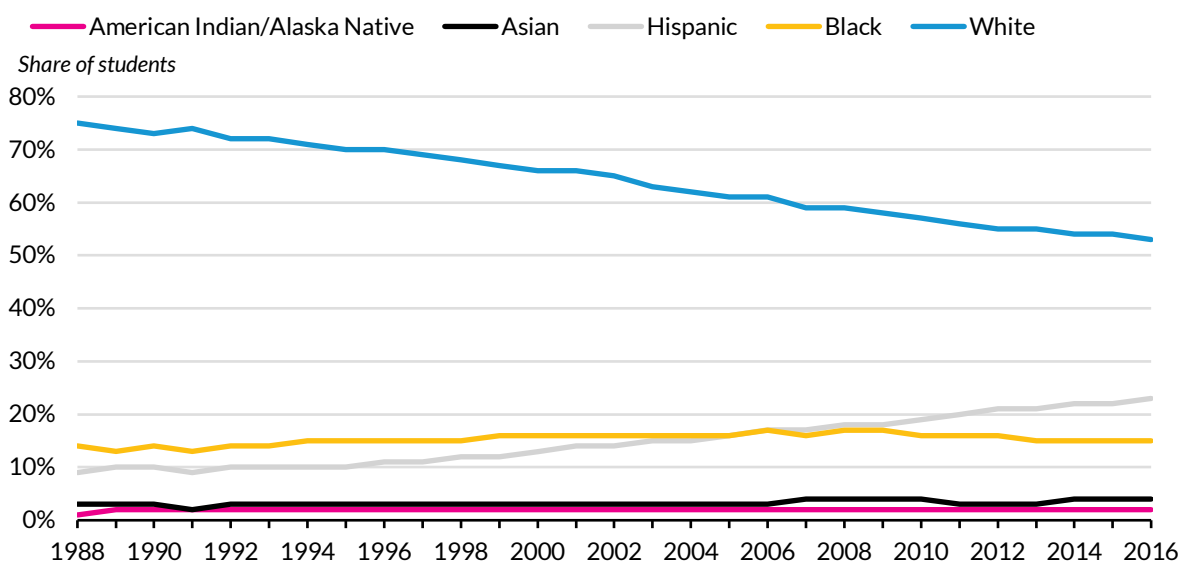
Findings and Implications

In our analyses of the data, we identified six major trends.

Finding 1. The public schools that principals lead have become more racially and ethnically diverse. They also serve higher numbers of low-income students, English learners, and students with disabilities.

The socioeconomic and demographic composition of US public schools has shifted dramatically over the past three decades. First, students are more racially and ethnically diverse today than at any previous time. Figure 3.1 shows the racial and ethnic composition of US public schools from 1987–88 to 2015–16. The share of students identifying as white has fallen from 75 percent of the typical school in 1988 to 53 percent in 2016. As these trends continue, white students will no longer be the majority of public school students. This change primarily reflects a large increase in the share of students identifying as Hispanic, which more than doubled from 9 percent to 23 percent. The proportion of Asian students also increased but only by about 1 percentage point. The share of Native American/Alaska Native and Black students has held roughly constant. Here, we should note that we follow the group identifications (e.g., “Hispanic” versus “Latinx”) as they are listed in the data sources.

FIGURE 3.1
Student Composition of US Public Schools by Race or Ethnicity, 1988–2016



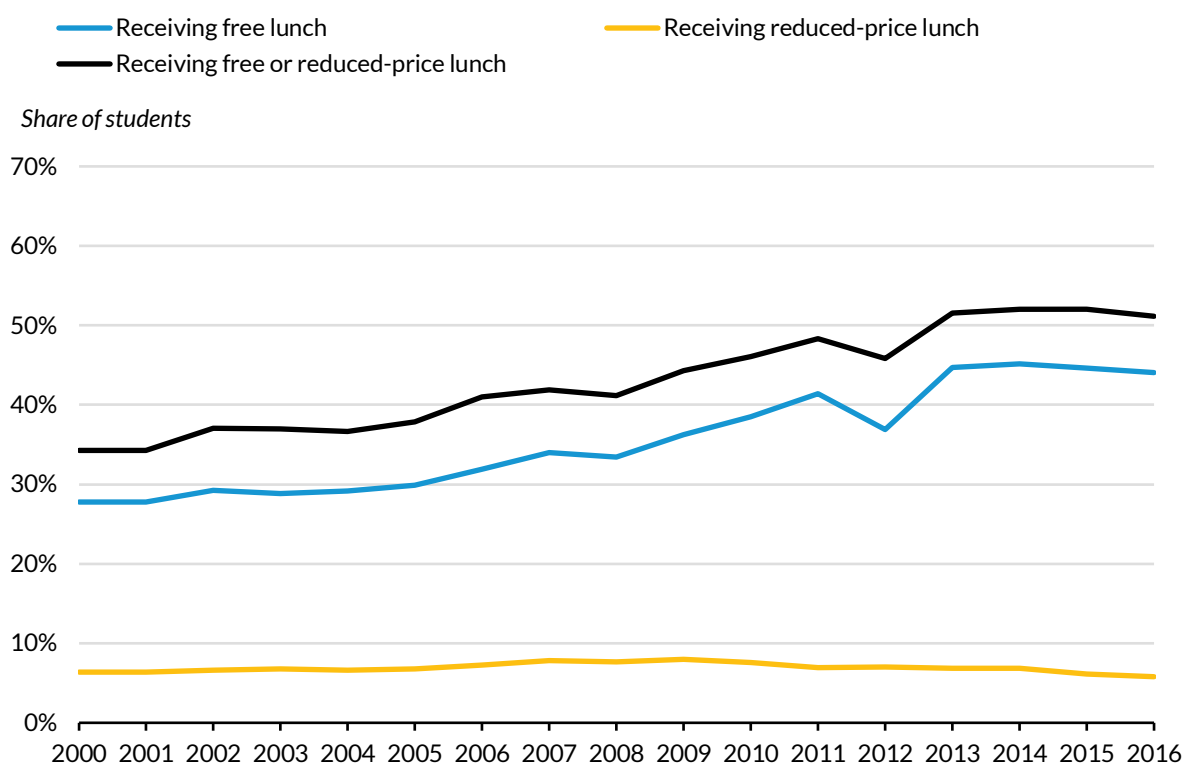
Source: Authors' calculations from the Common Core of Data.

Notes: Values may not sum to 100 percent in later years because the figure excludes the multiracial category. The sample is nationally representative of traditional public and charter schools.

Second, the share of public school students who qualify for free and reduced-price lunch (FRL), a common proxy for student poverty (though, via federal qualifications, some of these students' family incomes may fall above the federal poverty level), has increased. Since 2000, the first year the CCD reported both free and reduced-price lunch, this share has risen from 34 percent of students to 51 percent (figure 3.2). The CCD reports free lunch back to 1988. This share increased from approximately 20 percent to 44 percent between 1988 and 2016, providing a sense that student poverty has become even more consequential over a longer time.²

FIGURE 3.2

Share of US Public School Students Receiving Free or Reduced-Price Lunch



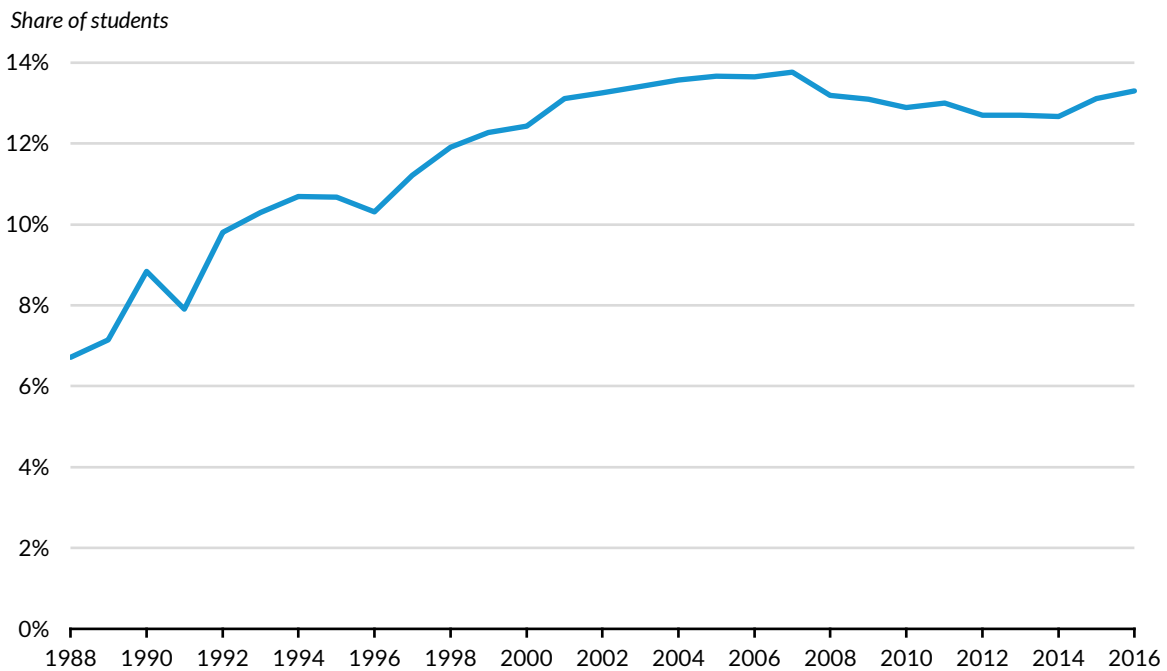
Source: Authors' calculations from the Common Core of Data.

Notes: We use data from the Urban Institute's Education Data Portal, which does not attempt to impute FRL data from nonreporting states. This may lead to slightly different estimates in FRL rates when compared with National Center for Education Statistics tables. The sample is nationally representative of traditional public and charter schools.

Public schools are also providing special education services to a larger share of students. The CCD tracks the share of students with an individualized education plan over time, which we plot in figure 3.3. In 1988, this share was just 7 percent, but it had doubled by the early 2000s and has remained steady. Today, the number of public school students receiving special education services is 13 percent.

FIGURE 3.3

Share of US Public School Students Receiving Special Education Services



Source: Authors' calculations from the Common Core of Data.

Note: The sample is nationally representative of traditional public and charter schools.

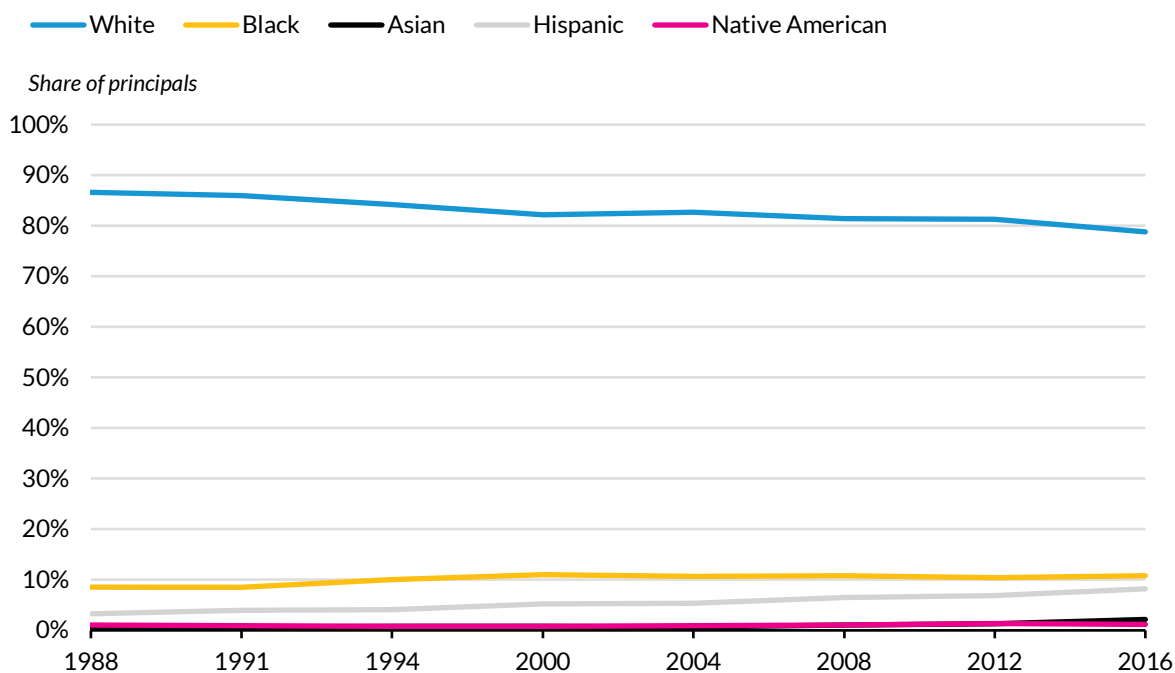
Public schools are also serving larger numbers of English learners. CCD numbers on students who are “limited English proficient” are less reliable because of challenges in state reporting in some years and because they are determined by state-specific definitions of English proficiency, so we do not show them here. But a recent report by the National Academies of Science, Engineering, and Medicine (2020) noted that English learners constitute one of the fastest-growing segments of the public school population, currently about 10 percent of all students.

The changing composition of US public schools highlights the increasing complexity of school leadership and the demands principals face to serve students with different cultural, economic, and learning needs. These demands mean that principals need broader sets of skills, expertise, and practices to ensure student success than those expected of principals before.

Finding 2. Public school principals have become more racially and ethnically diverse, but changes in their demographic characteristics have not kept up with changes among students.

Compared with the large racial and ethnic shifts among US public school students since the 1980s, changes in the demographic composition of public school principals have been small. In 1988, the share of public school principals who were white was 87 percent, and this number had fallen to just 79 percent by 2016 (figure 3.4). Although still a very small share of public school principals, Hispanic principals have increased from 3 percent of principals in 1988 to 8 percent in 2016. The share of public school principals who are Black has hovered between 9 and 11 percent over these years.

FIGURE 3.4
Public School Principal Race or Ethnicity over Time



Source: Schools and Staffing Survey/National Teacher and Principal Survey.

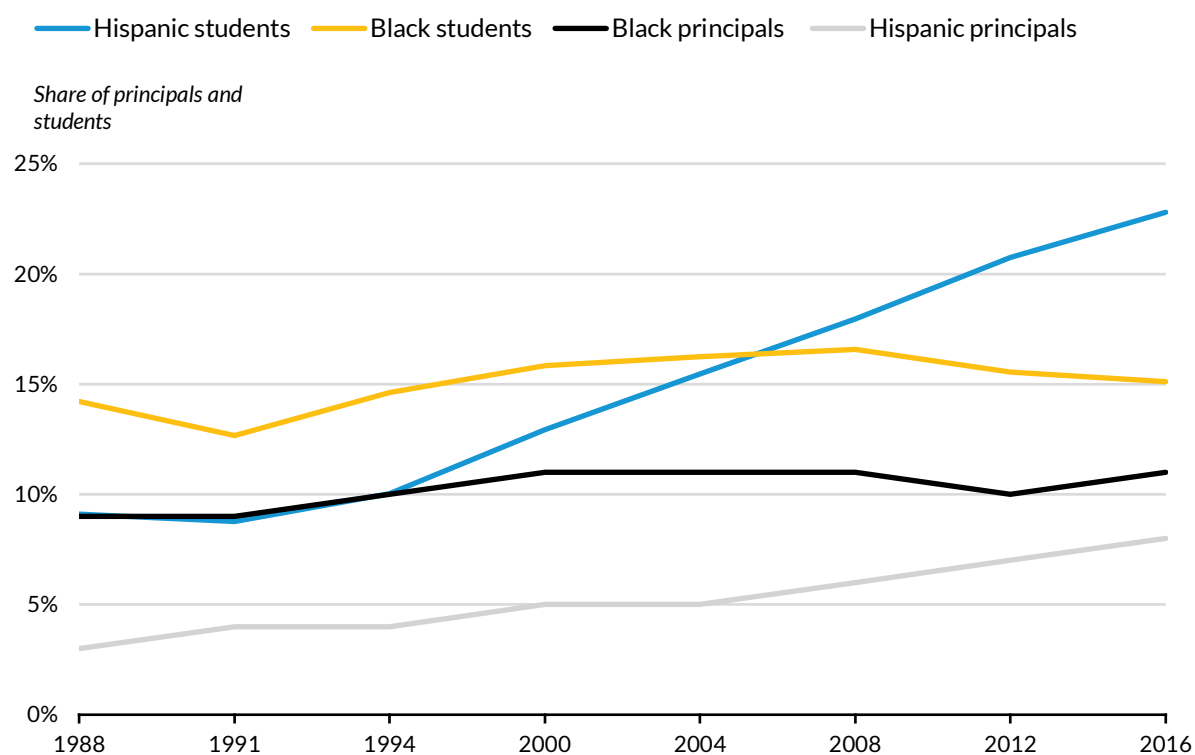
Note: The sample is nationally representative of traditional public and charter schools.

In supplemental analyses (not shown), we explore regional variation in public school principal race or ethnicity and find some regional differences. In particular, the share of Black principals is higher in the South, totaling nearly 20 percent.

The fast growth of the Hispanic student population and the slower growth of the Hispanic principal population has resulted in a growing leadership representation gap for Hispanic students. We define this gap as the difference between the share of students in a group and the share of principals in that group. To make the representation gap easier to see, figure 3.5 plots the share of Hispanic students and principals in the same chart, alongside the same information for Black students and principals. It shows that even though the Hispanic share of principals has ticked up somewhat, the more pronounced growth in Hispanic students has meant that the representation gap has grown from 8 percentage points in 1988 to 18 percentage points in 2016. For comparison, the Black leadership representation gap has shrunk slightly from 5 percentage points in 1988 to 4 percentage points in 2016.

FIGURE 3.5

Gaps in Principal Representation for Black and Hispanic Public School Students



Source: Authors' calculations from the Schools and Staffing Survey/National Teacher and Principal Survey and the Common Core of Data.

Note: The sample is nationally representative of traditional public and charter schools.

School segregation by student race, ethnicity, and income combines with principal sorting to produce differences in the average student characteristics that principals from different racial and ethnic groups serve. In particular, public school principals of color are more likely to serve low-income

students and students of color. In 2016, according to the NTPS, 72 percent of public school students in schools with Black principals were from low-income families (as measured by FRL eligibility), as were 63 percent of public school students in schools with Hispanic principals, 60 percent of public school students in schools with Native American principals, and 55 percent of public school students in schools with Asian or Pacific Islander principals. For comparison, only 47 percent of public school students in schools with white principals were low income. A similar pattern holds for students of color, who make up only 34 percent of students at the average white principal's school but 72 percent for Black principals, 77 percent for Hispanic principals, 62 percent for Asian principals, and 41 percent for Native American principals. These latter patterns may have some benefits from greater exposure of students of color to principals of color. Yet they also highlight varying work contexts for principals in different racial and ethnic groups, which may have implications for preservice preparation and the supports required for principals from diverse backgrounds, particularly given long-standing concerns about insufficient resources and associated leadership challenges in schools with large numbers of low-income students and students of color.

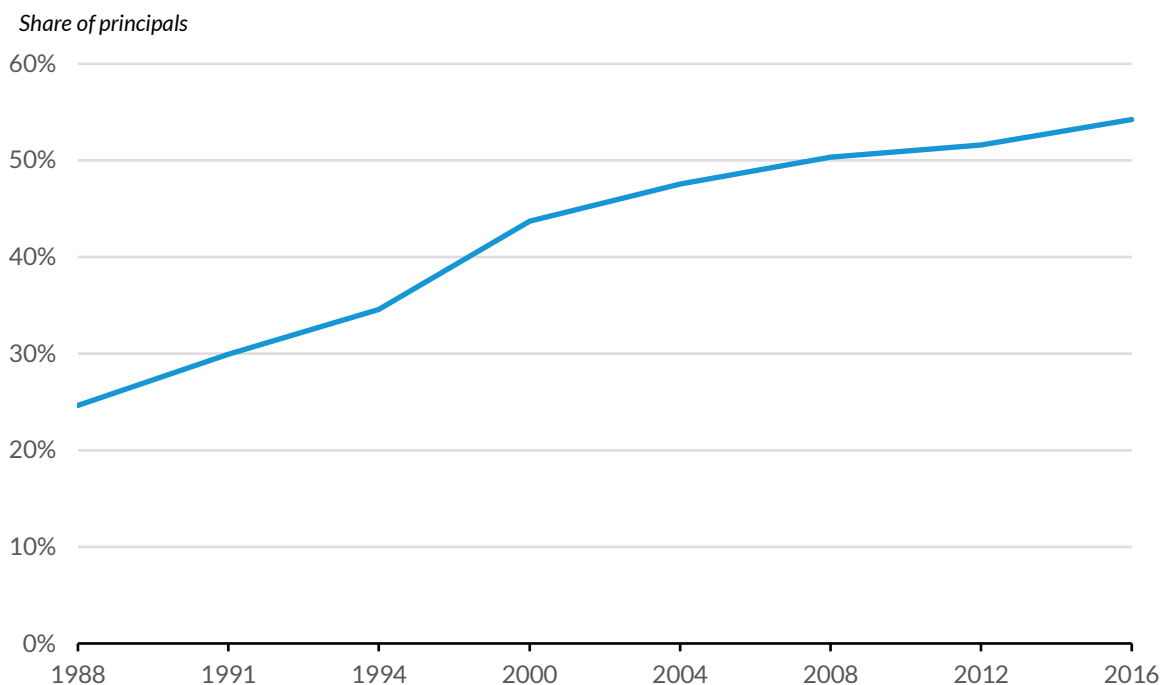
These representation gaps raise questions. Foremost, given mounting evidence that teachers of color hold higher expectations of students of color and better serve their educational needs on multiple dimensions (Egalite, Kisida, and Winters 2015; Gershenson, Holt, and Papageorge 2016; Grissom and Redding 2016; Lindsay and Hart 2017), they lead us to ask whether a principal workforce that is overwhelmingly white is best positioned to lead an increasingly diverse student body. (We cover the evidence on the connection between principal racial and ethnic diversity and student outcomes in chapter 6.) Relatedly, these studies raise questions for state and district leaders about the principal pipeline for leaders of color, where it is leaking, and what policies and practices might be implemented to encourage greater racial and ethnic diversity among principals.

Finding 3. The number of women in the principalship has grown dramatically.

Public school principals have become more female, with women representing 54 percent of all principals in 2016, compared with 25 percent in 1988 (figure 3.6). This shift has brought the share of women in the principal's office closer to the share of women in teaching, which is approximately 75 percent. Although the gap is still about 20 percentage points, the rapid change over just three decades suggests the need to explore whether (and which) policy changes have brought more women into the principal pipeline (alongside broader societal changes) and whether there may be lessons that might be useful for efforts to increase demographic representation.

FIGURE 3.6

Share of Public School Principals Who Are Female



Source: Authors' calculations from the Schools and Staffing Survey/National Teacher and Principal Survey and the Common Core of Data.

Note: The sample is nationally representative of traditional public and charter schools.

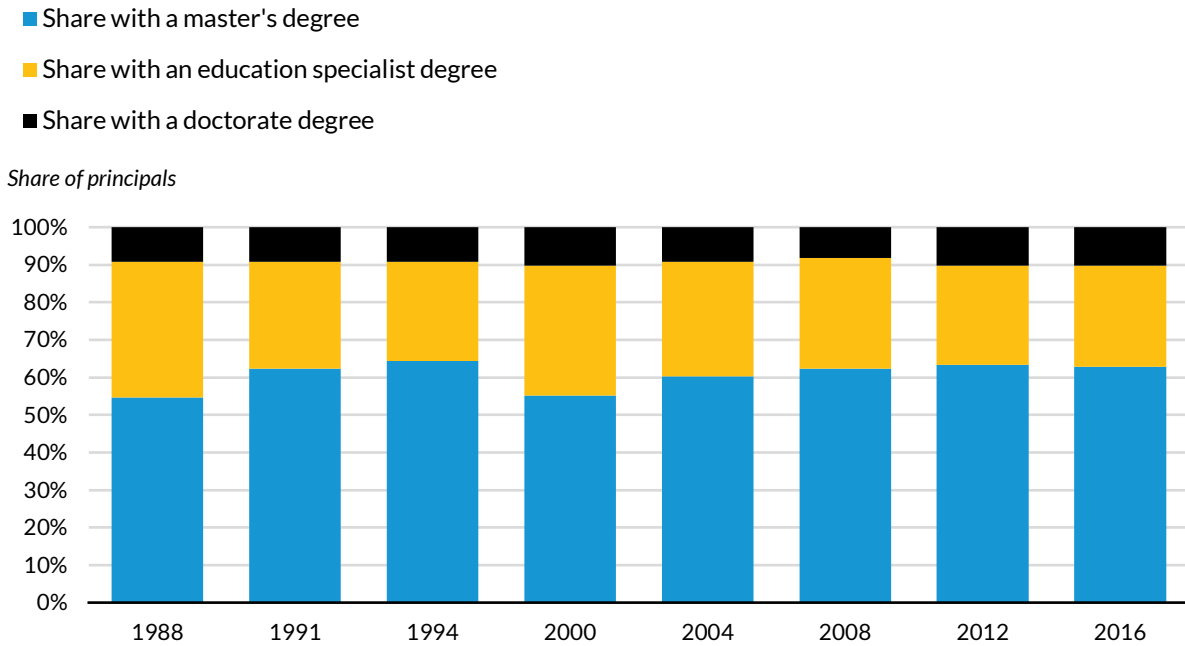
There are also differences in the public schools women lead. In 2016, women were more likely to lead elementary schools (68 percent) than middle schools (40 percent) and high schools (33 percent). They also lead schools with larger numbers of students of color (47 percent, compared with 38 percent in the typical male principal's school). Women also lead public schools with slightly higher shares of low-income students (52 percent, compared with 50 percent in the typical male principal's school). But this small average FRL difference hides the fact that women are overrepresented in the highest-poverty schools (defined as schools where more than 75 percent of students are FRL students) at 59 percent and underrepresented in the lowest-poverty schools (defined as schools where less than 35 percent of students are FRL students) at 51 percent.

Finding 4. Public school principals are no more or less likely to hold an advanced degree over time.

Public school principals' advanced degree attainment has been stable. Virtually all principals hold a degree beyond a bachelor's degree (figure 3.7), unsurprising given licensure requirements in most

states. The distribution of these degrees across master’s degrees, education specialist degrees, and doctoral degrees has remained similar. In the most recent year of survey data (2016), 61 percent of public school principals held master’s degrees (up from 53 percent in 1988), and 27 percent held education specialist degrees (down from 35 percent in 1988), an advanced professional degree designed to provide focused expertise in leadership or another area beyond the master’s level. Only 10 percent held doctorates, which is just 1 percentage point higher than in 1988.

FIGURE 3.7
Public School Principals’ Highest Degree Obtained



Source: Authors’ calculations from the Schools and Staffing Survey/ National Teacher and Principal Survey.

Note: The sample is nationally representative of traditional public and charter schools.

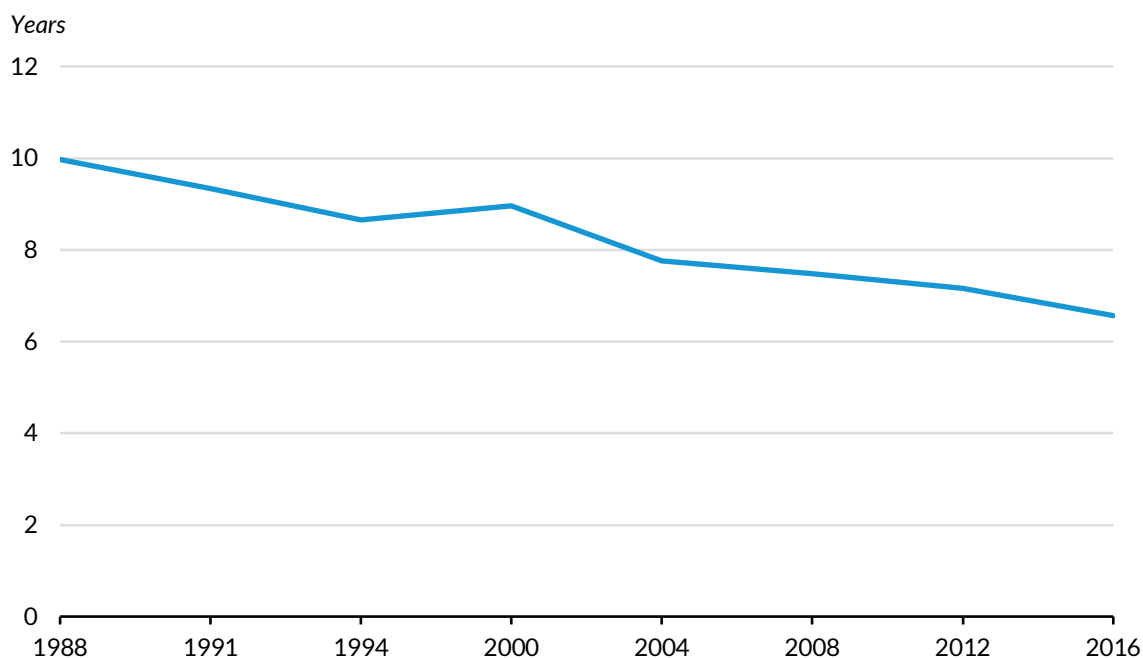
We also investigated differences in degree attainment by public school principal race or ethnicity and gender over time (not shown). We did not observe clear trends, beyond some growth in the share of Black, Hispanic, and Asian principals holding doctorates in the period since 2004. In 2016, approximately 18 percent of Black and Asian principals held doctorates, compared with 11 percent and 6 percent, respectively, in 2004, and the share of Hispanic principals with doctorates increased from 6 percent to 11 percent. We also observed that female principals are more likely to hold the more advanced degrees of education specialist or doctorate in every year. For example, in 2016, 24 percent of men held specialist degrees, and 9 percent held doctorates. For women, these numbers were 29 percent and 11 percent, respectively.

Finding 5. Public school principals have become less experienced, especially in high-need schools.

Years of experience as a principal has declined. In 1988, public school principals averaged 10 years of principal experience (figure 3.8). By 2016, that figure had dropped to 7 years. Half of principals had 5 or fewer years of experience, down from 8 years in 1988.

FIGURE 3.8

Principals' Average Years of Experience



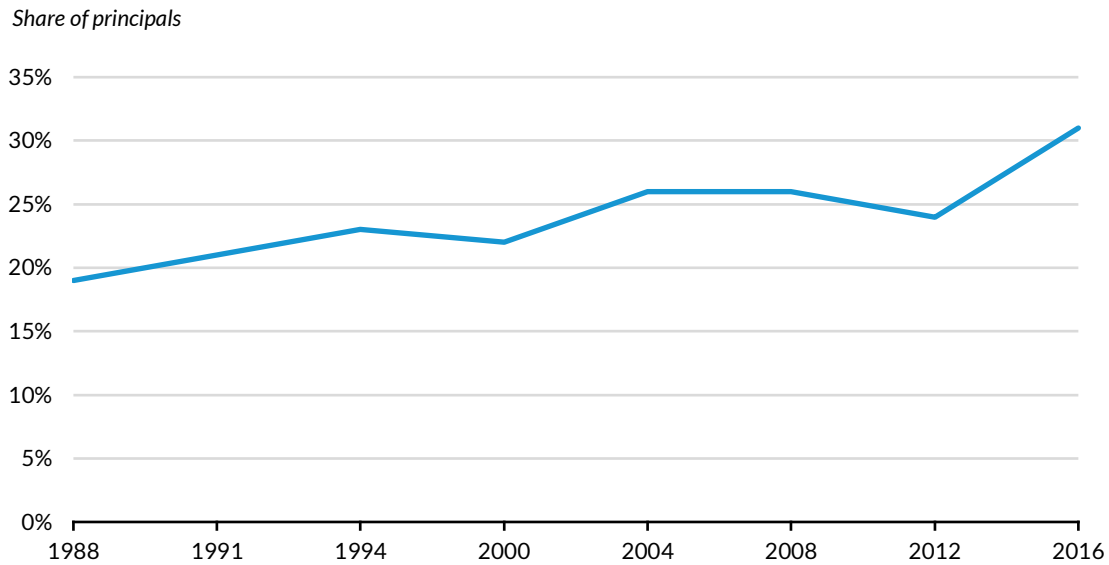
Source: Authors' calculations from the Schools and Staffing Survey/National Teacher and Principal Survey.

Note: The sample is nationally representative of traditional public and charter schools.

To see this differently, we also calculated the share of novice principals (i.e., those with one to three years' experience) by year (figure 3.9). The proportion of novice principals increased from 19 percent in 1988 to 31 percent in 2016.

FIGURE 3.9

Share of Public School Principals Who Are Novices (Three or Fewer Years as a Principal)



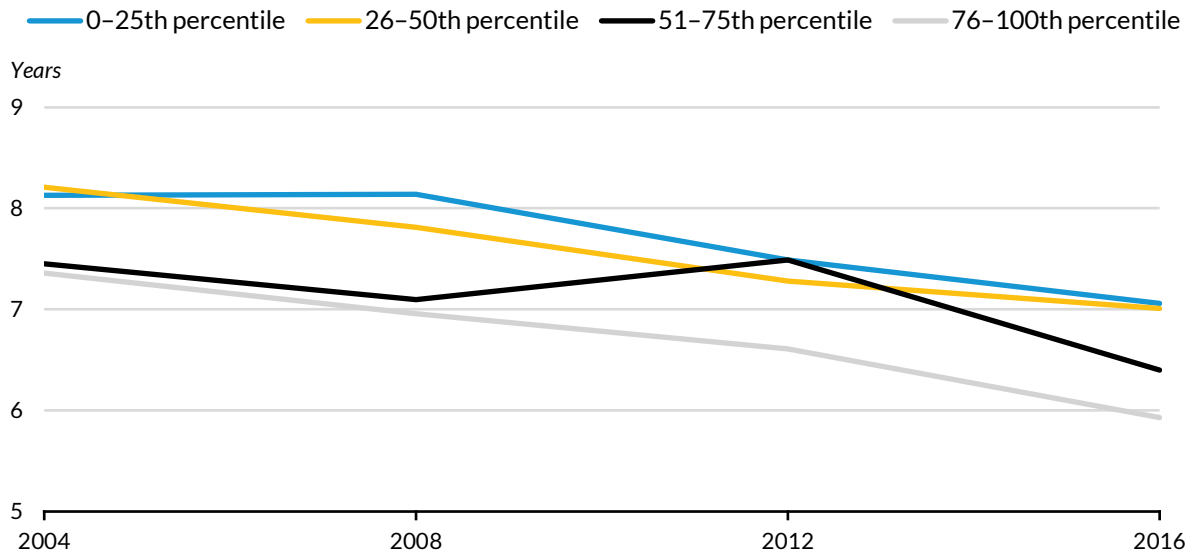
Source: Authors' calculations from the Schools and Staffing Survey/National Teacher and Principal Survey.

Note: The sample is nationally representative of traditional public and charter schools.

There also are differences in principal experience by poverty category (figure 3.10). Principals in the highest-poverty public schools (those where more than 75 percent of students are FRL students) have the least experience, on average, with a mean of 5.9 years in 2016, compared with 7.1 years for principals in the lowest-poverty schools. Differences in principal experience by school poverty parallel inequities in the distribution of measures of principal effectiveness documented in other work (Grissom, Bartanen, and Mitani 2019). Similarly, novice principals are more likely to be found in the highest-poverty schools (figure 3.11), and those schools have become more likely to have a novice principal.

FIGURE 3.10

Public School Principals' Average Years of Experience, by School's Poverty Percentile

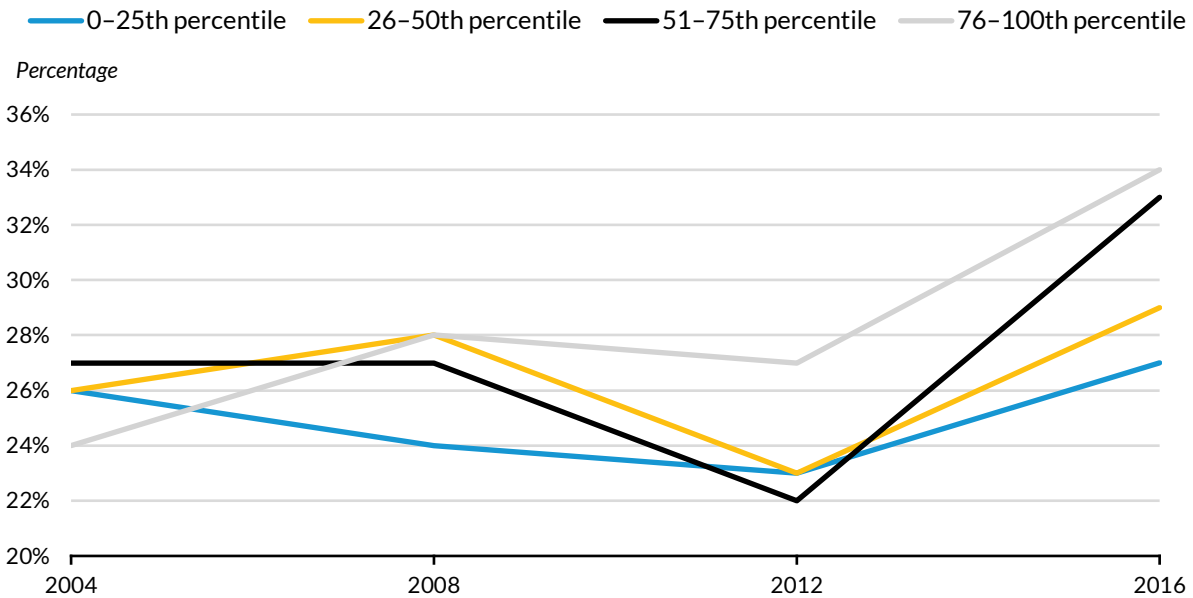


Source: Authors' calculations from the Schools and Staffing Survey/National Teacher and Principal Survey.

Note: The sample is nationally representative of traditional public and charter schools.

FIGURE 3.11

Share of Public School Principals Who Are Novices (Three or Fewer Years as a Principal), by School's Poverty Percentile



Source: Authors' calculations from the Schools and Staffing Survey/National Teacher and Principal Survey.

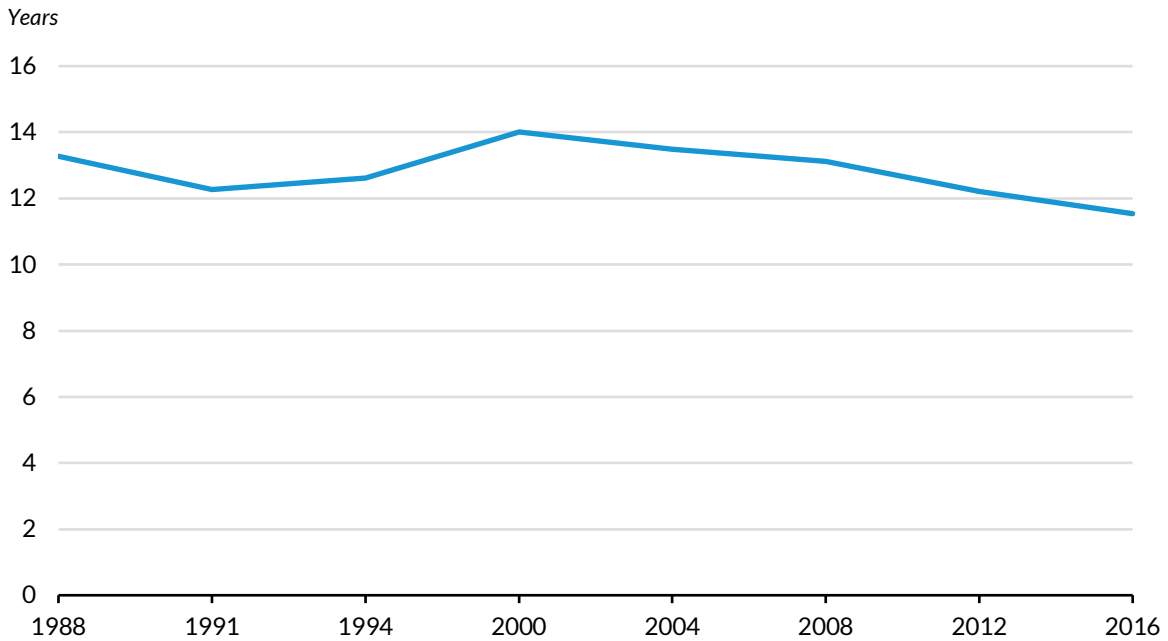
Note: The sample is nationally representative of traditional public and charter schools.

As we explore in chapter 6, falling experience likely has major implications for principals' capacity to perform the job well. Declines in principal experience in high-poverty public schools, in particular, are an equity concern, as students from low-income families and other marginalized groups likely benefit the most from having an experienced principal.

We also consider experiences in education before becoming a principal. We consider time in teaching and whether the principal had been an assistant principal (AP). We cannot track time as an AP because the SASS/NTPS does not track this value.

Like time in the principalship, time in teaching before moving into the principalship has also declined (figure 3.12). In 1988, the average public school principal had 13.3 years of teaching experience. By 2016, that had dropped to 11.5 years.³ As of 2016, male principals have fewer years of teaching experience (10 years), on average, than their female colleagues (13 years). These numbers represent a drop since 1988 of 2 years for women and 3 years for men.⁴

FIGURE 3.12
Years of Teaching Experience among Public School Principals



Source: Authors' calculations from the Schools and Staffing Survey/National Teacher and Principal Survey.

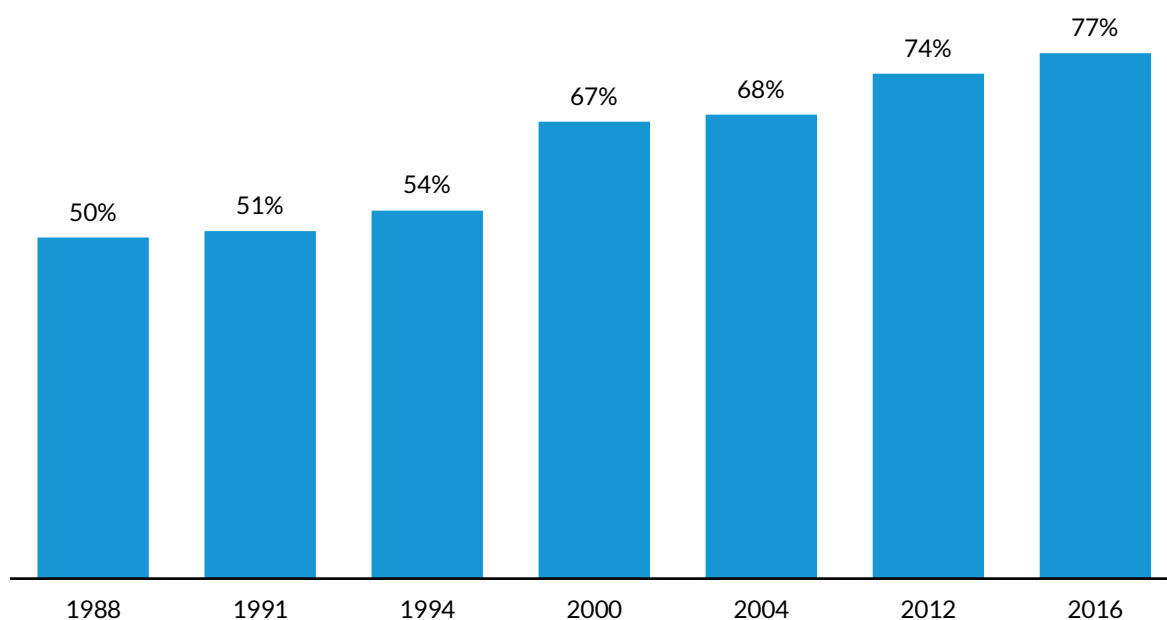
Note: The sample is nationally representative of traditional public and charter schools.

One reason time in teaching may have declined is that principals have been more likely to move into other school leadership roles before becoming a principal. Public school principals today are more likely

to have been an AP before assuming the principalship (figure 3.13). In 1988, only about 50 percent of principals report having been an AP, but by 2016, this share exceeded 70 percent. We do not know whether this apparent substitution of teaching experience for AP experience has had a positive impact on principals' capacity to do their work, though we return to this question in chapter 6. The assistant principalship and its place on the pathway to the principalship is examined in greater detail in Goldring, Rubin, and Herrmann (forthcoming).

FIGURE 3.13

Share of Public School Principals Who Had Previously Been an Assistant Principal



Source: Authors' calculations from the Schools and Staffing Survey/National Teacher and Principal Survey.

Notes: The sample is nationally representative of traditional public and charter schools.

Finding 6. Public school principals have shorter tenures in their schools.

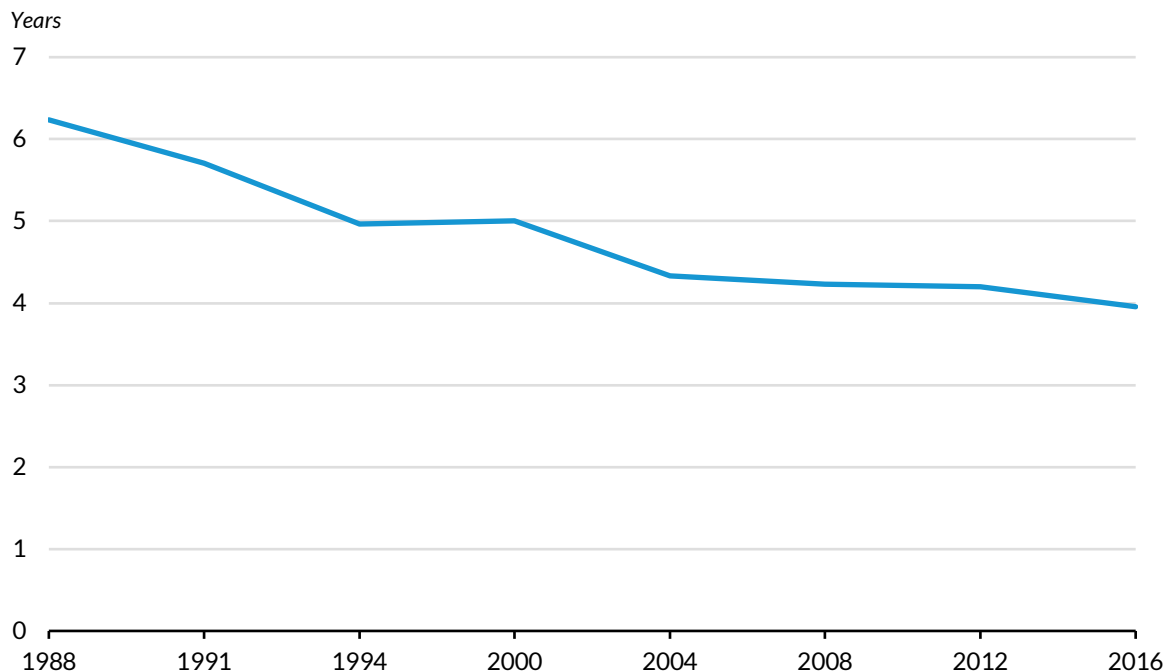
The average time a principal has spent at his or her current school has declined. In 1988, the average public school principal had spent 6.2 years at his or her current school, but by 2016, that number had dropped to 4 years (figure 3.14).

Tenures are even shorter in the highest-poverty public schools. In 2016, principals at the highest-poverty public schools had just 3.4 years of experience at their current school, compared with 4.3 years

for principals at the lowest-poverty schools, a difference of almost a full year (figure 3.15). These numbers reflect substantially higher principal turnover rates in high-poverty schools. The annual principal turnover rate in the highest-poverty schools is 28 percent nationally, compared with only 21 percent in the lowest-poverty schools (Grissom, Bartanen, and Mitani 2019).

FIGURE 3.14

Public School Principals' Tenure in Current School



Source: Authors' calculations from the Schools and Staffing Survey/National Teacher and Principal Survey.

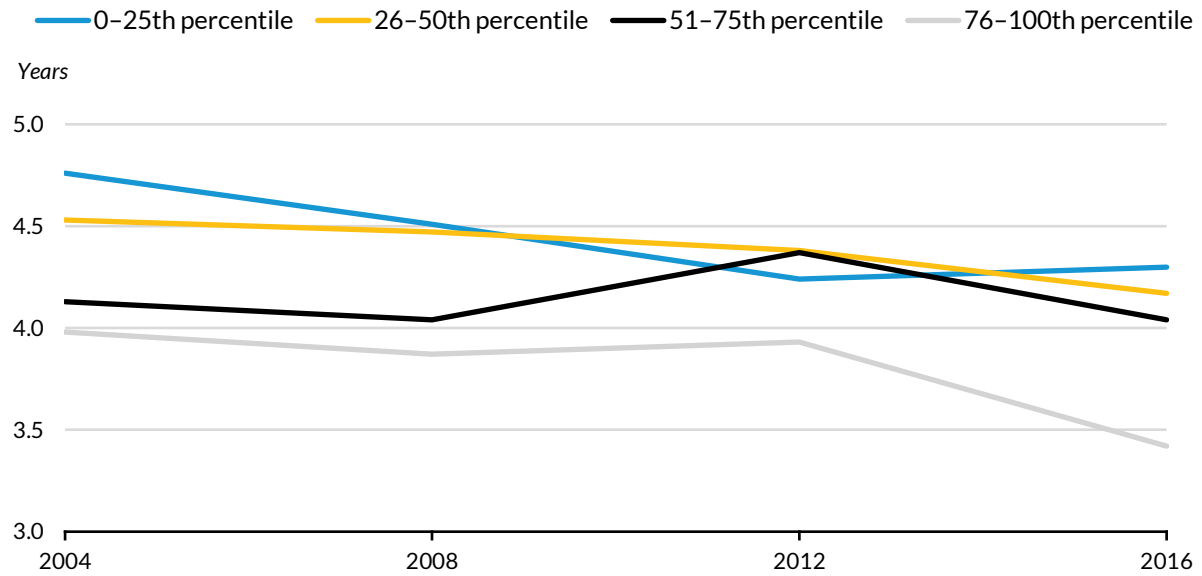
Note: The sample is nationally representative of traditional public and charter schools.

Interestingly, the decline in principal tenure on average from 1988 to 2016 was driven almost entirely by declining time in the same school for male principals, whose average tenure fell from 6.9 to 4 years (figure 3.16). This decline brought men's tenures in line with women's, which were around 4 years over all years. Length of tenure also fell more for Black and white principals than for Hispanic principals, though there were declines for all three groups (figure 3.17).

Falling tenures may have implications for principals' opportunities to implement changes in their schools. Declining tenures also mean more frequent incidence of principal turnover, which may negatively affect school outcomes. We investigate this topic in chapter 6.

FIGURE 3.15

Public School Principals' Number of Years at Current School, by School Poverty Percentile

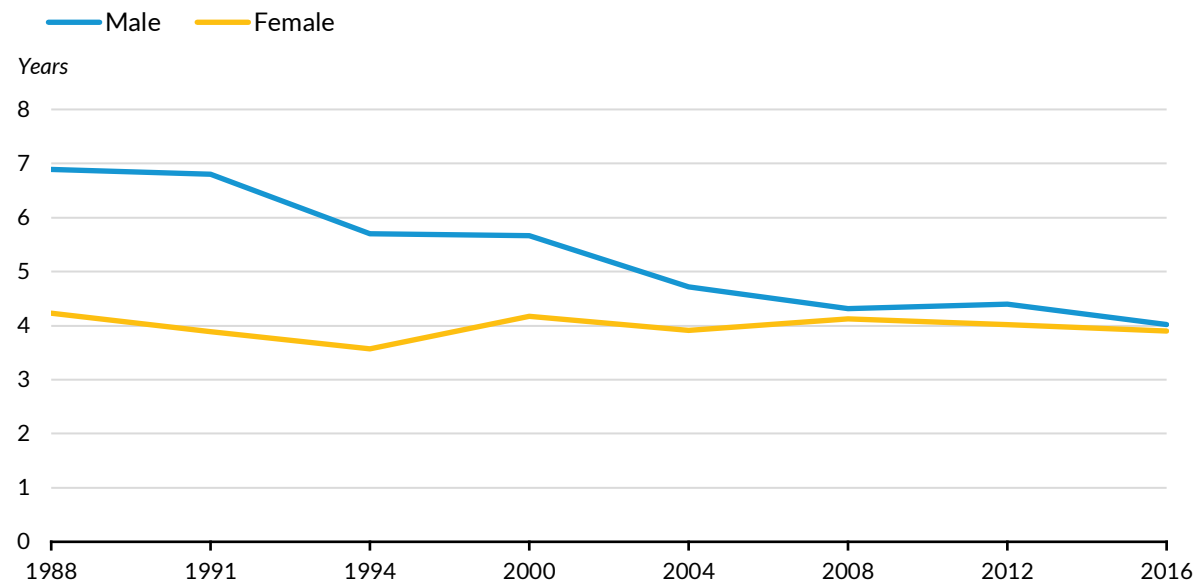


Source: Authors' calculations from the Schools and Staffing Survey/National Teacher and Principal Survey.

Note: The sample is nationally representative of traditional public and charter schools.

FIGURE 3.16

Public School Principals' Experience, Measured as Years at Current School, by Gender

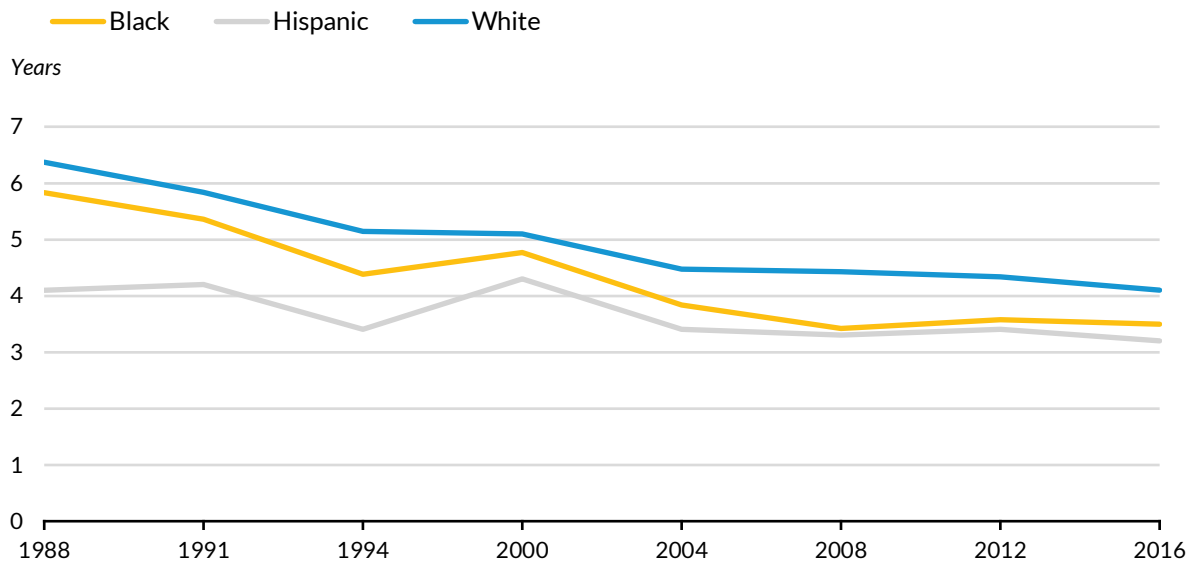


Source: Authors' calculations from the Schools and Staffing Survey/National Teacher and Principal Survey.

Note: The sample is nationally representative of traditional public and charter schools.

FIGURE 3.17

Public School Principals' Years of Experience at Current School, by Race or Ethnicity



Source: Authors' calculations from the Schools and Staffing Survey/National Teacher and Principal Survey.

Note: The sample is nationally representative of traditional public and charter schools.

Conclusion

Who are public school principals, and how have their characteristics changed over the past two decades? Our examination of key indicators reveals three key trends in US public schools: (1) principals have become more female, (2) principals' average experience level has fallen on average and especially in high-need schools, and (3) despite dramatic changes in the racial and ethnic composition of students in US public elementary and secondary schools, racial and ethnic diversity in the principalship has changed only slightly since the 1980s. It is also useful to examine trends that appear to be unchanging. For example, today's public school principals have not demonstrated any notable shifts in their educational attainment.

What are the implications of these findings? From a principal recruitment and retention perspective, we document equity concerns in response to the observed racial and ethnic disparities in the principalship. The representation gap between a predominantly white leadership corps (79 percent) and a student body that is only 53 percent white should prompt schools and districts to reconsider human resources policies and practices for the 21st century. In what ways are these districts diversifying the candidate pool from which they select the next generation of school leaders? Are

efforts made to mentor and coach promising candidates of color who might need additional (or different) encouragement and support before entering a principal preparation program?

Another implication of these shifting demographic patterns is that traditional ways of thinking about the nature of principal practice need to be updated. Attention to the needs of growing populations of English learners and students with disabilities, for example, must be incorporated into current understandings of instructional leadership.

The patterns revealed in this analysis of nationally representative data highlight what we do not know or understand about why these changes have occurred. These are averages that might mask potentially interesting underlying patterns. We do not know enough about the forces that explain why public school principals' average experience level has fallen, especially in high-poverty schools, and what the implications might be, especially for the most vulnerable students. We also do not know whether the unchanging levels of advanced degree attainment is meaningful for the schools they lead. By highlighting such trends, we hope to prompt researchers to identify empirical questions that can be investigated and unpacked in subsequent research studies.

The context of school leadership has changed significantly. The trends spotlighted here point toward the need for an updated review of the principal impact literature and a summary of the contemporary skills, behaviors, and practices associated with student success.

4. Synthesis Methodology

In this chapter, we describe our approach to synthesizing research on the connection between leadership and student and school outcomes since 2000 to answer the following questions:

- How much do principals contribute to student achievement and other school outcomes?
- What drives principals' contributions?

To address these questions, we reviewed research published since 2000 on principals and student, teacher, and school outcomes. We began with a systematic search of journal databases and grey literature sources, which yielded an initial return of more than 4,800 documents that we then individually screened and processed.

Empirical Approach

We answer the two research questions through two separate syntheses that draw from a common pool of studies. In the first synthesis, our goal is to summarize the magnitude of principals' effects on student achievement gains and other outcomes. We aim to identify studies with an arguably causal strategy for quantifying these magnitudes. In the second synthesis, we identify links between specific principal characteristics, skills, and behaviors associated with more positive student and school outcomes. These studies employ a diverse array of methodological approaches that range in their capacity to compellingly establish causal links. To establish the pool of studies for these two syntheses, we engaged in a multistage process.

Phase 1. Preparation of Analysis Plan

In phase 1 of the systematic review of the literature, we prepared an analysis plan that would allow us to identify rigorous research on key dimensions of the school leader's work using a targeted search strategy and to avoid injecting bias by excluding relevant research. We defined search terms, protocols, and databases to search, and we developed the coding architecture to allow us to extract key data in a standardized manner. To address potential reporting, dissemination, and publication biases that would result in biased samples for a systematic review, we included a strategy to identify important contributions from the "grey literature," such as rigorous policy reports that may not appear in the typical scholarly outlets.

BOX 1

Details of Analysis Plan

Time frame. We examined studies published since 2000.

Language. We included only studies published in English.

Setting. Data must have been collected in the United States on students in grades K–12 attending traditional public and charter schools.

Subject. School principals must be the focus; we excluded articles exclusively focused on district, state, or national leaders.

Methodology. We looked for studies that used quantitative, qualitative, or mixed-methods analysis of original or secondary data.

Search terms. We used the following Boolean keyword search, adjusted by database as appropriate: (“school leader*” OR “principal”) AND (“student achievement” OR “learning outcome”) AND (student OR school OR education). Follow-up searches included other outcomes (e.g., absenteeism or turnover).

Scholarly databases. We used Google Scholar, ProQuest, PsycINFO, JSTOR, ERIC, and EconLit; we also manually searched the archives of *Educational Administration Quarterly*, *Journal of Educational Administration*, and *Leadership and Policy in Schools*.

Grey literature search. We searched the archives of policy research firms and influential organizations in education leadership, including RAND, Mathematica, AIR, Abt Associates, and The Wallace Foundation.

Protocols:

- **Screening approach.** We cast a wide net initially and then eliminated studies by relevance and rigor, as defined by Preferred Reporting Items for Systematic Reviews and Meta-Analyses standards.
- **Standardization.** Key information was extracted into a common spreadsheet via standardized coding form, with attention to research design, sampling, and analytic methodology; specific reasons for study exclusion were carefully documented.
- **Team approach.** Rather than relying on individual researchers to conduct discrete tasks, we used collaborative teams to extract key data from the studies being reviewed and cross-checked each other’s work; this approach minimized potential errors in the review process itself and allowed teams to quickly resolve issues.
- **Citation chaining.** We used Google Scholar’s “cited by” function to identify studies that have cited canonical research in the field, identify studies that have cited those studies, and so forth in a snowball strategy to ensure we captured a robust, holistic body of literature.

Phase 2. Literature Search

In phase 2 of the systematic review, we tested and modified search terms to refine our strategy before conducting the formal literature search. In consultation with a librarian at Vanderbilt University, we also identified a comprehensive list of the databases we would consider for our review (appendix table A.1). After removing duplicates, this initial search yielded 4,832 articles (figure 4.1). The majority (87 percent) came from scholarly databases such as ERIC, ProQuest, PsycINFO, and ScienceDirect. The remaining 13 percent came from our review of the grey literature, which included searches of the archives of such organizations as the National Association of Secondary School Principals, the National Association of Elementary School Principals, Mathematica, The Wallace Foundation, and Learning Policy Institute. Next, we screened titles and abstracts for relevance to make inclusion decisions that determined which articles would progress to the next phase of review. This screening process was conducted twice, with articles doubly screened by separate members of our research team to maximize inter-rater reliability. Screening resulted in 821 articles being retained.

Phase 3. Analysis

In phase 3, we obtained full-text copies of all relevant articles. We used full texts to conduct additional relevance screening and to screen basic methodological questions, such as whether the study described its sample and how it was selected and whether the methods were sufficiently described. We full-text coded the 395 studies that passed these screens. We extracted information on the sample, research design, main findings, and ancillary findings and recorded it in a structured spreadsheet. We developed different coding protocols for quantitative and qualitative data appropriate to the results reported. As before, we conducted the coding process twice to maximize inter-rater reliability. The breakdown of full-text-coded articles was 267 that employed quantitative methods, 104 that employed qualitative methods, and 24 that employed both.

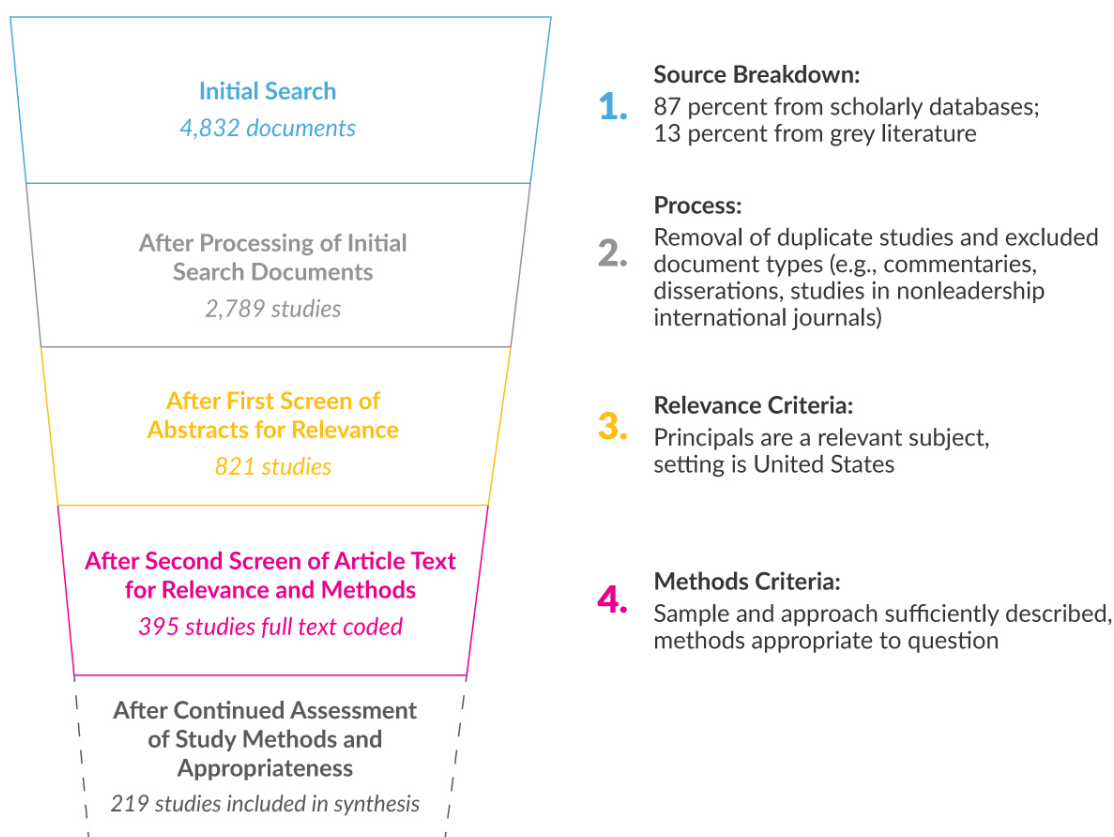
Phase 4. Synthesis

In phase 4, we organized and synthesized the findings from the various studies we selected for final inclusion. Topics emerged from an inductive approach to categorizing articles by codes and reading across results. We paid attention to both the main effects and any heterogeneity of findings to identify key themes. A close read of each text resulted in additional exclusions of studies whose conclusions could not be justified by the analysis reported (e.g., regression results with insufficient accounting for school context), whose instrumentation did not differentiate principals from other school actors, whose

reporting did not allow for specifically identifying correlations between principals or their actions and outcomes, or whose findings were not relevant. In completing this phase, we recorded observations about the rigor of the knowledge base by research domain to inform the field about the state of knowledge on principal effects more generally. This allowed us to make informed observations about gaps in the literature. We included 219 studies in the syntheses, on which we report in chapters 5 through 7.

FIGURE 4.1

Systematic Literature Search Yield at Various Phases of the Analysis



Equity Considerations in Study Design

We are particularly interested in studies that address equity in the school leadership context, and consideration of this concept is infused throughout all tasks related to this knowledge synthesis. We specifically coded articles as dealing with equity issues, where applicable, regardless of whether the word “equity” was used. Moreover, we captured both average effects or correlations and any reported

estimates from analyses of moderating variables such as school-level student poverty. This attention to heterogeneity is an important consideration of equitable treatment (e.g., are leadership factors differentially associated with gains for different groups of students?) and how leadership effects vary by school and community context. We report sources of heterogeneity and read across studies of moderators to provide insight into differences in overall leadership effects or the effects of leader characteristics, skills, and behaviors by contextual factors.

Limitations of Our Synthesis Approach

Despite our attempt to be comprehensive in our initial selection of studies connecting school principals to important student and school outcomes, the base of studies on which we draw is unavoidably incomplete. Our search, though systematic, was dependent on the terms and parameters we used to query the databases. These queries focused on principals and student achievement and other outcomes, supplemented with searches for a small set of teacher outcomes (e.g., turnover). Our synthesis of the studies returned from these queries identified important themes and topics that we discuss in the report, but this discussion is necessarily constrained by the studies our queries yielded. Many of these topics and themes could easily be the subjects of their own synthetic reviews, yet the slice of the literature on which we draw will be limited to studies that include principals and reference the specific outcomes we employed in our initial literature searches. We acknowledge that such studies may be of a particular type or perspective. Unfortunately, given the large number of studies with which we were working, time and resource constraints prevented us from a more comprehensive treatment of some of the topics that emerge in later chapters.

5. How Large Are Principal Effects?

This chapter answers our second research question: how much do principals contribute to student achievement and other school outcomes, such as student absences and teacher turnover? To provide an answer, we synthesize the most rigorous recent studies that measure the magnitude of principals' effects on multiple outcomes for students and teachers. Because the question of "how much?" is quantitative, we focus on high-quality quantitative studies. Our results suggest substantial benefits of staffing schools with effective principals.

The Empirical Challenge of Estimating the Size of Principal Effects

Quantifying how much principals matter for student outcomes is a difficult empirical problem for at least three reasons. First, principals' effects on students are mostly *indirect* (Hallinger and Heck 1998). Unlike teachers, who affect students directly, principals' primary effects on students come not through direct interaction but through impacts on factors that create the conditions for students to learn.⁵ Researchers refer to these indirect impacts as *mediation*. There are potentially many routes through which principals' effects on students are mediated, including impacts of their work on classroom instruction, the school's climate, which teachers are hired and retained, building safety, and so forth, each of which can affect student learning. A consequence of these multiple mediated pathways is that researchers typically require large samples of principals and schools to be able to identify principal effects statistically; in small samples, it can be too hard to differentiate them from the other factors that affect student learning.

Second, the *timing* of principal effects makes identifying them difficult. Some changes a principal might drive in a school affect students quickly, such as implementing a new curriculum or changing the master schedule to increase instructional time. These changes may be reflected in student outcomes in the same year. Other changes may be more gradual, such as a multiyear effort to hire and retain more effective teachers. Effects of such changes may not show up in student outcomes in the same year but may pay off in later years. A consequence of this timing problem is that researchers need multiple years of data on principals and their schools to fully capture principal effects.

Third, many factors that affect student outcomes are *beyond the principal's control*. Obvious examples include what resources the district makes available to the school and district or state policies

that shape or constrain how the school functions. Principals also typically cannot control which students the school serves or the challenges those students bring to school, such as challenges associated with living with poverty, which can have big impacts on students' outcomes. A consequence of the influence of these other factors is that researchers need ways to account for them, or else they risk confusing principal effects with other influences.

Two Types of Studies That Overcome These Empirical Challenges

Our synthesis of research that quantifies principals' contributions to student outcomes is limited to studies with empirical strategies capable of addressing the challenges of indirectness, timing, and factors beyond the principal's control. In particular, we privilege studies that use *panel data methods* to quantify principal effects. Panel data are longitudinal datasets that contain information about the same units (e.g., the same principals and schools) over time. Often, these are administrative data collected by states or school districts for bureaucratic purposes that can be leveraged for research. Panel data from states or large school districts over a long-enough period can provide enough data to observe indirect principal effects and average them out over multiple years. They also often permit statistical methodologies that can credibly separate the effects of principals from the effects of other influences.

Two types of studies that use panel data help us quantify principals' impacts. The first are *principal effects studies*. These studies track schools' outcomes over long periods, adjusting for student background characteristics, such as race or ethnicity, special education status, or being from a low-income household. They leverage the fact that these long data panels permit observing outcomes of the same school under different principals *and* the outcomes of the same principal leading different schools. Statistically, researchers then combine these patterns to tease out the average effects of individual principals, particularly in relation to long-term school outcomes. The logic underlying these studies is that some schools may enjoy historical social and resource advantages that produce a high level of average performance that may not have much to do with school leadership (and conversely, some schools face historical social and resource disadvantages that contribute to lower average performance). Rather than attribute all the school's high performance to the principal, these studies essentially look for deviations—positive or negative—from the long-run average for the school that correspond to a principal's tenure in office. If that principal goes on to lead another school, another positive or negative deviation can be measured.⁶ Principals who tend to have more positive deviations across the schools they lead are identified as more effective, and the size of the average deviation

captures the magnitude of the principal's effect. When the outcome is student-level test scores, for example, these studies can estimate the size of each principal's effect on the test score growth of the typical student in their school in the typical school year.

The second type of study is based on *overall principal effectiveness ratings*. Such studies use broad ratings of principals' performance provided by knowledgeable informants, such as their supervisors or the teachers in their schools. Principal supervisors or superintendents provide practice ratings in many evaluation systems, for example, and surveys of teachers can ask them to rate the quality of leaders' practices in their schools. Studies can then test the degree to which school outcomes differ under high- or low-rated principals, accounting for student and school characteristics. In the context of panel data, these studies can further test whether the *same school's* outcomes are statistically higher or lower in different years when principals' ratings are higher or lower. This test can get closer to establishing that leaders' practices affect those outcomes because, as in principal effects studies, the long-run outcome trends for that school can be accounted for.

An important caveat regarding both types of studies is that they are “black box” studies. That is, both can establish a link between principal “performance” and student or other school outcomes, but neither can say much about the nature of strong or weak leadership performance. (We turn to this issue in the next two chapters.) They also rely on assumptions that researchers often cannot directly test, such as that districts do not systematically infuse new resources into schools when principals change (as might happen under some school improvement models) or that ratings provided by supervisors or teachers respond to factors other than leadership that affect achievement. As we discuss in chapter 8, studies with new approaches to probing these assumptions may provide even better evidence about the magnitude of principals' effects.

Principal Effects Studies Show Strong Evidence That Effective Principals Drive Student Success

Our search identified six rigorous principal effect studies based on US data since 2000. These studies were conducted in diverse contexts at the state and district level, though they covered data primarily from elementary and middle schools (table 5.1). Estimates of principal effects on student achievement varied somewhat from study to study, though all showed positive effects of the typical principal. **Across studies, the average estimated impact of increasing principal effectiveness by 1 standard deviation—the equivalent of moving a principal from the 50th to the 84th percentile—is 0.13 standard deviations in math and 0.09 standard deviations in reading.**⁷

BOX 2

Estimating and Interpreting Principal Effects from Longitudinal Studies

Each of the six studies in table 5.1 used longitudinal data to model students' test score changes over time as a function of who their principal is, accounting for student background characteristics and other factors, including which school they attended. Some schools tend to have high or low achievement gains because of factors outside the principal's control (e.g., because of where they are located), which including the school in the model takes into account. For each principal in the data, the models produce a statistical value representing the extent to which their students' observed achievement gains are higher or lower, on average, than what would be predicted by students' background characteristics and school. This value is averaged over all years that we observe the principal in the data. When students tend to gain more than would be predicted under a given principal, the principal's value is positive, and when students significantly outperform the prediction, the principal's value will be high. The more students *underperform* relative to the prediction, the more negative a principal's value will be.

To underscore, models produce a range of values—one for each principal in the data—approximating their effects on their students' test scores. These values form a distribution. Picture a classic bell shape: some principals may have very negative or very positive effects, but most are probably in the area around the average. We want to know whether this distribution is narrow or wide. If it is narrow, principals tend to huddle tightly together in the middle of the distribution. Their effects on test scores tend to be very similar to one another, so changing one principal for another probably would not have much impact on achievement. If it is wide, however, principals' effects differ from one another; they are more spread out across the range from very negative to very positive. In other words, who the principal is matters much more, and there could be many more gains from identifying lower performers and replacing them with higher performers.

A **standard deviation** is a way to measure the width of a distribution. Larger values mean that there is more variation. The principal effects estimates in table 5.1 are the standard deviations of the distributions of the individual principals' effects they estimate. It tells us what gain we would expect in the average student's test scores (also in standard deviation units) associated with having a principal that is 1 standard deviation more effective than another principal.

Interpreting this value. Standard deviations are an unintuitive scale but can be benchmarked. In a normal distribution, 1 standard deviation is the distance between the 50th and 84th percentiles. So a math effect size of 0.13 standard deviations says that a principal at the 84th percentile of effectiveness could expect to see student math test scores that were 0.13 standard deviations higher than a principal at the 50th percentile. For the typical elementary school student, this difference represents about 2 months of learning each year.⁸

TABLE 5.1

Principal Effects Studies

Study	Setting	Data	Sample size		Mean principal effects estimates (standard deviation)	
					Reading	Math
Branch, Hanushek, and Rivkin (2012)	Texas	Administrative data and annual state standardized test scores for 3rd-to-8th-grade students, 1995 to 2001	N = 28,147 observations from 7,420 principals		-	0.11
Grissom, Kalogrides, and Loeb (2015b)	Miami-Dade County Public Schools	Administrative data and annual state standardized test scores for 3rd-to-10th-grade students, 2003–04 to 2010–11	Reading N = 488 principals	Math N = 484 principals	0.03	0.06
Chiang, Lipscomb, and Gill (2016)	Pennsylvania	Administrative data from the Pennsylvania Department of Education and annual state standardized test scores for 4th-to-8th-grade students, 2008–09 to 2012–13	N = 673 principal-grade observations on 291 principals		0.11	0.14
Laing et al. (2016)	Chicago Public Schools	Administrative data, including standardized test score information from unspecified grades, and information on principal transitions, 1993–94 to 2013–14	N = 1,500 principals in 704 schools		-	0.08
Dhuey and Smith (2018)	North Carolina	Administrative records from the North Carolina Department of Public Instruction and test scores for 3rd-to-8th-grade students, 1998–99 to 2009–10	N = 4,415 principals in 1,954 schools		0.12	0.17
Bartanen (2020)	Tennessee	Administrative data from the Tennessee Department of Education and student achievement scores for 3rd-to-8th-grade students, 2006–07 to 2016–17	Reading N = 2,058 (FE) N = 8,408 (DA)	Math N = 2,045 (FE) N = 8,559 (DA)	0.13 (FE) 0.10 (DA)	0.24 (FE) 0.20 (DA)

Notes: DA = drift-adjusted estimate; FE = fixed effect estimate. See the reference list for the full citations. Laing et al. (2016) does not specify subject, but we identified the subject as math via correspondence with one of the authors.

To translate this magnitude, consider a student making typical annual math test score gains—that is, the student is at the 50th percentile in the distribution of math gains in a year. Now suppose this student is in a school with a below-average principal—say, a principal at the 25th percentile of effectiveness. The magnitude of principal effects suggests that replacing this principal with one at the 75th percentile of effectiveness (an above-average principal) would move this student’s math performance about 7 percentile points, from the 50th to the 57th percentile. For reading, the change would be from the 50th to the 55th percentile.⁹

We can also express the size of this effect in terms of months of learning, though we emphasize that such calculations are only rough approximations, given differences in typical year-to-year achievement gains as students age (Kraft 2020). On nationally normed tests, the average fifth-grader, as an example, gains 0.56 standard deviations in math over the school year (relative to their end-of-fourth-grade scores) and 0.40 standard deviations in reading (Bloom et al. 2008). In the same scenario in which the student’s below-average principal was replaced with an above-average one, our estimates suggest an effect on the average fifth-grader’s math scores of 0.18 standard deviations, and 0.12 standard deviations in reading. Under a few assumptions, **these impacts equate to roughly 2.9 months of learning in math and 2.7 months in reading in the standard nine-month school year.**¹⁰

The magnitude of principal effects uncovered by our systematic review of the most rigorous studies is substantively important. **The math gains from replacing a below-average principal with an above-average one—again, 0.18 standard deviations—would be larger than approximately 70 percent of the effects (on math achievement) of various educational interventions in 747 studies compiled by Kraft (2020). Reading gains would be larger than about 50 percent.**¹¹

The size of principal effects is nearly as large as estimates of individual teacher effects on student learning. Averaging across rigorous studies of teacher effects, for example, Hanushek and Rivkin (2010) report that a 1 standard deviation increase in teacher effectiveness results in gains of 0.17 standard deviations in math and 0.13 standard deviations in reading.¹² These values are larger than—though surprisingly close to—the estimated effects of a parallel 1 standard deviation increase in principal effectiveness (0.13 standard deviations in math and 0.09 standard deviations in reading), and indeed there is substantial overlap in the range of estimates in table 5.1 and those reported by Hanushek and Rivkin (2010). This unexpected similarity can be seen in another way in table 5.2, which transforms these effects to the case of the hypothetical replacement of a below-average teacher with an above-average one. A teacher switch of this nature matters more than a principal switch for an individual student, but not by much: less than a month of learning in math and just more than a month in reading.

TABLE 5.2

Comparing Teacher and Principal Effects on Student Achievement

Average increase in student achievement associated with:	Math	Reading
Moving from a teacher at the 25th percentile of teacher effectiveness to one at the 75th percentile	0.23 SD ≈ 3.7 months of learning	0.17 SD ≈ 3.8 months of learning
	<i>Averaged across all students in the teacher's classroom</i>	
Moving from a principal at the 25th percentile of principal effectiveness to one at the 75th percentile	0.18 SD ≈ 2.9 months of learning	0.12 SD ≈ 2.7 months of learning
	<i>Averaged across all students in the principal's school</i>	

Notes: SD = standard deviation. Teacher effects estimates based on Hanushek and Rivkin (2010). The months-of-learning conversions are based on gains for the typical fifth-grader reported in Bloom et al. (2008), using assumptions explained on page 39.

Should we conclude from this comparison that it is almost as important for an individual student to have an effective principal as it is to have an effective teacher? We should not—but the question may be incomplete (or misleading). Principal effects studies do not separate the effects of principals from the effects of their teachers, nor would doing so make sense. Principals' effects on student achievement are mostly indirect, coming largely through their efforts to recruit, develop, support, and retain a talented teaching staff and create conditions for them to deliver strong instruction (issues to which we return in chapter 7). For the individual student, teacher effectiveness is central. At the same time, a student learns more in a school with an effective principal in part because the principal makes it more likely the student is exposed to effective teachers.

For improving the school as a whole, therefore, the effectiveness of the principal is more important than the effectiveness of any single teacher. The gains of 0.13 standard deviations and 0.09 standard deviations in math and reading, respectively, associated with increasing the principal's effectiveness by 1 standard deviation are average student-level effects. These gains are a little smaller than the gains associated with increasing a classroom teacher's effectiveness by the same amount, but they apply to many more students. In the average elementary school, according to the National Center for Education Statistics, the typical teacher teaches 21 students, the mean elementary school class size. This teacher's "effect," then, applies to 21 students. The typical elementary principal's effect, in contrast, is felt by 483 students, the average elementary enrollment. The implication is that **if a school district could invest in improving the performance of just one adult in a school building, investing in the principal is likely the most efficient way to affect student achievement.**

Conclusions from these principal effect studies are backed up by studies using overall effectiveness ratings from principal practice ratings or teacher surveys. Studies from three states show that practice ratings given by principal supervisors predict student achievement growth in math

and reading. In Tennessee, principals who received average ratings that were one point higher (on a five-point scale) than principals in the same district saw adjusted math gains that were 0.05 standard deviations higher in math and 0.02 standard deviations higher in reading (Grissom, Blissett, and Mitani 2018). In Pennsylvania, principals with higher scores on the state's Framework for Leadership similarly saw higher achievement growth, particularly in math and science (McCullough et al. 2016). In Virginia, principals rated higher by their superintendents on a standardized leadership rubric saw higher student achievement (Owings, Kaplan, and Nunnery 2005). Studies relying on survey-based ratings from teachers reach similar conclusions. New York City schools had higher math gains in years when teachers rated leadership practices as more effective, compared with those same schools in other years (Kraft, Marinell, and Yee 2016).¹³ In Massachusetts, teachers' survey ratings of principal leadership predicted student growth percentiles in both math and English language arts, compared with other schools in the same district (Johnson, Kraft, and Papay 2012). In other words, across geographic contexts, researchers find connections between principals' ratings and student achievement that are consistent with positive impacts of more effective principals.

Principal Effects on Other Outcomes

A few studies have used similar approaches to estimate principal effects on outcomes other than student achievement. These include effects on outcomes for both students and teachers.

First, according to a study of Tennessee data, effective principals have measurable effects on student absenteeism and chronic absenteeism (Bartanen 2020). Students in a school with a principal who is above average in effects on attendance (i.e., at the 75th percentile) go to school approximately 1.4 days more in the typical school year than do students whose principal is below average (i.e., at the 25th percentile).¹⁴ Students are also 4 percentage points less likely to be chronically absent (i.e., to miss more than 10 percent of the school year) in a school with an above-average principal. These are large effects, given that the typical student in the sample misses only 9.9 days of school and just 13 percent are chronically absent. Moreover, the study finds that principals' effects on both attendance and chronic absenteeism are even larger in urban schools and schools with high concentrations of student poverty. Highlighting the multiple dimensions of principals' effects, it also finds that the principals who stand out in reducing student absences often are not the same principals who excel at raising student test scores.

Second, two studies from North Carolina also demonstrate principal effects on school discipline. The first comes from a study of principal switching among schools in Charlotte-Mecklenburg Schools

(Bacher-Hicks, Billings, and Deming 2019). The authors document that some principals are more inclined to give students suspensions, irrespective of the school in which they work. Evidence elsewhere in the study suggests that exposure to a principal with a high propensity to suspend increases students' likelihood of dropping out and engaging with law enforcement (e.g., being arrested, being incarcerated). The second comes from a statewide study of middle schools (Sorensen, Bushway, and Gifford 2020). The study examined consequences assigned to students by principals for different categories of disciplinary incidents to estimate a range of principal discipline harshness, measured by a principal's propensity to remove the student from the school via suspension or expulsion, compared with principals disciplining similar offenses in similar circumstances. The authors found large differences in harshness, with lenient principals (those at the 10th percentile of strictness) removing only 21 percent of students for the typical offense, and harsh disciplinarians (those at the 90th percentile) removing students 41 percent of the time. Moreover, this harshness has both positive and negative effects. Having a harsh principal is associated with fewer incidents of disruptive behavior but lower future likelihood of graduation, as well as greater likelihood that a student is charged with a misdemeanor in young adulthood. Negative effects are larger for Black and Hispanic students.

Moreover, research has quantified effects of principals on teacher outcomes. Burkhauser (2017) uses longitudinal teacher survey data from North Carolina to estimate principals' impacts on teachers' reports of their working conditions. The study finds substantial impacts of more effective principals on working conditions, including teachers' reports of having the time necessary to do their work and access to physical resources and professional development opportunities. These results comport with evidence from Tennessee surveys that teachers in schools with principals who receive higher supervisor practice ratings report more positive climates (Grissom, Blissett, and Mitani 2018).

Relatedly, studies have found that in schools where principals are given high overall average ratings from their teachers, teachers report higher job satisfaction (Grissom 2011; Johnson, Kraft, and Papay 2012). They also are less likely to report an intent to leave the school (Johnson, Kraft, and Papay 2012; Ladd 2011) or to turn over in that school year (Boyd, Grossman, et al. 2011; Grissom 2011; Kraft, Marinell, and Yee 2016; Ladd 2011). Principals assigned high supervisor practice ratings also see lower teacher turnover, particularly among effective teachers (Grissom and Bartanen 2019b). Principal effectiveness appears to be even more important for lowering teacher turnover in high-poverty schools (Grissom 2011; Grissom and Bartanen 2019b).

Conclusions from Our Synthesis of Quantitative Studies of Principal Effects

Our review of the best evidence on principal effects reaches a clear conclusion: students learn substantially more in both math and reading in schools with more effective principals. Principals also have effects on students beyond achievement, as measured by standardized tests. They have documented impacts on other student outcomes (e.g., attendance and discipline) that are important for students' long-term success and on key teacher outcomes (e.g., job attitudes and retention).

In their earlier review, Leithwood and coauthors (2004, 5) set forth the claim that “leadership is second only to classroom instruction among all school-related factors that contribute to what students learn at school.” Those authors drew this conclusion not from effects estimates of the kind we present but from assessments reported in their source material of the relative variation in student achievement explained by different school-related factors. Because of limitations to the available research base at that time, many of the studies used to generate these comparisons feature less robust designs than our inclusion criteria require in this synthesis—often cross-sectional, correlational studies comparing schools with high and low achievement levels (not growth), with “leadership” captured via a mix of measurement tools.

Based on a more recent and rigorous research base than Leithwood and coauthors had at their disposal, we conclude that their oft-cited judgment holds up and, in fact, may not have been stated strongly enough. Principals *really* matter. Indeed, given not just the magnitude but the *scope* of principal effects, which are felt across a potentially large student body and faculty in a school, it is difficult to envision an investment with a higher ceiling on its potential return than a successful effort to improve principal leadership.¹⁵

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6. How Principals' Attributes Matter: Evidence on Race, Ethnicity, Gender, Experience, and Other Characteristics

The previous chapter established that principals have important impacts on students and teachers, as measured by the best-available quantitative studies. Yet, it also highlighted that the studies it synthesized left leadership as a “black box,” as they were not well suited to describing the nature of effective principal leadership.

This chapter and the next aim to go inside that black box. Across these two chapters, we synthesize results from the more than 200 studies that ultimately met our inclusion criteria to begin answering the question of what factors drive principals' contributions to their schools. In this chapter, we assess what we know about the links between principal characteristics and student, teacher, and school outcomes. Chapter 7 turns to skills and behaviors.

We begin by discussing the evidence on demographic diversity among principals, detailing the evidence on race, ethnicity, and gender and connections to school outcomes. The evidence on principal racial and ethnic diversity, in particular, brings urgency to our observations in chapter 3 regarding the slow rate of change in the demographics of the principal workforce in the face of a rapidly diversifying student body. We conclude by reviewing research on other characteristics, such as age and educational attainment and by looking more closely at the intertwined topics of principal experience and principal turnover. Although we synthesized both quantitative and qualitative studies as background for this chapter, fewer qualitative studies that our systematic literature search yielded directly addressed the themes we discuss, so this chapter focuses more heavily on quantitative studies.

Evidence on the Importance of Racial, Ethnic, and Gender Diversity

Principal diversity is relevant to policy discussions surrounding school leadership. We begin by synthesizing research we uncovered connecting principal race, ethnicity, and gender to school

outcomes. In each case, we describe findings of effects of diverse principals on teachers, which is more robust, before turning to effects on students. Before reporting our results, we note that the thinness of the research base on which we draw means we cannot report findings regarding other forms of principal diversity, such as diversity of languages spoken. Also, many studies of principal race or ethnicity are limited by a focus only on Black and white principals—reflecting the settings from which data are drawn—or by analyses that group all principals of color together in a single “nonwhite” category, a methodological choice that obscures potential differences among racial and ethnic groups.

An additional limitation is that the mechanisms linking principal diversity to outcomes often are not explored directly in the studies we synthesize. This limitation matters for what implications we can draw. If Black principals positively affect Black students’ or teachers’ outcomes through leadership practices that could be learned by white principals, for example, districts might seek to make those practices more widespread among all principals at the same time that they move to increase diversity among their principals. If effects are driven by role model or relationship effects for which principal race or ethnicity is fundamental, only diversifying the principal workforce can lead to the reported outcomes.

Principal Race or Ethnicity and Teacher Outcomes

Principal racial and ethnic diversity matters for teacher outcomes, including hiring, retention, and job attitudes. There appears to be important nuance, however, in this conclusion. When studies ask whether teacher outcomes, especially teacher turnover, differ by principal race or ethnicity for teachers *on average*, typically, they find that the answer is no, once other factors, such as school context, are considered (Jackson 2012).

Other studies ask whether hiring, retention, and job attitudes for teachers of different racial or ethnic groups vary as a function of the principal’s race or ethnicity. A first conclusion from these studies is that principal racial and ethnic diversity is an important determinant of the racial and ethnic diversity of a school’s teaching faculty. Using quasi-experimental methods to examine longitudinal administrative data from Missouri and Tennessee, Bartanen and Grissom (2019) find that the racial composition of a school’s teaching staff shifted according to whether the school was led by a Black principal or a white principal. They estimate that a change from a white principal to a Black principal increases the share of Black teachers working in a school by about 3 percentage points, on average, in subsequent years, with a parallel shift occurring from a switch from a Black principal to a white principal. These longitudinal results are consistent with earlier cross-sectional findings linking principal race or ethnicity with teacher composition, such as Meier, O’Toole, and Nicholson-Crotty’s

(2004) conclusion that Texas schools with Hispanic principals have higher shares of Hispanic teachers. Over time, the influence of a principal of color on the composition of a school's workforce would be compounded, which could noticeably diversify an individual school.

The shift in teacher racial and ethnic diversity associated with the change in principal race or ethnicity operates through two channels. The first is differences in teacher hiring among principals from different groups. In Missouri and Tennessee, Black principals are 5 to 7 percentage points more likely to hire a Black teacher than a white principal in the same school (Bartanen and Grissom 2019). Two studies of teacher job application data—one using data from a centralized hiring system in Wisconsin (Goff, Rodriguez-Escutia, and Yang 2018) and one using data from an anonymous urban district (D'Amico et al. 2017)—similarly find that Black principals are more likely than white principals to hire teachers of color who apply to their schools.

The other mechanism is impacts on teacher turnover by teacher race or ethnicity. In nationally representative data from the 2003–04 SASS, Grissom and Keiser (2011) show that teachers are significantly less likely—by about 4 percentage points—to turn over when they and the principal are the same race or ethnicity. This pattern is more evident in schools led by Black principals. In their two states (Missouri and Tennessee), Bartanen and Grissom (2019) demonstrate that Black teachers are less likely to leave their school when the school is led by a Black principal than when that same school is led by a white principal.¹⁶ Consistent with these findings, in a study of Wisconsin teachers' applications to transfer, Goff, Rodriguez-Escutia, and Yang (2018) find that both white teachers and teachers of color are more likely to apply to a position in another school when their principal is of a different race or ethnicity. In their data, however, only white teachers in a school with a principal of color are more likely to actually change schools.

Research on differences in the job attitudes of white teachers and teachers of color by principal race or ethnicity mirrors these patterns. In the SASS data, Black teachers report higher job satisfaction in schools led by Black principals, relative to their colleagues in the same school who are of a different race, as well as greater feelings of support and encouragement and recognition for a job well done (Grissom and Keiser 2011). In an extended analysis using multiple SASS waves, Viano and Hunter (2017) replicate the Grissom and Keiser (2011) job satisfaction result but find evidence that it is driven by lower satisfaction among white teachers with Black principals than they may have had with white principals, particularly in the South. In Tennessee survey data, both Black and white teachers report higher job satisfaction when their principal is of the same race, and, in the case of Black teachers with Black principals, give higher assessments to the quality of leadership in the school as well (Bartanen and Grissom 2019). In North Carolina, teachers report greater trust in principals of the same race or

ethnicity (Brezicha and Fuller 2019). Other evidence suggests that teachers' perceptions indeed reflect actual differences in their treatment. For example, Kalogrides, Loeb, and Béteille (2012) show that Black and Hispanic teachers are assigned higher-achieving students when schools are led by Black and Hispanic principals.

Principal Race or Ethnicity and Student Outcomes

Few quantitative studies test for differences in average student achievement growth by principal race or ethnicity, and those that do show mixed results. In models with minimal covariates using Georgia data, principals of color saw a mix of higher, lower, and similar achievement levels relative to white principals, depending on the grade and subject (Brockmeier et al. 2013). Bowers and White (2014) report no correlation between principal race and slopes in student proficiency rates in Illinois. In North Carolina, Bastian and Henry (2015) find that nonwhite principals see lower achievement growth in several subject or grade-level combinations.¹⁷

Principal race or ethnicity more consistently correlates with positive outcomes for students from the same racial or ethnic group. Latinx students in Texas had higher standardized test scores in schools with Latinx administrators, results that appeared to be driven by the higher shares of Latinx teachers in those schools (Meier, O'Toole, and Nicholson-Crotty 2004). Consistent with these correlational results, in their quasi-experimental study of schools in Tennessee, Bartanen and Grissom (2019) find that Black students' math test scores increase more when the principal is Black, a relationship that appears to emerge by the principal's second year in the school. According to the authors' estimates, after that second year, Black students score 0.06 standard deviations higher in math, on average, when the principal is Black—an amount equivalent to about one month of learning in a school year. This positive impact is not simply explained by the increased likelihood that a Black student is taught by a “same-race” teacher—though this likelihood indeed is higher—but operates through another channel that the authors cannot measure.

The presence of a principal of color appears to lead to more frequent hiring and retention of teachers of color and better outcomes for students of color, including higher math scores and higher likelihood of placement into gifted programs.

Results for non-test score outcomes mirror these results. Latinx students in Meier, O'Toole, and Nicholson-Crotty's (2004) study of Texas schools had higher attendance rates and likelihoods of taking advanced courses under Latinx administrators. In a national sample, Black students were more likely to receive gifted services when the school's principal was Black, even after accounting for the share of teachers in the school who were Black (Grissom, Rodriguez, and Kern 2017). This same study finds that having a Black principal made it statistically no more or less likely that white or Hispanic students were assigned to the school's gifted program. It also found that the presence of a Hispanic principal was uncorrelated with the share of Hispanic students (or white students or Black students) in the gifted program once the share of Hispanic teachers in the school was accounted for. In Tennessee, Black students were 1.5 percentage points less likely to experience in-school suspension when the principal was Black, an effect that grows the longer the principal remains in the school (Bartanen and Grissom 2019). The study does not find that principal race or ethnicity affects out-of-school suspensions.

Scholars also highlight that principal race or ethnicity is not destiny, so to speak; white principals can also create equitable schooling experiences for students from marginalized communities through antiracist work. For instance, in their case studies of white principals improving outcomes for students of color, Theoharis and Haddix (2011) uncovered several markers of success, including intentional learning about race, engaging staff around racial issues, and bringing a critical lens to school data, including breaking outcomes data down by race and reflection on drivers of disparities, in leadership work with teachers.

Principal Gender and Teacher Outcomes

The research base on differences in teacher and school outcomes by principal gender is even smaller than the research base investigating principal race or ethnicity. More studies focus on effects on teachers, so we begin there. We found two studies that investigate differences in teacher turnover under male and female principals. Both suggest that the principal's gender matters for teacher turnover, primarily for male teachers.

First, using nationally representative SASS data, Grissom, Nicholson-Crotty, and Keiser (2012) find that teacher turnover is lower for teachers of the same gender as their principal (by 2 percentage points) than for other teachers in the same school. To contextualize the magnitude of this effect, the reader should note that average turnover in this sample is quite low, at only 14 percent, implying that 2 percentage points is a large effect. Subsequent analysis suggests, however, that this connection is driven almost exclusively by the turnover response of male teachers to the presence of a female

principal; female teachers' turnover propensities are similar under both female and male principals, and they are similar to the propensity of a male teacher to turn over under a male principal. Second, in a more recent study using a 40-year panel of administrative data from New York, Husain, Matsa, and Miller (2018) confirm this finding, showing that male teachers are more likely to leave schools with female principals but that female teachers show no such relationship.

Principal gender may also relate to other aspects of how male and female teachers experience their work. In another study of SASS data, female teachers report working more hours per week than their male colleagues when their principal is female (Marvel 2015). The author does not find a difference in reported hours worked for male and female teachers in schools with male principals. In New York, there is evidence that male teachers may earn slightly less (about 1 percent) when their principal is female (Husain, Matsa, and Miller 2018). The authors also find evidence that male teachers who work for female principals may be less likely to go on to school leadership themselves.

Findings regarding teacher work attitudes by principal gender are limited. Teacher satisfaction appears higher when teachers share a gender with their principal, a pattern again driven by lower satisfaction among male teachers who work for female principals (Grissom, Nicholson-Crotty, and Keiser 2012). A study of VAL-ED (Vanderbilt Assessment of Leadership in Education) ratings from a large district concludes that teachers do not rate male and female principals differently, on average (Goff, Goldring, and Bickman 2014). In a cross-section of North Carolina teachers, trust in the principal appeared to be higher for teachers of the same gender as the principal, though further evidence suggested that this result may be an artifact of the kinds of schools in which gender matching between teachers and principals occurs (Brezicha and Fuller 2019).

Principal Gender and Student Outcomes

Our search uncovered almost no studies linking principal gender to student outcomes. Bastian and Henry's (2015) study of schools with early-career principals in North Carolina found no consistent evidence that math or reading scores, on average, are affected by whether the school's principal is male or female, conditioning on other factors. In Illinois, Bowers and White (2014), found somewhat higher proficiency growth in schools led by female principals, though this finding did not hold among schools in Chicago.

We did not locate studies credibly linking principal gender to differences in student achievement by student gender. Similarly, we found no studies that explore differences in other student outcomes,

such as discipline or gifted assignment, for male and female students that can be credibly linked to principal gender.

Other Principal Characteristics

Research has investigated other observable principal characteristics and their connection to school outcomes. We briefly summarize the conclusions of this work.

Evidence on advanced degrees is mixed. For example, in North Carolina, holders of different kinds of master's degrees had similar student achievement growth, but some kinds of doctorates—especially those from private institutions—were associated with lower growth, suggesting that institution may matter more than degree (Bastian and Henry 2015). This conclusion is reinforced by other studies that document variation in principal performance outcomes, including achievement growth of their students, by preparation institution (Grissom, Mitani, and Woo 2019) or characteristics of institutions, such as selectivity (Bowers and White 2014; Clark, Martorell, and Rockoff 2009). (For an in-depth review of the role of principal preparation programs and their features, we refer the reader to a review by Darling-Hammond and colleagues, forthcoming.)

Research does not find strong relationships between principal age and performance. In studies that control for principal experience, age tends to be uncorrelated or only weakly correlated with outcomes like student achievement or with practice ratings (Bowers and White 2014; Grissom, Blissett, and Mitani 2018).

A slightly larger set of studies have examined principal experience. These studies generally find that more experience as a principal is associated with more positive outcomes. Schools with more experienced principals have higher student achievement growth (Bastian and Henry 2015; Clark, Martorell, and Rockoff 2009), though in some samples, this relationship is nonlinear, with principals with middle ranges of experience seeing higher achievement (Bowers and White 2014). A few studies with more limited controls find no relationship between experience and achievement growth (Knoepfel and Rinehart 2008). More experience is associated with higher ratings of leadership practice (Grissom, Blissett, and Mitani 2018) though not with teachers' reports of their working conditions (Burkhauser 2017).

Evidence on quantity of other kinds of experience return mixed results. Total experience in education has no or only a weak relationship with student achievement (Clark, Martorell, and Rockoff 2009; Knoepfel and Rinehart 2008) and ratings of leadership practices (Grissom, Blissett, and Mitani

2018). Years as an assistant principal is positively related to achievement in some studies (Bowers and White 2014) but not others (Clark, Martorell, and Rockoff 2009), and in still others, it varies across samples within the same study (Bastian and Henry 2015). Beyond just number of years, however, some evidence links performance in prior roles to principal effectiveness. Principals who previously were more effective teachers, for example, have higher achievement growth (Goldhaber, Holden, and Chen 2019). Their practice ratings also are higher, as are principals who previously were rated highly as assistant principals (Grissom, Woo, and Bartanen 2020). Principals who previously were assistant principals in high-performing schools or in schools with high-performing principals also are more successful, as rated by student achievement growth (Bastian and Henry 2015) and practice ratings (Grissom, Woo, and Bartanen 2020).

Principal Turnover

Closely connected to principal experience is principal turnover. Several studies document the negative impacts of principal turnover on student achievement and other outcomes. Quantitative studies of schools in Miami-Dade County Public Schools (Béteille, Kalogrides, and Loeb 2012), North Carolina (Henry and Harbatkin 2019; Miller 2013), and Tennessee (Bartanen, Grissom, and Rogers 2019) employing quasi-experimental designs show that student test scores dip in the years following a principal's departure. Across these studies, this dip is 0.01 to 0.02 standard deviations for the average student in the school, which is modest in size but may last multiple school years (Bartanen, Grissom, and Rogers 2019; Miller 2013) and be larger in high-poverty and low-achieving schools (Béteille, Kalogrides, and Loeb 2012). Midyear and end-of-year principal turnover appear to have similar effects on student achievement (Henry and Harbatkin 2019). Impacts on achievement are mitigated when the replacement principal is more experienced or effective (Bartanen, Grissom, and Rogers 2019; Béteille, Kalogrides, and Loeb 2012), suggesting that it is not the turnover event itself but the associated loss of leadership skills, relationships, and the like that disrupt student learning. Correlational evidence from an unnamed school district suggests that achievement change becomes more variable following principal turnover, which may indicate that some schools' performance increases while others' decreases (Hochbein and Cunningham 2013), a pattern that could be explained by the observation that differing motivations for a principal's turnover (e.g., transfer, promotion to central office) can have different impacts on achievement (Bartanen, Grissom, and Rogers 2019). Indeed, turnover among presumably low-performing principals targeted for replacement by a policy change in DC Public Schools led to increased student achievement over time (Walsh and Dotter 2014). Such results may depend on the setting, however. In case studies of six low-performing schools targeted by an initiative

to replace principals with new ones with demonstrated records of success, achievement stayed flat, and the practices of the incoming principals appeared similar to those of the outgoing principal (Pulliam et al. 2014).

Principal turnover also causes teacher turnover (Bartanen, Grissom, and Rogers 2019; Bêteille, Kalogrides, and Loeb 2012; Henry and Harbatkin 2019; Miller 2013), though the impact of teacher turnover does not appear to be the primary mechanism through which principal turnover hurts student achievement (Bartanen, Grissom, and Rogers 2019). Ratings of school climate from teacher surveys decrease with principal turnover as well (Bartanen, Grissom, and Rogers 2019).

The negative effects of principal turnover on student achievement, teacher turnover, and school climate raise questions about the drivers of principal turnover. Studies come to differing conclusions about how turnover differs by principal characteristics such as race or ethnicity and gender (Baker, Punswick, and Belt 2010; Gates et al. 2006; Papa 2007; Sun and Ni 2016). Older or more experienced principals may be more likely to exit, perhaps into retirement (Baker, Punswick, and Belt 2010; Gates et al. 2006; Grissom and Bartanen 2019a). The relationship with effectiveness appears U-shaped, with both the least and most effective principals being more likely to turn over, with principals in the middle range of effectiveness being more stable (Grissom and Bartanen 2019a; Sun and Ni 2016). Lower salaries are associated with higher turnover in some studies (Baker, Punswick, and Belt 2010; Papa 2007) though not in others (Grissom and Bartanen 2019a; Sun and Ni 2019).

School context also predicts principal turnover. Rates are higher in charter schools (Sun and Ni 2016) and middle schools (Grissom and Bartanen 2019a), for example. More troubling, principal turnover is more frequent in schools with more students of color (Gates et al. 2006; Grissom, Bartanen, and Mitani 2019; Grissom and Bartanen 2019a; Loeb, Kalogrides, and Horng 2010; Sun and Ni 2016), more low-income students (Grissom, Bartanen, and Mitani 2019; Grissom and Bartanen 2019a; Loeb, Kalogrides, and Horng 2010), and low or declining student performance (Bartanen, Grissom, and Rogers 2019; Grissom, Bartanen, and Mitani 2019; Loeb, Kalogrides, and Horng 2010; Miller 2013).

Higher rates of turnover in high-need schools contribute to an inequitable distribution of principal quality, measured by qualifications measures and supervisor and teacher ratings (Grissom, Bartanen, and Mitani 2019). Frequent turnover means frequent replacement of a principal who has built capacity on-the-job with a newer, less effective successor. Given the multiple negative impacts of principal turnover, high principal churn in schools with larger populations of historically marginalized students and greater performance challenges is an important, largely unrecognized issue for educational equity.

The reasons for the relationship between school context and principal turnover have not been fully explored, but evidence suggests that they are complex. Principals' working conditions in high-need schools likely play a role (Sun and Ni 2016). In surveys, principals' views of their working conditions predict their satisfaction and intent to stay (Conrad and Rosser 2007), and more satisfied principals are less likely to turn over (Grissom and Bartanen 2019a), suggesting that workplace challenges in historically underserved schools may push principals out. Most principals who turn over, however, do not express dissatisfaction with their work (Boyce and Bowers 2016), suggesting the importance of other factors, including decisions by actors other than the principal. For instance, studies demonstrate that school accountability systems affect turnover in schools according to what achievement benchmarks they meet (Cullen et al. 2016; Mitani 2019), and districts may be more likely to remove or demote principals in low-achieving schools (Grissom and Bartanen 2019a).

Principal turnover is more frequent in schools with more students of color, more low-income students, and low or declining student performance. Given the negative impacts of principal turnover, high principal churn in schools with larger populations of historically marginalized students and greater performance challenges is an important, largely unrecognized issue for educational equity.

7. Principals' Skills and Behaviors That Support Learning

The second part of our synthesis of the best-available studies connecting principals to student achievement and other outcomes focuses on what principals know and do. In this chapter, we use this synthesis to introduce a framework for summarizing the evidence on principal *expertise and skills* and how they inform principal *behaviors* that link to outcomes. We identify four categories of principal behaviors that research suggests are most central to effective leadership. We conclude with a discussion of leadership for equity.

Conceptualizing Principal Skills

Our synthesis of the literature identifies promising evidence of three broad categories of skills and expertise that leaders need to be successful: skills and expertise to support instruction, those to manage and develop people, and those related to organizational management. The domains overlap and interact to increase student achievement. This list is not exhaustive but attempts to characterize broad themes from the literature.

Instruction

The first set of skills and expertise to which our synthesis of relevant research points is those related to supporting and leading the school's instructional program. Effective instructional leaders demonstrate expertise around high-quality instruction that enables them to observe and evaluate teachers and classrooms in a constructive manner (City et al. 2009; Johnson, Uline, and Perez 2011), offering responsive and actionable feedback to improve teaching and learning. Principals must be able to distinguish high- from low-quality pedagogical practices, producing meaningful variation in teachers' observation ratings (Grissom and Loeb 2017). Instructional leaders also must possess the skills that enable them to provide effective, structured feedback to teachers, with the goal of motivating them to refine their practices. Finally, to ensure teachers are participating in high-quality professional development opportunities, principals need to be able to recognize the characteristics of high-impact professional development offerings, what Fink and Markholt (2011, 149) refer to as "orchestrating professional learning."

BOX 3

A Diverse Research Base

We again underscore that this synthesis draws on more than 200 studies spanning quantitative, qualitative, and mixed methodologies. Drawing on a diverse research base is essential for this portion of our report because of the challenges inherent in linking different facets of a complex role like principal leadership to school outcomes. Quantitative studies can gather data on a large scale, establishing generalizability of findings and offering opportunities to compare leadership approaches and outcomes across diverse contexts. Large-scale data can also facilitate quasi-experimental designs that can establish causal relationships between facets of school leadership and outcomes. Yet quantitative studies often necessarily sacrifice depth for breadth, relying on coarse measures and statistical summaries of constructs that can obscure nuance and limit opportunities to illuminate mechanisms. Qualitative studies, in contrast, specialize in depth and nuance, providing a rich look at leaders' and schools' individual experiences. Careful examination of these experiences can provide important insights about mechanisms, build theory, and provide direction for new avenues of inquiry. The trade-offs, typically, are small numbers of cases that make systematic comparison more difficult and uncertainty about whether conclusions generalize to different circumstances. An ideal principal leadership research base would build systematically on both categories of studies, using the complementary strengths of the two broad modes of inquiry to assemble a cohesive knowledge base.

Our assessment from synthesizing this diverse research base is that we, as a field, have not constructed a cohesive knowledge base on the drivers of principals' contributions. The problem is not an overreliance on either quantitative or qualitative approaches, as both are well represented in our synthesis. Instead, as we worked to make meaning out of studies connecting facets of leadership to school outcomes, we observed dizzying variation in what factors leadership studies considered, how those factors were operationalized, and the approaches the studies employed for analyses. Even among studies of the same topic, we seldom encountered two studies using the same measurement tools, or studies that replicated an earlier result. The challenges we faced in synthesizing this diverse—even disparate—array of studies parallels a challenge for the field more broadly. We return to this idea in chapter 8.

We also faced a body of studies that varied substantially in how well they could credibly demonstrate causal links between leadership and outcomes. Quantitative studies often failed to account for factors that could confound the conclusion that a principal's skills or behaviors drove (rather than merely was correlated with) a particular outcome. Many qualitative studies in our synthesis in fact were not primarily about principals' impacts on outcomes but discussed leadership as one aspect of inquiry into a related topic, so the specific leadership evidence they presented may have been thin. Even when leaders' impacts were the primary focus, claims about those impacts may not have been reinforced by multiple-case comparisons or other approaches that could reinforce their robustness. In synthesizing these studies, we weighed some studies more heavily than others given the strength of the research and resulting conclusions.¹⁸

People

The second set of skills describes how principals develop and interact with people in and around their school: teachers, support staff, parents, and the broader community. This set of human development or relationship skills is broad. We focus on three components highlighted in the literature: caring, communication, and building trust. The three are interrelated.

Researchers note that principals' ability to both develop and demonstrate a sense of caring for the teachers in the building can be a factor in positive relationship development. Brown and Wynn (2007) find that principals who retain teachers at higher rates offer proactive support to new teachers and are committed to the success of both novice and veteran teachers. Similarly, Jacobson and coauthors (2007) document the importance of principals in creating and maintaining safe and nurturing environments for everyone in the school. Caring principal leadership is associated with increased student support and teachers' sense of collective responsibility (Louis, Murphy, and Smylie 2016).

The ability to communicate effectively is another skill principals need to develop interpersonal relationships and positively influence school outcomes. In an investigation of principals in challenging schools, Jacobson and coauthors (2005) focus on communication as an essential element of developing people. In a case study of four principals, Hollingworth and colleagues (2018) find that successful principals communicate purposefully, implementing strategies like "open door" policies, sending weekly emails with information staff need and recognition of staff contributions, and being willing to have challenging conversations with staff when necessary. Effective communication can build shared expectations, which predicts teacher satisfaction, cohesion, and commitment to the school (Price 2012). Effective communication with families or caregivers is also necessary to increase parental involvement, which is associated with higher levels of student academic achievement (Gordon and Louis 2009).

Cultivating trust is another critical skill for principals. In a study of an urban district, collective trust—the degree of trust among principals, teachers, and students—was positively associated with the school's academic performance (Adams 2013). In a study of elementary school teachers in an urban district, Moyer and coauthors (2005) find that teachers who felt empowered at work had higher levels of trust with their principals; similarly, principals in Hollingworth and colleagues' (2018) study of high-quality leaders gained teacher trust via provision of autonomy. Price (2015) shows the close interconnection between trust and how teachers perceive their relationship with their principal and shows how these factors inform teachers' attitudes toward their students. When teachers view their principal as a competent, reliable leader, they trust the principal (Handford and Leithwood 2013). In a study looking at schools implementing reforms, Tschannen-Moran (2001) find that trust has to

precede any collaborative efforts. Khalifa (2012) demonstrates that school leaders can build trust between the school and the wider community by serving as highly visible community leaders.

The Organization

The final set of skills we identify is a general class of management skills that transcend schools. That is, they would be relevant to leading other kinds of organizations, such as private businesses or nonprofits.

Principals need skills to manage a complex organization. Studies of effective schools from the 1970s and 1980s often highlighted the importance of more traditional management skills for creating a high-functioning learning environment. More recent studies echo this conclusion. In an analysis of survey and administrative data from Miami, Grissom and Loeb (2011) show that principals' ratings of their organizational management skills (examples include developing a safe school environment, managing budgets and resources, and hiring personnel) predict higher student achievement growth, teacher satisfaction, and parent ratings of the school. Principals in Chicago showed a similar pattern, with higher ratings of organizational management skills correlated with higher achievement (Sebastian et al. 2018). In a study measuring organizational management practices in a cross-national sample, Bloom and coauthors (2015) found that US schools had higher performance when leaders reported broader engagement with organizational management, as measured by a management index. School outcomes also are higher when principals spend more time on management (Horng, Klasik, and Loeb 2010).

A challenge for these studies is that they often cannot differentiate areas of organizational management skills; principals who are rated highly on personnel management, for example, are the same ones rated highly on school safety and maintaining facilities (Grissom and Loeb 2011), and perhaps even in other domains, such as instructional leadership (Sebastian et al. 2018). Still, the literature points to specific organizational management skills that may be especially important. One is data use skills (Anderson, Leithwood, and Strauss 2010), which principals can make use of across domains of decisionmaking. Another is the ability to set goals and think strategically about how to harness available resources to meet those goals (Finnigan 2012; Lorton et al. 2013).

Domains of Leadership Behaviors and Practices Linked to School Outcomes

Skills and expertise alone are not sufficient to affect schools, as evidenced by the fact that scores on licensure examinations, which measure the skills and knowledge school leadership is purported to require, are poor predictors of later performance outcomes, including student achievement (Bastian and Henry 2015; Grissom, Mitani, and Blissett 2017).

Our synthesis of the literature identifies four interrelated domains of behaviors and practices that integrate instruction, people, and organizational skills to produce school outcomes. We label these:

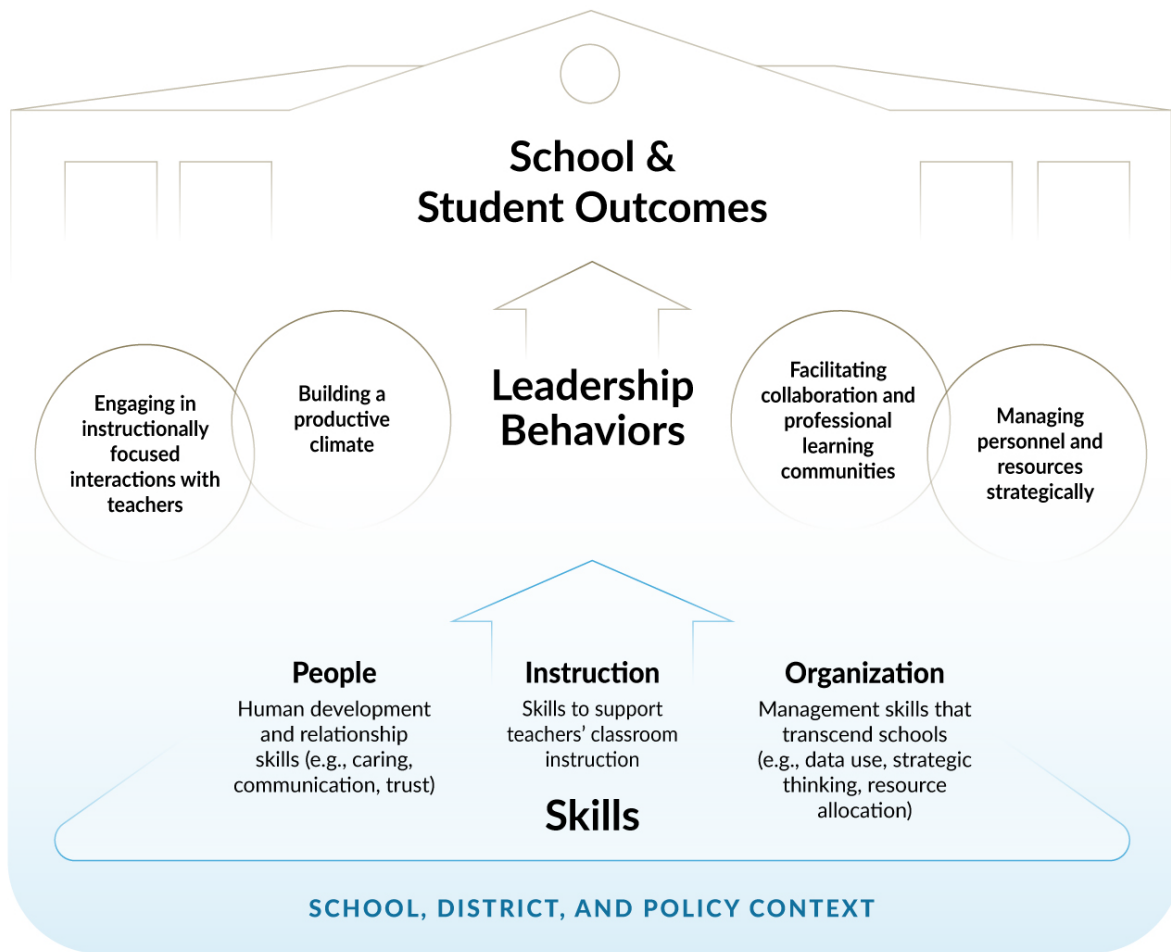
1. *Engaging in instructionally focused interactions with teachers,*
2. *Building a productive climate,*
3. *Facilitating collaboration and professional learning communities, and*
4. *Managing personnel and resources strategically.*

These behavioral domains, described below, are not exhaustive. Our synthesis of research on principal practices that predict more positive student and school outcomes finds, however, that these practices are ones most clearly supported by the weight of existing evidence.

Successfully engaging in these four leadership behaviors requires expertise in all three of the underlying skills—people, instruction, and the organization—to see improvements in school and student outcomes (figure 7.1). Some leaders have more proficiency in one skill area or another and may need to consciously build proficiency in other areas to engage in more effective practices that will benefit the school and students. For example, some principals are master teachers themselves and have a deep well of knowledge to draw on in interacting with their teachers around instruction but may have less well developed organizational skills that can help them prioritize and focus their time coaching struggling teachers. To be effective, a principal needs to build capacity across all three skill areas that they can integrate to advance the leadership behaviors and practices we describe. Finally, it is important to note that the various skills and leadership behaviors described here are affected and shaped by the school, district, and policy context in which principals find themselves operating.

FIGURE 7.1

Principal Skills and Behaviors to Improve School Outcomes



Engaging in Instructionally Focused Interactions with Teachers

Instructionally focused interactions with teachers refers to forms of engagement with teachers around instruction and instructional practice.

Traditionally, the field has referred to principals' engagement with teaching and learning under the broad heading of "instructional leadership." This term, however, does not have a clear, agreed-upon definition and lacks specificity (Neumerski 2013; Rigby 2014). Our synthesis emphasizes that not all instruction-related activities are productive ones; high-leverage instructional activities appear to be those that support and improve teachers' classroom instruction (May and Supovitz 2011). We group these activities into three interrelated buckets: teacher observation and evaluation, feedback and coaching, and the establishment of a data-driven instructional program.

TEACHER EVALUATION. Multiple studies demonstrate that students benefit academically from sophisticated teacher evaluation systems that marry structured classroom observations of a teacher's performance with high-quality feedback. Experimental evidence of the efficacy of systems that evaluate individual teachers' instructional effectiveness comes from the Chicago Public Schools' Excellence in Teaching Project, which shows that an elementary teacher evaluation program featuring classroom observations and structured principal-teacher dialogue resulted in reading achievement gains of 0.10 standard deviations (Steinberg and Sartain 2015). Positive impacts of similar magnitude have also been observed in studies of midcareer math teachers in Cincinnati (Taylor and Tyler 2012), and even larger impacts have been observed in Washington, DC, where the high-stakes teacher-evaluation system known as IMPACT resulted in performance improvements of 0.27 standard deviations (Dee and Wyckoff 2015). There likely are multiple mechanisms linking evaluation to higher teacher performance, including increased teacher motivation and opportunities to grow from actionable feedback or personalized teacher professional learning opportunities linked to what is observed in classrooms (Ovando & Ramirez 2007).

Principals play multiple roles in making teacher evaluation successful. One is securing buy-in. According to evidence from a study in Virginia, higher principal leadership ratings are associated with teachers expressing greater perceptions of legitimacy in evaluation (Kim, Sun, and Youngs 2019). Moreover, these perceptions of legitimacy were associated with growth in their instructional practice. In a related finding, Derrington (2016) describes how state-mandated changes to teacher evaluation can be supported by principals' adaptation of existing professional development opportunities or creation of new ones to support teachers during such transitions. LeChasseur and coauthors (2018) show that when interpreting a controversial teacher evaluation policy, principals can buffer their teachers from undue burdens and broker additional resources to meet its requirements.

A second role principals play in making teacher evaluation successful is to implement evaluation well, especially the teacher observation component. Successful implementation is not just measured by time spent on evaluation, which is positively related to achievement outcomes in some studies (Grissom, Loeb, and Master 2013) but not in others (Shin and Slater 2010). Instead, an important indicator of quality of implementation is validity of the information or scores collected. Studies generally conclude that ratings principals give to teachers indeed correspond to their performance. For example, Jacob and Walsh (2011) show that principal ratings of teacher effectiveness are correlated with proxies for effectiveness, such as teacher experience and attendance. When studies have looked more directly at effectiveness, results have been similarly encouraging. Two studies comparing principal evaluation ratings to "value-added" measures of teacher effectiveness derived from student test scores find strong correlations (Jacob and Lefgren 2008; Kane et al. 2011).

There are challenges, however. Jacob and Lefgren (2008) demonstrate that principals can accurately identify the top and bottom 10 to 20 percent of teachers but struggle to differentiate between teachers in the middle 60 to 80 percent of effectiveness, suggesting limitations on such ratings for providing teachers with precise feedback. Kerrins and Cushing (2000) observe a further challenge that can arise with regard to classroom observations, which is that “expert” and “novice” principals can have different takeaways when they conduct classroom observations of the same teacher. Furthermore, Grissom and Loeb (2017) demonstrate that principals can differentiate high-performing teachers from low-performing ones but still give all teachers “effective” or “highly effective” ratings on high-stakes personnel evaluations. This paradox prevents evaluation from being used to dismiss teachers even when principals told researchers in low-stakes interviews that these individuals were ineffective.

TEACHER FEEDBACK, COACHING, AND OTHER PROFESSIONAL LEARNING. Evidence suggests potential for principal feedback to teachers to improve teacher performance and student achievement. For example, an Institute of Education Sciences (IES)-funded intervention provided resources and supports to eight districts to measure educator performance in three ways in 2012–13 and 2013–14: classroom observations, a measure of teachers’ contributions to students’ value-added test scores, and a measure of principal leadership (Wayne et al. 2016). Impact evaluation findings show that principal feedback to teachers improves classroom practice, which is positively associated with subsequent improvements in students’ math and reading test scores (Garet et al. 2017). Specifically, this random assignment study measured the size of the association between classroom practice and students’ math achievement as 0.06 to 0.07 standard deviations, depending on the instrument used. In reading, the effect size is 0.03 standard deviations.

Another study that measures the strength of the relationship between teacher coaching and student learning gains uses data from Miami-Dade County Public Schools. Using data from 100 principals, Grissom, Loeb, and Master (2013) provide empirical evidence of the link between specific instructional leadership behaviors and school performance on standardized achievement tests. In particular, time spent on coaching teachers is associated with higher student achievement growth, whereas time spent on informal classroom walk-throughs is unproductive, especially in high schools. The authors find suggestive evidence that walk-throughs are unproductive on their own because they are seldom part of a broader coaching or feedback strategy.

Evaluation systems benefit teacher feedback by giving principals and teachers a common framework and language for discussing instruction (Kraft and Gilmour 2016). Yet as Kraft and Gilmour’s interviews with principals find, the challenges of implementing evaluation—including the

time it takes amid principals' other duties—can undermine feedback as well, often making feedback conversations brief and infrequent. Another challenge they document for effective feedback is principals' hesitancy to have challenging conversations about weaknesses, leading them to over-focus on the positive aspects of what they have observed in classroom observations and not discuss areas of improvement. Qualitative research from Florida finds that principals in higher-performing schools follow up more consistently on classroom observations to provide more specific, actionable feedback for teachers to use to improve their practice (Huff et al. 2018).

Evidence is also beginning to accumulate that individualized teacher coaching models can benefit teachers. A randomized controlled trial studying 59 teachers in New Orleans charter schools who received individualized coaching to improve their behavior management and instructional techniques found they scored 0.59 standard deviations higher on an index of effective teaching practices (Kraft and Blazar 2017). Although the coaches in this study were not school principals, this individualized coaching model could be implemented by a school principal in another context.

For many school leaders, the skills required to give teachers meaningful feedback and authentic coaching support must be learned. Drago-Severson and Blum-DeStefano (2018) discuss six strategies for building a developmental culture of feedback in schools, which are deeply embedded in relationship-building and creating a school-wide infrastructure for collaboration. Similarly, Woulfin and Jones (2018) emphasize both the structural components and the relational aspects of social capital in effectively facilitating instructional coaching reforms. Their recommended approach includes principals elevating coaching as a valuable strategy for school reform, which may raise teachers' willingness and enthusiasm to participate in coaching activities.

One principal behavior that does not have strong evidence that it improves the quality of feedback exchanged during such principal-teacher conferences is the use of a checklist. Mihaly and coauthors (2018) report that even though such checklists reduce the degree to which a school principal may dominate conversation during these conferences, their use is not associated with any meaningful changes in teachers' instruction or student achievement.

Feedback and coaching fall, alongside traditional notions of professional development, under a more general heading of *professional learning*. High-performing schools devote resources to learning opportunities for teachers that focus on instruction and build teacher capacity (Borko et al. 2003; Garza et al. 2014). Student achievement is higher in schools in which principals ensure that professional learning opportunities for teachers align with school goals (Shin, Slater, and Backhoff 2013). Relatedly, achievement growth is higher in schools in which teacher professional learning is an integral part of a coherent school-wide instructional program (Newmann et al. 2001).

USING DATA TO DRIVE INSTRUCTIONAL IMPROVEMENT. Expectations for principals' use of data to drive decisions about the school's instructional program and strategies to promote achievement have increased in the last few decades. Research suggests that effective principals make use of data not only to make good decisions and address school needs but to inspire action (Hitt et al. 2018). Data-driven leadership practices promote teacher buy-in to school improvement approaches (Yoon 2016) and are associated more generally with more positive teacher perceptions of the school's climate and school processes (Shen et al. 2016). Engagement with data specifically around monitoring student progress appears especially important to student achievement and supports for students (Elfers and Stritikus 2014; Shin, Slater, and Backhoff 2013).

Data use links closely to the concept from public administration of "performance management." Performance management involves setting performance goals or targets and then using data to direct resources, coordinate decisions, and monitor progress toward desired results. In correlational analyses, Sun and Van Ryzin (2014, 331) show that New York City school leaders employing performance management practices "including an emphasis on measurable goals, ongoing feedback, targeted intervention, and strategic decision making based on performance information" experienced improved student outcomes on standardized assessments. Similarly, principal goal setting and management toward clear goals and expectations were associated with higher achievement scores in Hawaiian schools (Johansen and Hawes 2016). Note that not all studies find clear connections between goal setting and student outcomes (Shatzer et al. 2014).

How can a data-driven culture be established? Cohen-Vogel and Harrison (2013) describe how schools build a culture in which data are prioritized as a tool to improve instructional practice, such as by instituting collaborative "data chats" between administrators and teachers. Blanc and coauthors (2010) point to the value of data gathered from interim assessments, which can be used to build instructional coherence so long as a robust feedback system in that school helps teachers engage with data. To learn more about how to establish such systems and engage with teachers in a data-driven way, executive coaches can be engaged to build principals' confidence as reflective and effective instructional leaders (Houchens et al. 2012). These individuals can guide inexperienced principals in how best to leverage data to support and improve teacher performance.

Building a Productive School Climate

Several studies investigate practices that center the principal as the person responsible for creating and maintaining the school's climate. Although the terms are sometimes used interchangeably, we

suggest school climate is a broader umbrella under which school culture falls. School climate refers to the behaviors and actions of people in the school who are members of its social system and is an outgrowth of the more stable school culture, which is the shared beliefs of people in the school community (Lindahl 2006; Rousseau 1990; Van Houtte 2005). This conceptualization is consistent with Tagiuri and Litwin (1968), who suggest that school climate includes (1) the physical aspects of schools, (2) the characteristics of individuals participating in the organization, (3) social systems of relationships, and (4) culture, which is the shared set of beliefs about the organization.

A strong climate is one in which all individuals in the school can spend their time engaging in or supporting effective teaching and learning. Elements that are typically present in a strong climate are collaboration, engagement with data, organizational learning, a culture of continuous improvement, and “academic optimism” (Bevel and Mitchell 2012), which refers to the three organizational properties of trust, collective efficacy, and academic emphasis. Although this work can be challenging, especially when a principal is tasked with “cleaning up” an ineffective school culture (Peters 2012), when principals succeed in creating a strong school climate, it can be self-sustaining, even in high-need schools (Okilwa and Barnett 2017). It can also guide them through challenging policy shifts, often externally imposed, as the skills to develop a rich social fabric and tight-knit sense of community are a key component of the transition leader’s toolkit (Goldring et al. 2003).

One set of studies connects school climate to teachers, instruction, and students’ academic outcomes. Teachers’ instructional effectiveness improves more rapidly in schools with strong professional climates (Kraft and Papay 2014). In turn, school climates featuring an academic emphasis are positively associated with students’ academic performance (Henderson et al. 2005). Leana and Pil (2006) find that instructional quality is rated better by parents when “internal social capital” (i.e., trust, information sharing, and shared vision) among teachers is higher. They also find that internal social capital predicts higher student test score growth. Studies consistently find that principals are one of the main drivers of teacher working conditions (Johnson et al. 2012) and that positive climates predict lower teacher turnover (Guin 2004). In a study of high school principals in Chicago Public Schools, Sebastian and Allensworth (2012) find that leaders can affect instruction directly by establishing a safe, college-focused school climate.

A number of studies identify the ways principals facilitate and create a strong climate by organizing schools to help teachers and students feel safe, valued, and supported (Jacobson et al. 2007) and to help them believe their individual effort will lead them to achieve their goals (Kelley and Finnigan 2003). Louis and Murphy (2017) demonstrate that teachers’ trust in their principal’s caring leadership is connected to organizational learning and, in turn, student achievement. Conversely, Blase

and Blase (2006) document the negative effect of administrative mistreatment on efforts to build a community of learners. Thus, it appears that principals who build a school climate in which teachers and students feel emotionally supported provide a bedrock on which academic improvement efforts can rest. This work often starts with a needs assessment. For example, Klar and Brewer (2014) emphasize the value of principals taking the time to familiarize themselves with the school community's values, priorities, needs, and norms. From there, principals can harness their emotional and social intelligence competencies to foster improvement (Williams 2008). Similarly, effective principals invest in knowing their staffs' expertise, needs, and personalities (Hollingworth et al. 2018).

Effective principals can improve the school climate by empowering teachers. This can take the form of promoting teacher leadership (Sebastian, Allensworth, and Huang 2016), delegating tasks to them (Crum, Sherman, and Myran 2010), actively mentoring teachers to enhance their personal and professional competence (Tillman 2005), selecting professional development experiences that generate powerful learning opportunities (Brown and Militello 2016), and promoting collaboration (Berebitsky, Goddard, and Carlisle 2014; Goddard et al. 2015). Teachers can also feel empowered by having access to timely data on their students, something principals can influence as they create the circumstances for teachers to engage in data-driven instruction (Brown 2015; Koyama 2014).

Principals also affect school climate by fostering trust (Tschannen-Moran and Gareis 2015), which is an essential part of school climate because it directly facilitates school improvement, positive student beliefs, and positive student behavior (Adams 2014; Finnigan 2012). Trust among teachers can drive improvement by building collective efficacy (Pierce 2014) and making teachers more flexible and adaptive in their approaches to improving student outcomes (Daly 2009). Strong leaders cultivate trust by providing teachers with autonomy to try new strategies and risk failure (Hollingworth et al. 2018). They create routines and structures that encourage collective action (Adams 2013). They also gain trust via demonstration of competence (including being visible, helping teachers solve problems), consistency (e.g., in observation feedback, in approach to discipline), and respect and support for staff (Handford and Leithwood 2013). In addition to math and reading improvements, collective student trust is associated with greater identification with school and internal control over learning tasks (Adams 2014). In a qualitative study of secondary leadership, "principals articulated the importance of engaging in collaborative efforts that cultivated leadership for improved student learning through consensus-building efforts. These efforts represented relational dimensions of leadership practices where openness and trust were fostered" (Mansfield and Jean-Marie 2015, 828).

Building a productive school climate does not just mean focusing on teachers and students but extends to parents and other community stakeholders. Khalifa (2012) demonstrates that school

leaders who simultaneously serve as highly visible community leaders and advocates build trust between the school and the wider community. Reyes and Garcia (2014) offer concrete examples of school leaders' practices that validate a community's culture, language, and traditions. These efforts can pay off. Gordon and Louis (2009) demonstrate that schools where teachers say parent involvement is higher experience higher levels of student academic achievement, and Mukuria (2002) documents a relationship between high parental involvement and lower rates of student suspensions for disciplinary infractions. In general, Klar and Brewer (2013) point out the value of leaders' awareness of their context and willingness to adapt leadership practices for their unique community environment.

Facilitating Collaboration and Professional Learning Communities

Collaboration is a key element of a productive school climate, though given its importance to instruction and the volume of studies addressing it, we call it out as its own category. Friend and Cook (1992) define collaboration as practices that are universal to the interpersonal activity that occurs in schools. They explain how it is voluntary, all parties are co-equal, and it involves working toward a common goal with shared resources, responsibilities, and accountability. Researchers have shown that teacher collaboration can drive higher student achievement (Ronfeldt et al. 2015) and other outcomes, such as lower teacher turnover (Brown and Wynn 2007). Importantly, however, collaboration goes deeper than mere staff cooperation, which Miller and Rowan (2006) show is not on its own associated with higher achievement growth.

Several studies investigate how principals facilitate collaboration. For example, Goddard and coauthors (2015) discuss how principal leadership supports teacher collaboration, which leads to larger collective efficacy within a school. In turn, these positive relationships are associated with improved student achievement. Supovitz, Sirinides, and May (2010) similarly show that principals' effects on teacher instruction come, in part, via effects on teachers working together on instructional issues. One way principals facilitate collaboration is through leading effective data use for student improvement. Principals can set purposes and expectations, allowing opportunities for data use and training (Anderson, Leithwood, and Strauss 2010). Explicit protocols for collaboration can make collaborative work more systematic and increase teams' effectiveness (Saunders, Goldenberg, and Gallimore 2009). Elementary schools in which grade-level teams were allotted common planning time saw higher achievement growth, particularly in reading (Miller and Rowan 2006).

Principals are also responsible for creating a culture of learning that permeates the entire school and facilitating instructional collaboration. In a study that drew data from the Comprehensive

Assessment of Leadership for Learning, Min and coauthors (2016) explored leadership practices that promote instructional collaboration, finding that schools in which the principal monitors teaching and learning and builds nested learning communities experience instructional collaboration that is of a higher quality. Similarly, Tichnor-Wagner, Harrison, and Cohen-Vogel (2016) describe how principals create a positive culture of learning. Drawing on high-leverage practices, such as providing opportunities for formal collaboration and structured opportunities for participatory leadership, effective principals create systems for a culture of learning and formal collaboration. In interviews with 62 leaders whose schools had shown improvement, Taylor (2010) identified establishing a culture of learning as the primary action theme associated with school improvement.

Professional learning communities (PLCs) are a widely used strategy for formalizing and increasing collaboration among teachers. Strong PLCs are closely connected to other conditions for learning, including a strong school culture and supports for instruction (Leithwood and Jantzi 2008). Principals establish professional learning as a priority and support teacher communities and groups in a school, and the creation and maintenance of these communities improves student achievement (Park, Lee, and Cooc 2019).

Principals who are effective instructional leaders provide time and support for PLCs (Cravens et al. 2017). They work with teachers to create a shared sense of responsibility for student learning (Sanzo, Sherman, and Clayton 2011). They engage directly to facilitate teachers' collaborative work in their instructional teams (Charner-Laird et al. 2017). They also schedule and budget with opportunities for professional learning in mind (Lyman 2008). When they cannot engage in PLC work directly, they can leverage the expertise and engagement of other leaders in the school, such as department chairs, to create and maintain communities of practice (Printy 2008).

Both the design and the success of professional learning communities vary according to school context, and principals are an important source of this variation. Hollingworth (2012) notes that their success hinges on the quality of the relationship between teachers and school leaders. In a two-site case study, Brown (2015) notes that principals can establish a positive school community with PLCs. On the other hand, Rigby, Andrews-Larson, and Chen (2020) describe how school leaders guided PLCs toward focusing on standardized test preparation instead of instructional matters. Voelkel and Chrispeels (2017) document within-school variation in PLC processes and how high-functioning teams have principal support. In a case study, Bagwell (2019) investigates contextual differences in leadership behaviors in creating these communities. In certain contexts, principals use PLCs as a part of reform efforts. Huggins, Scheurich, and Morgan (2011) detail the role of principal leadership in guiding the work of PLCs, particularly as a reform strategy in one low-achieving school. Finally,

principals increase collective efficacy, and increased teacher collaboration can close racial achievement gaps by using PLCs as a key school reform strategy (Goddard, Skrla, and Salloum 2017).

Managing Personnel and Resources Strategically

Effective leadership requires strategic management of scarce resources. *Strategic* means optimizing how resources are used or allocated to support teaching and learning. Research links strategic management to positive outcomes.

Some scarce resources that principals manage strategically are intangible. One is time. In one study, principals with better time management skills, as measured by a time management assessment, spent more time on instruction and in classrooms, according to time-use observations. In high schools, principals with better time management skills were rated more highly in their leadership effectiveness by their teachers and assistant principals (Grissom, Loeb, and Mitani 2015). Beyond managing their own time, principals can harness the school's schedule to pursue goals. To facilitate teacher collaboration, for example, principals can schedule common planning or protect teacher time for team meetings (Charner-Laird et al. 2017). They can also limit teacher responsibilities to create time for teachers to focus on teaching (Shatzer et al. 2014; White-Smith 2012).

Another intangible resource is external social capital. Some evidence suggests that principals who spend more time interacting with parents, community members, and other stakeholders outside the school see higher reading (but not math) growth in their schools (Leana and Pil 2006). In another study, principal time on external relations showed some positive—but generally inconsistent—relationships with school accountability performance metrics and parent and teacher climate measures (Horng, Klasik, and Loeb 2010). Research has documented several potentially successful strategies for principals to engage parents and other community members, including creating parent liaison positions to broker relationships, build trust, and connect families to school resources (López et al. 2018) and pushing staff into the community with home visits and off-site meetings (Kraft et al. 2015).

Evidence broadly indicates that principals' management of more tangible resources predicts positive school outcomes. In multiple studies of Miami schools, both skills and time investment in tasks labeled organizational management (including resource management) were linked to student achievement, teacher satisfaction, and other outcomes (Grissom and Loeb 2011; Horng, Klasik, and Loeb 2010).

Within organizational management, research most clearly connects strategic personnel management to student achievement and other outcomes. We can broadly categorize strategic

personnel management behaviors as related to teacher hiring, assignment (or placement), and retention.

HIRING. Strategic teacher hiring appears especially important. Schools that more consistently hire high-performing teachers have substantially higher achievement growth (Loeb, Kalogrides, and Béteille 2012). In some contexts, principals have substantial influence over teacher hiring, influence that has increased over the past 25 years as teacher hiring processes have become less centralized (Engel, Cannata, and Curran 2018). Unfortunately, principals often do not exercise this influence to hire the most effective applicants (Jacob et al. 2018).

A key differentiator between strong and weak hiring practices that has emerged in research is principals' access to and engagement with data about teacher applicants. Principals' hiring processes too often are "information poor" in that they do not carefully incorporate information about applicants that can signal effectiveness (Cannata et al. 2017). Such information includes teacher qualifications, past impacts on student achievement, and classroom observation ratings. For example, in surveys of principals in Texas and Florida, only 41 percent of respondents reported using achievement data "to a great extent" in hiring teachers (Cohen-Vogel, Little, and Fierro 2019). Only 7 percent of Illinois principals reported that a demonstration teaching lesson was typically part of their selection processes (Kersten 2008).

Principals may face barriers to accessing some of this information, such as inadequacies in their districts' systems for sharing applicant data. But even for information that would likely be accessible (e.g., because it could be gleaned from résumés) or in school districts with advanced systems and supports for facilitating principal data use in the hiring process, principals often report not considering or prioritizing it (Cannata et al. 2017). Constraints on principals' time to engage with data is a key barrier (Cohen-Vogel, Little, and Fierro 2019).

Other evidence shows that available information on teachers is not necessarily used in hiring decisions. In a study of teacher hiring in Washington, DC, Jacob and coauthors (2018) found that teachers' academic qualifications were uncorrelated with their likelihood of being hired, even though those qualifications were good predictors of job performance, as measured by both classroom observations and contributions to student achievement. They found a similar pattern for scores from district screening based on written responses, interviews, and sample lessons, which helped applicants be placed on a list of "recommended candidates" but, among candidates on that list, only weakly predicted the likelihood of being hired, despite a strong connection to later job performance. Instead, principals often prioritize factors that may not be strong predictors of future performance, such as

enthusiasm and being a team player (Cannata et al. 2017; Engel 2013). More experienced principals may be more likely to base hiring decisions on teacher qualifications (Papa and Baxter 2008).

More generally, studies come to mixed conclusions about the degree to which principals, in the hiring process, value evidence that a teacher will raise student achievement. In some cases, principals appear to place value on such signals (Cannata and Engel 2012; Cannata et al. 2017), while in others, such information seems to be discounted or ignored (Rutledge, Harris, and Ingle 2010). One possibility is that principals use hiring to pursue school goals other than raising achievement (e.g., creating a supportive climate). Indeed, principals value such teacher attributes as caring for students more often than factors typically associated with achievement when describing hiring priorities (Engel 2013; Harris et al. 2010). Principals also value other factors, such as subject-matter expertise, which may inform effectiveness (Ingle, Rutledge, and Bishop 2011; White-Smith 2012).

Studies also identify important sources of variation in principals' approaches to hiring. Principals in urban and low-performing schools report spending less time on hiring processes (Papa and Baxter 2008). Principals in low-achieving schools in Chicago were more likely to report looking for classroom management skills and ability to raise test scores when hiring teachers (Engel 2013). Principals were more likely to engage with teacher effectiveness information in school districts that put structures in place to facilitate such engagement, when principals had skills and expertise necessary to use data for decisions, and when they perceived measures as valid (Cannata et al. 2017). High school principals hold additional hiring criteria around extracurricular activities, such as coaching and sponsoring clubs (Ingle, Rutledge, and Bishop 2011) that elementary schools do not. There is also evidence of racial differences in hiring outcomes that may signal differences in principals' approaches to hiring by race. In particular, Black principals appear more likely to hire Black teachers (Bartanen and Grissom 2019; Goff, Rodriguez-Escutia, and Yang 2018).

ASSIGNMENT AND PLACEMENT. Placement of teachers within the school is another way principals exercise personnel strategy. Principals often play a role in assigning teachers and students to classrooms (Grissom, Kalogrides, and Loeb 2015a). Principals report using student test scores and other evidence of teacher effectiveness to place teachers strategically (Cohen-Vogel 2011; Cohen-Vogel and Harrison 2013). Yet not all principals pursue the same strategic goals. Equity and response to accountability pressures have emerged as two themes in research on teacher placement.

High-growth schools place teachers more equitably within the school, matching high-performing teachers to low-achieving students (Loeb, Kalogrides, and Bêteille 2012). But analyses of classroom composition data tend to find that more experienced teachers are assigned to more advantaged students, on average, suggesting that many principals are not using strategic assignment policies to

pursue equity (Grissom, Kalogrides, and Loeb 2015a; Kalogrides, Loeb, and Bêteille 2012). Classrooms where low-achieving students are concentrated are more likely to be taught by novice teachers (Kalogrides and Loeb 2013), as are classrooms serving English learners, which interview evidence suggests reflects preferences of more senior teachers and micropolitical dynamics among teachers, administrators, and others (Dabach 2015).

Accountability pressure appears to be a key driver of teacher placement strategy. In particular, principals report moving unsuccessful teachers out of tested classrooms into untested ones to increase measured school performance (Cohen-Vogel 2011; Cohen-Vogel and Harrison 2013). Use of achievement data for assignment appears to be more common in schools facing accountability pressure (Cohen-Vogel, Little, and Fierro 2019). Both these patterns appear in quantitative analyses of administrative data on teacher placement. In Miami, teachers with higher performance in both tested and untested classrooms are more likely to teach in tested classrooms the next year, patterns that become even stronger in schools with low accountability grades and where principals have greater involvement in assignment (Grissom, Kalogrides, and Loeb 2017). This kind of strategic placement has consequences, however. In the Grissom, Kalogrides, and Loeb (2017) study, strategic placement in elementary schools meant moving low performers into untested K–2 classrooms. Students in those classrooms performed lower on K–2 assessments and on high-stakes assessments in later years.

RETENTION. The final area of personnel strategy is strategic retention. Research demonstrates fairly conclusively that teacher turnover rates are lower under more effective principals (Boyd, Lankford, et al. 2011; Kraft, Marinell, and Yee 2016; Ladd 2011). Principals' relationships with teachers and their ability to build trust are important for teacher retention (Guin 2004). But even though reducing average teacher turnover rates likely benefits schools, it is even more beneficial to decrease turnover among the strongest teachers. Indeed, high-growth schools are better at retaining high-performing teachers (Loeb, Kalogrides, and Bêteille 2012). When schools lose effective teachers, student achievement is negatively affected (Kraft 2015).

Effective principals are more likely to retain high-performing teachers, as measured by both classroom observation ratings and value-add (Grissom and Bartanen 2019b). They are also more likely not to retain their lowest-performing teachers, as measured by classroom observation ratings. This “strategic retention” pattern is more apparent in low-poverty schools where principals may have a more readily available supply of replacement teachers. Case study evidence similarly suggests that even though principals value teacher stability, successful principals can also seize turnover as an opportunity to “weed out” less effective teachers and bring in teachers with new ideas. These benefits of turnover are contingent on a strong applicant pool (Guin 2004).

Research has not fully explored the specific strategies principals employ to retain high performers and move low performers out. Principals who are successful at retaining teachers take a proactive approach and focus on teacher growth, including building opportunities for teachers to collaborate (Brown and Wynn 2007). Research documents examples of principals strategically counseling out teachers who were poor fits for the principal's vision of the school's goals (Mansfield and Jean-Marie 2015) and using administrative procedures to remove ineffective teachers (Grissom, Loeb, and Nakashima 2014; Kraft 2015). Some evidence suggests that when removing low performers, "counseling out" is more important than formal administrative procedures (Grissom and Bartanen 2019b).

BOX 4

Leadership Practices and Policies That Evidence Weighs Against

Our synthesis focuses on the links between facets of principal leadership and student achievement and other outcomes. In some cases, however, rigorous studies have identified practices or policies that evidence does not support. Here we highlight a few examples.

- **“Unproductive” classroom walk-throughs.** In a study linking observations of principal time use over multiple years to student achievement, researchers found that time spent on informal classroom walk-throughs negatively predicted achievement growth, especially in high schools (Grissom, Loeb, and Master 2013). This result stood in contrast to other kinds of instructional time use, like time spent on coaching teachers, that generally positively predicted achievement growth. Supplemental evidence, including from principal interviews, suggested that the negative correlation between walk-throughs and achievement growth may arise from principals using walk-throughs for monitoring or their own visibility rather than as opportunities to provide feedback or link to broader teacher professional learning strategies.
- **Post-observation feedback checklists.** Mihaly and colleagues (2018) conducted a statewide experiment among principals in New Mexico in which principals in the treatment group were provided with a 24-item feedback conference checklist (plus supporting materials) to guide discussions with teachers after classroom observations. Although they documented some impacts, such as teachers reporting less dominance of the feedback conference by principals, there was no clear impact on perceptions of quality of feedback, subsequent classroom ratings, or student achievement.
- **Licensure examinations.** Two studies have tested whether scores on examinations taken as a condition of administrative licensure, such as the School Leaders Licensure Assessment, predicts subsequent leadership performance. In neither case was the answer yes, with performance measured by practice ratings given by supervisors, teacher ratings of school leadership, or student test score growth (Bastian and Henry 2015; Grissom, Mitani, and Blissett 2017). Also, both studies document that white test takers perform much better on the assessments, suggesting that the exams may create barriers for educators of color seeking to enter school leadership.

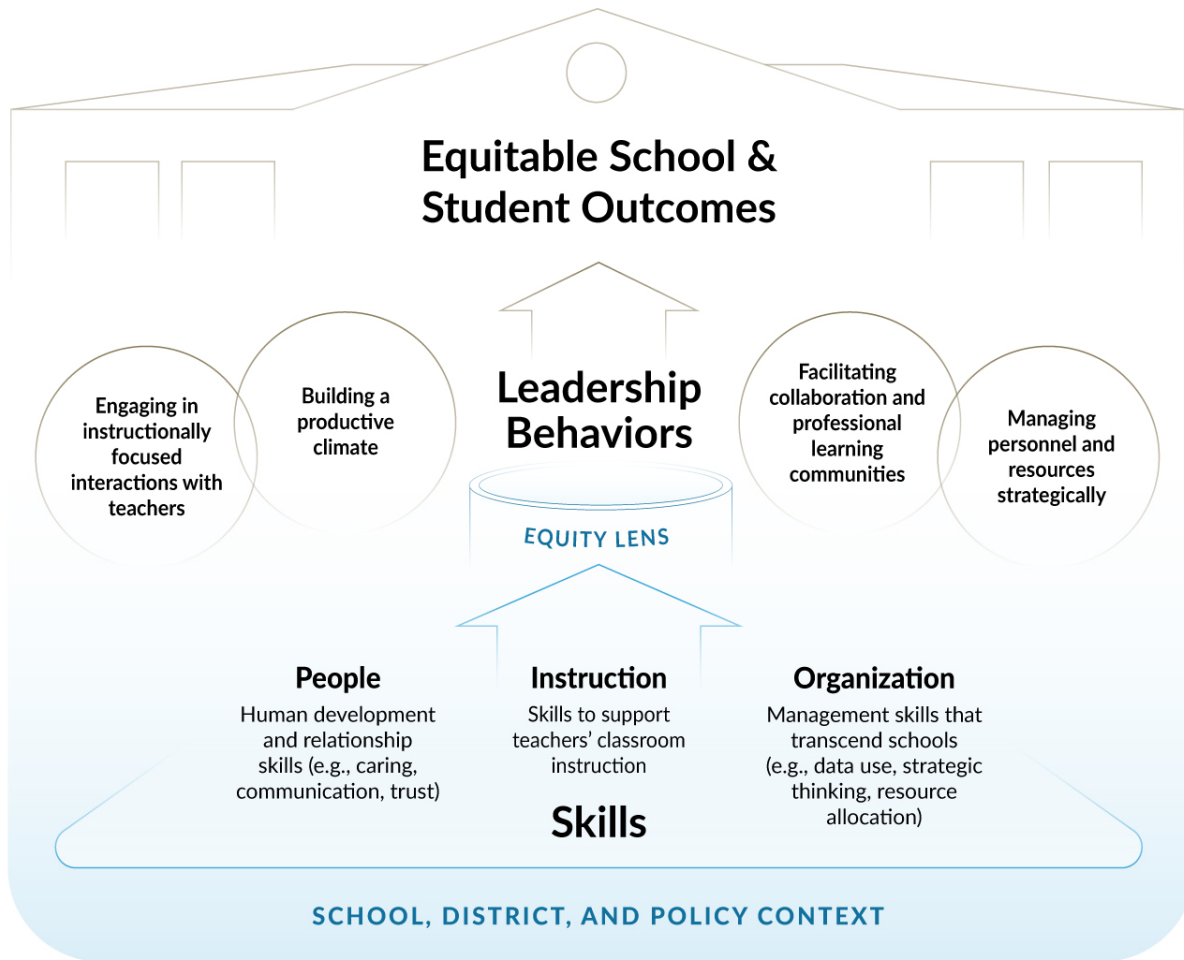
Leadership for Equity

An accumulating body of research examines the principal’s role in producing equitable outcomes across students from historically marginalized and nonmarginalized groups.¹⁹ Much of this research is qualitative, often based on case studies of schools either that have promoted equity or that were

attempting to address equity issues. We discuss some of the successful principal practices highlighted in these studies, describing how a focus on equity overlays the framework presented in figure 7.1. This exercise leads us to offer an emerging framework that builds on what is already supported by the most rigorous evidence, and summarized in figure 7.1, but augmented to connect equity in principal leadership to equitable school and student outcomes (figure 7.2). We propose that the adoption of an equity lens inspires school leaders to reconsider their leadership behaviors in light of equity considerations, asking questions such as how their actions will remove barriers and create opportunities for historically underserved groups, how their behaviors will promote access to critical resources and supports for the success of all students, and how their practices will confront institutional factors that may be currently inhibiting certain members of the school community from achieving their full potential. Regular, authentic examination of these refracted leadership behaviors presents an opportunity for school leaders to advance equity and promote an antiracist school community.

FIGURE 7.2

An Emerging Framework for Connecting Equity in Principal Leadership to Equitable Outcomes



EQUITY AND ENGAGING IN INSTRUCTIONALLY FOCUSED INTERACTIONS WITH TEACHERS.

Equity-oriented school leaders consider how their instructionally focused interactions with teachers affect equity in the broader school community. For example, multiple studies describe how principals work with teachers to search for alternative instructional approaches (e.g., culturally responsive teaching) to meet the learning needs of marginalized students (Danridge, Edwards, and Pleasants 2000; Ylimaki et al. 2012) or engage teachers in specific professional development around serving the needs of subpopulations such as English learners (Theoharis and O’Toole 2011). Principals also create new structures for student learning, such as meeting the needs of English learners by adopting a coteaching approach between general education and ESL teachers (Theoharis and O’Toole 2011) or implementing peer tutoring programs (Gardiner and Enomoto 2006). Other research documents examples of principals working on changing mindsets around instructional needs of students with

disabilities and integrating the special education program with the instructional program of the rest of the school (DeMatthews 2018), or getting creative with school schedules to support inclusive programming for students with disabilities (Burch, Theoharis, and Raushcer 2010).

Relatedly, principals educate teachers more broadly about marginalized students' circumstances. Strategies include offering teachers training on such topics as the challenges faced by students from lower socioeconomic backgrounds to shift mindsets about students and affect instruction (Gerhart, Harris, and Mixon 2011). Principals report engaging in book studies with their staffs that focus on books addressing social justice and ways of teaching diverse students (Mansfield and Jean-Marie 2015).

Another instruction-related theme is setting and communicating high instructional expectations for marginalized students (Gerhart, Harris, and Mixon 2011). Principals can communicate these expectations via their actions by, for example, placing them in enrichment or advanced courses (Gardiner and Enomoto 2006). With clear expectations around the performance of marginalized students, principals can harness data in the pursuit of those expectations. Equity-focused principals use data to identify students who are falling behind and target instructional resources toward them (Larocque 2007). Other principals use data to track student outcomes by race or ethnicity to facilitate discussions with teachers about achievement gaps (Theoharis and Haddix 2011), though in interviews with principals in three districts, Roegman and coauthors (2018) found that principals were unlikely to disaggregate data in this way. More recent scholarship has focused on how principals move from analyzing data by subgroups to having a social justice orientation to create opportunities for marginalized students (Garza et al. 2014).

EQUITY AND BUILDING A PRODUCTIVE CLIMATE. Equity-focused leaders build a school climate in which diverse students are valued (Demerath 2018) and feel welcomed (Theoharis 2007). They celebrate diversity and affirm pluralism through inclusive programming to build community (Larocque 2007) and by engaging in multicultural leadership practices (Gardiner and Enomoto 2006). Sometimes, these efforts involve navigating tension between the principal's desire to serve students' diverse learning needs and centralized administrative mandates (e.g., around special education requirements) that they perceive as requiring "one-size-fits-all" treatment (Frick and Faircloth 2007).

Crawford and Arnold (2017) discuss practices principals use to build a positive climate surrounding undocumented students in their schools, including communicating high expectations for undocumented students' success, encouraging an asset mindset, and explicitly training staff about how to engage around students' statuses to create inclusivity. Serving children from non-English-speaking

families can be challenge when most principals speak only English. They must be creative in how they engage bilingual teachers or community members (Gardiner, Canfield-Davis, and Anderson 2009).

Also key to an inclusive climate is how principals manage discipline and its implications for the racial disciplinary gap. Research highlights that exclusionary discipline (where students are removed from the classroom as punishment) is more common when schools have more Black students, which is partly driven by principals' favorableness toward exclusionary discipline in those schools (Skiba et al. 2014). DeMatthews and coauthors (2017) highlight how principals' approaches to discipline can reinforce inequities. They document principals with racist beliefs about Black students that inform how they make disciplinary decisions that hurt Black students. They also document principals whose rigid enforcement of school rules without regard to underlying causes of behavior results in similar harms. Other studies highlight the challenge for principals pursuing colorblind treatment in pursuit of fairness across students versus individualizing treatment for students with special circumstances and being perceived as inconsistent (Frick and Faircloth 2007). Social justice equity-oriented leaders recognize that they can pursue alternative strategies to close racial discipline gaps in their schools, including restorative justice approaches, home visits with parents to discuss discipline, and discussions with teachers about classroom management and student treatment (DeMatthews et al. 2017).

EQUITY AND FACILITATING COLLABORATION. Equity-focused school leaders build opportunities for collaboration among teachers, families, and the community to meet students' needs (Theoharis 2007; Ylimaki et al. 2012). Engagement with external stakeholders, especially families, comes up frequently in these studies (DeMatthews 2018; Larocque 2007). Studies describe efforts to build purposeful connections with families and community groups to better meet schools' obligations to serve marginalized students (Gardiner and Enomoto 2006; Gardiner, Canfield-Davis, and Anderson 2009). Successful principals reach out to parents, including families of color, to engage them around supporting students and involving them more generally with the life of the school (Gerhart, Harris, and Mixon 2011; Theoharis and Haddix 2011). Reaching out can include home visits to bridge the social distance between home and school (Ylimaki et al. 2012). Conversely, research also documents examples of principals lacking cross-cultural competence that produced awkward interactions with dissimilar members of the school community, becoming a barrier to positive change and derailing the principal's tenure (Abrams and Gibbs 2000).

EQUITY AND MANAGING PERSONNEL AND RESOURCES STRATEGICALLY. A few studies highlight examples of the intersection between organizational management and equity. For example, a typical practice in schools is that lower-achieving students are assigned teachers with lower qualifications (Kalogrides, Loeb, and Bétaille 2013), which likely reinforces their performance

challenges. A characteristic of high-growth schools is that placement processes more equitably assign experienced teachers across low- and high-achieving students (Loeb, Kalogrides, and Bêteille 2012).

Studies describe principals prioritizing diversity in teacher hiring as an equity strategy (Mansfield and Jean-Marie 2015). Harris et al. (2010), for example, documents principals' preferences for hiring diverse teachers along racial and gender lines to better represent the mix of students in their schools so that students can see themselves represented and have "some people on this campus that they can go to" (p. 240). In the face of a low supply of candidates of color applying for jobs, principals who prioritize student access to diverse teachers can implement other strategies, such as shuffling teachers to ensure representation across grade levels (Ingle, Rutledge, and Bishop 2011). Even when not necessarily focused on hiring diverse teacher candidates, equity-focused principals seek to hire teachers with pedagogical skills to reach every student and who display a clear commitment to equity (Theoharis 2007). Other research points to the importance of the presence of an effective principal for teacher retention in schools with large numbers of marginalized students (Grissom 2011), suggesting value from further investigation of effective principals' strategies for increasing retention in such environments.

BOX 5

Evidence on the Effects of Specific Interventions to Support Principal Practice

Several studies drawn into our synthesis evaluate specific interventions, trainings, and induction programs that support principals. Some interventions are aimed primarily at early-career principals. Others provide support to a mix of inexperienced and experienced principals. This distinction appears to be important in whether studies find evidence of impacts on outcomes in schools; programs focused on early-career principals appear more likely to yield positive results.

Interventions to Support Early-Career Principals. We identified five studies of interventions in this category. These programs generally showed evidence of positive effects on achievement.

- **New Leaders.** Three studies examined the impacts of New Leaders' Aspiring Principals Program, a preparation, selection, and support program for new urban principals that requires partner districts and charter management organizations to give principals expanded autonomy. In California's Oakland Unified School District, attending a school led by a New Leaders principal was associated with three-year student achievement gains of 4 months of additional learning in math and 1.5 months in English language arts (Booker and Thomas 2014). A seven-year evaluation by Gates and coauthors (2014) across partnership sites found small but positive effects after three or more years' exposure to a New Leaders principal. In the younger grade levels, the magnitude of this effect was 0.7 to 1.3 percentile points in math and reading. In the older grade levels, the effect was 3 percentile points in reading but none in math. A follow-up study of a revised version of the program across sites found that achievement in schools with a New Leaders principal was about 3.5 percentile points higher in math and 2 in reading after three years, as compared with schools with other new principals (Gates et al. 2019a).
- **Inspired Leadership in Pennsylvania.** This principal induction program has required participation from all newly hired principals in Pennsylvania since 2008. An analysis by Steinberg and Yang (2020) revealed the program has a positive overall impact in math (though not in English language arts), with student performance improving by 0.02 to 0.03 standard deviations. Positive impacts were concentrated among the most disadvantaged schools.
- **Principal Pipeline Initiative.** The Wallace Foundation's Principal Pipeline Initiative (PPI) supported and evaluated district-level changes to the preparation, placement, and support of school leaders between 2011 and 2016 in six urban school districts. Effects of PPI were positive; after three or more years, schools in PPI districts with newly placed principals outperformed comparison schools in both math (2.9 percentile points) and reading (6.2 percentile points) (Gates et al. 2019b).

Interventions to Support Principals Broadly. Studies of interventions to support a mix of early-career and other principals are less likely to show evidence of positive impacts on student learning.

- **Balanced Leadership.** Jacob and colleagues (2015) tested the effects of the McREL Balanced Leadership program in a randomized controlled trial among principals in rural Michigan.

Balanced Leadership focuses on teaching school leaders 21 leadership responsibilities through a series of 10 two-day, cohort-based sessions. Although principals in the treatment group reported higher feelings of efficacy after the sessions, teachers in their schools did not report better principal leadership or climate, and student achievement was not affected.

- **Center for Educational Leadership (CEL) principal professional development program.** In a random assignment study of principals from 100 schools in five states, Herrmann and coauthors (2019) tested whether CEL's professional development program for principals affected participants' behaviors and their students' achievement. The CEL program featured an in-person summer institute, in-person group trainings, quarterly virtual professional learning communities, and individualized coaching aimed at improving instructional leadership through increased observations and structured feedback to teachers, among other leadership components. The study found no impacts on student achievement during the two years of implementation or in the year after or on other outcomes, such as amount of time spent on instructional leadership, teacher reports of school climate, or teacher or principal retention.
- **National Institute for School Leadership's (NISL) Executive Development Program.** NISL's Executive Development Program is a one-year, cohort-based principal professional development program covering vision, promoting effective teaching, and capacity building. Using propensity scores to match students in schools with participating principals to similar students in other schools in a single school district, Corcoran (2017) found mixed, inconclusive evidence regarding the program's potential effect on student achievement.²⁰
- **Principal Supervisor Initiative.** The Principal Supervisor Initiative (PSI) was a four-year effort supported by The Wallace Foundation to reform principal supervision in six urban school districts to better support principals. Principals in PSI districts gave increased ratings to their supervisors' effectiveness and reported greater frequency of contact over the life of the initiative but did not see increases in their own effectiveness, as measured by teacher reports, compared with a sample of schools in non-PSI districts (Goldring et al. 2020).
- **Texas Principal Excellence Program (TxPEP).** TxPEP was a training program created by an act of the Texas legislature to improve student academic achievement, graduation rates, and teacher retention by improving principals' leadership skills. Aimed primarily at principals from schools receiving ratings of "academically unacceptable," TxPEP required attendance at an initial and final summit meeting, three workshops, and five required webinars. Several optional webinars were also offered. Topics included strategic planning, fiscal management, and data-driven decisionmaking. Relative to comparison principals, self-reported leadership scores of TxPEP principals increased following participation (Hoogstra et al. 2008). No impacts were detected, however, on teachers' ratings of teacher performance or satisfaction or on student performance.

8. The State of the Evidence on School Principals

Our comprehensive and systematic review of research connecting principals to school outcomes required the synthesis of a broad body of research. In this chapter, we reflect on the evidence uncovered during this process.

Studies of leadership practices have come a long way since 2000, generating stronger support for the conclusion that improving principal leadership can effect large-scale educational change. Yet our review also leads us to two broad conclusions about the state of the evidence in educational leadership that highlight some challenges, limitations, and opportunities.

First, the studies we considered in our review demonstrate wide variation in topics of inquiry, research approach, and methodological rigor. Variation in topic and approach can be both an asset (as variation encourages well-rounded conclusions) and a challenge (for making meaning of disparate studies). The large number of studies we encountered, however, that provide weak or dubious evidence to support claims unambiguously represent a major limitation. We also found little evidence that the field values replicating results. Opportunities are abundant in education leadership to pursue old and new questions with rigorous data collection and analysis, including studies that question long-standing assumptions.

Second, important topics for principal research remain underexplored. We know little about significant changes in who enters the profession and the types of schools in which principals fitting various demographic categories serve. We also know little about the conditions under which principals typically have larger impacts on student outcomes and the skills and practices that are associated with success. Below we describe these conclusions more fully, followed by an accounting of the primary areas where we need to know more.

A Highly Variable Research Base

Our review of nearly 400 articles finds that the research on principals is highly variable in which topics they explored. Synthesizing studies to draw out the themes we described in chapters 5 through 7 required repeated iteration over categorizations of studies and their findings to uncover connections.

Education leadership research appears to have taken a topical approach of letting a thousand flowers bloom. Similarly, there is wide variation in methodological approaches (table 8.1).

Variation in topic and method of inquiry represents both an asset and a challenge. It is an asset because topical and methodological diversity can mean that research can shed light on many dimensions of the principalship—perhaps necessary given the complexity of the role—and from different methodological perspectives, providing a fuller accounting. The challenge is one of making sense of a diverse, uncoordinated field in which scholars pursue disparate questions. Could we get further collectively by agreeing on what aspects of the principalship are high-priority items that deserve more attention? We hope that our synthesis helps researchers identify high-priority areas.

A third area of variation we wrestled with was methodological rigor. We are not comparing different epistemologies or research paradigms. Instead, we are leveling a broader criticism about the large number of studies we encountered that provided weak evidence to support their claims, regardless of their research approach.

We work primarily from a quantitative perspective in our own research, and these concerns about research design and execution were most obvious to us in quantitative studies. Few studies employed an experimental or quasi-experimental design with a credible strategy for making causal claims about the relationship between some aspect of leadership and a school outcome. Instead, most studies had correlational research designs, which have a weaker claim to causality (i.e., less *internal validity*) because of concerns about bias from omitted variables that may be driving the associations they observe. To combat this concern, we excluded quantitative studies that related leadership to school outcomes without some accounting for schooling factors that research has shown affect leadership and achievement, such as the school's level of poverty. This minimal exclusion criterion eliminated a surprising number of studies. With a more advanced body of research, we could have made even more prudent exclusions, such as excluding studies that correlate leadership measures with achievement *levels* (which tends to reflect student background characteristics, like being in poverty) rather than *growth* (which more accurately reflects schooling inputs). Such studies form the basis of several prominent meta-analyses of supposedly “high-leverage” practices, despite concerns about omitted variables bias that risk leading the reader to mistake correlation for causation (e.g., there might be unobserved reasons that principals may implement some kinds of practices more frequently than others in high-status schools, but these practices do not necessarily lead to improved student outcomes). For now, we often must rely on correlational studies that are subject to criticisms about challenges from omitted variables, reverse causality, and other validity threats, which makes them less robust. Yet the language they employ often is causal, which can be misleading and imply—particularly

to practitioners or those not trained in research methodology—that more has been demonstrated than actually has.

Of course, we should acknowledge here that descriptive studies are enormously valuable, and we do not mean to criticize descriptive work in education leadership. We aim to highlight, however, that many studies aim to make causal claims, even implicitly, and often do so on the basis of questionable evidence.

A related concern is one about *external validity*. Research using data from nonrepresentative samples may not apply to other populations, which limits their usefulness outside its immediate context. We often do not know whether the relationships research describes will hold up if examined elsewhere.

Concerns about both internal and external validity lead us to a final challenge: research on school principals, despite its size, appears to place little value on replicating results. We encountered too few studies that reevaluated claims from earlier research or that attempted to test a claim in a new context. This tendency perhaps reflects low value placed by journal editors, funders, or researchers themselves on replication over novelty. This observation is important, as reproducibility is a cornerstone of scientific inquiry and generates confidence in the knowledge foundation on which future work builds.

Qualitative studies often use participants' voices and perspectives to ascribe claims about the relationships between leadership and outcomes while adding depth to our understanding of a specific context or experience. We make a few observations here.

First, among the qualitative research designs, we encountered the case study approach most frequently. Perhaps this was because of our focus on student outcomes and our search approach, but we nonetheless think greater representation of alternative approaches to inquiry (e.g., phenomenology, ethnography, grounded theory, content analysis, or narrative inquiry) could generate new insights. Second, we were forced to exclude many qualitative studies for not meeting reporting standards around such details as sampling strategy or how the qualitative data were analyzed. Increased rigor could enhance the contribution of some qualitative studies.

Taken together, these methodological problems are, in our view, major ones for the field. We discounted many studies for insufficient attention to methodological rigor and reporting. Many studies made causal claims based on weak evidence. We do not know whether findings would apply to new settings. And we do not place a premium on replicating findings. There is substantial space, we think,

for the next generation of education leadership researchers to address these limitations and reexamine much of what we think we know about school principals.

TABLE 8.1
Methodological Breakdown of Articles That Were Full-Text Coded

Research design	Count	Research methodologies used with representative studies
Quantitative	267	Experimental designs <ul style="list-style-type: none"> ▪ Randomized controlled trial design (Garet et al. 2017; Kraft and Blazar 2017; Mihaly et al. 2018; Steinberg and Sartain 2015)
		Quasi-experimental designs <ul style="list-style-type: none"> ▪ Propensity score matching (Corcoran 2017; Mitani 2019; Steinberg and Yang 2020) ▪ Difference-in-differences (Bartanen, Grissom, and Rogers 2019; Branch, Hanushek, and Rivkin 2012; Kraft 2015; Saunders, Goldenberg, and Gallimore 2009; Walsh and Dotter 2014; Steinberg and Yang 2020) ▪ Fixed effects (Bastian and Henry 2015; Bartanen and Grissom 2019b; Burkhauser 2017; Chiang, Lipscomb, and Gill 2016; Dhuey and Smith 2018; Grissom, Loeb, and Master 2013; Johnson, Kraft, and Papay 2012; Kraft, Marinell, and Yee 2016; Laing et al. 2016) ▪ Regression discontinuity (Dee and Wyckoff 2015)
		Correlational designs <ul style="list-style-type: none"> ▪ Ordinary least squares with and without extensive controls (Daly 2009; Knoepfel and Rinehart 2008; Min et al. 2016) ▪ Hazard models (Baker, Punswick, and Belt 2010; Loeb, Kalogrides, and Horng 2010) ▪ Path analysis (Leithwood and Jantzi 2008; Louis, Murphy, and Smylie 2016) ▪ Social network analysis (Daly 2009; Jabbar 2015b)
		Qualitative
Qualitative	104	<ul style="list-style-type: none"> ▪ Comparative case study (Cohen-Vogel and Harrison 2013; Ovando and Ramirez 2007) ▪ Ethnographic case study (Bagwell 2019) ▪ Phenomenology (Frick and Faircloth 2007) ▪ Autoethnography, field logs, and other methods (Theoharis 2007; Theoharis and Haddix 2011) ▪ Other qualitative designs with reliance on structured and semistructured interviews, observations, and focus groups (Adams and Jean-Marie 2011; Brown and Wynn 2007; Neumerski et al. 2018)
Both	24	<ul style="list-style-type: none"> ▪ Engel (2013), Guin (2004)

Notes: N = 395 studies. Among these 395 studies, 219 were included in the synthesis. See the reference list for the full citations.

Topics for New Research Investment

Having reviewed the key methodological considerations, we offer pathways for future topics of inquiry on school principals.

The Changing Principal Workforce

In chapter 3, we use national data from the US Department of Education to track changes in key dimensions of the principalship. We document several trends that raise questions for future research.

First, principals have become more racially and ethnically diverse, but the rate of change has been small when judged against the demographic characteristics of America’s public elementary and secondary school students. We do not know why we have made so little progress in diversifying the principalship along racial and ethnic lines.

- Are there barriers and disincentives that drive the principal race or ethnicity imbalance and, if so, what are they?
- Is the school leader pipeline leaky for people of color throughout, or are there points along the pipeline that should be points of focus?
- At what stages along the preparation, recruitment, and retention continuum might state and local policy responses have the greatest impact?

Second, we document that school principals are more likely to be female today than at any other point in history but that the share of women in the principal’s office (nearly 55 percent) remains well below the share of women in teaching. These patterns prompt us to ask the following:

- What are the consequences, if any, of the gender disparity that emerges when comparing the composition of the teacher versus school leader workforce?
- What are the barriers to increasing the share of women in the principalship even further?
- Do women travel the same paths into the principalship as their male colleagues, or do they face different opportunities and obstacles?
- Do women have access to leadership jobs in the same kinds of schools? Do women have the same access to jobs (e.g., in high schools) that lead disproportionately to district-level leadership opportunities? Similarly, do women face a “glass cliff,” in which their leadership trajectories end in low-achieving or at-risk schools?

The average principal has much less experience in the role than three decades ago. An implication is that leaders stay in the profession for less time. Moreover, the decline in experience has been even more pronounced in high-poverty schools.

- Why are years of principal experience falling, especially in the most challenging school environments?
- Have specific policy reforms contributed to the drop in average principal experience?
- How are students and teachers affected by this change?
- What are the implications of falling experience for district strategies around in-service professional learning opportunities and supports?

Principal Effects on Students, Teachers, and Schools

In chapter 5, we review studies that have been conducted since 2000 to measure principal impact on student achievement and other outcomes. These studies improve upon prior evidence by using panel data methods in a student growth framework to better specify principals' impacts. Across these six studies, the presence of a more effective principal is associated with substantial student gains in both math and reading.

Still, these are just six studies, conducted in just a few states and districts, which may not be representative. We need replication of these findings in different contexts, which can allow for investigation of the conditions under which leader effects are smaller or larger. Also, the six studies we synthesize use data primarily from elementary and middle schools. We need more research on principals' effects on student outcomes in high schools specifically to say whether these effects are similar in size to those we report. Also, the measurement of principal effects is a topic ripe for methodological innovation. New or refined statistical approaches that overcome the challenges of measuring principals' impacts, including how to deal with their timing and how to separate them from other factors, may arrive at different (and more accurate) estimates than those in existing studies.

Future research on principal effects should adopt an equity lens and move beyond assessing the average impact to addressing how much principals affect different groups of students, which existing studies have not fully explored. Studies can then learn more about the conditions under which principals are more effective or less effective for various student subgroups.

We also need investment in new methodological tools for measuring principals' effects. Isolating principals' impacts on student achievement and other outcomes presents statistical challenges for

which current approaches are not fully up to the task. Models rely on assumptions that researchers often cannot directly test with data at hand. New methodological approaches with creative use of existing or new data to probe and address these assumptions may provide better evidence.

Finally, we recommend that researchers continue to push the field beyond a focus of principals on achievement scores. Recent work has begun to use the rigorous approaches of effects studies to document principal impacts on student outcomes such as absenteeism and discipline. This line of work is a fruitful one, and we encourage continued investigation of nonachievement outcomes such as socioemotional measures of student well-being. Studies can advance the frontier of principal effects on teacher outcomes as well, extending studies of turnover and job attitudes to such outcomes as instructional improvement and engagement in leadership.

Drivers of Principals' Contributions

In chapter 7, we review the literature on principal practices, skills, and behaviors to learn more about what effective principal leadership looks like. We were interested in seeing how different aspects of leadership skills and behaviors work in schools with diverse characteristics.

As noted above, a broad takeaway is that the evidence on how the principal's role matters could be more robust if researchers paid greater attention to research design. Quantitative studies investigating a causal chain must rule out alternative explanations for their findings, which can be better accomplished through random assignment (when feasible) or with a quasi-experimental strategy that leverages natural experiments or changes over time, for example. Quantitative and qualitative studies, including those whose purpose is description, better serve the field when they employ careful, transparent sampling strategies, can state what population the study represents, and collect data with rigorous and transparent protocols and instruments. We see large benefits to studies combining multiple forms of data, such as administrative data, interviews, time-use instruments, and video or in-person observations, to provide a more comprehensive and nuanced view of principals' roles. And the field would benefit from researchers striving to build a systematic, incremental base of knowledge. Though voluminous, research on school principals has produced a patchwork of studies often on disconnected topics that are challenging to sum up into a clear picture of what effective principals need to know and do.

Quantitative and qualitative studies, including those whose purpose is description, better serve the field when they employ careful, transparent sampling strategies; can state what population the study represents; and collect data with rigorous and transparent protocols and instruments.

To build a more rigorous, robust, cohesive research base on the school principalship, we recommend more investment in

- careful articulation of a research agenda that produces a systematic knowledge base that focuses on promising areas of principal practice, encourages research innovation, and prioritizes replication;
- high-quality studies that support that agenda;
- the collection of deeper, more representative data in diverse contexts around which such studies can be built; and
- researchers themselves, meaning investment in building capacity to implement high-quality research on school principals through pre- and postdoctoral fellowships or other training opportunities.

On this last point, we suggest that moving forward, research teams composed of researchers with multiple methodological strengths studying a single topic can be helpful for differentiating mechanisms by which principal impacts occur. Similarly, research teams that study the same phenomenon across diverse settings—perhaps through a multiple-case-study approach—can shed light on important implementation factors that affect outcomes.

In thinking about specific avenues for future research inside the black box of the school principalship, based on our synthesis we propose a focus on 3 Ps: practices, policies, and pipelines.

PRACTICES. Our synthesis identifies four areas of practice through which research suggests that principals positively affect students: instructionally focused interactions with teachers, building a productive school climate, facilitating collaboration and professional learning communities, and strategic resource and personnel management processes. Within each of these areas, our review leaves much to unpack:

- How can principals make their instructionally focused interactions with teachers most effective? How specifically should they approach feedback and coaching to ensure that they are beneficial for teachers? How should they bring performance metrics and other sources of data into these interactions to be most productive and informative? How can principals bring other members of the school leadership team into these interactions successfully? How do school leader training and induction ensure teachers experience helpful, comparable supervision experiences across schools?
- Given the context-specific nature of school climate, what specific strategies for building a productive climate generalize across schools? How do climate-enhancing strategies interact with school size and demographic characteristics of the student body?
- How can principals maximize the benefits of teacher collaboration and community? What professional learning tools, resources, and strategies might play a role here?
- What else can be learned about strategic management and its connection to school outcomes, including in important areas our synthesis could not examine (given the absence of studies)? This includes principals' role in budget allocation and other resource decisions, such as the acquisition of intervention materials and school scheduling.
- How do equity-focused principals approach each of these domains of work? How does a focus on equity infuse interactions with teachers, teacher collaboration, strategic personnel decisions, and so forth? How do these approaches affect students from different subgroups?

POLICIES. In chapter 2, we document the shifting policy landscape of school leadership, but connecting specific policy changes across states or districts to shifts in practice was beyond the scope of this report. Given the importance of policy for practice, we think that making these connections is important and could form the basis of valuable future research projects.

- How do local, state, and even national policies promote or inhibit principals' engagement in successful leadership practices?
- What incentives do policies create, not only for practice but for changes in the principal labor market?
- What can we learn from states or districts that are especially successful in developing and supporting leaders to implement high-quality practice?

PIPELINES. A broad area of state or local policy that can affect who comes into the principalship, where they work, and how long they stay is in the domain of principal pipelines. Given the increasing

complexity of the role and the associated “ratcheting up” of expectations and needs for support, and concerns about falling experience levels and high turnover, this area deserves special attention in future research.

- What approaches to principal preparation and licensure, including alternative routes, are successful in diversifying the principal workforce, especially along racial, ethnic, and gender lines?
- What are successful strategies for developing and selecting high-quality principals with the necessary skills and approaches to be effective, generally, and to be effective for diverse students, in particular?
- How can we better retain effective principals, particularly in schools serving students with the greatest needs? What factors drive higher turnover in high-need schools, and how can districts address or compensate for those factors?
- What are effective in-service professional learning approaches that can drive principal improvement in key areas of their practice?
- Across strategies for preparation, development, selection, recruitment, and professional learning, what approaches are most cost-effective for states and districts?

We also recognize that the principal skills and behaviors documented by the studies in our review do not represent a comprehensive accounting of effective approaches to principal leadership. On some level, principals are involved in every aspect of a school, including school accountability, teacher evaluation, and student discipline. In this sense, the topics we identify cannot comprehensively capture every area that is the domain of school administration but can be a useful jumping-off point for future inquiry. We expect that researchers will continue probing areas that have not accumulated much evidence of a link with student and teacher outcomes, such as efforts to bridge and buffer connections to central office and external stakeholders or management of the micropolitics of schools. We also anticipate that shifting contexts of schools, such as the recent school closures and rapid movement move to remote learning during the COVID-19 pandemic, may require new consideration on principal skills and behaviors as demands of the job continue to evolve.

9. Implications and Conclusions

Major developments since 2000 in the policy landscape of education leadership have fundamentally altered the role of school principals, shifting their responsibilities and focus into new arenas to keep pace with contemporary expectations for their performance. Landmark federal education developments including No Child Left Behind, Race to the Top, and the Every Student Succeeds Act placed student achievement at the center of education reform efforts, influenced approaches to reforming low-performing schools, and introduced new responsibilities for managing testing and evaluating school personnel. Policy changes that originated in Washington, DC, flowed to the states and localities, where school leaders were asked to engage more directly with classroom instruction, compete for students in public and private school choice environments, and pay close attention to equity as a stand-alone policy and professional goal.

The research landscape has shifted in parallel. Two decades after the publication of the highly cited and influential report by Leithwood and colleagues (2004), our synthesis updates what we know about school principals, reflecting not just shifts to the role but new data collection and methodological advances that have allowed for more precise links between principals' work and student, teacher, and school outcomes. In this concluding chapter, we highlight the main findings of our report and their implications for the field.

1. Effective principals are at least as important for student achievement as previous reports have concluded—and in fact, their importance may not have been stated strongly enough.

Leithwood and colleagues (2004) described principals as the second-most-important in-school factor affecting student learning, based broadly on their read of the literature as it stood at that time. We now have rigorous, arguably causal studies based on longitudinal data that can estimate the size of principals' effects on achievement. Effective principals have large effects. Replacing a below-average principal (at the 25th percentile) with an above-average one (at the 75th percentile) would increase the typical student's learning by nearly three months in both math and reading annually. But this is just an average effect across students in a school, meaning a principal's effects are felt by potentially hundreds of students in a school year. Indeed, it is difficult to envision an investment with a higher ceiling on its potential return than improving principal leadership. Our results suggest the need for renewed attention to strategies for cultivating, selecting, preparing, and supporting a high-quality principal workforce.

2. Principals have substantively important effects that extend beyond student achievement. We document recent rigorous studies linking more effective principals to key student outcomes, such as

reductions in absenteeism and exclusionary discipline. Research also shows clear links between effective leadership and important teacher outcomes, including more positive teacher working conditions and reduced turnover, especially among effective teachers. Together with the student achievement results, these findings underscore just how crucial strong principals are on multiple dimensions and how critical policy efforts to strengthen principal leadership are for school success.

3. Effective principals orient their practice toward instructionally focused interactions with teachers, building a productive school climate, facilitating collaboration and professional learning communities, and strategic personnel and resource management processes. These areas of practice emerge from our synthesis of dozens of methodologically and topically diverse studies on the principal's role and the behaviors of successful principals. These practices draw on skills and expertise in three areas—*instruction, people, and the organization*—that principals need to effect positive change in their schools. We emphasize that the term *instructionally focused interactions with teachers* is more specific than broad notions of the principal as an instructional leader, highlighting that effective principals focus their work on feedback, coaching, and other instructional improvement work that is grounded in classroom observations and other data about teaching and learning. Productive climates are those marked by trust, collective efficacy, and a culture of data use that promote teachers' and students' engagement around learning. These ideas relate closely to collaboration and professional learning communities, which emphasize teachers' work together to improve instruction and meet student needs. Finally, strategic management of personnel and other resources focuses on effective and equitable allocation of teachers and other key inputs to student learning. We conclude that principal preparation programs, pipeline initiatives, and in-service support structures are likely to have more positive impacts if they focus on improving principals' practice in these areas.

4. Principals must develop an equity lens, particularly as they are called on to meet the needs of growing numbers of marginalized students. As we document in chapter 3, US public schools are serving growing numbers of students of color, economically disadvantaged students, English learners, and students with disabilities. This shift accentuates the need—always there but sometimes overlooked—for principals to approach their work with equity as a central concern. A growing body of research describes leadership for equity and the practices that characterize it, including how equity intersects with instructionally focused interactions with teachers, a productive school climate, and the other areas of practice effective leaders engage. Fewer studies make direct connections between leadership practices and more equitable outcomes for diverse student populations, a key need for future research. Still, equity-focused principals lead differently, and evidence suggests that leadership for equity can make schools more inclusive and instruction more culturally responsive. This evidence

argues for continued reorientation of the work of school principals toward educational equity through preservice preparation, in-service supports, and other policy mechanisms.

5. Effective principals are not equitably distributed across schools. If principals must develop an equity lens, we suggest that school districts develop one also. School districts undermine pursuit of equitable outcomes when they do not focus on hiring, placing, and retaining effective principals in schools that serve large numbers of historically minoritized students. Existing research suggests that such focus is missing in many school districts. Leaders in high-need schools typically are given lower practice ratings from their supervisors, are rated less positively by their teachers, and turn over at much higher rates, disrupting expertise accumulated with on-the-job experience. Given the central importance of principal leadership, prioritizing a more equitable allocation of principals and developing local policies and systems to pursue that goal is imperative for more equitable student outcomes.

6. Principals are becoming more racially and ethnically diverse, but representation gaps with students are growing, which is concerning, given the payoffs to principal diversity. Attention to equity also means attention to access to the principalship for leaders from racially and ethnically diverse groups. As we show, principal racial and ethnic diversity is increasing but slowly, while the diversity of the student population is changing rapidly. The result is that the gap between the demographic characteristics of principals and students is growing, particularly with respect to Hispanic students. These representation gaps raise concerns in light of the research we review linking principal demographic diversity to better outcomes for students of color, including test score gains and nonachievement outcomes, such as higher likelihood of receiving gifted services. Principal diversity also affects teacher outcomes, including the likelihood that teachers of color are hired into a school and their likelihood of staying. These results imply the need for new research into the barriers and opportunities that propel educators with some characteristics into leadership positions more easily or faster than others and new policies and systems aimed at increasing principal diversity. They also highlight the need to better understand the mechanisms linking principal race or ethnicity to student and teacher outcomes, so that the skills, expertise, practices, or other qualities diverse principals bring to the job might become the focus of preservice and in-service supports for an overwhelmingly white principal workforce.

7. Research on school principals is highly variable, and the field requires new investment in a rigorous, cohesive body of research. School principal research displays a topical diversity that reflects the complexity of the job. This diversity can be an asset but creates challenges around making sense of such a patchwork of studies. A research agenda aimed at a more cohesive body of findings, perhaps

guided by some of the themes we have identified, would help advance the field. More clearly a limitation is that research conclusions are often undercut by data and methodological limitations; indeed, our synthesis would have been much richer if we could have relied on the broad set of studies our methodological criteria for inclusion set aside. The field calls out for major investment in data collection and capacity-building around high-quality methods if it is to provide clear direction for leadership policy and practice. This reflection implies a role for policymakers, too, and not just researchers. How are lawmakers prioritizing principal data collection and study? What are current barriers to such efforts, such as data system limitations or a desire to quickly implement new policies and programs before clearly articulating a set of research questions and an accompanying research design to answer them?

Our work on this synthesis has afforded us new respect for school principals, the challenges they face, and the tough demands of the role. Clearly, principals matter, and substantially so. It is incumbent upon state and local leaders to find effective means to ensure that the right people find their way into the principal's office and that they are appropriately prepared and supported to do this difficult work. At the same time, the education leadership research community must continue to probe principal practices, their effects on all students, and the policies and organizational structures that influence the role.

Appendix A. Details on Search Strategy

This appendix describes the strategy we used to identify research on how principals affect student achievement, in addition to the links between leadership characteristics, skills, behaviors, and student achievement. Our approach has two objectives: to identify rigorous research using a targeted search strategy and to avoid injecting bias by excluding relevant research. Below are descriptions of the search strategies we used to find journal articles and the grey literature sources.

Journal Article Search Strategy

General Search Strategy

We used the following Boolean keyword search: (“school leader*” OR “principal”) AND (“student achievement” OR “learning outcome”) AND (student OR school OR education). We made additional changes to the search based on the differing capabilities of search engines. For example, when possible, the results were restricted based on time of publication (2000 to the present), publication type (journal articles), location of research (United States), and language of text (English).

We made changes to the search in three cases based on the recommendation of a research librarian we consulted at Vanderbilt University’s Peabody College. JSTOR and ERIC assign articles detailed topic descriptors based on the research content. Searching the relevant topics (e.g., principals, academic achievement) yielded more targeted results without excluding particular types of research. We used an alternative approach for ScienceDirect. We examined the articles we retrieved with the general keyword search and found patterns in the topics of articles that were erroneously included. Excluding research with either the word “nurse” or “China” excluded irrelevant research.

Supplementary Search Criteria

The general search strategy collected articles that did not meet specific criteria because of differences in the capabilities of search engines. A first step was to remove duplicate citations. Additionally, all non-journal article source types were removed (e.g., conference papers, dissertations, blog posts, bibliographies, and opinion editorials). Peer review has a substantively different definition for non-journal publications (i.e., internal editorial process). We excluded all sources that do not use a peer

review process similar to academic research journals. We used UlrichsWeb to determine whether a journal was peer-reviewed. As a final check, we removed all anonymous articles. In most cases, these were opinion editorials included in journals.

This general search strategy captures all research on the relationship between principals and student achievement. This strategy is sufficiently broad to collect sources for the second review on mechanisms and contextual variables. We used Google Scholar's "cited by" function to ensure we collected all other relevant sources for the second review.

Overall, we designed this approach to ensure our search strategy was transparent, rigorous, and systematic and included diverse methodologies.

TABLE A.1

Comprehensive List of Scholarly Databases Examined

Database	Relevant Discipline	Count of Records Retrieved	Date Accessed	Search Parameters	Search Notes
ERIC ProQuest	Education	611	6/6/19	MAINSUBJECT.EXACT("PRINCIPALS") AND MAINSUBJECT.EXACT("ACADEMIC ACHIEVEMENT")	Years: 2000-2019; Peer Reviewed; Source Type: Scholarly Journals; Document type: 080: Journal Articles; Education Level: Not Postsecondary education
Education Full Text (H.W. Wilson) EBSCO	Education	343	6/6/19	(("school leader*" OR "principal") AND ("student achievement" OR "learning outcome") AND (student OR school OR education)	Years: 2000-2019; Limit your results "Full Text; Scholarly (Peer Reviewed) Journals"; Source type: Academic Journals
Emerald Insight	Education	385	6/6/19	(("school leader*" OR "principal") AND ("student achievement" OR "learning outcome") AND (student OR school OR education)	Years: 2000-2019; Research Paper
PsycINFO	Psychology	120	6/6/19	(("school leader*" OR "principal") AND ("student achievement" OR "learning outcome") AND (student OR school OR education)	Years: 2000-2019; Record Type: Journal Article
Web of Science: Social Sciences Citation Index (SSCI)	Social Science	227	6/6/19	(("school leader*" OR "principal") AND ("student achievement" OR "learning outcome") AND (student OR school OR education)	Years: 2000-2019
ScienceDirect	Social Science	509	6/6/19	((("school leader" OR "school principal")) AND ((("student achievement" OR "learning outcome")) AND (("United States" OR "U.S.)) NOT ("Nurse") student school education	Years: 2000-2019; Article Type: Research article; Does not support wildcards
PAIS Index	Policy	211	6/6/19	(("school leader*" OR "principal") AND ("student achievement" OR "learning outcome") AND (student OR school OR education)	Years: 2000-2019; Document type: Article; Language: English

Database	Relevant Discipline	Count of Records Retrieved	Date Accessed	Search Parameters	Search Notes
Proquest Central Collection (education databases)	Education	1118	6/6/19	(("school leader*" OR "principal") AND ("student achievement" OR "learning outcome") AND (student OR school OR education)	Database: Proquest Central Education Database; Years: 2000-2019; Source type: Scholarly Journal; Language: English; Restricted to US locations; peer-review
JSTOR	Social Science	295	6/6/19	((("School Principals") AND ("Academic Achievement")) OR (("school leader*" OR "principal") AND ("student achievement" OR "learning outcome"))	Years: 2000-2019; Content type: Journals; Access Type: All Content
Econlit	Economics	11	6/6/19	(("school leader*" OR "principal") AND ("student achievement" OR "learning outcome") AND (student OR school OR education)	Years: 2000-2019; Publication Type: Journal Article; Geographic Region: Northern America
Google Scholar	All	22	6/6/19	(("school leader*" OR "principal") AND ("student achievement" OR "learning outcome") AND (student OR school OR education) -book	Years: 2000-2019. I pulled the reverse citation sources for the first page of GS results and wasn't able to get around it with a VPN
Total		3,852			

Grey Literature Search Strategy

The grey literature search shares much in common with the strategy we used to identify journal articles. But the keywords varied depending on the capabilities of each organization’s website. Some websites organized their research into specific education topics. For example, it was occasionally possible to identify all reports on principals. When there was no clear catalogue of research materials, we attempted Boolean keyword searches. When this was not possible, we searched for individual keywords. In some cases, there was a journal or report series associated with a specific organization (e.g., *NASSP Bulletin*, *Journal of Teacher Education*). In these cases, we conducted a keyword search for that journal.

1. Boolean search: (“school leader*” OR “principal”) AND (“student achievement” OR “learning outcome”).
2. Specific keywords: “school leader” “principal” “student achievement” “learning outcome”

If possible, we restricted searches based on location (United States) and time of publication (2000 to the present). Only reports and articles were collected in these searches. We excluded such sources as blogs, webinars, and event proceedings.

TABLE A.2

Grey Literature: Comprehensive List of Archives Consulted

Abt Associates	National Association of Secondary School Principals
American Association of Colleges for Teacher Education	National Association of Elementary School Principals
American Institutes for Research	National Bureau of Economic Research
Brookings Institution	National Governors Association
Consortium for Policy Research in Education	RAND Corporation
Council of Chief State School Officers	Regional Educational Laboratory
Education Commission of the States	SRI International
Institute for Education Sciences	Wallace Foundation
Learning Policy Institute	WestEd
Mathematica	What Works Clearinghouse

Notes

- ¹ Given that principals are ultimately involved in everything that happens in a school, there are broad bodies of research that could be included in a review of this nature (studies related to, for example, school accountability, teacher evaluation, instructional coaching, and student discipline). To demonstrate the steps we take to capture the various dimensions of a school leader's work, the methodology chapter and accompanying appendix provide the specific Boolean search terms we used, the databases we mined, and the funneling procedure we followed.
- ² FRL data collected after 2014–15 may be inflated because of the Community Eligibility Provision, which went into effect that year and deems an entire school FRL eligible once 40 percent of students have been “directly certified” by receiving Supplemental Nutrition Assistance Program or Temporary Assistance for Needy Families benefits.
- ³ This pattern holds true whether we rely on the mean or the median. The corresponding statistics when considering the median are as follows: in 1988, the average principal had 11 years of teaching experience, and in 2016, that figure was 10 years.
- ⁴ When we look at prior teaching experience among principals by race or ethnicity, we see that time in teaching has declined for all groups, but especially for Black principals, who in 1988 had more years in teaching (15) than white or Hispanic principals (12 each). By 2016, years in teaching for all three groups had fallen to 11 years.
- ⁵ Principals' effects on students often are described in the literature as “indirect,” but we note that principals can have direct effects as well—for example, by forming relationships with students or through decisions about student discipline.
- ⁶ A trade-off with this approach is that principals who are the only principal ever observed in a particular school over all years of data drop out of the analysis, which is another reason these methods require long data streams.
- ⁷ These average estimates weight each study equally. The median is very close to these estimates: 0.105 standard deviations in reading and 0.125 standard deviations in math. If instead we calculate a weighted mean, using principal sample sizes as weights, we calculate estimates of 0.10 standard deviations in reading and 0.15 standard deviations in math.
- ⁸ This calculation is based Bloom and coauthors' (2008) estimate of the typical student gain in math from fourth to fifth grade, which is 0.56 standard deviations. Thus, 0.13 standard deviations represents about 23 percent the 9-month school year, or 2.1 months. In reading, Bloom and coauthors report average growth from fourth to fifth grade of 0.40 standard deviations, so 0.09 represents a similar share of the school year. Students gain different amounts at different grade levels, so this value represents a rough approximation.
- ⁹ This example is meant only as a thought experiment. In reality, there would be many challenges to realizing these effects. For example, information on principal effectiveness often is limited in real-world hiring processes, and clearly replacing below-average principals with above-average ones creates principal vacancies for which existing pipelines may be ill-equipped to provide strong replacements. Also, given the earlier discussion of principal sorting, it is not clear that effective principals would remain in the kinds of schools that often hire less effective principals without additional supports. Although beyond the scope of this report, each of these challenges must be addressed to reach a goal of having strong principals in most schools.
- ¹⁰ Our choice of fifth-graders is arbitrary. Choosing other grade levels will result in different estimates. In general, typical yearly gains are larger among younger students and get smaller as students age, so assuming a constant average principal effect, choosing lower grades makes the number of months of learning associated with the principal appear smaller, and choosing higher grades inflates it. An additional wrinkle is that, in reality, principals' effects probably are not constant across grades; Bartanen (2020) suggests, for example, that principal effectiveness matters more for elementary school students than for middle and high school students. Even if principals in fact matter more in the earliest grades and less as students age, research has not provided much

guidance about these magnitudes, so we cannot accurately estimate months of learning. The punch line is that the months-of-learning translation provided in the text should be taken only as a rough approximation.

- ¹¹ Kraft (2020) reports evidence from randomized controlled trials of interventions with standardized test outcomes, which is quite different from the approaches used to estimate principal effects we report here, so this comparison may not be a fair one. Still, we think this comparison makes the more general point that improving principal effectiveness likely has larger effects on student achievement than many interventions schools or districts may implement.
- ¹² These numbers are the (unweighted) mean of values reported in table 1 in Hanushek and Rivkin (2010), among the studies that are estimated within-school to take school sorting into account.
- ¹³ The Kraft, Marinell, and Yee (2016) results use scales from a factor analysis of teachers' responses to 33 survey items. Factor analysis identifies underlying factors that drive patterns in teachers' responses. In this case, one of the factors the researchers identified group together items that appear to measure both leadership and professional development opportunities, suggesting a close connection between the two but muddying the interpretation of the link between leadership and the outcomes the study considers.
- ¹⁴ These estimates assume a 180-day school calendar.
- ¹⁵ We base this general conclusion on the magnitude of principal effects and the fact that they are averaged across so many students in the average school, not on empirical evidence regarding the cost-effectiveness of any specific strategies or interventions.
- ¹⁶ The comparisons in this study are within-teacher comparisons, meaning Black teachers are less likely to leave their school when the school is led by a Black principal than they were in earlier years when their school was led by a white principal.
- ¹⁷ As an example of the magnitude and significance level of the effect sizes in question, Bastian and Henry (2015) report a negative coefficient on the minority principal indicator of -0.019 standard deviations in elementary math (significant at $p < 0.10$), -0.008 in middle grades reading, (significant at $p < 0.10$), and -0.043 in high school (significant at $p < 0.01$)
- ¹⁸ As an example of this weighting, among quantitative studies, we relied more heavily on studies based on quasi-experimental designs, when available, relative to those with more descriptive designs with weaker strategies for accounting for other factors that may influence outcomes. As another example, qualitative case analyses based on multiple cases weighted more heavily in our synthesis than single-case designs. Moreover, we gave more weight to findings that appeared across multiple studies than those that appeared only once.
- ¹⁹ The field offers multiple perspectives on how principals can and do engage in equity work. One is culturally responsive school leadership (Khalifa, Gooden, and Davis 2016), which emphasizes how leaders leverage student, family, and community cultural assets and knowledge to create conditions through which all students can learn. The leadership for equity framework that arises from the studies in our synthesis shares several points of intersection with culturally responsive school leadership.
- ²⁰ The wording in this sentence was adjusted following the original posting of this report.

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Asterisk (*) denotes inclusion in synthesis described in Chapter 4.

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“Across the country, principals play a key role, strengthening their schools and their communities, working alongside educators, families, and students. The difference that outstanding school principals make in the lives of young people cannot be overstated. Yet, we know that far too many of our historically and presently underserved students—including and especially students from low-income backgrounds and students of color—attend schools where principals have been underprepared and undersupported to do the crucial work that is required of them. This report adds to our collective understanding of the importance of principals, and it should strengthen our resolve as a nation to ensure that all schools are led by people well prepared and ready to ensure that every child feels valued and safe and receives an excellent education.”

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President and Chief Executive Officer of The Education Trust; Former US Secretary of Education

“In the almost two decades since the last Wallace report on the effect of principals on schools (2004’s *Review of Research: How Leadership Influences Student Learning*), the principalship—indeed schools themselves—has changed dramatically. This latest research brings new and compelling insights into the essential role of principals in student learning and sustained school improvement. A must-read for students of educational leadership.”

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“It’s clear that this report will become the seminal work in the field.”

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“Grissom, Egalite, and Lindsay have penned an important new contribution to our understanding of school principals, their role in boosting student outcomes, and their work. Anyone committed to improving our schools ought to devote time and energy to delving into this critical synthesis of the research on how and why principal leadership is the indispensable ingredient in our education system.”

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Executive Director of the Council of the Great City Schools
