

# **Triangulating Principal Effectiveness: How Perspectives of Parents, Teachers, and Assistant Principals Identify the Central Importance of Managerial Skills**

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## **ABSTRACT**

While the importance of effective principals is undisputed, few studies have identified specific skills that principals need to promote school success. This study draws on unique data combining survey responses from principals, assistant principals, teachers, and parents with rich administrative data to determine which principal skills correlate most highly with school outcomes. Factor analysis of a 42-item task inventory distinguishes five skill categories, yet only one of them, the principals' Organization Management skills, consistently predicts student achievement growth and other success measures. Analysis of evaluations of principals by assistant principals supports this central result. Our analysis argues for a broad view of principal leadership that includes organizational management skills as a key complement to the work of supporting curriculum and instruction.

## **KEYWORDS**

Educational leadership, principal effectiveness, school management

School leaders matter for school success. A large number of studies spanning the last three decades link high-quality leadership with positive school outcomes, including student achievement (see Hallinger & Heck 1998; Waters, Marzano, & McNulty, 2003). Recognition of the importance of principals has led to increased policy attention on attracting and preparing school leaders (Davis, Darling-Hammond, LaPointe, & Meyerson, 2005; Hale & Moorman, 2003). Unfortunately, existing research does not tell us enough about the skills principals need to promote school improvement, making the design of policies geared towards recruiting and preparing effective school leaders challenging.

Researchers face at least two major obstacles in identifying important skills for principals: data availability and the complexity of principals' work. Data suitable for doing rigorous empirical work in this area are scarce. Without comprehensive data, it is difficult statistically to separate the effect of a principal from the effect of other school-level characteristics. However, distinguishing these effects is critical if we are to attribute a change in

school outcomes to a specific principal, as opposed to a previous principal or other school factors. This attribution problem is complicated by the fact that school principals influence student outcomes *indirectly*, by, for example, hiring effective teachers (Hallinger & Heck, 1998; Witziers, Bosker, & Krüger, 2003); because other factors also affect teacher hiring, it is difficult to identify the principal's contribution without rich data.

The other obstacle to developing useful empirical research on principal effectiveness is that the complex nature of principal work makes categorization of behaviors difficult (Brewer, 1993). There exist many possible dimensions over which to describe principals and what they do. By far the most common category of principal behaviors examined in the literature is what scholars have termed *instructional leadership* (e.g., Murphy, 1988), which emphasizes the principal's role in facilitating teaching and learning. Though studies underscore the importance of instructional leadership by linking it to positive school outcomes (see Robinson, Lloyd, & Rowe, 2008), the dominance of instructional leadership as the primary frame for understanding the job of the principal has, to some extent, crowded out the study of other aspects of principal work.

We approached the present study with the idea that we might enhance understanding of principal effectiveness by examining a broader spectrum of practice, including what March (1978, 244) calls the "rudimentary pragmatics" of making the organization function, and how competencies in different areas of practice might predict school success. We focus on the identification of specific sets of principal skills that are associated with positive school outcomes, measured in multiple ways from multiple perspectives. Drawing on survey and administrative data from a large urban district and a newly-developed task inventory that uses principal self-assessments to define areas of relative strengths, the study addresses five main research questions. First, how does principal efficacy vary across leadership tasks? Second, to what extent can efficacy on individual tasks be grouped statistically into larger dimensions of effectiveness? Third, do domains of task efficacy vary systematically across principal and school

characteristics? Fourth, does principal task efficacy predict key school outcomes, including state accountability system performance, student achievement gains, teacher satisfaction, and parents' assessments? Finally, as a check on the validity of the results, how do assistant principals' assessments of their principals' task effectiveness compare to the principals' self-assessments and, furthermore, can they be used to similarly predict school outcomes? The next section grounds this examination and discusses our approach in the context of existing research.

## **THE STUDY OF PRINCIPAL EFFECTIVENESS**

Our study extends a long literature on the role of principals in influencing school performance. For example, in a meta-analysis of 70 empirical studies, Waters, Marzano, and McNulty (2003) find the average correlation between school leadership, broadly defined, and student achievement to be approximately 0.25. This result squares with a large body of qualitative research linking principal leadership to school effectiveness (see Hallinger, 2005).

### *Focus on Instructional Leadership*

However, recognizing that principals affect school outcomes is very different from specifying *how* principals affect these outcomes. The question of what makes principals effective has sparked substantial scholarly inquiry. More than thirty years ago, "effective schools" studies began uncovering a variety of broad descriptors that appeared to characterize successful principals: creates an atmosphere conducive to learning (Edmonds, 1979), gets involved in staff development (McLaughlin & Marsh, 1978), monitors classrooms (Brookover, Beady, Flood, Schweitzer, & Wisenbaker, 1979), guards teachers' instructional time (Leithwood & Montgomery, 1982), and so forth. Commonalities among these descriptors begged for an organizing label: "instructional leadership." This term soon became commonplace as a means of grouping together "anything and everything" principals might do to support classroom learning (Hallinger & Murphy, 1985, 217), or, more recently, "everything a principal does during the day

to support the achievement of students and the ability of teachers to teach” (Marks & Printy, 2003, 373).

Although subsequent studies have offered other definitions of instructional leadership, its “anything and everything” history has provoked criticism of the concept as overly broad, vague and ambiguous (Murphy, 1988). Yet an absence of agreement about its precise meaning has not prevented researchers from developing a large body of work linking instructional leadership to school outcomes (see Robinson et al., 2008). Operationally, the measurement tools employed in these studies have focused on the principal’s role in facilitating classroom instruction. A good example is Hallinger and Murphy’s (1985) Principal Instructional Management Rating Scale (PIMRS), used by over 100 published studies and doctoral dissertations to capture instructional leadership empirically (Hallinger, 2005). A close reading of the instrument suggests that strong instructional leaders spend their time engaging in behaviors related to supervising, coordinating, and evaluating classroom instruction; building a learning climate by, for example, facilitating professional development opportunities; and framing and communicating school goals. Other functions for principals are not considered.

Instructional leadership—defined conceptually or operationally to be activity primarily pertaining to facilitating instruction and learning—has come to dominate the collective understanding of the school principalship (Hallinger, 2005; Marks & Printy, 2003). This dominance has resulted in a narrowing of research perspectives on what it means to be an effective school leader. As the literature has cultivated a focus on support for teaching and learning as the hallmark of good school leadership, other aspects of principals’ work have received little attention. There are exceptions, such as the study of transformational leadership theory (Bass, 1998), which emphasizes principals’ work to inspire and motivate, develop commitment to a common vision, and work collaboratively. Recent studies, however, have tended to find very small effects of transformational leadership behaviors, particularly as compared to instructional leadership (Leithwood & Jantzi, 2005; Robinson et al., 2008),

reinforcing instructional leadership as the main lens through which to consider principal effectiveness.

### *A Complementary Approach*

A recent meta-analysis by Robinson et al. (2008, 636) concludes: “the more leaders focus their relationships, their work, and their learning on the core business of teaching and learning, the greater their influence on student outcomes.” The present study grows from the observation that much of the principal’s day-to-day activity in fact is *not* consumed with the core business of teaching and learning. As March (1978, 233) observes, schools are bureaucracies, and as managers in those bureaucracies, much of the principal’s time is allocated to “the mundane work of making a bureaucracy work”: managing finances, handling personnel matters, accounting for school progress, maintaining the physical plant, and “responding to little irritants in organizational life.” Thus, we approached the present study from the perspective that, while instructional leadership is important, our understanding of principal effectiveness might benefit from incorporating examination of those pieces of principal practice that fall outside what traditionally has been understood as instructional leadership, including March’s “mundane work.”

Our study and the instrument we employ focus on a list of tasks that characterize the job of the principal and how effective principals are at accomplishing those tasks. Focusing on specific tasks departs from some prior school leadership studies, which have included a mix of behaviors, skills, power relationships, and orientations within the same instrument. Utilizing a more specific class of indicators enhances conceptual clarity, distinguishing task effectiveness from other constructs. Use of a specific class of items is not an innovation; the aforementioned PIMRS instrument, for example, measures specific principal behaviors (e.g., “discusses the school’s goals with teachers at faculty meetings”). Instruments employed by other studies have utilized similar behavioral indicators (e.g., Heck, 1992; van de Grift & Houtveen, 1999). Our

instrument, however, does depart from other leadership studies by focusing on effectiveness—how *good* the principal is at accomplishing a task—rather than on the frequency or extent of a particular behavior, the typical approach.

This distinction between task effectiveness and behavioral frequency is an important one, since, as Hallinger and Murphy (1985) point out, “certain behaviors could be performed frequently but in a perfunctory or ritualistic manner [while] certain practices probably do not need to be performed frequently in order to be performed effectively” (226). In other words, for many principal job tasks, time allocation might be a very poor indicator of job performance. For example, more time spent on school budgeting may indicate good stewardship, or more time may indicate that the principal has not put good budget management procedures in place and thus needs to attend to the budget more often.<sup>1</sup> By complementing *frequency of practice* studies with our analysis of *effectiveness of practice*, we emphasize the competency dimension that likely matters in uncovering principal effects.<sup>2</sup>

## **DATA AND METHODS**

Data for this study come from Miami-Dade County Public Schools (M-DCPS). With 350,000 students, M-DCPS is the United States’ fourth-largest school district. It is ethnically diverse, with approximately 9% white, 26% black, and 63% Hispanic students. More than 60% of students are subsidized-lunch eligible, and 15% are English language learners. The district is organized more hierarchically than most; leadership is divided into three tiers across more than 400 schools, six regional centers, and a central office. We focus on school-level leadership only.

### *Survey Data*

Primary measures of principal effectiveness come from an online survey given to 314 M-DCPS principals in regular public schools in spring 2008.<sup>3</sup> The survey yielded a response rate of 89%. Principals were presented with 42 job tasks common to the principalship and asked to rate

how effective they felt they were at conducting each task in their current school. To develop this list, we began with categories of principal duties described by Spillane, Camburn, and Pareja (2007) but added substantially more specificity through consultation with principals in multiple states and discussions with district leaders. Our expanded list was subsequently refined through pilot shadowing of principals. A four-point response scale was used (*ineffective, a little effective, effective, and very effective*). We administered a similar survey to assistant principals in the district at the same time (n = 585). The response rate was 85%. The assistant principal survey included the same 42-item task inventory and asked the respondent to assess how effective his or her principal was at completing each task. We also conducted a survey of M-DCPS teachers that yielded responses from 83% (N = 15,842). In this paper, we use the responses of teachers to: “To what extent are you generally satisfied with being a teacher in this school?” Possible answers were *dissatisfied, somewhat dissatisfied, somewhat satisfied, and very satisfied*.<sup>4</sup>

M-DCPS also provided us with data from a parent climate survey that the district conducts each year. On this survey the parents respond to the following: “Students get grades A, B, C, D, and F for the quality of their school work. What overall grade would you give your child’s school?” We used the average grade parents assigned as a subjective assessment of overall school performance.

### *Administrative Data*

We merged these data with district administrative records. Administrative data included school performance ratings based on Florida’s A+ accountability system. Florida grades each school on a five-point scale (A, B, C, D, F) that is meant to succinctly capture performance. Grades are based on a scoring system that assigns points to schools for their percentages of students achieving the highest levels in reading, math, science, and writing on Florida’s standardized tests in grades 3 through 10, or who make achievement gains. Grades also factor in the percentage of eligible students who are tested and the test gains of the lowest-performing

students.<sup>5</sup> We use grades for the 2007-08 school year and for previous years to capture changes in school performance over time.

Admittedly, A+ grades are imprecise school performance measures. Nonetheless, they have been utilized in a variety of studies of Florida's public schools to examine the relationships between school outcomes and variables from school instructional focus (Goldhaber & Hannaway, 2004) to housing prices (Figlio & Lucas, 2004). Because accountability grades are imprecise, they are but one performance outcome used. We complement the accountability grade analysis by analyzing student growth on the Florida Comprehensive Assessment Test.

Administrative data also provide information that allows us to account for factors that might affect principals' assessment of themselves or assistant principals' assessments of their principal, or that might be correlated with outcome variables. This information includes school characteristics such as grade level, poverty concentration of students and racial concentration of students. It also includes personnel information, such as experience, gender, race and ethnicity, age, and degree attainment.

Table 1 shows descriptive statistics for all variables used in the analyses, with the exception of principal and assistant principal ratings, which we describe later. The 244 schools in our sample serve 33% black students, 57% Hispanic students, and 68% students eligible for subsidized lunch, numbers very similar to those for all 314 regular schools in M-DCPS. School grades range from one (F) to five (A) and average almost a four (B). Teacher satisfaction averages 3.3. Climate grades from parents are on an eight-point scale (C-, C, C+, B-, B, B+, A-, A); grades of F, D-, D, D+, and A+ were also options but not observed as mean ratings. On average, parents graded schools at 5.6, approximately a B+.<sup>6</sup>

### *Methods*

Our first set of questions, about the patterns in task effectiveness and how they vary over school and leader characteristics, are descriptive in nature. Thus, to begin, we simply describe

the means and standard deviations of principals' assessment of their own effectiveness on each of the 42 tasks. We then conduct exploratory factor analysis to identify task effectiveness dimensions and then compare domains of self-assessed task effectiveness across principal and school characteristics using *t*-tests.

The remaining research questions, about the link between principal task effectiveness and outcomes, require more sophisticated analyses. We estimate each school outcome as a function of principal effectiveness along each of the five tasks dimensions that we identify in the factor analysis. We use standard ordinary least squares regression to control for other school characteristics. Models for school grades and parental satisfaction are at the school level. For teacher satisfaction models, we run teacher-level analyses, controlling for teacher characteristics and clustering standard errors at the school level to adjust for the hierarchical nature of the data. Student-level test score growth models control for student characteristics and cluster standard errors by school.<sup>7</sup>

Other analysis uses data from the surveys of assistant principals, which include assessments of the principal on each of the same 42 dimensions. We allow the data to identify new dimensions of assistant principal-assessed principal effectiveness using factor analysis. Regression analyses similar to those described above assess the relationship between these task effectiveness dimensions and the same set of performance measures.

An important contribution of this study is the delineation of five skill areas that categorize principals' task effectiveness. The next section details the identification of these five areas.

## **DIMENSIONS OF PRINCIPAL TASK EFFECTIVENESS**

As described above, we asked principals to rate their own effectiveness across 42 task items. Figure 1 shows the items. Examples included "Hiring personnel" and "Evaluating curriculum." We conducted an exploratory factor analysis on principals' self-assessments to

identify patterns in the ratings.<sup>8</sup> Using the standard approach of retaining factors with eigenvalues greater than 1.0, five underlying constructs emerged from the data.<sup>9</sup> To aid in the identification of patterns of loadings across factors, we used varimax rotation. One consequence of this rotation is that the rotated factors are uncorrelated with one another by construction, which affects how we interpret the results. At this stage, two of the 42 items were dropped because the loadings were very low across all five factors. Among the remaining 40 items, we identified and labeled five distinct dimensions along which principals judge their own effectiveness based on patterns in the factor loadings matrix.<sup>10</sup> We categorized these dimensions of principal skills as: *Instruction Management*, *Internal Relations*, *Organization Management*, *Administration*, and *External Relations*.<sup>11</sup>

Figure 1 groups the individual items under these headers according to which factor each elemental variable loaded on most heavily. The figure shows variation in principals' ratings across individual items within and across the factors. On average, principals felt the most effective at developing relationships with students, communicating with parents, attending school activities, developing safe school environments, dealing with concerns from staff, managing school schedules and using data to inform instruction. Principals felt least effective at fundraising, planning professional development for prospective principals, releasing or counseling out teachers, utilizing district office communications to enhance their goals, and working with local community members and organizations. While on average principals rated themselves highly on most tasks, a pattern consistent with other principal self-assessment tools (see Goldring & May, 2010), we will see below that there is sufficient variation in the composite factor scores to identify differences across principals.

### *Instruction Management*

The first dimension represents the set of tasks principals conduct to support and improve the implementation of curricular programs. We label this dimension *Instruction*

*Management.* As shown in Figure 1, 13 task items load primarily onto this factor. Three items with the highest loadings are those that address the role of the principal in developing teachers' instructional capacities: planning professional development for teachers (0.72), implementing professional development (0.66) and informally coaching teachers (0.62). The next three highest items involve the evaluative role the principal plays with respect to classroom instruction: evaluating curriculum (0.62), using assessment results for program evaluation (0.62) and formally evaluating instruction and providing instructional feedback (0.60). Professional development and program evaluation appear to anchor principals' assessments of their effectiveness as managers of school instruction.

How effective do principals rate themselves along the various Instruction Management measures? Figure 1 is organized to facilitate ease of comparison among items, ordering them from highest to lowest within factors. One general observation from scanning across all of the factors is the relative lack of variation; mean responses for all but one item (fundraising) fall above 3.0 ("effective" on the ratings scale). In other words, principals generally expressed confidence in their abilities to engage in and complete nearly all the tasks about which they were asked. Within the Instruction Management factor, less than half a rating point separated the task at which principals felt most effective (using data to inform instruction, 3.64) from the least effective (planning professional development for prospective principals, 3.18). Yet while few principals rated themselves "ineffective" or only "somewhat effective" across the tasks assessed, there was more variation between those who rated themselves "effective" and those who rated themselves "very effective." For example, while 65% gave themselves the highest score for using data to inform instruction, just 35% gave themselves a similar rating for their ability to plan professional development for potential principals.

Taking a self-assessment of four as an indication that a principal feels completely confident in his or her ability to complete a given task effectively, we find that in six of the 13 Instruction Management tasks, at least half of responding principals feel fully effective. In

addition to data use, these are: developing a coherent educational program across the school (61%), using assessment results for program evaluation (60%), formally evaluating teachers and providing instructional feedback (57%), classroom observations (57%), and utilizing school meetings to enhance school goals (56%). At the other end of the spectrum, just 38% of principals expressed full confidence in their effectiveness at directing supplementary instruction, and just 31% felt fully effective at releasing or counseling out ineffective teachers.

### *Internal Relations*

The second dimension of principal task effectiveness we label *Internal Relations*. This factor captures effectiveness at tasks related to principals' capacities for building strong interpersonal relationships within the school. Seven of the task items load most highly onto this factor. The items that load most highly are counseling staff about conflicts with other staff members (loading = 0.68) and counseling students or parents (0.66).

Figure 1 shows that there is even less variation in principals' ratings of their effectiveness at building interpersonal relationships than in Instruction Management. The mean score for six of the seven items was 3.5 or higher, and the seventh, interacting socially with staff, had an average of 3.42. On each of these items, at least half of principals gave themselves the highest score of four, indicating that, in general, principals feel a high degree of confidence in their effectiveness in the interpersonal dimension. Seventy-two percent of principals rated themselves "very effective" at developing relationships with students, and 70% said they were "very effective" at communicating with parents. At the other end of the spectrum, just 54% gave themselves the highest ratings on informally talking to teachers about students, and just over 50% felt fully effective at interacting socially with staff.

### *Organization Management*

A third identifiable set of tasks captured the principal's effectiveness at overseeing the functioning of the school. This set included tasks that we would expect the principal to conduct throughout the year in pursuit of the school's medium- and long-term goals. We refer to this dimension as *Organization Management*. The three (of eight) questionnaire items that load most highly onto this factor are maintaining campus facilities (loading = 0.65), managing budgets and resources (0.59), and developing a safe school environment (0.55).

Again, the mean self-ratings for the Organization Management tasks were quite high on the whole, with seven of eight receiving a mean score of 3.5 or higher. Looking instead at the variation between scores of three and four, we see that principals rated themselves most effective at developing a safe school environment ("very effective" = 68%), dealing with concerns from staff (65%) and managing the budget (64%). The lowest scores were given to networking with other principals (47%), an item that in fact does not load highly on any of the five factors. Exempting this item, no fewer than 53% of principals indicated the highest level of effectiveness at any of the tasks in the Organization Management dimension.

### *Administration*

We label the fourth dimension of principal task effectiveness *Administration*. Again, eight questionnaire items capture this construct. This area of task effectiveness is characterized by more routine administrative duties and tasks executed to comply with state or federal regulations. The two items that load most highly on this factor are managing student records and reporting and implementing standardized tests, both of which have loadings of 0.60. Other tasks in this area include managing school schedules, fulfilling compliance requirements and paperwork, and managing student attendance-related activities. Administration also includes student discipline and student supervision (e.g., lunch duty).

In this area, principals report feeling most effective at managing school schedules and managing student discipline. Both of these items had means of about 3.65 with approximately

two-thirds of principals assessing their effectiveness at the highest level on the scale. Fulfilling compliance requirements and implementing standardized tests are also tasks at which principals tend to rate themselves highly, with 60% and 51%, respectively, assigning themselves a score of “very effective” in these areas. Further down were records and reporting, student supervision and managing attendance. The lowest mean effectiveness score for the items under this factor went to fulfilling special education requirements (3.30). Just 40% of principals rated themselves “very effective” at these duties.

### *External Relations*

The final dimension of principal task effectiveness addresses working with stakeholders outside the school. Just four items load primarily on this factor: communicating with the district to obtain resources, working with local community members and organizations, utilizing district office communications to enhance goals, and fundraising. A comparison of the External Relations factor with the others shows that the four tasks identified under this heading have lower mean effectiveness scores than nearly all other items assessed by the questionnaire. In fact, with the exception of two Instruction Management items, the mean scores of all four External Relations tasks are lower than the lowest-scored tasks from any other factor. Only 38% of principals rated themselves as “very effective” at either communicating with the district to obtain resources or working with the local community. Thirty-three percent said they were “very effective” at utilizing district communications. A low 18% expressed the highest level of confidence in their effectiveness at fundraising, with 26% describing themselves as “ineffective” or only “a little effective.”

Having uncovered the five factors of principal task effectiveness discussed above, we applied a standard factor scoring method to the principals’ responses to assign an effectiveness score to each principal in each of the five task areas. We then standardized the scores to have a mean of zero and standard deviation of one; each principal’s five individual scores thus measure

standard deviations of self-assessed effectiveness above or below that of the average principal. These standardized factor scores are the focus of our main analyses.

## **DIFFERENCES IN TASK EFFECTIVENESS ACROSS SCHOOLS AND PRINCIPALS**

School context influences principals' practice (Hallinger, Bickman, & Davis, 1996). For example, principals may face greater demands in challenging school environments, requiring them to focus their effort on some tasks over others (Goldring, Huff, May & Camburn, 2008). As a result, we might expect systematic differences in job task self-assessments by school characteristics. Similarly, principal skills may vary with personal characteristics, such as experience accumulated. To assess these differences, we compare task factors by the characteristics of schools and the principals themselves.

Table 2 shows that, on average, female principals rate themselves more highly than do their male peers on Instruction Management and Administration and less highly on Organization Management. More experienced principals rate themselves more highly on Instruction Management, Internal Relations, and Organization Management but not on Administration or External Relations. Principals with higher educational attainment also rate themselves higher on most dimensions. In particular, principals with doctorates rate themselves stronger in Instruction Management, Organization Management and External Relations, while there is no difference by degree in Internal Relations or Administration. Positive associations with experience or education level could result from real gains to task effectiveness as principals gain experience or training or could reflect the attrition of less effective principals earlier in the career or before investing in additional education.

No important differences are evident by school level, with similar self-ratings from principals in elementary, middle and high schools, a surprising result given that the organizational structures of high schools often differ from those of elementary schools in ways we might expect to emphasize the importance of different skill sets. We also find only minor

differences in principals' self-reported effectiveness by school enrollment, with principals in larger schools rating themselves higher on External Relations.

Figure 2 illustrates differences in principals' self-assessments by poverty level. We use free and reduced price lunch eligibility as a proxy for student disadvantage and categorize schools by quartile, comparing the 25% of schools with the highest concentrations of students in poverty with other schools in the district. Because of differences in poverty by school level, we separate elementary schools from middle and high schools for this analysis. The figure shows only small differences in average ratings by poverty level for elementary schools. At the high school level, however, principals in high-poverty schools are likely to feel more effective at Instruction Management and less effective at Organization Management. These differences are quite large, totaling more than a quarter of a standard deviation for Instruction Management and more than half a standard deviation for Organization Management.

## **PRINCIPAL TASK EFFECTIVENESS AND SCHOOL PERFORMANCE MEASURES**

Ultimately, we would like to know which skills are beneficial for principals in improving the performance of their schools. We face multiple difficulties in identifying such skills empirically. One is how to operationalize school performance. Any single measure of school success is limited. Thus, we utilize multiple school performance measures in our analysis. A second is how to establish the causal link between principal effectiveness and school outcomes. For instance, it is easy to imagine that principals feel better about their job performance in schools that are performing better. In this case, a simple correlation of principal efficacy and school performance would tell us little about the effects of principal skills on school outcomes. Moreover, most school outcomes reflect many factors, such as student background, over which schools and principals exercise little control.

We address such concerns in two ways. First, instead of relying on an overall measure of principal efficacy, we score principal effectiveness along five dimensions that are uncorrelated

by design (a result of the varimax factor rotation), meaning that a principal who is high on one dimension is no more likely to be high on any other. Whereas we may be concerned that principals feel more positively about their skills overall when their schools perform better, it is less obvious that these feelings would systematically be reflected among some skills over others. Second, we use a regression framework that adjusts for other characteristics of the school that, if omitted, might create biased estimates. All regressions account for grade span, student poverty and the percentage of students who are African American.<sup>12</sup> In addition, in the analyses estimating school grades in the Florida accountability system, we run specifications controlling for prior school grade so that the link is made between principal task efficacy and performance *gains*. In the models for teacher satisfaction and parent climate grades, we control for 2007 accountability grade to partially separate the variation attributable to principal skills from the variation attributable to long-run school performance.

#### *Principal Task Effectiveness and State-Assessed School Performance*

Figure 3 gives a first descriptive look at the association between principals' assessment of their task effectiveness and school accountability grades. Schools assigned an A by Florida's accountability system had principals who assessed themselves as more effective on all five task dimensions. This difference is greatest for Organization Management and smallest for Instruction Management and External Relations.

Next, we test the association between task efficacy and school performance in a multivariate framework that allows us to control for school characteristics.<sup>13</sup> Table 3 shows the results. Across all specifications, self-assessed effectiveness in Organization Management is positively related to school performance. In most specifications this relationship is statistically significant, and in those where it is not, the p-values fall just above the 0.10 cutoff. No other task efficacy dimension is associated with accountability grade. As an example of the relationship between Organization Management and performance, in column 1, we see that for

all schools, a standard deviation increase in Organization Management is associated with a 0.12-point increase in school accountability performance, or 10% of a standard deviation. This effect size is about one-fourth the effect size for the percentage of students eligible for subsidized lunch, according to the same model.

The remaining columns include controls for prior school grades to estimate the relationship between the task dimensions and performance gains, rather than levels. Our preferred control is the 2005 grade because it balances the advantage of assessing longer term gains with the disadvantage of potentially attributing changes to principals that they were not responsible for (column 3), though for completeness we include (in columns 2 and 4) other prior years' grades as controls also. The point estimate for Organization Management in column 3 is 0.09, corresponding to an effect size of 0.08. For comparison, the effect sizes for percent black and percent subsidized lunch are -0.34 and -0.17, respectively, suggesting that the association between outcomes and Organization Management is between one-fourth and one-half as large as the association between outcomes and student demographics.<sup>14</sup> It is also substantially larger than the mean effect size (0.01) that Witziers et al. (2003) calculated in their meta-analysis of 45 empirical studies examining the association between educational leadership and student achievement, though it is similar to effect sizes they calculate for specific leadership behaviors such as monitoring (0.07) and maintaining visibility (0.08).

Next, we split the sample between elementary schools and middle and high schools to examine whether the effectiveness associations are driven by school level (columns 5 and 6). We find only small differences. While the Instruction Management coefficient is larger for secondary schools and statistically significant at the 0.10-level, the other effectiveness coefficients remain similar. The point estimates for Organization Management are identical in both models ( $\beta = 0.10$ ), though due to the smaller number of secondary schools, the coefficient is only statistically significant for elementary schools.

### *Teacher Satisfaction*

The first two columns of Table 4 give the result of a similar estimation using teacher satisfaction as the outcome variable. The impact of principal skills on teachers is an important consideration because teachers are central school stakeholders and because low teacher satisfaction and resulting high turnover can negatively impact school performance (see Grissom, 2011). The two models shown are identical, controlling for school and teacher characteristics, except that the second column adds a control for the school's 2007 accountability grade.

In both models, again, Organization Management is positive, with coefficients ranging from 0.027 to 0.015, though the coefficient is only significantly different than zero before controlling for last year's accountability grade. The effect size in column 2 is 0.02, compared to 0.15 for the 2007 grade and -0.11 for percent black. The decline in the coefficient between the two models suggests that a significant portion of Organization Management's effects on teacher satisfaction may operate indirectly via its effects on student performance. Perhaps surprisingly, principal task efficacy in Administration is negatively and significantly related to teacher satisfaction in both models (effect size = -0.03). Instruction Management is not associated with teacher satisfaction in either model. In general, the low degree of power the principal effectiveness and other variables have in explaining teacher satisfaction may result from the relative roughness and low variation of the available satisfaction measure.

### *Parents' Ratings of School Performance*

The final two columns of Table 4 model parents' assessments of the school from the school climate survey as a function of principal efficacy in the five task dimensions, controlling for school characteristics. We see that parents rate schools more highly in elementary schools, when there are a lower concentration of black students or students eligible for subsidized lunch, when the school is smaller, and when the schools' state accountability grade is higher.

More importantly for this study, we again find a positive association between principals' self-assessed Organization Management skills and parents' assessments of the schools' performance. This partial correlation is statistically significant at the 0.01-level, both with and without the control for school performance, though the smaller coefficient on Organization Management in the second model ( $\beta = 0.14$ , effect size = 0.08) indicates that some of the relationship between this dimension and the parents' assessment can be attributed to the tendency for principals with better Organization Management skills to be located in higher-performing schools. Some of this difference may result from the indirect effect that principal Organization Management has on student outcomes, as demonstrated in Table 3. None of the other areas of task efficacy are statistically associated with parent rating in either model, suggesting that, at the margins, effective Organization Management skills are a more important determinant of parents' views of their children's schools than other principal skill groups.<sup>15</sup>

#### **FURTHER EVIDENCE FROM ASSISTANT PRINCIPAL ASSESSMENTS**

The results thus far have been based on principals' assessments of their own task effectiveness. However, the usefulness of these results may be limited by the fact that self-assessments are not ideal measures. While principals' self-ratings reflect an informational advantage in the sense that principals experience themselves performing the tasks, principals are not unbiased observers and may not provide objective assessments. One means of evaluating the validity of the self-assessments is to check them against the ratings of another observer. To provide this external check, we use assistant principals' evaluations of their supervising principals' skill sets.

Using assistant principals' ratings has advantages and disadvantages. Assistant principals observe their principals performing many but not all of the tasks, which makes them more qualified to judge principals' competencies in some areas than in others. For example, assistant principal may have a good sense of how well the principal works at maintaining

campus facilities but not of how well the principal networks outside the school. Also, like principals, assistant principals may not be unbiased evaluators, though given that these biases need not run in the same direction as the principals', finding similarities between the two sets of ratings would be good confirmation that the dual evaluations provide meaningful information about the principals' skills.

The approach that we take to the analysis of the assistant principals' ratings is similar to that used for the principals' ratings. We administered a survey to all assistant principals in the district to collect assessments of the principals' effectiveness on the same set of 42 tasks given to the principals. On average, these ratings were lower and more variable than the principal self-ratings, though patterns across the items were quite similar.<sup>16</sup>

Exploratory factor analysis of these responses with varimax rotation identified groupings that define the dimensions of assistant principal-assessed principal effectiveness.<sup>17</sup> Using the minimum eigenvalue criterion, assistant principals distinguish three areas of principals' task effectiveness: *Instruction Management*, *Internal Relations*, and *Organization Management*.<sup>18</sup> These three factors generally are consistent with the first three factors identified by the principals. Assistant principals did not distinguish Organization Management from more routine administrative tasks, nor did they identify a separate External Relations dimension, perhaps because they do not commonly observe principals performing these tasks. Examination of the factor loadings matrix reveals generally less differentiation of principal skills by the assistant principals. Compared to loadings matrix for the principals' responses, assistant principal items are more likely to load highly on at least two factors. In fact, five items load relatively highly on all three factors, suggesting that, from the perspective of the assistant principals, these tasks necessitate competency across all three dimensions. A good example is efficacy at hiring personnel, which the matrix suggests may reflect instructional, interpersonal and organizational management components.

Correlations between the principals' and the assistant principals' ratings are not high, probably as a result of the different perspectives on performance captured and of imprecise measurement. Measurement error is a characteristic of the factor model by design, and error in the principal and assistant principal factors will attenuate the correlations between them. The assistant principals' Organization Management assessment is positively and significantly correlated with the principals' Organization Management assessment ( $r=0.15$ ), though also negatively correlated with the principals' External Relations self-rating ( $r=-0.11$ ). Other factors are not correlated across raters.

Next we model the relationship between assistant principals' factored assessment of their principals' effectiveness and the same three school outcomes used before. Assistant principal factors are averaged at the school level and standardized across schools. Table 5 gives the results. Here again, Organization Management skills emerge as consistently positive and statistically different from zero across specifications. Controlling for school characteristics, Organization Management, as rated by the assistant principals, is positively and statistically significantly related to accountability performance level, teacher satisfaction and parent climate survey assessments of school performance. These findings bolster our argument that principals' general managerial skills are important contributors to school success.

In contrast, neither of the other dimensions of principals' skills is consistently associated with school performance, nor are the point estimates as large. Internal Relations skills are positively associated with teacher satisfaction in both models, but only significantly associated with parent climate grades before past performance is included. They do not predict student performance. As before, Instruction Management skills have no predictive power in any specification; in fact, the point estimates for this variable are negative in four of the six models.

## **EVIDENCE FROM STUDENT-LEVEL ACHIEVEMENT GAINS**

To further investigate the relationship between principals' task effectiveness and school outcomes, in this section we examine the association between principal task effectiveness and students' math and reading achievement gains. This analysis complements the analysis of accountability grades, which aggregate student test growth with other school performance factors. We model student test performance in the spring of the year we surveyed the principals and assistant principals as a function of students' prior-year test performance, personal characteristics (race/ethnicity, gender, Limited English Proficiency status, subsidized lunch eligibility), grade level, the average characteristics of students in their school, and either the principal's or assistant principals' ratings of principals' task effectiveness. In some models we also include the principals' characteristics, including their race/ethnicity, gender, educational attainment, and years as a principal. Models are estimated via OLS.

The student-level test score data include math and reading scores from the Florida Comprehensive Assessment Test (FCAT) from spring of 2007 and 2008. The FCAT is given in math and reading to students in grades 3 through 10; use of these tests necessarily excludes middle and secondary school teachers who teach other subjects. The FCAT includes criterion-referenced tests measuring selected benchmarks from Florida's Sunshine State Standards. We standardize students' test scores within each grade and school year. Students' test scores therefore describe their position in the overall achievement distribution.

Table 6 displays the results. The first four columns report the findings for math achievement while the last four report the results for reading. Within these groups, the first two columns give the estimates for models that use principals' self-assessments of task effectiveness while the next two columns give the estimates for models that use assistant principals' assessments. We report the results with and without controls for the principals' characteristics, though these controls do not substantively change the results. In keeping with prior literature, the table shows a strong positive relationship between students' prior score and their current

score, as well as a negative relationship between test performance and being black, Hispanic, an English learner, and subsidized lunch-eligible. Students in schools with higher proportions of subsidized lunch-eligible students also score consistently lower, as do students in larger schools. While not shown, we find no relationship between principal characteristics and student performance, except for principal experience, which shows positive associations with test score growth in both subjects.

The results for our measures of task effectiveness are generally consistent with the school-level analyses. In particular, principals' self-assessments of Organization Management effectiveness are positively associated with student achievement gains in both math and reading. The coefficient on Organization Management of 0.015 is just under half as large as the difference between students who are eligible for subsidized lunch and students who are not (-.033). The results for reading are approximately the same size (0.012), though they represent a somewhat smaller proportion of the poverty differential (0.044). Also, though not shown, coefficients suggest that a one standard deviation increase in a principal's Organization Management effectiveness is equivalent to about three years' experience, in terms of student gains in math and reading achievement. There is also some evidence of a positive relationship between principals' self-assessed task effectiveness in Administration and student learning, though the coefficients are not consistently significant across models.

In contrast, the results for assistant principals do not show the same consistent patterns observed in Table 5. We find no relationship between an assistant principal's assessment of the principal's effectiveness in Organization Management tasks and student learning gains in any of the models. In fact, the only statistically significant relationship for the assistant principals' assessment is for Instruction Management task effectiveness, which is positively correlated with math gains but not reading gains.

## **DISCUSSION AND CONCLUSIONS**

This paper makes two main contributions. First, it uses principals' self-assessments on 42 tasks to distinguish five effectiveness dimensions. Second, it shows the particular importance of Organization Management effectiveness for school improvement.

The consistent pattern of positive results for Organization Management skills we uncover—across outcome measures gathered from multiple constituents and from assessments gathered from multiple raters—suggests that these tasks matter for school performance. But are these effects substantively meaningful? On one hand, they are roughly comparable to the average principal leadership effect on student achievement across studies calculated by Witziers et al. (2003), which those authors described as small. However, two observations must be kept in mind in interpreting the effect size. First, Organization Management effectiveness is measured with substantial error, which biases the estimate of its impact toward zero. Further work to refine the measurement tool may well uncover stronger correlations. Second, the right benchmark for interpreting factor effect sizes might not be absolute magnitudes but its magnitude relevant to other predictors we know to be important for outcomes. The student-level test score analysis presented in Table 6 shows that having a principal who is one standard deviation higher in Organization Management has nearly half the average impact on a student's math performance as does being a subsidized lunch recipient. Viewed this way, the results suggest that reallocating principals with higher Organization Management competencies to schools with larger numbers of high-poverty students could be a meaningful way to address socioeconomic achievement gaps.

Although our findings emphasize the importance of skills associated with traditional concepts of management, they are not necessarily inconsistent with the idea that instructional leadership is important. Some Organization Management tasks have clear implications for support of classroom learning, and moreover, we find a positive relationship between student-level math achievement gains and assistant principals' assessments of principals' efficacy in Instruction Management. More generally, however, our findings do argue against narrowing the

principal's focus to *only* overseeing day-to-day instructional practices and observing teachers in classrooms at the expense of managing key organizational functions, such as budgeting and maintaining campus facilities. Rather, we might conceive of effective instructional leadership as combining an understanding of the instructional needs of the school with an ability to target resources where they are needed, hire the best available teachers, and keep the school running smoothly. At the margins, principal efficacy in these latter functions may be more important for school effectiveness than previous work has articulated. Principals devoting significant energy to becoming instructional leaders—in the narrow sense—are unlikely to see school improvement unless they increase their capacity for Organization Management as well.

Other scholars have made similar observations. Murphy (1988) cautioned against adopting a false dichotomy between management and instructional leadership, as “this perspective incorrectly separates two potentially reinforcing constructs and overlooks the ways in which traditional, routine actions (i.e., management behaviors) can contribute to improved teaching and learning” (127). Stronge (1993) similarly called for a more unified view of the principalship as requiring both managerial and instructional leadership skills that reinforced rather than competed with one another. More recently, Bryk et al.'s (2010) book on school improvement highlighted how instructional leadership effectiveness depends on successful orchestration of programs, people, and resources. Yet the role of principal competency in more traditional management activity in determining school success has received little emphasis relative to the principal's role in promoting instruction. Our results argue for a reorientation: involvement in instruction matters, but so do “traditional” management functions that have not typically been included under the instructional leadership mantle. Recalling Marks and Printy's (2003) call for integrating leadership perspectives, we suggest that a more holistic view of school leadership as necessitating skills across multiple dimensions, in instruction but also in management of the school as an organization, is important for identifying the ways that principals can promote school improvement.

One policy implication of our results is that districts seeking to identify strong candidates for open principal positions or recruit potential candidates into the administrative pipeline may benefit from considering candidates' Organization Management competencies, such as those in hiring or budgeting. Another is the possibility that a productive strategy for increasing the performance of the districts' lowest-achieving schools could be to shift the principals with the greatest management skills to those schools. In M-DCPS, we see little evidence of such a strategy. As Figure 2 shows, the schools with the highest levels of student poverty, particularly at the secondary level, tend to be led by principals assessing themselves the lowest on Organizational Management skills. Instead, the district has placed principals into those schools who systematically are higher on the Instruction Management dimension, a human resource decision supported by earlier research but that shows no association here with higher school performance. We suspect that M-DCPS is not unique among districts in pursuing this approach.

A third potential implication is for the investments that states and districts should make in principal preparation. In particular, pre-service and in-service administrator professional development programs might promote greater gains in overall principal effectiveness by integrating training in leading instruction with the development of more traditional management competencies. Results of prior work on principal development programs are consistent with this recommendation. For example, Levine (2005) studies the content of top educational administration programs and concludes that even the best programs tend to be overly theoretical and disconnected from the needs of day-to-day school management. Similarly, in a study of 210 syllabi from educational leadership programs nationwide, Hess and Kelly (2007) conclude that pre-service training is deficient in such key management topics as handling personnel and maintaining facilities. Attending to the development of such skills may be an avenue for programs to positively impact principal practice.

Still, the study's findings should be interpreted cautiously. The data are cross-sectional, which prevents us from examining how school outcomes may change when principals with

different skill sets come into a school. Moreover, despite the consistency of the relationships between the principals' and assistant principals' ratings of Organization Management and school outcomes, the correlation between the two raters is low, raising concerns about the reliability of the measures. As a result, we certainly would not want to use the task effectiveness inventory to, for example, evaluate principals. Instead, the appropriate way to view our analysis is as an exploratory look at principal task effectiveness that points toward a promising direction for future analysis. Further research using more refined tools in a diverse set of school districts will be essential for more fully assessing the contribution of principal management to school performance. We suggest that the kind of tool presented here might be a jumping-off point for such assessment.

## END NOTES

<sup>1</sup> A prior study used our task list in a frequency analysis (Horng, Klasik, & Loeb, 2010).

<sup>2</sup> Other researchers are developing instruments for evaluating principals that also incorporate this focus on effectiveness. An example is the Vanderbilt Assessment of Leadership in Education (VAL-ED), which assesses the effectiveness of specific educational leadership behaviors using principal self-ratings and ratings from supervisors and teachers (Porter, Goldring, Murphy, Elliott, & Cravens, 2006). These behaviors draw from the instructional leadership literature and other effective principals studies and do not share our emphasis on job tasks.

<sup>3</sup> M-DCPS contains more than 400 schools. However, our study excludes non-regular school types, such as magnet schools, vocational schools, alternative schools and special education centers. The 314 principals administered the survey represent the universe of principals in regular elementary and secondary schools.

<sup>4</sup> A simple four-point assessment of teacher satisfaction is not ideal. Fortunately, there is substantial variation in the responses. Also, because the average school has more than 40 responding teachers, we can be confident that our measure does a reliable job of capturing mean satisfaction in the school on this scale.

<sup>5</sup> See Figlio and Lucas (2004) for more information.

<sup>6</sup> Though not shown in the table, assistant principals look similar to principals by race, gender, and years in their current position, but are a bit younger, averaging age 44.

<sup>7</sup> Hierarchical models accomplish a similar kind of correction for correlations in responses among subjects nested within the same unit. Both modeling techniques yield unbiased coefficients. We report standard regression models with clustered standard errors because they are more easily interpreted.

<sup>8</sup> Bartlett's sphericity test ( $p < 0.001$ ) and the Kaiser-Meyer-Olkin statistic (0.921) confirmed the appropriateness of the data for factoring. A small number of missing item responses were imputed prior to factoring to avoid sample loss.

<sup>9</sup> Eigenvalues of these five factors: 12.6, 1.9, 1.5, 1.2, 1.0.

<sup>10</sup> Available upon request.

<sup>11</sup> One consequence of factor rotation is that, while the retained factors account for the same total variance as they did prior to rotation, the variance explained is redistributed across the rotated factors. Thus, although the first unrotated factor explained much higher variation than the others, the corresponding Instruction Management factor does not necessarily explain more variation than the other rotated factors (see Lattin, Carroll, & Green, 2003, 140–141).

<sup>12</sup> We omit percent Hispanic students because the exceptionally high negative correlation ( $r = -0.94$ ) between percent black and percent Hispanic results in severe multicollinearity.

<sup>13</sup> We also considered the possibility that principal characteristics, such as experience and education, should be included. In an alternative set of models, we included these variables in all of the principal effectiveness regressions and found that neither experience nor education significantly explained any of dependent variables after the effectiveness factors were included. In none of the models could we reject the null hypothesis that the coefficients were all zero using a joint F-test. Moreover, the point estimates for the principal effectiveness variables were robust to the inclusion of these variables. Thus, in the interest of model parsimony, we chose not to include principal characteristics in the models we report.

<sup>14</sup> A comparison of the  $R^2$  coefficient in column 3 to one for an equivalent model without the five task effectiveness variables shows that the principal variables explain 6–7% of the remaining variation in accountability grades after accounting for school characteristics.

<sup>15</sup> M-DCPS also provided us with students' climate ratings, which were obtained in a survey similar to the one given to parents. The student grades were highly correlated with parents' ( $r = 0.84$ ), and results obtained from using the student evaluations were qualitatively very similar to the parent results.

<sup>16</sup> For brevity, summary statistics on these items are omitted.

<sup>17</sup> Two survey items, *Teaching students* and *Planning professional development for prospective principals*, were dropped because they contained more than 10% "I don't know" or other missing responses. A small number of values were imputed to avoid loss of sample size due to item non-response.

<sup>18</sup> Eigenvalues: 26.5, 1.5, 1.2. Factor loadings matrix for the assistant principal rating variables available upon request.

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