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# School Leadership Counts

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**Disciplines**  
Education



SCHOOL

LEADERSHIP

COUNTS

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**NEW TEACHER  
CENTER**

**INSTRUCTIONAL LEADERSHIP  
FOR STUDENT SUCCESS**



Graduate School of Education  
**Penn GSE**

# SCHOOL LEADERSHIP COUNTS

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# INTRODUCTION

It is almost universally recognized that how schools are organized and managed—the realm of school leadership—is crucial for the success of students and the performance of schools (for a review, see, Hitt & Tucker, 2016). Moreover, school officials and reformers have also long held that the key to successful leadership in elementary and secondary schools is to make the core activities of teaching and learning the primary focus of those making the decisions and managing of schools (Louis, Leithwood, Wahlstrom, & Anderson, 2010). Indeed, what is often called “instructional leadership” has been the equivalent of the “Holy Grail” in the management and administration of elementary and secondary schools (Elmore, 2000). In this view, effective schools almost invariably emphasize key elements of instructional leadership, such as: developing a shared purpose and vision among faculty and administrators in schools; fostering an atmosphere of trust and respect in the building; promoting high and consistent academic standards; providing objective, consistent, and useful assessment of the quality of teachers and teaching; using evidence and data to make decisions about the instructional program; and providing support for, and recognition of, teachers (Bryk & Schneider, 2002; May, Huff, & Goldring 2012; Supovitz, Sirinides, & May 2010).

Focusing on teaching and learning may seem an obvious and straightforward objective for school leaders, but to many school critics a central failing of school leadership has been that direct involvement in instruction has been among the least frequent activities performed by school leaders of any kind, and at any level. Such critics hold that the lion’s share of leadership time and energy typically has focused on myriad other managerial issues, such as school facilities, regulations, budgets, scheduling, hiring, community affairs, and parental relations. According to this view, school leaders tend to focus on anything but what should be the core mission of schools: teaching and learning (Elmore, 2000; Goff, Goldring, Guthrie, & Bickman, 2014).

Along with how closely schools focus on teaching and learning, a second concern often arises in discussions of school leadership: who or which groups should have a role in the decision-making in schools. Historically, a hierarchical model similar to that widely used in industry was adopted by the school system (Tyack, 1974). At the school level, the norm over the past century has been that principals and administrators are, and should be, the main decision-makers for school-level issues. But a long-standing aspiration of many school reformers has been to grant teachers an important role in the leadership and decision-making within schools, especially beyond the classroom (for examples and reviews, see McNeil, 1988; Johnson, 1990; Conley, 1991; Sizer, 1992; Grant & Murray, 1999; Ingersoll, 2003). This perspective of school reform has come and gone under different banners, including school-based management, teacher empowerment, site-based decision-making, and distributed leadership. Regardless of the label, the common theme has been to give more “voice” and authority to school faculty, and to allow and encourage teachers to have input into decisions on key issues in their schools that impact their teaching and work.

Wielding authority in organizational decision-making is one of the classic hallmarks of the established and traditional professions, such as law, medicine, dentistry, university professors, and engineering (Freidson, 1986; Hodson & Sullivan, 1995). When it comes to organizational decisions about their work, members of such traditional professions usually have levels of workplace authority and autonomy approaching that of senior management. For example, professors often have equal or greater control than university administrators over the content of their teaching or research, the hiring of new colleagues, and, through the institution of peer review, the evaluation and promotion of members. As a result, academics are able to influence the ongoing content and character of their profession. Following this model, reformers seeking to enhance the professional standing and status of elementary and secondary teaching usually make increased teacher authority a key part of their initiatives (Ingersoll & Merrill, 2011).

In recent years, efforts to increase the decision-making influence of teachers in schools have increasingly come under the banner of “teacher leadership” (Pennington, 2013; Leading Educators, 2015). A growing number of states have enacted policies directing that public schools develop school-level leadership mechanisms, often called school improvement teams or school councils. The objective of these initiatives is to foster collective and shared decision-making among key stakeholders in schools, especially principals and faculty. Often such policies explicitly mandate that school teams and councils wield real authority over key decisions rather than simply serve in an advisory role.

A further development in teacher leadership and teacher professionalization is the small but growing number of “teacher-powered” schools—schools that are collectively designed and led by teachers (Berry, Byrd, & Wieder, 2013; Farris-Berg & Dirkswager, 2013; Hawkins, 2009; Kolderie, 2008, 2014). Such schools are often explicitly modeled after the partnerships that are common among white-collar vocations, such as lawyers, accountants, architects, auditors, and engineers, where the partners, as professionals, own, run, and are accountable for the success of the firm.

Given the prominence of both instructional leadership and teacher leadership in the realms of school reform and policy, both have also been the focus of extensive empirical research. But there have been limits to this research. It is, for example, unclear which of the many key elements of instructional leadership are more, or less, likely to be adopted in schools across the nation. Similarly, it is unclear which of these elements are more or less beneficial for the performance of schools and for enhancing student learning and growth (May, Huff, & Goldring, 2012). Likewise, though the extent of teacher involvement in school decision-making has been widely studied, there has been almost no solid empirical research on whether teacher leadership is beneficial for student learning and growth (Ingersoll, 2003). These topics are the subject of this study.

# THE STUDY

The objective of our study is to address four sets of research questions:

## 1. What are the levels of instructional leadership in schools?

- How widely are key elements of instructional leadership implemented and emphasized in schools?
- Are some elements of instructional leadership more widely implemented than others?
- Are there differences in the levels of instructional leadership across different types of schools?

## 2. What is the relationship between instructional leadership and student achievement?

- Is the level of instructional leadership in schools related to student achievement?
- Are some elements of instructional leadership more strongly related to student achievement than others?
- Does the relationship between instructional leadership and student achievement depend on the type of school?

## 3. What is the role of teachers in school leadership?

- What role do faculty have in decision-making and leadership in their schools?
- Are there differences in the role and leadership of teachers across different decision-making areas in schools?
- Are there differences in the role of teachers in leadership across different types of schools?

## 4. What is the relationship between teacher leadership and student achievement?

- Is the role faculty have in decision-making and leadership in their schools related to student achievement?
- Are some areas of teacher leadership and decision-making more strongly related to student achievement than others?
- Does the relationship between teacher leadership and student achievement depend on the type of school?



# DATA AND METHODS

## BACKGROUND

The data for this study come from the Teaching, Empowering, Leading, and Learning (TELL) Survey. The TELL Survey is a unique and valuable source of data on school organizational conditions and school performance in the United States. In addition to collecting data on multiple measures of student academic achievement and growth, the survey also collects data on an unusually wide range of measures of teaching, learning, and working conditions in schools. TELL is also an unusually large survey; it has compiled data from almost 1.3 million teachers and principals, in over 30,000 public schools, in 23 states, from 2008 to 2014. TELL surveys a large number of teachers per school, providing accurate school-level data. TELL is longitudinal for some states, allowing analysis of school-level changes over time, and finally, TELL supports both cross-state and within-state analyses of schools. As a result, the TELL survey database is one of the most comprehensive and detailed sources of information on school leadership and school performance in the nation.

The TELL Survey originated as part of the Governor's Teacher Working Conditions Initiative in North Carolina. The latter began in 1999 when the North Carolina Professional Teaching Standards Commission (NCPTSC), with support from the North Carolina State Board of Education, conducted a review of the research literature on how to measure teaching conditions in schools and their impact on teachers' careers. The review included analyses of state and national survey data from the Schools and Staffing Survey, which is a nationally representative survey conducted by the National Center for Education Statistics (NCES) of the U.S. Department of Education and the U.S. Census Bureau and is the largest source of data on teachers and conditions in schools in the United States.

NCPTSC drew from this review to develop standards for teaching conditions in schools, which were adopted by the State Board of Education in 1999. In 2000 the NCPTSC developed the original Teacher Working Conditions Survey, a 39 question, paper and pencil survey administered to principals and teachers as a way to assess teaching conditions in schools against the new state standards. The survey was piloted in 60 schools in the state in 2001–2002. In 2002, the Governor's Teacher Advisor, Ann McArthur (now Maddock), took the results of the pilot survey to the Governor, who then led the effort to administer the first-ever, statewide survey of teaching conditions in the nation. More than 42,000 educators completed the first North Carolina Teacher Working Conditions Survey (NC TWC) in 2002. Subsequent analyses of the state data found five important sets of school conditions to be strongly related to teacher outcomes: the allocation of time in schools, the provision of professional development for teachers, the quality of school leadership, the input of teachers into school decision-making, and the adequacy of school facilities/resources. The NC TWC survey has continued to be administered statewide every two years. By 2008, due to encouragement from the Governor in North Carolina, four other state Governors had initiated similar efforts, using the NC TWC Survey.

In 2008 the New Teacher Center (NTC) assumed responsibility for the design and administration of the survey outside of North Carolina, renaming it the Teaching, Empowering, Leading, and Learning (TELL) survey. In recent years NTC has expanded

the breadth of the TELL Survey to incorporate both teacher and student outcomes and, along with the school conditions already described, other conditions that are logically and empirically linked to the survey’s outcomes of interest, teacher job satisfaction, teacher retention, and student achievement. These additional school conditions include: student behavior and conduct, community support and involvement, teacher instructional practices and support, and new teacher support. Based on the NCPTSC-identified areas, and an external validation study, described below, the TELL Survey now includes groups of measures for nine general constructs, representing nine areas or conditions in schools, as listed and defined in Table 1. TELL has almost 200 questionnaire items that capture information in these nine areas.

**TABLE 1. SCHOOL CONDITIONS CONSTRUCTS IN THE TELL SURVEY**

| SCHOOL CONDITIONS CONSTRUCT         | DESCRIPTION  |
|-------------------------------------|--|
| Time                                | Available time to plan, to collaborate, to provide instruction, and to eliminate barriers in order to maximize instructional time during the school day. |
| Facilities and Resources            | Availability of instructional, technology, office, communication, and school resources to teachers.  |
| Community Support and Involvement   | Community and parent/guardian communication and influence in the school.   |
| Managing Student Conduct            | Policies and practices to address student conduct issues and ensure a safe school environment.   |
| Teacher Leadership                  | Teacher involvement in decisions that impact classroom and school practices.   |
| School Leadership                   | The ability of school leadership to support teaching and learning, create trusting, supportive environments and address teacher concerns.                |
| Professional Development            | Availability and quality of learning opportunities for educators to enhance their teaching.  |
| Instructional Practices and Support | Data and support available to teachers to improve instruction and student learning.  |
| New Teacher Support                 | Participation in induction and mentoring activities by beginning teachers.   |

For its measures of student academic achievement and growth, TELL uses state standardized student achievement test scores for grades 3, 8, and 10, for two subjects—English/language arts (ELA) and mathematics. Finally, TELL also collects general demographic information on the teachers and schools in the sample, including levels of teaching experience of the teacher respondents and the level of the school—elementary, middle, secondary, and other/combined.

As part of the Measures of Effective Teaching Project (MET) in 2010, supported through the Bill and Melinda Gates Foundation, NTC sponsored an external review and analysis of the validity and reliability of the TELL survey data. The external review examined TELL data collected from 286,835 educators from 11 states. The objective of the review was to verify that the structure and items included in the TELL Survey result in meaningful and useful information. For a detailed review of the methods and results from the external review and analysis, see Swanlund (2011).

To assess validity, that is, whether the survey items accurately measure what they are intended to measure, the external analysis evaluated the structure of the question response scale and the alignment between survey items and the broader survey constructs, as identified in Table 1. The review used the Rasch Rating Scale Model to examine item-measure correlations, item fit, rating-scale functioning, unidimensionality, and generalizability of the questionnaire. Results from the external validity analysis prompted NTC to implement several edits to TELL to increase the statistical stability of the survey. For example, in place of the original six-point scale, a five-point rating scale was introduced that ensures appropriate scoring for both individual-level responses and school-level responses. Based on the external study finding that some school conditions constructs were more stable if broken into multiple components, an additional construct was added. Additionally, the review indicated that some individual questionnaire items overlap across school condition constructs. For example, items found in the teacher leadership construct overlap with the school leadership construct.

To assess reliability, that is whether the survey instrument produces the same results across repeated measures either within the same population or with a similar population, the external review examined both Rasch model-person separation reliability and levels of the Cronbach's alpha statistic across items. The external review concluded that the TELL survey is capable of producing consistent results across participant groups and that the survey offers a robust and statistically sound approach for measuring teaching and learning conditions in schools.

## **STUDY MEASURES**

TELL, from its origins, was designed to focus on schools as a whole and to gather data on the overall characteristics, conditions, and performance of schools. To this end, the survey questions ask individual teacher-respondents to report on conditions across the school rather than on conditions within their own classrooms. The underlying assumption is that school-level aggregation of the reports of a large sample of teachers in a school is likely to be a useful indicator of actual conditions in that school. Following this, our study uses TELL data to focus on schools as the unit of analysis; ours is a school-level analysis of the levels and effects of school-wide characteristics and conditions. To this end, we aggregate the responses of the individual teacher-respondents in order to create school-level mean scores of school conditions.

In particular, our study focuses on two of the nine TELL constructs of school conditions (in Table 1): school leadership and teacher leadership. These constructs, and the individual survey questions that comprise them, are illustrated in Tables 2 and 3. Throughout this report, we use the term “instructional leadership” to refer to the items listed under the school leadership construct. These items all are concerned with the operation and management of schools that is specifically focused on core teaching and learning activities. Moreover, in this study the term “leadership” in schools does not refer solely to the activities of school administrators, such as school principals. Instead, it refers to any individuals or groups, including teachers themselves, involved with managing the core activities in the school organization. Teacher leadership—the extent to which teachers are involved with this management—is a focus of our study and the subject of research questions 3 and 4.

**TABLE 2. TELL SURVEY ITEMS ON SCHOOL INSTRUCTIONAL LEADERSHIP**

Please rate how strongly you agree or disagree with the following statements about school leadership in your school.

|   | Strongly disagree | Disagree | Agree | Strongly agree | Don't know |
|---|-------------------|----------|-------|----------------|------------|
| a. The faculty and leadership have a shared vision.   |                   |          |       |                |            |
| b. There is an atmosphere of trust and mutual respect in this school.                             |                   |          |       |                |            |
| c. Teachers <sup>1</sup> feel comfortable raising issues and concerns that are important to them. |                   |          |       |                |            |
| d. The school leadership <sup>2</sup> consistently supports teachers.                             |                   |          |       |                |            |
| e. Teachers are held to high professional standards for delivering instruction.                   |                   |          |       |                |            |
| f. The school leadership facilitates using data to improve student learning.                      |                   |          |       |                |            |
| g. Teacher performance is assessed objectively.   |                   |          |       |                |            |
| h. Teachers receive feedback that can help them improve teaching.                                 |                   |          |       |                |            |
| i. The procedures for teacher evaluation are consistent.  |                   |          |       |                |            |
| j. The school improvement team provides effective leadership at this school.                      |                   |          |       |                |            |
| k. The faculty are recognized for accomplishments.  |                   |          |       |                |            |

Notes: <sup>1</sup> Teachers means a majority of teachers in your school. <sup>2</sup> School leadership is an individual, group of individuals or team within the school that focuses on managing a complex operation. This may include scheduling; ensuring a safe school environment; reporting on students’ academic, social and behavioral performance; using resources to provide the textbooks and instructional materials necessary for teaching and learning; overseeing the care and maintenance of the physical plant; or developing and implementing the school budget.

**TABLE 3. TELL SURVEY ITEMS ON TEACHER LEADERSHIP**

Please indicate the role teachers<sup>1</sup> have at your school in each of the following areas.

|  | No role at all | Small role | Moderate role | Large role | Don't know |
|--|----------------|------------|---------------|------------|------------|
| a. Selecting instructional materials and resources                         |                |            |               |            |            |
| b. Devising teaching techniques  |                |            |               |            |            |
| c. Setting grading and student assessment practices                        |                |            |               |            |            |
| d. Determining the content of in-service professional development programs |                |            |               |            |            |
| e. Establishing student discipline procedures                              |                |            |               |            |            |
| f. Providing input on how the school budget will be spent                  |                |            |               |            |            |
| g. The selection of teachers new to this school                            |                |            |               |            |            |
| h. School improvement planning   |                |            |               |            |            |

Note: <sup>1</sup> Teachers means a majority of teachers in your school.

The measures of student performance collected by TELL are also school-level constructs, which are based on the percentage of students in each school that score at a proficient level on the state’s standardized student achievement tests for grades 3, 8, and 10 for ELA and mathematics. Because state tests change over time, and different states use different tests, and moreover, differently define proficiency, the measures of student achievement are not consistent across different states and years. This presented a challenge because the objective of our study is to examine data from as large a sample of schools possible from the TELL Survey. To pool the data from multiple states and multiple years, it was necessary for us to create a standardized, school-level, cross-state student achievement measure that is consistent across different states and years. We did this by ranking the schools within each state according to their percentage of students scoring at a proficient level, separately for each subject. The resulting measure is a percentile ranking, from 1% to 100%, of each school compared to all other schools in the state, in that year, for both mathematics and ELA. We were able to access and use school-level percent proficiency data for all schools, for each state, in the TELL Survey. Thus the percentile rankings do not merely reflect the relative standing of schools in the analytic sample. Rather they reflect relative ranking when compared to the full population of schools within their respective states for a given year. This was done not only to support the generalizability of study findings but also to mitigate risk that a school’s percentile ranking would fluctuate year by year due to changes over time in the composition of other schools participating in the TELL Survey.

Finally, in addition to background information on levels of faculty teaching experience and school level (elementary, middle, secondary, and other/combined school) gathered by TELL, we used school identification numbers to merge other information with our TELL sample. Specifically, we merged information from NCES’s Common Core of Data (CCD)

on several other measures of school background characteristics typically utilized in research on school leadership: school locale (urban, suburban, or rural/small town); percent of minority students; percent of students from poverty-level families; and number of students enrolled. The addition of these variables allowed us to examine differences in school conditions across different types of schools. See Table 4 for definitions of all of our school background measures.

**TABLE 4. MEASURES OF BACKGROUND SCHOOL CHARACTERISTICS IN TELL SAMPLE**

| SCHOOL CHARACTERISTIC   | DEFINITION  |
|-------------------------|---|
| Elementary School Level | A schooling level that provides learning experiences that focus primarily on knowledge and skills for the appropriate age or grade level from after kindergarten to the eighth grade, as defined by applicable state laws and regulations.  |
| Middle School Level     | A schooling level that provides learning experiences that focus primarily on knowledge and skills for the appropriate age or grade level between the elementary and senior high school, as defined by applicable state laws and regulations.  |
| Secondary School Level  | A schooling level that provides learning experiences that focus primarily on knowledge and skills for the appropriate age or grade level between the middle/intermediate/junior high school and grade 12, as defined by applicable state laws and regulations.  |
| Other School Level      | Combined school with K–12 grades  |
| School Size             | Average Daily Membership—the number of students enrolled on October 10 of current school year.  |
| Poverty Enrollment      | Percent Students Qualifying for Free or Reduced-Priced Lunch program for students from families below the federal poverty line.   |
| Minority Enrollment     | Percent students identified as: Black/African American; native Hawaiian/Pacific/Islander or Asian; Native American/Indian/Alaska Native; Hispanic; and those of multiple races. Hispanic refers to ethnicity and includes those of all races.   |
| Beginning Faculty       | Percent teachers with 0 to 3 years of employment as an educator.  |
| Urban                   | Territory inside an urbanized area and inside a principal city. This designation is defined by the National Center of Education Statistics (NCES) in the ‘City’ locale designation and includes all subcategories within the ‘City’ locale designation (Large >250k, Midsize 100k–250k, Small <100k). |
| Suburban                | Territory outside a principal city and inside an urbanized area. This designation is defined by NCES in the ‘Suburb’ locale designation and includes all subcategories within the ‘Suburb’ locale designation (Large >250k, Midsize 100k–250k, Small <100k).  |
| Small Town/Rural        | Territories designated as ‘Town’ or ‘Rural’ by urban-centric locale, as defined by NCES. These locales include schools that are outside an urbanized area, but can still be within an urbanized cluster.  |

## TELL SAMPLE

For our analyses we combined five years of TELL Survey data—from 2011 to 2015. Prior to 2011, the TELL questionnaire items used a five-point Likert scale with a ‘neither agree nor disagree’ option. After 2011 the TELL questionnaire was standardized across states, allowing for collective analysis of a far larger sample of states. Table 5 summarizes our TELL sample. We included schools in our analytic sample only if they met a response rate reporting threshold set at a minimum of five respondents and 40% response rate at the school level.

**TABLE 5. BASIC INFORMATION ON THE TELL SAMPLE**

| YEARS DATA COLLECTED | STATES | DISTRICTS | SCHOOLS | TEACHER-RESPONDENTS | AVERAGE RESPONSE RATE (SCHOOL LEVEL) |
|----------------------|--------|-----------|---------|---------------------|--------------------------------------|
| 5                    | 16     | 1,874     | 24,645  | 880,494             | 83.20%                               |

The TELL school sample is not a random sample and hence cannot be assumed to be either state or nationally representative. But the TELL sample is unusually large, which raises the question of the extent to which our findings can be generalized. To try to understand how closely the TELL sample matches or represents public schools across the United States generally, we compared our TELL school sample to all public schools using NCES’s Common Core of Data. We evaluated how closely our school sample resembles that of the overall public school population for background variables (see columns I and II in Table 6). As shown by these comparisons, the TELL Survey sample, at least relative to these variables, closely resembles schools across the nation.

**TABLE 6. COMPARISON OF THE BACKGROUND CHARACTERISTICS OF ALL PUBLIC SCHOOLS IN THE U.S. AND TELL SCHOOL SAMPLES**

| VARIABLE                         | I. U.S<br>(n=98,424) | II. TELL School<br>Sample<br>(n=24,645) | III. Analytic<br>Sample – ELA<br>(n=18,608) | IV. Analytic<br>Sample<br>– Math<br>(n=18,584) |
|----------------------------------|----------------------|---|---|--|
| Percent Elementary Schools       | 55.0                 | 56.0                                    | 60.0  | 60.0   |
| Percent Middle Schools           | 16.7                 | 20.0                                    | 23.0  | 23.0   |
| Percent Secondary Schools        | 21.5                 | 20.0                                    | 16.0  | 15.0   |
| Percent Other Schools            | 6.9                  | 4.0                                     | 1.0   | 1.0  |
| Percent Urban Schools            | 26.3                 | 27.0                                    | 27.0  | 27.0   |
| Percent Suburban Schools         | 32.4                 | 30.0                                    | 31.0  | 31.0   |
| Percent Small Town/Rural Schools | 41.3                 | 40.0                                    | 42.0  | 42.0   |
| School Size                      | 410                  | 560                                     | 562   | 560  |
| Percent Minority Enrollment      | 44.6                 | 41.5                                    | 41.0  | 41.0   |
| Percent Poverty Enrollment       | 52.5                 | 54.7                                    | 55.0  | 55.0   |

Given that the TELL survey is generally administered biennially and because our analytic sample represents several years of data collection, some schools are duplicated within our sample. Within our school sample of 24,645, there are 14,122 distinct schools. From an analyses viewpoint, an advantage of including a school more than once in the sample is that it increases the sample size, and hence the analytic power of the study. To better understand the implications of school duplication we evaluated how closely the non-duplicate schools in our sample match the duplicate schools on a number of variables. The latter included both the variables shown in Table 6 as well as some leadership and proficiency variables in the TELL survey. As shown in Table 7, we found that duplicate schools, at least relative to these indicators, closely resemble non-duplicate schools.

**TABLE 7. COMPARISON OF DUPLICATE AND NON-DUPLICATE SCHOOLS IN THE TELL SAMPLE**

| VARIABLE                         | Duplicate<br>(>1 Record/School,<br>n=18,954) | Non-Duplicate<br>(1 Record/School,<br>n=5,692) |
|----------------------------------|--|--|
| Percent Elementary Schools       | 55.0   | 56.0   |
| Percent Middle Schools           | 18.0   | 21.0   |
| Percent Secondary Schools        | 20.0   | 20.0   |
| Percent Other Schools            | 7.0  | 3.0  |
| Percent Urban Schools            | 26.0   | 28.0   |
| Percent Suburban Schools         | 27.0   | 30.0   |
| Percent Small Town/Rural Schools | 40.0   | 40.0   |
| School Size                      | 520  | 570  |
| Percent Minority Enrollment      | 41.8   | 41.4   |
| Percent Poverty Enrollment       | 54.7   | 54.7   |
| Percent Beginning Teachers       | 13.3   | 13.9   |
| School ELA Proficiency Rank      | 48.8   | 49.5   |
| School Math Proficiency Rank     | 49.1   | 50.2   |
| Overall Instructional Leadership | 3.0  | 3.1  |
|                                  | 2.9  | 3.0  |
| Overall Teacher Leadership       | 3.0  | 3.0  |



## STUDY METHODS

We employed several types of statistical analysis to generate the results of this study. We present descriptive data from TELL to address research questions 1 and 3, regarding levels and variations of instructional leadership and teacher leadership. The descriptive analyses utilize the entire TELL school sample, as summarized in Tables 5 and 6. We also conducted, and present the results from, multiple regression analyses to address research questions 2 and 4, regarding the association between instructional leadership, teacher leadership, and student academic achievement.

In the regression analyses, the outcome or dependent variable is the school's state student proficiency ranking. In our regression models we progressively examine three groups of school-level predictors of school student proficiency ranking: school characteristics, instructional leadership, and teacher leadership. (Tables 2, 3, and 4, above, provide definitions for these variables). The regression analyses examine whether the school's ranking for student proficiency is related to our measures of instructional leadership and teacher leadership, while controlling for school background demographic characteristics. The latter include percent of minority students, percent of students from poverty-level families, number of students enrolled, and percent beginning teachers in the school. We do not include the urbanicity measure (urban/suburban/small town/rural) in our models because our urbanicity measure is highly interrelated, and confounded, with our measure of poverty enrollment.

TELL's large sample and rich set of multiple measures of both instructional leadership and teacher leadership allow us to focus on the relationships between student achievement and each of the 11 measures of instructional leadership (in Table 2) and eight measures of teacher leadership (in Table 3). Because the measures of different elements of instructional leadership and different areas of teacher leadership are often interrelated, and their relations to student proficiency possibly confounded, we estimate the coefficients for each separate measure of leadership in a separate regression model in order to avoid the problem of multicollinearity.

Our multiple regression analyses used PROC REG from the SAS software package (version 9.4) to estimate the relationship between our measures of leadership and student achievement using the Ordinary Least Squares (OLS) regression procedure. The OLS equation assumes there is a linear association between the outcome variable and the independent variables. For example, OLS estimates whether changes in leadership are associated with changes in student achievement. It is important to note that any relationships we found between the independent variables and student proficiency represent statistical associations between measures and do not imply causality.

Due to deletion methods in the SAS statistical procedures, schools with missing data, for either independent or dependent variables, are excluded from the regression modeling procedures. Because of missing data for particular measures in our TELL data, the effective sample size in our regression analyses is reduced. There are two main sources of missing data in our regression analyses. Of the 24,645 schools in our TELL sample, 4,443 schools are missing ELA proficiency rank scores and 4,477 schools are missing mathematics proficiency ranking scores. These reductions were due to a handful of reasons including match failure and schools that did not report mathematics or ELA scores to the state. In

addition, about 1,600 of the 24,645 schools in our TELL sample were missing some of the school background data. This was because some of these schools, such as those administered by the Defense Department or the Bureau of Indian Affairs, did not have school identification numbers, making it impossible to merge their school background characteristics from NCES' Common Core of Data into our TELL sample. To try to understand how closely the TELL schools in the regression analytic samples match those schools in the larger TELL sample, we compared the groups on the variables used in Table 6. These comparisons (in columns III and IV of Table 6) suggest that the smaller regression analysis school samples closely resemble schools in the larger TELL Survey sample, and also resemble schools across the nation, at least for these variables.

As mentioned above, our TELL measures of school conditions, such as leadership, are based on teachers' self-reports. Teachers' responses within any individual school, of course, may vary for many reasons including differences between teachers within the same building as to how positive or negative they perceive various conditions to be. In background analyses we partitioned the variance of each measure of leadership into within-school and between-school components. The former represents actual teacher-to-teacher differences in reports on leadership and also unexplained variance in the measurement of leadership. The intraclass correlation, or the portion of the variation that lies between schools, indicates the part of each measure that is common to all teachers within a school. For the instructional leadership items, the intraclass correlations ranged from 18% for atmosphere of trust to 7% for school improvement teams. For the teacher leadership items the intraclass correlations ranged from 10% for devising teaching techniques to 18% for selecting new teachers. The school-level variance in leadership is the focus of our regression analyses. That is, our regression models focus on the part of each measure that is common to all teachers within a school. One of the challenges of our method is to discern if the predictors in our regression models are able to explain the relatively small portion of the total variance that lies at the school level.

Finally, following up our multiple regression analyses, we undertook an additional set of statistical analyses to further illustrate the magnitude of the relationships between student achievement and our leadership measures, as revealed in the regression models (research questions 2 and 4). In this last type of analysis, we estimated predicted percentile rankings of proficiency for both mathematics and ELA for a plausible range of values of overall measures of average levels for both instructional leadership and teacher leadership. We set the overall leadership measures to values corresponding to the 10th percentile, the 25th percentile, the mean, the 75th percentile, and the 90th percentile for the sample, while holding the measures of background school characteristics constant at the sample mean. This allowed us to predict student proficiency for hypothetical schools that reflect the actual range of observed values, beginning with those that have the lowest level of leadership (i.e., at the 10th percentile on the overall measure) and concluding with those that have the highest level of leadership (i.e., at the 90th percentile on the overall measure).

# THE FINDINGS

## 1. What are the Levels of Instructional Leadership in Schools?

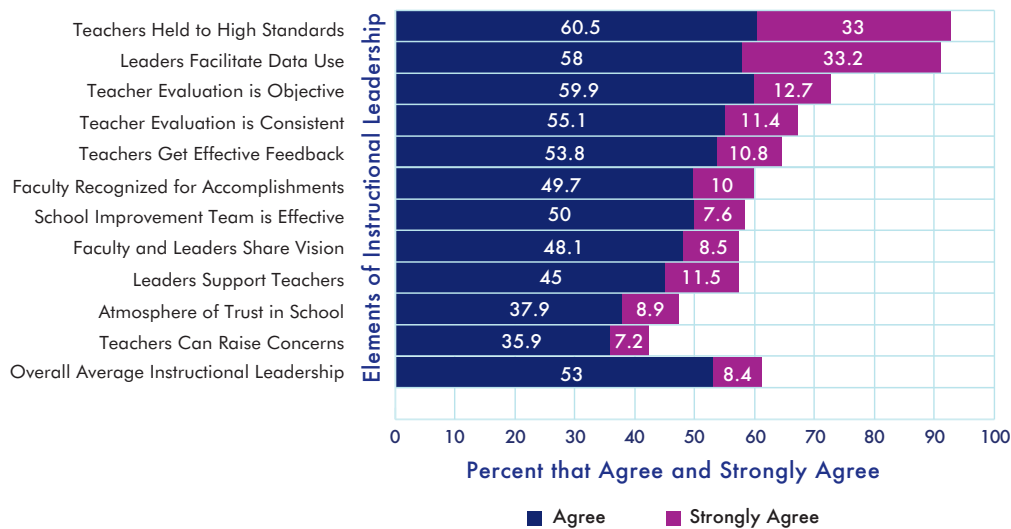
Which elements of instructional leadership are schools more likely to undertake and which elements are they more likely to neglect, according to teachers? Are levels of instructional leadership higher or lower in some schools than in others? In other words, to what extent are the key elements of instructional leadership implemented and emphasized in schools, does this vary across different elements of instructional leadership, and does this vary across different types of schools?

To answer these questions, we focused on a battery of TELL Survey questions that asked school faculties to rate their degree of agreement or disagreement with statements regarding 11 key elements of instructional leadership in their schools, on a four-point scale, ranging from “Strongly Disagree” (1) to “Strongly Agree” (4). Figure 1 and Table 8 display the percentage of school faculties that, on average, reported they agree and strongly agree with each statement.<sup>2</sup>

Our analyses showed that the different elements of instructional leadership are highly correlated. In other words, schools that have high levels of one element are likely to have high levels in others. But, the data also show large variations across these elements. The data show that schools vary dramatically in which elements of instructional leadership they emphasize and implement, and which they do not. For example, in over 90% of the schools, on average, the faculty agreed or strongly agreed that “teachers are held to high professional standards for delivering instruction.” On the other hand, in less than half of the schools did “teachers feel comfortable raising issues and concerns that are important to them” (see Figure 1).

**FIGURE 1. LEVELS OF INSTRUCTIONAL LEADERSHIP**

(Percent Schools in Which Faculty on Average “Agree” and “Strongly Agree” with Selected Statements Regarding Their School’s Instructional Leadership)



<sup>2</sup> In Figure 1 and Table 8, “agree” is defined as average school-level scores of greater than or equal to 3 on the 1–4 scale. “Strongly agree” is defined as average scores greater than or equal to 3.5.

Moreover, these variations across elements were more marked when we focused solely on schools in which faculty reported they “strongly agree,” that is, in which the faculty reported the highest level for that element of instructional leadership. For instance, while in 50% of schools the faculty on average reported they “agree” with the statement that “the school improvement team provides effective leadership at this school,” in only about 8% of schools did faculty report that they “strongly agree” with this statement. In comparison, in a third of schools faculty reported they “strongly agree” that teachers are held to high standards.

In general, the data indicate that schools are more likely to implement elements of instructional leadership that are aligned with enhancing high instructional standards, teacher accountability, evaluation, and performance. In contrast, the data indicate that schools less likely to emphasize elements of instructional leadership that entail recognition of, and support for, teachers and that are aligned with enhancing teacher “voice” and input into decision-making.

In addition, the data also reveal a wide range in the quality of leadership across different types of schools (see Table 8). Some of the most prominent differences are based on the poverty level of the students in the school. In nine of the 11 elements of instructional leadership, faculty in high-poverty schools rated their schools lower than faculty in low-poverty schools. For instance, in less than half of the high-poverty schools did faculty report that the school leadership consistently supports teachers. In contrast, this was true of about 60% of low-poverty schools. There was an even larger gap (38% to 50%) in faculty ratings of the atmosphere of trust and mutual respect in their schools. In only 38% of high-poverty schools did the faculty agree there was any such atmosphere, compared with 50% of faculty in more affluent schools.

## **2. What is the Relationship Between Instructional Leadership and Student Achievement?**

Do schools with higher levels of instructional leadership have higher student achievement? Are some elements of instructional leadership more related to student achievement than others? And, finally, do these relationships vary across schools?

To answer these questions, we examined the relationship between our instructional leadership measures and school-level student achievement for both mathematics and ELA. Our student achievement measure was the within-state percentile ranking of a school’s student proficiency levels. To evaluate these relationships we undertook a series of multiple regression analyses of the TELL data. We examined the relationship between mathematics and ELA proficiency rankings and each of the 11 measures of instructional leadership separately, and also between the proficiency rankings and an overall measure that represented an average of instructional leadership across all 11 elements. In these regression analyses we controlled for the effects of several key school characteristics: school level, school size, student poverty levels, percentage of minority students, and the proportion of teachers who were beginners. The independent variables and associated regression estimates from each model are shown in Tables 9a and 9b.

Not surprisingly, most of the background school characteristics were related to student achievement. School poverty especially stood out as a key variable. Student proficiency was at statistically significantly lower rates in higher poverty schools than in lower poverty schools. For instance, in most of the models, a 10-percentage point difference in the proportion of the school's students that were eligible for the free or reduced-price lunch program in a school was typically associated with a 5- to 6-point difference in the school's proficiency percentile ranking in the state. This poverty effect was little different for mathematics and ELA; lower income schools ranked significantly lower academically in both.

Other things being equal, schools with more minority students and more beginning teachers also had lower student achievement, but these associations were weaker than the poverty effect. Secondary schools sometimes ranked slightly lower than elementary schools in their student proficiency. Middle schools did not differ, at a statistically significant level, from elementary schools in their ranking, while the relatively smaller number of combined schools typically ranked far lower than elementary schools. Interestingly, larger schools ranked higher in proficiency than smaller schools, and they did so at a statistically significant level.

**TABLE 8. PERCENT SCHOOLS IN WHICH FACULTY AGREE OR STRONGLY AGREE WITH STATEMENTS REGARDING THEIR SCHOOL'S INSTRUCTIONAL LEADERSHIP, BY TYPE OF SCHOOL**

| ELEMENTS OF INSTRUCTIONAL LEADERSHIP   | Low Poverty | High Poverty | Low Minority | High Minority | Elementary School | Middle School | Secondary School | Small School | Large School |
|--|-------------|--------------|--------------|---------------|-------------------|---------------|------------------|--------------|--------------|
| Teachers Can Raise Concerns            | 46.1        | 35.5         | 50.3         | 31.7          | 44.9              | 37.7          | 41.2             | 54.8         | 32.6         |
| Atmosphere of Trust in School          | 50.1        | 38.1         | 53.9         | 34.5          | 50.1              | 40.9          | 42               | 55.8         | 37.1         |
| Leaders Support Teachers               | 59.3        | 49.1         | 62.9         | 45.1          | 60.1              | 49.3          | 50.1             | 66           | 46           |
| Faculty and Leaders Share Vision       | 54.1        | 53.5         | 62.1         | 48.6          | 62.4              | 49.7          | 45.6             | 63.3         | 45.7         |
| School Improvement Team is Effective   | 55.8        | 53.8         | 60.4         | 48.9          | 63.8              | 50.8          | 46.6             | 63.5         | 48.4         |
| Faculty Recognized for Accomplishments | 64.2        | 54.4         | 59           | 53.6          | 61.1              | 57            | 58.8             | 63.1         | 58.7         |
| Teachers Get Effective Feedback        | 59.5        | 63.1         | 59           | 58.4          | 68.1              | 62.1          | 55.1             | 69           | 57.9         |
| Teacher Evaluation is Objective        | 74.4        | 66.7         | 79.9         | 62            | 76.6              | 69.5          | 63.6             | 78.6         | 63.2         |
| Teacher Evaluation is Consistent       | 64.9        | 61.3         | 75.2         | 56.7          | 71.3              | 61.3          | 57.1             | 73.7         | 55.2         |
| Leaders Facilitate Data Use            | 89.3        | 92.4         | 91.6         | 91            | 95.5              | 91            | 81               | 89.9         | 88.8         |
| Teachers Held to High Standards        | 95.2        | 92           | 94.4         | 91.3          | 96                | 93.8          | 87.5             | 93.1         | 92.6         |
| Overall Instructional Leadership       | 62.5        | 55.8         | 67.6         | 51.7          | 66.6              | 56.1          | 52.2             | 67.4         | 53.2         |

Note: Categories for school poverty enrollment, minority enrollment and school size are based on quartiles. For example, low poverty refers to the 25 percent of schools with the lowest percent students eligible for the federal free/reduced lunch program. High poverty refers to those schools at or above the 75th percentile.

**TABLE 9A. REGRESSION ANALYSIS OF RELATIONSHIP BETWEEN INSTRUCTIONAL LEADERSHIP AND STUDENT PROFICIENCY, FOR MATH AND ENGLISH/LANGUAGE ARTS, WHILE CONTROLLING FOR SCHOOL CHARACTERISTICS**

|                                  | Model 1 |        | Model 2 |        | Model 3 |        | Model 4 |        | Model 5 |        | Model 6 |        | Model 7 |        |
|----------------------------------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|
|                                  | Math    | ELA    | Math    | ELA    | Math    | ELA    | Math    | ELA    | Math    | ELA    | Math    | ELA    | Math    | ELA    |
| <b>School N</b>                  | 18,584  | 18,608 | 18,584  | 18,608 | 18,584  | 18,608 | 18,584  | 18,608 | 18,584  | 18,608 | 18,584  | 18,608 | 18,584  | 18,608 |
| <b>Rsq</b>                       | .412    | .510   | .426    | .522   | .432    | .526   | .430    | .525   | .439    | .532   | .437    | .520   | .436    | .532   |
| <b>Intercept</b>                 | 89.03   | 90.05  | 65.45   | 68.75  | 61.28   | 65.52  | 58.47   | 62.40  | 50.84   | 55.31  | 44.79   | 49.30  | 51.74   | 54.57  |
| <b>School Characteristics</b>    |         |        |         |        |         |        |         |        |         |        |         |        |         |        |
| Poverty Enrollment               | -.545   | -.635  | -0.54   | -0.63  | -0.54   | -0.63  | -0.54   | -0.63  | -0.56   | -0.65  | -0.58   | -0.66  | -0.53   | -0.62  |
| Minority Enrollment              | -.136   | -.160  | -0.12   | -0.15  | -0.12   | -0.14  | -0.12   | -0.14  | -0.11   | -0.14  | -0.10   | -0.12  | -0.13   | -0.16  |
| School Size (in 100s)            | .774    | .724   | 0.91    | 0.85   | 0.89    | 0.82   | 0.92    | 0.86   | 0.87    | 0.81   | 1.05    | 0.90   | .80     | 0.75   |
| Middle School Level              | -11.4   | -.903  | -17.20  | -3.55  | -16.69  | -3.10  | -16.61  | -3.02  | -15.42  | -1.93  | -7.76   | 1.06   | -11.09  | -.62   |
| Secondary School Level           | -17.3   | -3.65  | -11.20  | -0.73  | -10.84  | -0.41  | -10.74  | -0.31  | -10.28  | 0.11   | -8.70   | 0.68   | -16.59  | 2.97   |
| Other School Level               | -18.5   | -12.66 | -18.47  | -12.66 | -18.24  | -12.46 | -18.04  | -12.28 | -18.55  | -12.74 | -16.57  | -11.60 | -16.98  | -11.25 |
| Beginning Faculty                | -.100   | -.095  | -0.09   | -0.09  | -0.10   | -0.10  | -0.10   | -0.10  | -0.12   | -0.11  | -0.12   | -0.12  | -0.11   | -0.10  |
| <b>Instructional Leadership</b>  |         |        |         |        |         |        |         |        |         |        |         |        |         |        |
| Teachers Can Raise Concerns      | .       | .      | 7.68    | 6.94   | .       | .      | .       | .      | .       | .      | .       | .      | .       | .      |
| Atmosphere of Trust/Respect      | .       | .      | .       | .      | 8.95    | 7.91   | .       | .      | .       | .      | .       | .      | .       | .      |
| Leaders Support Teachers         | .       | .      | .       | .      | .       | .      | 9.51    | 8.61   | .       | .      | .       | .      | .       | .      |
| Shared Vision in School          | .       | .      | .       | .      | .       | .      | .       | .      | 12.40   | 11.28  | .       | .      | .       | .      |
| Effective School Improve Team    | .       | .      | .       | .      | .       | .      | .       | .      | .       | .      | 14.23   | 13.23  | .       | .      |
| Faculty Recognized               | .       | .      | .       | .      | .       | .      | .       | .      | .       | .      | .       | .      | 12.02   | 11.44  |
| Effective Teacher Feedback       |         |        |         |        |         |        |         |        |         |        |         |        |         |        |
| Objective Teacher Evaluation     |         |        |         |        |         |        |         |        |         |        |         |        |         |        |
| Consistent Teacher Evaluation    |         |        |         |        |         |        |         |        |         |        |         |        |         |        |
| Leaders Facilitate Data Use      |         |        |         |        |         |        |         |        |         |        |         |        |         |        |
| Teachers Held to High Standards  |         |        |         |        |         |        |         |        |         |        |         |        |         |        |
| Overall Instructional Leadership |         |        |         |        |         |        |         |        |         |        |         |        |         |        |

**TABLE 9B. REGRESSION ANALYSIS OF RELATIONSHIP BETWEEN INSTRUCTIONAL LEADERSHIP AND STUDENT PROFICIENCY, FOR MATH AND ENGLISH/LANGUAGE ARTS, WHILE CONTROLLING FOR SCHOOL CHARACTERISTICS**

|                                  | Model 8 |        | Model 9 |        | Model 10 |        | Model 11 |        | Model 12 |        | Model 13 |        |
|----------------------------------|---------|--------|---------|--------|----------|--------|----------|--------|----------|--------|----------|--------|
|                                  | Math    | ELA    | Math    | ELA    | Math     | ELA    | Math     | ELA    | Math     | ELA    | Math     | ELA    |
| <b>School N</b>                  | 18,584  | 18,608 | 18,584  | 18,608 | 18,584   | 18,608 | 18,584   | 18,608 | 18,584   | 18,608 | 18,584   | 18,608 |
| <b>Rsq</b>                       | .437    | .530   | .420    | .510   | .428     | .524   | .437     | .528   | .444     | .533   | .439     | .532   |
| <b>Intercept</b>                 | 51.72   | 56.39  | 48.96   | 54.87  | 54.77    | 59.12  | 30.20    | 40.99  | 15.03    | 28.33  | 41.09    | 46.93  |
| <b>School Characteristics</b>    |         |        |         |        |          |        |          |        |          |        |          |        |
| Poverty Enrollment               | -0.57   | -0.66  | -0.56   | -0.64  | -0.55    | -0.64  | -0.56    | -0.65  | -0.52    | -0.62  | -0.55    | -0.64  |
| Minority Enrollment              | -0.11   | -0.14  | -0.10   | -0.12  | -0.12    | -0.14  | -0.12    | -0.14  | -0.12    | -0.15  | -0.11    | -0.14  |
| School Size (in 100s)            | 0.85    | 0.79   | 1.03    | 0.91   | 0.90     | 0.83   | 0.79     | 0.74   | 0.86     | 0.80   | 0.90     | 0.84   |
| Middle School Level              | -15.62  | -2.14  | -11.02  | -0.87  | -16.05   | -2.52  | -13.16   | -0.19  | -13.63   | -0.58  | -15.52   | -2.05  |
| Secondary School Level           | -10.82  | -0.39  | -9.75   | -0.10  | -10.71   | -0.29  | -9.81    | 0.43   | -9.89    | 0.35   | -10.45   | -0.06  |
| Other School Level               | -19.12  | -13.25 | -17.68  | -12.40 | -17.73   | -11.99 | -17.17   | -11.57 | -18.65   | -12.82 | -17.96   | -12.21 |
| Beginning Faculty                | -0.11   | -0.11  | -0.10   | -0.09  | -0.10    | -0.09  | -0.12    | -0.11  | -0.13    | -0.13  | -0.11    | -0.11  |
| <b>Instructional Leadership</b>  |         |        |         |        |          |        |          |        |          |        |          |        |
| Teachers Can Raise Concerns      | .       | .      | .       | .      | .        | .      | .        | .      | .        | .      | .        | .      |
| Atmosphere of Trust/Respect      | .       | .      | .       | .      | .        | .      | .        | .      | .        | .      | .        | .      |
| Leaders Support Teachers         | .       | .      | .       | .      | .        | .      | .        | .      | .        | .      | .        | .      |
| Shared Vision in School          | .       | .      | .       | .      | .        | .      | .        | .      | .        | .      | .        | .      |
| Effective School Improve Team    | .       | .      | .       | .      | .        | .      | .        | .      | .        | .      | .        | .      |
| Faculty Recognized               | .       | .      | .       | .      | .        | .      | .        | .      | .        | .      | .        | .      |
| Effective Teacher Feedback       | 12.19   | 11.00  | .       | .      | .        | .      | .        | .      | .        | .      | .        | .      |
| Objective Teacher Evaluation     | .       | .      | 12.06   | 10.68  | .        | .      | .        | .      | .        | .      | .        | .      |
| Consistent Teacher Evaluation    | .       | .      | .       | .      | 10.66    | 9.63   | .        | .      | .        | .      | .        | .      |
| Leaders Facilitate Data Use      | .       | .      | .       | .      | .        | .      | 17.30    | 14.43  | .        | .      | .        | .      |
| Teachers Held to High Standards  | .       | .      | .       | .      | .        | .      | .        | .      | 21.17    | 17.66  | .        | .      |
| Overall Instructional Leadership | .       | .      | .       | .      | .        | .      | .        | .      | .        | .      | 15.04    | 13.53  |

The question of particular interest here is: After controlling for these background characteristics of teachers and schools, is the level of instructional leadership in schools also associated with student achievement? For instance, the data show that both student achievement and the level of instructional leadership are lower in higher poverty schools. This raises the question: In such schools, is lower achievement largely or solely linked to the socio-economic background of the students, or is some part of student achievement in the schools accounted for by the caliber of instructional leadership? In short, does instructional leadership appear to make a difference?

The results of our regression analyses clearly show that instructional leadership is independently and significantly related to student achievement, even after controlling for the background characteristics of schools, and this is so for both mathematics and ELA.

In each of the models shown, the introduction of the instructional leadership variable improved the model  $R^2$  statistic by a statistically significant amount. This indicates that each separate measure of leadership individually explained a significant portion of the variation in student achievement across schools. Moreover, after controlling for the characteristics of teachers and schools, the regression analyses showed that each of the 11 separate measures of instructional leadership is related to student achievement at a statistically significant level. In other words, other school characteristics being equal, schools with higher levels of leadership in each of the 11 areas also had significantly higher student achievement. For instance, a one-unit (on a four-unit scale) difference in a school's degree of shared vision was associated with a 12-percentile difference in that school's ranking in mathematics proficiency. Similarly, a school reporting one-unit difference in the effectiveness of its school improvement team was, on average, 13 percentiles different in its ELA proficiency ranking.

To further illustrate the magnitude of these associations between achievement and instructional leadership we estimated predicted percentile rankings of student proficiency by entering a range of values for the overall measure of instructional leadership, while holding the measures of school characteristics constant at the sample mean. We set the leadership measure to values corresponding to the 10th percentile, the 25th percentile, the mean, the 75th percentile, and the 90th percentile for the sample. This allowed us to predict student proficiency for a range of hypothetical schools, beginning with those that have the lowest level of instructional leadership (i.e., at the 10th percentile on the overall measure) and concluding with those that have the highest level of instructional leadership (i.e., at the 90th percentile on the overall measure). Figure 2 presents these predicted percentile rankings for both mathematics and ELA, for the different levels of overall instructional leadership.

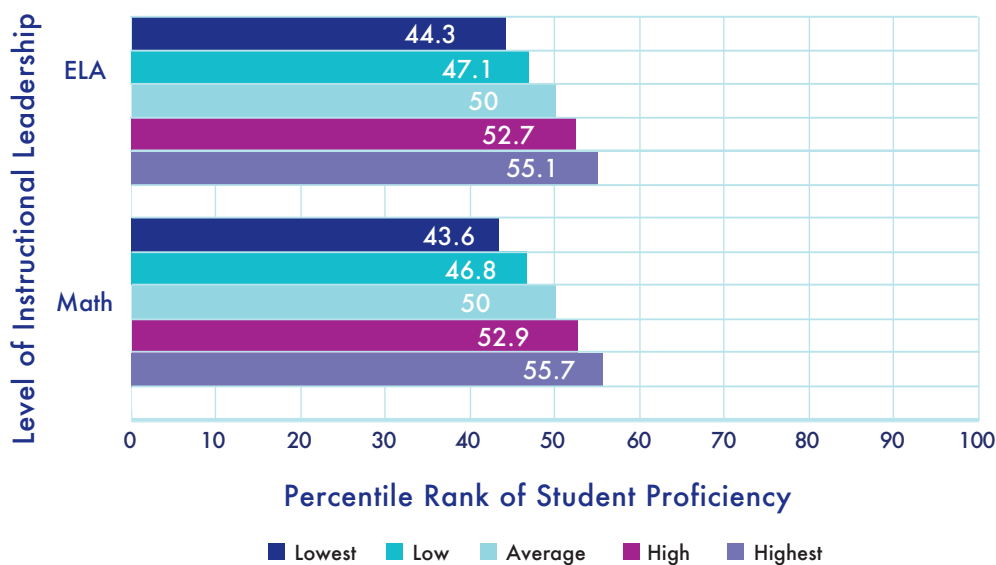
The data in Figure 2 reveal a clear collective relationship between the level of leadership in a school and a school's levels of student proficiency. For example, holding constant school background characteristics (at average levels of poverty, size, etc.), a school with the highest level of overall instructional leadership, on average, is ranked at the 55th to 56th percentile in mathematics proficiency and in ELA proficiency in its state. In contrast, a school with the lowest level of leadership, on average, is ranked at the 44th percentile in both mathematics proficiency and ELA proficiency. These differences are at a statistically significant level.



We also undertook analyses to explore whether these relationships between leadership and student achievement hold up across different types of schools. Does the importance of leadership for achievement depend on the demographic characteristics of schools? For instance, does the strong association between a high level of instructional leadership and higher student achievement hold true in both higher poverty and lower poverty schools? Or does leadership seem to make more or less difference in one type of school or another?

## FIGURE 2. INSTRUCTIONAL LEADERSHIP AND STUDENT ACHIEVEMENT

(Predicted Percentile Ranking of Student Proficiency in Schools, by the Overall Level of Instructional Leadership, after Controlling for School Characteristics)



To investigate whether such differences exist we examined the relationship between achievement and our overall measure of instructional leadership in different subgroups of schools—at the bottom and top quartiles, for school size, student poverty levels, percentage of minority students, the proportion of teachers who were beginners, and also for school levels (elementary, middle, and secondary). Interestingly, while there were some differences, we found the relationships between leadership and student achievement to be highly robust; that is, the relationships between leadership and achievement were strong in a variety of different types of schools. Hence, the data indicate that while schools vary in the level of their instructional leadership, regardless of the type of school, improvements in the level of leadership are strongly associated with improvements in student achievement.

Our regression analyses also reveal significant differences in the strength of the relationship between student achievement and each of the 11 separate elements of instructional leadership. Some elements of instructional leadership have a stronger relationship with student achievement than others. Three leadership dimensions with

among the strongest relationships to achievement are (a) holding teachers to high instructional standards, (b) providing an effective school improvement team, and (c) fostering a shared vision for the school. For instance, for every unit difference (on a four-unit scale) in the degree to which teachers were held to high instructional standards, there was a 21-percentile difference in the school's ranking in mathematics.

A comparison of Figure 1 and Tables 9a and 9b indicates that many schools lag in implementing some of those elements of instructional leadership that have the strongest relationship to student achievement. For instance, as shown in Figure 1, in only a minority of schools did the faculty "strongly agree" that there was a shared vision (8.5%), an effective school improvement team (7.6%), or that teachers are held to high instructional standards (33%). Yet these elements have among the strongest of relationships to achievement.

Hence, the data suggest an imbalance: schools often do not do well in regard to some of the elements of instructional leadership in their schools that are more strongly related to student learning. These findings suggest that there is an important lesson for leadership and management in these schools—a point we return to in our conclusion.

It is also important to remember that these analyses do not document causality; the data do not verify that increases in leadership cause increases in student achievement. The data simply indicate that in our large sample of schools, holding equal some key background factors, such as poverty, those schools with higher scores on our measures of instructional leadership also have significantly higher student achievement.

### 3. What Is the Role of Teachers in School Leadership?

In the second part of our study we focused in more detail on potential areas of teacher leadership: the role of faculty in key areas of decision-making in their schools. What role do faculty have in decision-making and leadership in their schools? Are there differences in the role of teachers across different decision-making areas? Are there differences in the role of teachers in leadership across different types of schools? To answer these questions, our analysis focused on a battery of TELL Survey questions that asked teachers to report on the role teachers have in eight key areas of decision making in their school, on a four-unit scale: "None" (1), "Small" (2), "Moderate" (3), "Large" (4). Figure 3 displays the percentage of school faculties that on average reported teachers had moderate and large roles in each of the eight decision-making areas.

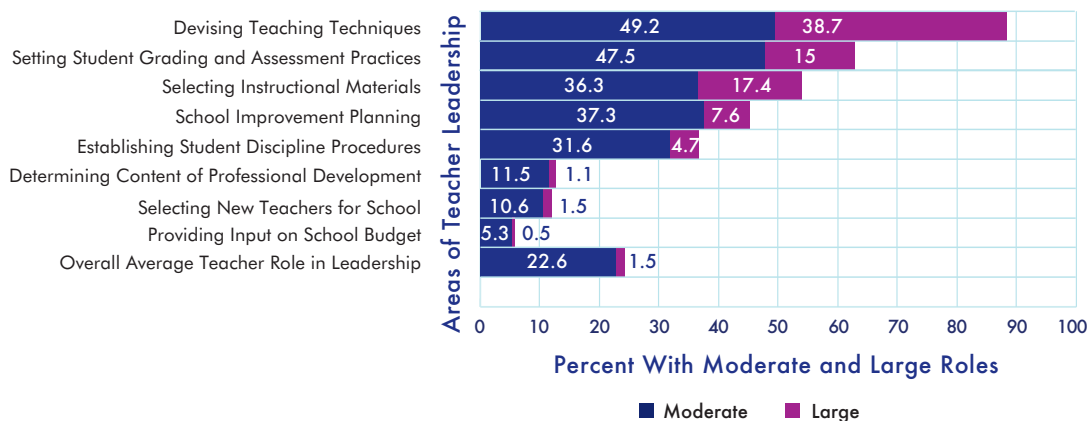
Similar to the case of school leadership, the data in Figure 3 show large variations in the degree of teacher involvement in leadership across the decision areas. For example, almost 90% of school faculties reported teachers have either a moderate or a large role in "devising teaching techniques," while less than 10% reported that teachers have a large role in "providing input on how the school budget will be spent."

In general, the data indicate that teachers more often have a substantial role in decisions regarding classroom instruction, teaching techniques, and student grading, and less often have a role in school-wide decisions, both academic and nonacademic, such as establishing student behavior policies, engaging in school improvement planning, and determining the content of professional development programs.

Again, these variations were more distinct when we focused solely on those percentages of schools in which faculty on average reported teachers to have a “large” role. For instance, while 37% of faculties reported that teachers have a moderate role in “school improvement planning,” only about 8% reported that teachers had a large role in this area of decision-making. In comparison, in almost 40 percent of schools faculty reported teachers have a “Large” role in determining teaching techniques.

### FIGURE 3. THE ROLE OF TEACHERS IN SCHOOL LEADERSHIP

(Percent Schools in Which Faculty Report Teachers on Average Have “Moderate” and “Large” Roles in Regard to Selected Decision-making Areas in Their Schools)

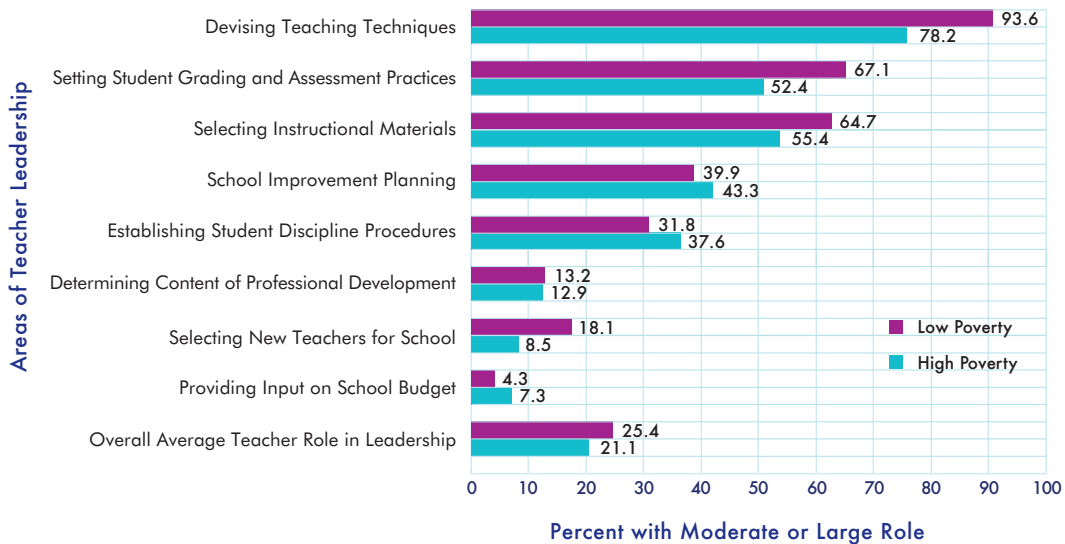


In Figures 3 and 4, “Moderate” is defined as average school-level scores of greater than or equal to 3 on the 1–4 scale. “Large” is defined as average scores greater than or equal to 3.5.

Similar to the variations in instructional leadership, the data also reveal a wide range in the role of teachers in leadership across different types of schools. Some of the most prominent differences are associated with the poverty level of the students in the school. As shown in Figure 4, for five of the eight elements of teacher leadership, faculty in low-poverty schools reported a larger role for faculty in leadership than in high-poverty schools. For instance, in only about 9% of high-poverty schools do faculty have much role in selecting new teachers; this was true for double that percentage in low-poverty schools.

## FIGURE 4. THE ROLE OF TEACHERS IN SCHOOL LEADERSHIP, BY SCHOOL POVERTY

(Percent Schools in Which Faculty Report Teachers on Average Have a “Moderate” or “Large” Role in Regard to Selected Decision-making Areas in Their Schools, by School Poverty Level)



In Figure 4, categories for school poverty enrollment are based on quartiles. Low poverty refers to the 25% of schools with the lowest percent students eligible for the federal free/reduced lunch program. High poverty refers to those schools at or above the 75th percentile.

### 4. What is the Relationship Between Teacher Leadership and Student Achievement?

Is the amount of teacher decision-making influence related to student academic achievement in school? To answer this question, we used multiple regressions to examine the relationship between our eight measures of teacher leadership and school-level student achievement. Our methods here parallel our earlier multiple regression analyses for school leadership: our outcome measure was the percentile ranking of a school’s student proficiency levels; we examined each of the eight teacher leadership measures separately, along with an overall average measure; and we controlled for key school characteristics (table with results not displayed here, but available from the authors).

Similar to before, all of the background school characteristics, with the exception of middle schools and at times secondary schools, were significantly related to student achievement. School poverty especially stood out as a key variable. Most importantly, the regression analyses showed that each of the eight separate measures of teacher leadership was related to student achievement at a statistically significant level. In other words, other school characteristics being equal, schools with higher levels of teacher leadership in each of the eight areas also had significantly higher student achievement.

Also as before, to further illustrate the magnitude of the association between achievement and teacher leadership we estimated predicted percentile rankings of proficiency by entering a range of values for the average overall measure of teacher leadership, while holding the measures of school characteristics constant at the sample mean. We set the teacher

leadership measure to values corresponding to the 10th percentile, the 25th percentile, the mean, the 75th percentile, and the 90th percentile for the sample. This allowed us to predict student proficiency for a range of hypothetical schools, beginning with those that have the lowest level of teacher leadership (i.e., at the 10th percentile on the overall measure) and concluding with those that have the highest level of teacher leadership (i.e., at the 90th percentile on the overall measure). Figure 5 presents these predicted percentile rankings for both mathematics and ELA, for the different levels of leadership.

The data in Figure 5 reveal a clear collective relationship between the degree of teacher leadership in a school and a school's levels of student proficiency. For example, holding constant school background characteristics (at average levels of poverty, size, etc.), a school with the highest level of overall teacher leadership on average is ranked at the 56th percentile in both mathematics proficiency and in ELA proficiency in its state. In contrast, a school with the lowest level of teacher leadership on average is ranked at the 45th percentile in both mathematics proficiency and ELA proficiency. These differences are at a statistically significant level.

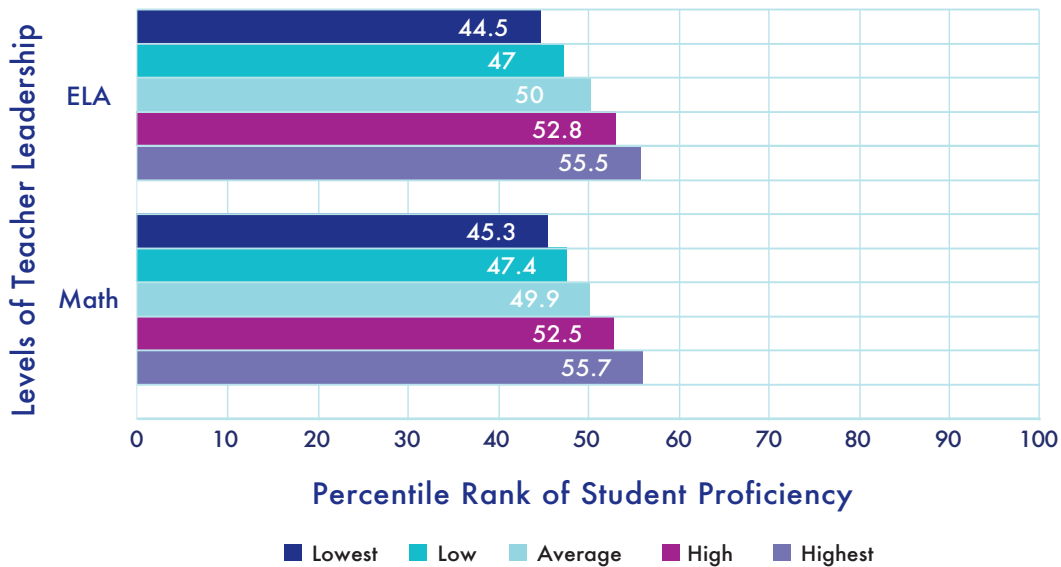
As with our earlier analyses of school leadership, we also explored whether these relationships between teacher leadership and student achievement hold up across different types of schools. We examined the relationship between achievement and our overall measure of school leadership in different subgroups of schools—at the bottom and top quartiles, for school size, student poverty levels, percentage of minority students, the proportion of teachers who were beginners, and also for school levels (elementary, middle, and secondary). And, as before, while there were some differences, we found the association between teachers' role in leadership and student achievement to be highly robust; that is, we found the relationships between increased teacher leadership and higher achievement to remain strong in a variety of different types of schools. Hence, the data indicate that while schools vary in the degree to which their teachers are involved in leadership, regardless of the type of school, increases in the role of teachers in leadership are strongly associated with improvements in student achievement.

Our regression analyses also revealed significant differences in the strength of the relationship between student achievement and each of the eight separate teacher leadership decision areas. The decision-making area with by far the strongest relationship with student achievement was establishing student discipline procedures. For example, a one-unit difference (on a four-unit scale) in the role of teachers in establishing student discipline procedures is associated with a 11 percentile difference in that school's ranking in mathematics proficiency. Interestingly, the data suggest that faculty voice and control in student behavioral and discipline decisions are more consequential for academic success in the school than teacher control over issues seemingly more directly tied to classroom instruction, such as selecting textbooks, choosing grading practices, and devising one's classroom teaching techniques. This is a striking finding, which we return to in our conclusion.

The teacher leadership issue with the next strongest association with achievement is teachers' role in school improvement planning. Schools in which faculty have a "large role" (on a four-unit scale from none to large) in school improvement planning ranked, on average, over 20 percentiles higher in ELA than schools in which faculty had a "small role" in such planning.

## FIGURE 5. TEACHER LEADERSHIP AND STUDENT ACHIEVEMENT

(Predicted Percentile Ranking of Student Proficiency in Schools, by the Overall Level of Teachers' Role in Leadership, after Controlling for School Characteristics)



While the data indicate that schools in which teachers have a substantial role in school improvement planning and school disciplinary policies have significantly higher student achievement, recall that the data (see Figures 3 and 4) also indicate that in the majority of schools teachers report having little or no role in either of these two areas. This gap between what the data suggest and what schools actually do is an especially revealing finding when combined with the school leadership data on school improvement teams in Figure 1 and Tables 9a and 9b. Collectively, the data on school and teacher leadership indicate that both having a school improvement team that provides effective leadership and delegating a large role to teachers in this school improvement planning are among the most important school-based practices associated with improved student achievement.

But the data also reveal that many schools do not have a school improvement team that provides effective leadership and, moreover, that most schools do not provide teachers a substantial role in such planning activities. The latter connection is important. Our background analyses reveal a strong correlation (.7) between the measure for effective school improvement teams and the measure for teachers' role in school improvement planning. In other words, schools that have more teacher involvement in school improvement planning are highly likely to also have a more effective school improvement team, and vice versa.

Hence, the data suggest an imbalance: teachers are often allowed little input into some of the more consequential decisions in their schools. These findings suggest that there is an important role for rethinking leadership, management, and organizational conditions in these schools—a point we return to below.

## CONCLUSION

Our study shows that the degree of both instructional leadership and teacher leadership in schools are strongly related to the performance of schools. After controlling for school background demographic characteristics, schools with higher levels of instructional leadership and higher levels of teacher leadership rank higher in student achievement, for both mathematics and ELA. Moreover, the data show that some elements of instructional leadership and some areas of teacher leadership are more strongly related than others to student achievement.

But, our analyses also suggest the presence of an imbalance. Some of those elements of instructional leadership and areas of teacher leadership that are most strongly related to student achievement, are among the least-often implemented in schools. This imbalance speaks to the fundamental objective of teacher leadership and teacher professionalization reforms.

The data indicate that holding teachers to high instructional standards—a key element of instructional leadership that is conceptually aligned with enhanced accountability—is more strongly related to higher achievement. The data also indicate that two elements of instructional leadership that are conceptually aligned with enhanced teacher authority and leadership—providing an effective administrator and teacher school improvement team, and fostering a shared vision among faculty and administration for the school—are also more strongly related to higher achievement. Yet, schools are far more likely to implement high teacher standards than they are to have effective school improvement teams or a shared vision.

We found similar results for teacher leadership: some elements of teacher leadership that are more strongly related to achievement are least often present in schools. The data indicate that two areas of school-wide decision-making—establishing student discipline procedures and teachers' role in school improvement planning—are the most strongly related to higher achievement. Yet, in only a minority of schools do teachers have a large role in either of these two key areas.

Our data analyses suggest the benefits of a balanced approach. In other words, schools that promote both teacher accountability and teacher leadership authority have better performance. In short, our study suggests first, that leadership matters, and second, that good school leadership actively involves teachers in decision-making, and third, these are tied to higher student achievement.

As mentioned earlier, it is striking that teacher authority concerning student behavioral and discipline decisions is more consequential for academic success in the school than teacher authority concerning issues ostensibly more directly tied to classroom instruction. This raises the question: Why would teacher leadership related to this seemingly nonacademic issue—student discipline policies—be so consequential for student academic success?

Data from other studies we have conducted suggest one explanation (Ingersoll, 2003, 2012; Ingersoll & Collins, 2017). These analyses of national data indicate that teachers have substantial responsibility for maintaining an orderly school and classroom and for the enforcement of student behavioral and discipline standards. But these data also tell

us that teachers often have little input on school-wide behavioral and disciplinary rules, norms, and standards for students. Instead, these rules and guidelines are largely conceived by others. Similarly, teachers often have little say over the types of rewards or sanctions used to bolster or enforce these rules.

These limitations on teacher authority can undermine their ability to take charge of their classrooms and to successfully meet their responsibilities. Indeed, our data indicate that a lack of authority on the part of teachers can degrade their role with students—pushing it in a negative and punitive direction. Their job can become akin to “police persons” enforcing rules made by others and rules with which they may not agree. Our analyses of TELL data further suggest this lack of authority in relation to student behavior is also tied to lower student achievement.

It is important to recognize, however, that teacher input into student behavioral policies is not simply a pragmatic issue of classroom management, necessary for academic instruction to proceed. Schooling is not solely a matter of instructing children in the “three R’s” and passing on essential academic skills and knowledge. Schools are one of the major institutions for the socialization of the young. Teachers do not just teach academic subjects. They are also charged with furthering the social-emotional learning of the young.

Poll after poll has shown the public overwhelmingly feels one of the most important goals of schools is and should be to shape conduct, develop character, and impart values (see for example, the annual Phi Delta Kappa Poll of the Public’s Attitudes Toward the Public Schools). In this view, the relationships that teachers successfully form with students are crucial to connect students to school, create a sense of community, and support their growth and learning. To the public, the good school is characterized by a positive ethos and climate and well-behaved children and youth. Deciding which behaviors and values are proper and best for the young is not trivial, neutral, or value-free. Our data here appear to suggest that it is important that teachers have a voice in these larger decisions related to creating the culture, climate, and ethos of their schools.

In our explanation, at the crux of the role and of the success of teachers, as the men and women in the middle, is their level of authority over the tasks and issues for which they are responsible. On the one hand, if teachers have sufficient say over the decisions surrounding those activities for which they are responsible, they will be more able to exert sufficient influence to see that the job is done properly and, in turn, derive respect with administrators, colleagues, and students. On the other hand, if teachers’ authority over school and classroom policies is not sufficient to accomplish the tasks for which they are responsible, they will meet neither groups’ needs, and sour their relationships. The teacher who has little control and power, is the teacher who is less able to get things done, is the teacher with less credibility. Principals can more easily neglect backing them. Peers may be more likely to shun them. And, based on our analyses of the TELL data, students’ academic achievement will suffer.

This perspective suggests the benefits of a balanced approach that stresses the importance of aligning and combining accountability and autonomy as well as responsibility and authority. In this approach, teachers would first be provided with the resources, conditions, tools, support, authority, and autonomy necessary for quality teaching, and then they would be held accountable for doing a quality job (for discussion of this reform approach, see Hawkins, 2009; Kolderie, 2008, 2014; Farris-Berg & Dirks-wager, 2013; Berry et al., 2013).



This need for balance between accountability and autonomy and between responsibility and authority is not unique to schools. Indeed, the importance of balancing both sets of imperatives is a long-standing central tenet in the theory and practice of organizational management.

Experts in the realm of organizational leadership, including both for-profit and nonprofit sectors, have long advocated a balanced approach to implementing accountability in work settings (e.g., Whyte & Blasi, 1982; Drucker, 1973, 1992). In this view, organizational accountability and employee autonomy and authority must go hand in hand in workplaces, and increases in one must be accompanied by increases in the other; imbalances between the two can result in problems for both employees and for organizations. Delegating autonomy or authority to employees without also ensuring commensurate accountability can foster inefficiencies and irresponsible behavior and lead to low performance. Likewise, administering organizational accountability without providing commensurate autonomy and authority to employees can foster job dissatisfaction, increase employee turnover, and lead to low performance.

A balanced approach is a key characteristic of the established professions, such as law, medicine, university professors, dentistry, engineering (Freidson, 1986; Hodson & Sullivan, 1995). In the professional model, practitioners are, ideally, first provided with the training, resources, conditions, and autonomy to do the job, and then they are held accountable for doing the job well.

Translating this balanced perspective to the school setting suggests that it does not make sense to hold teachers accountable for issues they do not have authority over, nor does it make sense to give teachers autonomy or authority over issues for which they are not held accountable. Both of these changes are necessary, and neither alone is sufficient.

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