

*P*rincipal Time-Use and School Effectiveness

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Abstract

School principals have complex jobs. To better understand the work lives of principals, this study uses observational time-use data for all high school principals in Miami-Dade County Public Schools. This paper examines the relationship between the time principals spent on different types of activities and school outcomes including student achievement, teacher and parent assessments of the school, and teacher satisfaction. We find that time spent on Organization Management activities is associated with positive school outcomes, such as student test score gains and positive teacher and parent assessments of the instructional climate; whereas Day-to-Day Instruction activities are marginally or not at all related to improvements in student performance and often have a negative relationship with teacher and parent assessments. This paper suggests that a single-minded focus on principals as instructional leaders operationalized through direct contact with teachers may be detrimental if it forsakes the important role of principals as organizational leaders.

Acknowledgements

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Introduction

Principals can play critical roles in the development of high-quality schools (see Darling-Hammond, LaPointe, Meyerson, Orr & Cohen, 2007; EdSource, 2008; Knapp, Copland, Ford, Markholt, McLaughlin, Milliken & Talbert, 2003; Wallace Foundation, 2007). While only a small body of research links principals directly to student achievement (Branch, Hanushek & Rivkin, 2009; Hallinger & Heck, 1996), a much larger research base documents principals' effects on school operations, through motivating teachers and students, identifying and articulating vision and goals, developing high performance expectations, fostering communication, allocating resources, and developing organizational structures to support instruction and learning (Knapp, Copland, Plecki & Portin, 2006; Lee, Bryk and Smith, 1993; Leithwood, Louis, Anderson & Wahlstrom, 2004). Principals also affect the instructional quality of schools through the recruitment, development, and retention of teachers (Harris, Rutledge, Ingle & Thompson, 2006).

While the importance of the principal for school operations is widely acknowledged, surprisingly little is known about what principals do on a day-to-day basis and how this varies across schools. Previous principal time-use research can be grouped into two broad categories – ethnographic studies and self-report studies – each with their own benefits and limitations. Ethnographic studies allow for depth and detail but generally include observations of only a few principals and are consequently unable to generalize to a larger population of schools or to empirically link principal time-use to school outcomes (Martin and Willower, 1981; Morris, Crowson, Porter-Gehrie & Hurwitz, 1984; Wolcott, 1973). Self-report research, usually conducted with surveys, allows for large samples but often sacrifices depth, and perhaps accuracy. These studies are likely to be susceptible to self-reporting and memory biases (Andrews, Soder & Jacoby, 1986; Andrews & Soder, 1987; Brewer, 1993; Eberts & Stone, 1988; Erickson & Reller, 1979; Martinko & Gardner, 1990).

Recent advances in self-report data collection methods, such as end-of-the-day logs and experience sampling methods (ESM), have reduced some of these potential biases (Goldring, Huff, May & Camburn, 2008; Scott, Ahadi & Krug, 1990). For example, Spillane, Camburn and Pareja (2007) employ ESM by paging principals up to 15 times a day on portable handheld devices for six consecutive days. Each time they were paged, principals

filled out a short survey asking questions about what they were doing, who they were with, and where they were. The real-time nature of this method eliminates the possibility that principals forget or misremember their daily activities. The method, however, still suffers from the potential biases inherent in self-reporting. An additional drawback to ESM is that the surveys take time to complete and are thus necessarily limited in their scope so as not to overly disrupt the principal's work day.

The study reported in this paper draws on the strengths of these two types of research. Similar to ethnographic studies, trained researchers observed principals and recorded their time use to eliminate bias associated with self-reports and to allow for more detailed description of time-use than usually possible in surveys. Similar to self-report data, the data for this study cover the activities and locations of a large number of principals, and so do not have the small sample limitations of ethnographic studies. Specifically, a team of researchers shadowed 65 principals in Miami-Dade County Public Schools (M-DCPS), each over the course of a full school day, and collected detailed information on time-use at five-minute intervals. They collected time-use data from all 41 high school principals in the district and a sample of 12 elementary and 12 middle school principals for comparison. The scale of the data collection is large enough to allow for explicit modeling of the links between principal actions and school outcomes.

With these data we seek to answer four broad questions:

1. What do principals do?
2. Where do principals spend their time?
3. How do principals' roles vary by school characteristics?
4. How are variations in principal actions reflected in measurable school outcomes?

The school outcomes that we examine include student test performance as well as measures of a school's educational environment. In what follows, we describe our data and methods and then present the results. The final section discusses the implications of the findings, limitations of the study, and directions for future research.

Figure 1: Principal Job Tasks by Category

Administration	Instructional Program
Managing student services (e.g., records, reporting)	Utilizing school meetings
Managing student discipline	Planning, directing after-school/summer instruction
Supervising students (e.g. lunch duty)	Planning, facilitating professional development for teachers
Managing schedules (for the school, not personal schedule)	Planning, facilitating PD for prospective principals
Fulfilling (non SpEd) ompliance requirements/paperwork	Developing an educational program across the school
Preparing, implementing, administering standardized tests	Releasing or counseling out teachers
Managing students attendance-related activities	Evaluating curriculum
Fulfilling SpEd requirements (e.g., meetings with parents)	Using assessment results for program evaluation
Organization Management	Internal Relations
Managing budgets, resources	Interacting socially with staff about school-related topics
Managing non-instructional staff	Interacting socially with staff about non-school topics
Maintaining campus facilities	Developing relationships with students
Developing and monitoring a safe school environment	Counseling students and/or parents
Dealing with concerns from staff	Attending school activities (e.g., sports events, plays)
Hiring personnel	Communicating with parents
Interacting or networking with other principals	Counseling staff (about conflicts with other staff members)
Managing personal, school-related schedule	Informally talking to teachers about students, not related to instruction
Day-to-Day Instruction	External Relations
Preparing, conducting classrm. observations/walk-throughs	Working with local community members or organizations
Formally evaluating teachers, providing instruc. feedback	Utilizing district office meetings or other communications initiated by the district office
Informally coaching teachers	Communicating with district office to obtain resources for school (initiated by principal)
Teaching students (e.g., tutoring, after-school)	Fundraising
Implementing required professional development	
Using data to inform instruction	

Data and Methods



ata for this study come primarily from observational time-use data that we collected from Miami-Dade County Public Schools (M-DCPS). To this data we link information from district school climate surveys of teachers and parents, surveys that we administered to all teachers in the district, and district administrative data on schools, staff, and students. We use these data to create measures of:

- Principals' time spent on each of 43 tasks and six aggregate task categories
- Principal's time in each of five locations
- School-level student achievement and student achievement gains in multiple years
- Teachers' assessments of the school
- Teachers' satisfaction in general and at their current school
- Parents' assessments of the school
- Characteristics of teachers principals and schools to serve as controls in the models

In what follows, we describe each of our data sources.

Time-Use Observational Data

The opportunity to observe principals in Miami-Dade, one of the country's largest and most diverse school districts, allowed us to analyze a large number of principals across varying school environments but within the same district context.¹ As described above, we observed 65 principals in M-DCPS, including the leaders of all 41 high schools as well as a sample of 12 elementary schools and 12 middle schools.²

We coded principal actions as one of a list of 43 tasks as shown in Figure 1. We populated our list of task codes based on the broad categories for principal duties described by Spillane, Camburn, and Pareja (2007). These four categories were: Administrative (e.g., managing budgets, managing personnel); Instruction and Curriculum (e.g., observing classroom instruction, planning curricula); Professional Growth (e.g., receiving coaching, studying effective practices); and Fostering Relationships (e.g., interacting socially). Given that we were directly observing principals and not asking the principals to take time to fill

out surveys as Spillane et al. did, we were able to add substantially more specificity to this task list. We expanded the task list through consultation with principals and district leadership in multiple states, and then refined our expanded list through pilot shadowing of principals in local schools.

It would be impractical to include 43 separate tasks in our models. Because of this, we aggregate tasks into six task categories: Administration, Organization Management, Day-to-Day Instruction, Instructional Program, Internal Relations, and External Relations. Figure 1 describes the individual tasks that comprise each task category. The groupings of tasks into these categories are based on analyses conducted in another study that is part of the same research project. In that prior study, Identifying Reference (forthcoming) uses factor analysis of principals' self-ratings of effectiveness on the same set of tasks to distinguish five task categories. For this study, we made a further distinction in one of those categories, Instructional Management, separating Day-to-Day Instruction tasks from Instructional Program tasks. We made this distinction because

the conceptual difference between principal work related to day-to-day instruction and the broader management of a school's instructional program is substantial enough to warrant separate consideration. All observations analyzed in this study occurred during one week in April 2008, which, within the district's calendar, was the second week after spring break. Researchers shadowed principals for an entire school day, starting roughly 30 minutes before the start of school and ending when students were released at the end of the day. In both a conference call before the visit and a briefing immediately prior to the shadowing, principals were instructed to ignore the researcher and not make any alterations to their usual routine on account of the researcher's presence. Researchers recorded the principals' tasks throughout the day at five-minute intervals. At each observation, researchers coded the task of the principal, the location of the principal, with whom the principal was interacting, and the nature of the activity (e.g., phone call, scheduled meeting, etc.). In cases where multiple codes were relevant, the more specific code was entered as the primary task, with other relevant codes listed as secondary activities. We examine only primary task codes in this study. In cases where a researcher was unsure of which code to use in a particular situation, the instance was discussed with the larger group of researchers during a daily debriefing until a consensus was reached on which code to use. Most analyses in this paper use the 3,607 high school principal time-use observations. Elementary and middle school observations provide comparisons for the high school data where noted.

A note on the reliability of the time-use observations:

The fourteen researchers who conducted the principal observations were trained on how to conduct the observations and how to differentiate among the principal tasks. The training placed particular emphasis on consistent decision-rules, such as how to code tasks for which multiple codes might apply. As one example, an observation of a principal leading a staff meeting about standardized testing might be coded as "utilizing staff meetings"

or "preparing and implementing standardized tests." The decision-rule which applies to this case is to prioritize the specific content over the more general context – in other words, the primary task is "preparing and implementing standardized tests" and the secondary task is "utilizing staff meetings." In addition to participating in these training sessions, the researchers conducted practice observations in pairs at local schools.

We used the practice observations in local schools to test inter-rater reliability. We randomly assigned researchers to observe principals in pairs. Seven pairs of researchers observed local principals for three hours. The researchers shared a timer but independently completed their shadowing logs. We calculated a consistency rate for each pair of researchers as the percentage of observations for which their task codes were the same.³ On average, the researchers had an 85 percent consistency rate. The individual pairs of researchers had consistency rates ranging from 69 to 94 percent. We closely reviewed the incidents of inconsistent coding and distinguished two types of inconsistencies: 1) due to coding different principal actions and 2) due to coding the same principal action differently. An inconsistency due to coding different principal actions is indicated by widely divergent task codes - for example, one researcher recording the task as "managing school schedules" and another as "preparing or conducting classroom observations/walk-throughs." Because principals often rapidly transition between tasks, the timer can go off between distinct tasks. One researcher might be inclined to code what the principal was doing the moment before the timer went off; while another might code what the principal does immediately after; and still another might code the task as "in transition." While the protocol required researchers to code the principal's activity exactly when the timer went off, our inter-rater reliability tests demonstrate that there is still variation in how this is interpreted. In the previous example, a review of the shadowing logs before and after this time point shows that the principal was indeed in transition between these two activities when the timer

went off. Among the 31 incidents of inconsistent coding, we found that 74 percent were due to the researchers coding different principal actions. We are less concerned about this type of inconsistency because it does not affect the reliability of our results as long as an individual researcher remains consistent. In other words, it is fine for a researcher to code the activity that the principal was engaged in immediately before the timer when off (or immediately after) as long as he or she does so every time the timer goes off at a point of transition. As a matter of fact, because we are only capturing intermittent time points and aggregating our observations, it does not even matter if the researcher was consistent with this as long as he or she was not biased – for example, tending to code interactions with students over other behaviors regardless of whether they occurred immediately before or after the timer went off.

Of greater concern to the reliability of our results are the inconsistencies due to coding the same principal action differently. That is, the researchers observing the same principal action (not at a point of transition between activities) and interpreting what they see differently. As much as we attempted to make the task codes clear and objective and to intensively train observers, there is still room for subjectively differing interpretations. One example of this inconsistency is two researchers observed a principal talk with a parent about making sure her child gets to school on time every day. One researcher coded this activity as "communicating with parents," while another coded it as "counseling students and/or parents." For this particular study, these discrepancies are not too troubling because we aggregate the tasks into categories, and both of these codes fall in the Internal Relations category. There are other, more troubling, examples of inconsistencies across different task categories. For example, two researchers observed a principal talking with a student during recess when the principal was on duty. One coded this as "supervising students," while another coded this as "developing

relationships with students." The former is part of the Administration category while the latter is part of the Internal Relations category, so this inter-rater inconsistency does affect the reliability of our results. Of the eight incidents of inconsistent coding due to coding the same principal behavior differently, only three crossed over different task categories. This represents only one percent of all the observations in our inter-rater reliability tests.

Teacher and Parent Surveys

To better understand teachers' and parents' perceptions of the school's educational environment, we draw upon three surveys: a district-administered school climate survey for staff, a district-administered school climate survey for parents, and our own survey of teachers in the district. The school climate surveys were designed by the district and have been administered annually in January or February since 1998-99. They provide information about staff and parent perceptions of the school. In January and February 2008, the district distributed the surveys to 26,100 staff and 83,700 parents. The response rates were 74 percent for the staff and 43 percent for the parents.

We also surveyed teachers in M-DCPS in May 2008. This survey asked teachers about the teaching and learning environment of their school, the role of their current principal, how appealing different aspects of the principalship are to them, how prepared they feel to take on school leadership responsibilities, their future plans, and their preferences for different school characteristics. We administered surveys to all teachers in the district, and offered cash prizes through a raffle for the teachers who completed the survey. Ultimately, 15,842 teachers responded, representing 83 percent of all teachers in the district. For this paper, we examine the responses to questions on teacher satisfaction, one assessing overall satisfaction with teaching and the other assessing satisfaction at the current school.

Administrative Data

We merge the survey and principal observation data with administrative data provided by M-DCPS. These data include school demographic variables such as enrollment, principal tenure at a school, and school performance based on the state's accountability system. We obtain information on each school's population of minority students as well as the number of students eligible for the Free and Reduced Price Lunch program from the National Center for Education Statistics's Common Core of Data.

Methods

This paper asks four questions: *What do principals do? Where do principals spend their time? How do principals' roles vary by school characteristics? How are variations in principal actions reflected in measurable school outcomes?* The first three questions are descriptive. To answer them, we describe the average percent of time principals spent on each task as well as on the six aggregated task categories. We then describe where principals completed these tasks and compare the time-use data across principals and schools with different characteristics. For these analyses, we use percent of time spent on a task instead of the number of minutes because observations represent an instantaneous sampling of a principal's actions rather than an accounting of the actual amount of time spent on a task. However, because all principals were observed for approximately the same length of time, percent of time on task and amount of time spent on task are similar measures.

The final question - *How are variations in principal actions reflected in measurable school outcomes?* - is trickier to answer. Any observed relationship between school performance and principal actions may be causal, but the causality may work in either direction or the relationship may be a spurious one; that is, more and less effective schools might differ in other ways that mask the true relationship

between principal time-use and outcomes. For example, it may be that when principals spend less time on Administration tasks, students have higher achievement or it may be that when students are high-achieving, principals do not need to spend as much time on Administration tasks. Alternatively, it may be that lower student achievement reflects characteristics of the school context, such as the extent and type of student behavioral issues, which necessitate principals spending more time on Administration tasks (e.g., student discipline). To begin to unpack this final research question, *including taking into account potential confounding relationships*, we examine the relationships between principal time-use and school outcomes in a multivariate framework.

We run a series of regressions to investigate the relationships between principal time-use as reflected by the percent time spent on each of the six aggregated task categories and several school outcomes while controlling for other characteristics of the school and principal. All regression analyses take roughly the same form with school performance as a function of time-use and other controls. Because the proportion of time-use across the categories sums to 100 percent, we omit Administration tasks as the reference category. We use four types of school-level outcome measures: student achievement, teacher assessments of the school, teacher satisfaction, and parent assessments of the school.

We run approximately the same five specifications for each outcome variable. The first specification contains only the percent of time principals spend on each of the task categories. The second specification adds school-level controls including school size, percent minority enrollment, percent of students qualifying for the Free and Reduced Price Lunch program, and whether the school falls within the district's "school improvement zone" as these schools had special resources directed towards them. The third specification adds a variable for the principal's experience (in months) at their

current school. The fourth specification accounts for change in the outcome variable by adding a control for the level of the outcome variable in a prior school year. We use a three year lag in order to capture change over more than one year. When data for prior years are not available, we use the school accountability grade as a control instead. Finally, because we are wary of stressing a model that uses so many predictor variables relative to the effective size of our sample, after noting that most of our control variables are statistically insignificant, we run a “concise” specification for each dependent variable with only percent of time spent on task category and controls for past school outcomes. In general, these reduced models confirm the trends seen in the fully specified models.

Student Achievement: We model student achievement based on Florida’s accountability system.⁴ Our first set of models looks at principals’ time-use in relation to the school’s 2007-08 accountability grade on an academic A-F scale. We use ordered probit regressions for these models because school grades create an ordinal variable in which the distance between each level is not necessarily the same – for example, it might be more difficult for a school to move from an F to a D than from a B to an A. The last two model specifications (a full model and a concise one), include controls for the school grade three years prior.

As an alternative to a school’s accountability grade, we use the 2007-08 raw score of the school’s accountability points earned – i.e., the sum of the component scores that comprise the school grade. These data have the benefit of providing a continuous outcome variable on which we are able to run ordinary least squares (OLS) regression models that are easier to interpret than ordered probit models. We similarly model school-level student performance *gains* by adding a control for performance three years prior on this same measure.

Teacher Assessments of the School: In addition to affecting student performance, a principal’s actions may affect school performance in ways better measured by teachers’ assessments of the school than by accountability grades. To estimate the relationship between principal time-use and the school educational environment, we link the principal observation data to teachers’ responses on the district school climate survey.

The district climate survey asks teachers the extent to which they agree with the following three statements: *At my school I feel safe and secure; I believe children at my school are receiving a good education;* and, *the overall climate or atmosphere at my school is positive and helps students learn.* We run OLS regressions on the percent of teachers in a school who agree or strongly agree with each of these statements about the school’s educational environment. We run these outcome variables against the usual sequence of controls: the first specification includes only the percentage of time principals spent on the task categories with no controls, the second includes school control variables, the third adds principal experience, and the fourth includes a control for the percent of staff who agreed with the same statement three years prior. The final specification represents a concise model with only task category time-use and the percentage of staff who previously agreed with the statement.

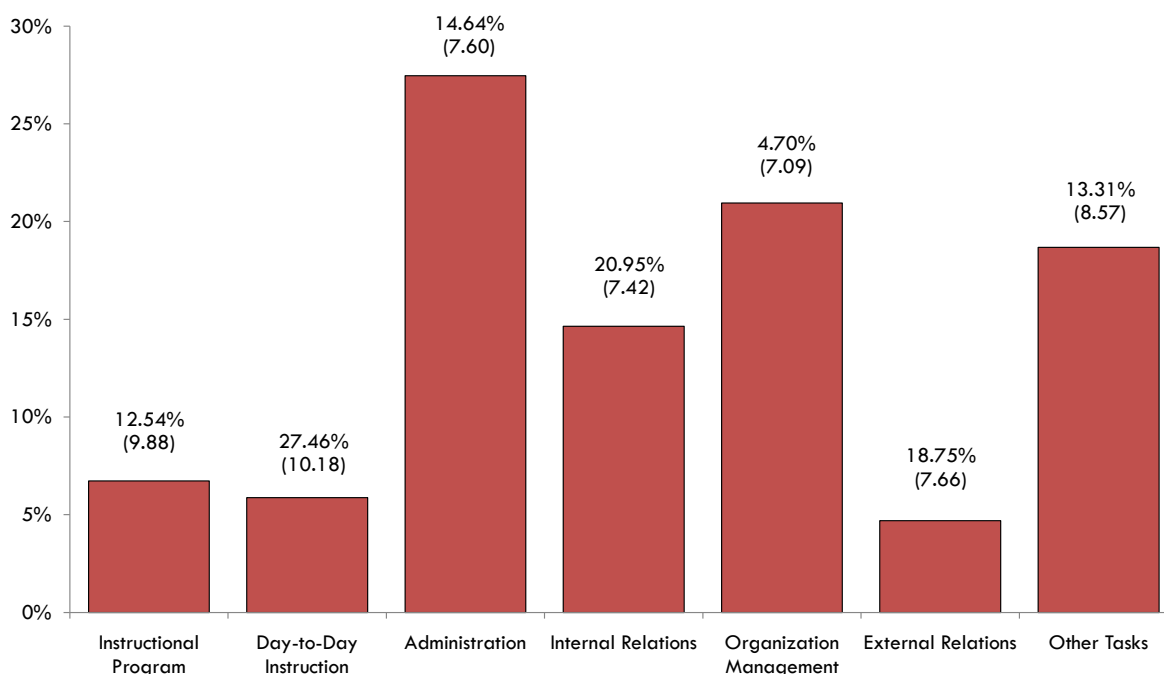
Teacher Satisfaction: Another indicator of a positive educational environment is teacher satisfaction. We run logistic regressions modeling whether a teacher is satisfied with teaching in general and with teaching at their current school. Because this data is at the teacher level, we cluster the standard errors at the school level to account for the hierarchical nature of the data. We run five models similar to those described above. However, since we do not have prior survey data for our teacher survey, we control for school accountability grade instead of prior survey responses in order to distinguish the relationship between principal

time-use and teachers' satisfaction from the relationship between principal time-use and school grade. For brevity, we only present and discuss the results of the last two specifications – the full and concise models – in this paper.

Parent Assessments of the School: Principal effectiveness may also be reflected in parents' assessments of the school. We link our time-use data to district surveys of school climate that asked parents the extent to which they agree with the following three statements: *my child's school is safe and secure*; *my child is getting a good education at this school*; and, *the overall climate or atmosphere at my child's school is positive and*

helps my child learn. Our outcome represents the percent of parents that agreed or strongly agreed with this statement for the 2007-08 school year. We run these parent assessment variables against the usual sequence of controls: the first specification includes only the percentage of time principals spent on given task categories with no controls, the second includes school control variables, the third adds principal experience, and the fourth adds controls for the same measure three years prior. Finally, we run a concise model with only task category time-use and parents' prior assessment of the school. Again, for brevity we present and discuss only the last two specifications in this paper.

Figure 2: Principal Time-Use by Task Category



Results

What Principals Do

Our analyses begin with a description of how principals spend their time during the school day. Figure 2 describes the distribution of principals' time across the six task categories, as the average percent of the school day principals devoted to the given category. On average, principals spent the most time on Administration activities to keep the school running smoothly, such as managing student discipline and fulfilling compliance requirements, accounting for about thirty percent of the school day. They spent just over a fifth of the day on Organization Management tasks, such as managing budgets and staff and hiring personnel. On average, they spent 15 percent of their time on the Internal Relations tasks, such as developing relationships with students and interacting socially with staff; and five percent on the External Relations tasks, such as fundraising. Principals appear to devote the least total amount of time to instruction-related activities including Day-to-Day Instruction tasks (six percent) and more general Instructional Program responsibilities (seven percent). Day-to-Day Instruction includes activities such as conducting classroom visits and informally coaching teachers; while Instructional Program includes activities such as evaluating the curriculum and planning professional development. Close to a fifth of all observations did not fit well into any of these six broad task categories. These observations included the principal taking "personal time" (e.g., eating lunch, using the restroom), interacting with the researcher, or in transition between activities.

Appendix 1 gives the breakdown of principal time-use by individual task within each of these aggregated task categories. Within the Administration category, principals spent the most time managing student services (e.g., making announcements or organizing bus transportation for field trips). Within the Organization Management category, principals

on average spent the most time managing budgets and resources. The vast majority of Day-to-Day Instruction time was spent preparing for or conducting classroom observations. Within the Instructional Program category, the principals' top three activities were attending school meetings, planning supplementary education programs (e.g., after-school and summer school), and planning or facilitating teacher professional development. In the category of Internal Relations, principals on average spent the most time interacting with staff about school-related and non-school related topics. Finally, working with local community members, businesses, and organizations occupied the vast majority of principal time spent on External Relations.⁵

Where Principals Spend Their Time

While principals spent approximately 20 percent of their time in transition between the tasks defined in Figure 1, this does not necessarily imply that they are always on the go. As seen in Table 1, principals spent most of their time in the school office – 54 percent of the day in their own offices and another nine percent elsewhere in the main school office. About 40 percent of principals' time was spent away from the school office in locations around campus including hallways, playgrounds, and classrooms. On average, the principals spent only about eight percent of the school day in classrooms. They spent even less time, approximately four percent, off campus entirely.

Principals perform different tasks in different places. Table 1 shows that the majority of Administration, Organization Management, Instructional Program, and Other tasks occurred in the principal's office. Not surprisingly, principals performed Day-to-Day Instruction tasks largely in classrooms, while they split Internal Relations tasks largely between their office and the more general school grounds. External Relations tasks tended to occur in the principal's office or off campus.

We can also use Table 1 to describe what principals tend to do when they are at various locations. As might be expected, the predominant tasks that occurred within the school office involved Administration and Organization Management tasks. Surprisingly, only about half the time that principals were in classrooms was dedicated to Day-to-Day Instruction tasks, such as observing or coaching teachers. The other half was divided roughly evenly among Administration, Organization Management, Instructional Program, and Internal Relations tasks. No other location demonstrates such diversity of tasks, suggesting that principals are most likely to multi-task while visiting classrooms. During the quarter of their day when principals were not in the school office or classrooms, they tended to engage in Administration tasks – such as dealing with student discipline issues – and Internal Relations tasks, primarily building relationships with students. In

the rare cases (on average, four percent of the time) that principals left campus, their time was most frequently spent on External Relations tasks – such as, working with community members and the school district to obtain resources for the school – and attending off-campus meetings.⁶

Differences in Principal Time-Use Across Schools and Principals

Principals may behave differently in different school contexts. Moreover, schools with certain characteristics may be able to attract principals who engage in certain activities more than others, particularly if those activities are related to how effective the principal is perceived to be. Consequently, we may see systematic differences in principal actions between schools. Similarly, principals may change their profile of actions as they gain more experience or their choice

Table 1: Principal Time-Use by Location

Row Percent	Principal's Office	Main Office	Classroom	School Grounds	Off Campus	Total
Column Percent						
Administration	53.5	11.8	2.8	30.7	1.3	100.0
	28.7	36.2	10.1	36.1	8.4	28.8
Organization Management	65.0	8.1	3.9	21.7	1.4	100.0
	25.7	18.2	10.5	18.8	6.5	21.3
Day-to-Day Instruction	14.3	2.9	71.9	11.0	0.0	100.0
	1.6	1.8	54.5	2.7	0.0	6.0
Instructional Program	74.5	6.5	12.2	6.9	0.0	100.0
	9.8	4.9	10.8	2.0	0.0	7.1
Internal Relations	43.0	12.3	6.0	34.9	3.8	100.0
	12.2	19.8	11.6	21.6	12.9	15.2
External Relations	53.2	5.8	0.0	6.9	34.1	100.0
	4.9	3.0	0.0	1.4	38.1	5.0
Other	55.0	9.1	1.2	25.7	9.1	100.0
	17.1	16.1	2.5	17.5	34.2	16.7
Total	53.7	9.4	7.9	24.5	4.4	100.0
	100.0	100.0	100.0	100.0	100.0	100.0

of actions may differ based on their personal background characteristics. For this analysis, we compare schools by school level (i.e., elementary, middle, or high school), proportion of students eligible for the Free and Reduced Price Lunch program, and proportion of students who are black. We also compare principals by gender and experience.

Table 2 demonstrates that, on average, principals of elementary, middle, and high schools spent their days similarly distributed between the six aggregate task categories. Few of the differences across the school levels are statistically significant,

though our sample size is quite small for detecting significant effects. Table 2 also describes differences in principal actions by school poverty level and the proportion of minority students. We use Free and Reduced Price Lunch program eligibility as a proxy for student poverty and categorize schools by quartile, comparing the 25 percent of high schools with the highest concentration of students in poverty with the 25 percent of high schools with the lowest concentration in the district. We similarly compare schools in the top and bottom quartile of all high schools in the district by percent black students. Generally, the activities of principals appear similar across these groups and

Table 2: Comparing Principal Time-Use across Selected Characteristics of Principals and Schools

		Admin.	Organ. Mgmt.	Day-to-Day Instruction	Instructional Program	Internal Relations	External Relations
School Type	Elementary	25.31 (3.50)	20.86 (3.76)	9.26 (2.83)	6.97 (2.40)	17.23 (3.39)	4.61 (1.87)
	Middle	22.48 (3.68)	23.76 (3.73)	8.38 (2.42)	8.63 (2.92)	11.01** (1.63)	4.39 (1.79)
	High	27.43 (1.63)	20.95 (1.19)	5.88 (1.33)	6.73 (1.22)	14.64 (1.22)	7.70 (1.13)
% Black Students	Lowest Quartile	22.54* (3.73)	23.24 (2.62)	4.39 (1.99)	5.84 (1.74)	15.21 (1.66)	3.99 (2.16)
	Highest Quartile	34.53 (3.60)	21.52 (2.79)	3.65 (1.43)	4.81 (2.08)	14.49 (2.92)	2.83 (1.11)
School Poverty	Lowest Quartile	24.89* (1.52)	21.37 (1.60)	6.32 (1.42)	7.00 (1.46)	14.32 (1.78)	5.41 (1.67)
	Highest Quartile	30.60 (2.95)	20.44 (1.77)	5.34 (2.38)	6.41 (2.03)	15.04 (2.29)	3.82 (1.46)
Principal Gender	Female	26.03 (2.32)	22.58 (1.84)	5.99 (2.66)	8.63 (2.50)	15.33 (1.94)	5.86 (2.31)
	Male	27.79 (1.99)	20.68 (1.68)	5.82 (1.40)	5.10 (1.07)	14.95 (1.78)	4.59 (1.24)
Principal Experience	4+ years	21.91*** (4.32)	19.99 (3.16)	6.15 (2.43)	6.16 (3.16)	17.51 (1.69)	5.99 (3.28)
	2-3 years	27.67 (4.08)	20.58 (3.02)	7.10 (3.09)	7.49 (3.53)	12.92 (2.48)	4.66 (1.72)
	0-1 years	33.76 (3.52)	22.80 (2.40)	3.36 (1.76)	6.05 (1.76)	14.30 (1.69)	3.20 (1.09)

Parentheses indicate robust standard errors. Asterisks indicate significant differences from last category within groupings.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

the differences are not significant at the five or ten percent levels. The one exception is that principals in schools with a high percentage of black students and principals in high poverty schools spent marginally significantly more of their day on Administration tasks than their counterparts in low minority and low poverty schools. These differences might reflect differences in school needs as the Administration category captures many of the student discipline-related tasks that a principal performs.

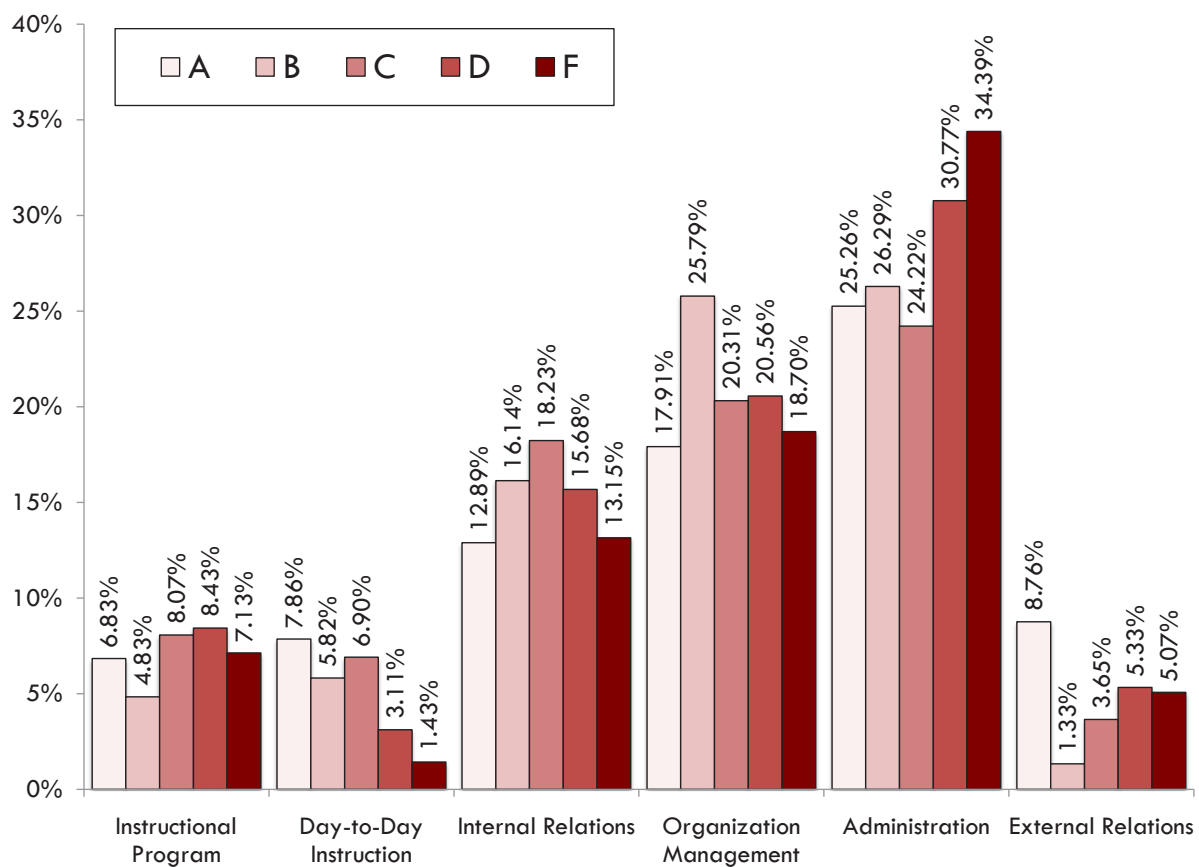
Finally, Table 2 shows time-use by principal gender and experience. Of the high school principals that we observed, roughly 45 percent were female. We see no notable differences in actions performed based on principal gender. Differences based on the number of years a principal had worked at their current school are small as well. The one notable exception to this is that the amount of

time that principals spent on Administration tasks is substantially lower among principals with at least two years of experience at their current school. New principals spent about 34 percent of their time on Administration tasks. However, principals who had been leading their schools for at least four years spent only 22 percent of their day on these tasks. No other task category shows significant changes with principal experience at their current school. Overall, we find relatively little systematic variation in principal time-use by measured characteristics of schools or principals.

Principal Time-Use and Measures of School Effectiveness

Ultimately, we would like to know how principal time-use affects school outcomes – i.e., what makes some principals more effective than others. A single measure of school success is likely to be

Figure 3: Principal Time-Use by School Grade



limited. For example, gains in student test scores may reflect the actions of the school leadership, but these changes may take time to manifest and also may be difficult to measure if, for example, student mobility is high. As a result, it is worth comparing principal actions to a range of school outcomes while controlling for other school characteristics. In our analysis, we use four types of school effectiveness measures: student achievement on state standardized tests, teachers' assessments of the school, teacher satisfaction, and parents' assessments of the school.

Principal Time-Use and Student Performance

We use two measures of student performance: school-level accountability grades and school-level raw scores of accountability points earned. Both these measures are based on student performance on state standardized tests. Figure 3 provides a descriptive look at the relationship between principal time-use and these outcomes. We see that the lowest-performing schools, those assigned a D or F by the state accountability system, have principals who spent more time on Administration tasks. The difference between principals' time-use on Administration tasks at A and F schools is significant at the one percent level. We see the opposite trend with respect to time spent on Day-to-Day Instruction tasks. That is, principals in schools with higher accountability grades spent more time on Day-to-Day Instruction tasks than those in schools with lower grades. This difference is significant at the $p < 0.05$ level. Interestingly, we do not see the same trend in time spent on broader Instructional Program tasks—the frequency with which principals engage in these tasks remains fairly consistent across schools by accountability grade. Principals in A and F schools look similar in terms of their time spent on Internal Relations, though both types of schools engage in these activities less than schools that had received a grade of C. We also find that External Relations activities occur almost entirely at A schools.

Table 3 presents the regression analyses using our two measures of school effectiveness based on student achievement. The first set of columns present the results of the five specifications of the ordered probit regressions with school grade in 2007-08 as the outcome. The second set of columns present the results of the five specifications of the OLS regressions with total accountability points earned in 2007-08 as the outcome. In both sets of analyses, student performance *gains* are modeled by including a control for prior student achievement in the fourth and fifth specifications.

The results of the ordered probit and OLS regressions are very similar. In the simple models only considering principal time-use (Specification 1), time spent on Organization Management, Day-to-Day Instruction, External Relations, and Other tasks (relative to the omitted time spent on Administration tasks) are significantly related to student performance in the same school year. That is, principals at higher performing schools spent more time on Organization Management, Day-to-Day Instruction, External Relations, and Other tasks. As previously discussed, this relationship may be a spurious one – for example, principals at higher performing schools may have more time to spend on these tasks relative to Administration tasks because they have less student behavior issues or because they are more efficient at completing Administration tasks due to greater leadership experience. To detect such spurious relationships we include multiple controls in the models. When controls for school characteristics and principal experience are added (Specifications 2 and 3), time spent on External Relations and Other tasks remain significant in the OLS regression models but not the ordered probit models. Only time spent on Organization Management and Day-to-Day Instruction tasks consistently remain significant. However, the causal direction between principal time-use and student performance is still not clear – students could have higher achievement when their principals spend more time on Day-to-Day Instruction and Organization

Table 3: Principal Time-Use and Student Performance

	School Accountability Grade (Ordered Probit)					Total Accountability Points Earned (OLS)				
	(1)	(2)	(3)	(4) ^a	(5)	(1)	(2)	(3)	(4)	(5)
Org. Mgmt. %	1.069** (2.152)	1.129*** (2.874)	1.125*** (2.756)	1.169*** (2.865)	1.080** (2.190)	4.540** (1.778)	3.761*** (0.976)	3.724*** (1.003)	1.651** (0.634)	0.869 (0.773)
Day-Day Instruc. %	1.157*** (3.640)	1.152** (2.490)	1.120* (1.816)	1.113 (1.473)	1.088* (1.736)	9.747*** (2.267)	4.353*** (1.133)	4.158*** (1.239)	0.936 (1.019)	0.292 (1.119)
Instruc. Prog. %	1.030 (1.095)	1.004 (0.0994)	0.998 (0.0607)	1.041 (0.804)	1.049 (1.465)	1.430 (1.527)	0.796 (0.871)	0.759 (0.890)	0.313 (0.679)	0.200 (0.652)
Internal Relations %	1.013 (0.498)	0.995 (0.134)	0.979 (0.509)	0.960 (-0.800)	1.019 (0.644)	0.500 (1.619)	-0.0723 (0.859)	-0.184 (1.021)	-0.0236 (0.759)	0.368 (0.626)
External Relations %	1.088** (2.567)	1.023 (0.504)	0.991 (0.163)	1.056 (0.894)	1.072* (1.899)	6.787*** (2.336)	2.811** (1.263)	2.546* (1.263)	0.308 (0.802)	0.622 (0.694)
Other Tasks %	1.091*** (2.756)	1.076 (1.597)	1.058 (1.147)	1.114* (1.854)	1.065 (1.598)	6.282*** (1.578)	3.143*** (0.936)	3.005*** (0.935)	1.230* (0.706)	0.931 (0.811)
Zone School Flag		2.108 (0.854)	3.031 (1.181)	44.51** (2.103)			1.519 (20.60)	4.443 (19.93)	16.68 (19.48)	
% Black		0.936 (1.502)	0.904* (1.840)	0.948*** (2.881)			0.553 (1.106)	0.327 (1.227)	-0.768 (1.154)	
% Hispanic		0.971 (0.679)	0.941 (1.152)				1.580 (1.127)	1.380 (1.233)	-0.227 (1.102)	
% Asian		2.874** (2.494)	2.021 (1.327)	6.852*** (3.258)			43.42*** (8.699)	41.11*** (9.628)	10.78 (8.599)	
% F/R Price Lunch		0.956 (1.372)	0.945 (1.631)	0.981 (0.500)			-1.111 (0.691)	-1.198* (0.682)	-0.548 (0.595)	
Enrollment (in 100s)		0.957 (1.560)	0.956 (1.573)	0.925** (2.019)			-2.254*** (0.642)	-2.278*** (0.659)	-1.411* (0.692)	
Principal Exp (in mo.)			1.016 (1.091)	1.007 (0.468)				0.113 (0.328)	0.286 (0.257)	
Grade in 2005 - B				21.15** (2.199)	0.651 (0.589)					
Grade in 2005 - C				5.486 (1.346)	0.192*** (2.621)					
Grade in 2005 - D				0.194 (0.890)	0.041*** (3.987)					
Grade in 2005 - F				0.000 (0.000)	0.000 (0.000)					
2005 Points Earned									0.817*** (0.218)	1.287*** (0.0861)
Constant						170.3** (72.59)	253.0** (109.7)	281.7** (124.1)	196.1 (157.7)	-25.58 (35.80)
Observ. (Pseudo) R-squared	38 0.132	37 0.538	37 0.548	37 0.667	38 0.384	38 0.398	37 0.914	37 0.914	36 0.957	36 0.925

Robust standard errors in parentheses for OLS regressions and z-statistics for ordered probits. *** p<0.01, ** p<0.05, * p<0.1

^a Percent Hispanic dropped from school controls in order to achieve convergence.

Management tasks (relative to Administration tasks); or principals at high-performing schools could simply have more time to dedicate to these tasks. To investigate the possible direction of the causality, we model student performance gains instead of levels, by including controls for prior student achievement (Specification 4). While we still cannot definitively demonstrate causality, this allows us to explore whether principal time-use is associated with changes in student achievement over time. In both the ordered probit and OLS regression full-models, which include controls for prior student performance, only time spent on Organization Management tasks remains significant.

Because our sample size may not be adequate for models with so many control variables, we also run concise models (Specification 5), which include controls for prior student performance but remove controls for school characteristics and principal experience. In these concise models, time spent on Day-to-Day Instruction tasks is only marginally associated with improvement in school grades and not significantly related to changes in the total number of accountability points a school earned. In other words, principal time spent on Day-to-Day Instruction tasks is a significant and positive predictor of student performance until we control for past performance. This suggests that while time spent on Day-to-Day Instruction tasks is associated with high-performing schools, it is not necessarily associated with *improving* schools. In contrast, time spent on Organization Management activities has a significant and positive relationship with both types of student performance outcomes—school grade and total number of accountability points—even when controls for prior school performance are added, suggesting that principals' time spent

on Organization Management tasks is positively associated with both student performance and *gains* in student performance.

Principal Time-Use and Teacher Assessments of the School

Principals might affect student outcomes by influencing the school teaching and learning environment. One way to measure the educational environment is through teachers' perceptions as reported on a survey. Table 4 presents the results of our OLS regression analyses of the following three items from the district school climate survey: *at my school I feel safe and secure; I believe children at my school are receiving a good education; and, the overall climate or atmosphere at my school is positive and helps students learn.* The outcome is the percent of teachers in the school who agreed with the statement. We present the results for the full and concise model specifications for each of these items.

Principal time spent on Organization Management (relative to Administration) tasks is significantly and positively associated with the teachers' assessment of the school educational environment in almost all models. To a lesser extent, the proportions of time spent on Instructional Program and Internal Relations tasks are also significantly and positively associated with teachers' agreement with the statements. In contrast, time spent on External Relations tasks demonstrate no significant relationship with teachers' assessments of the school climate. Day-to-Day Instruction tasks appear, if anything, to be negatively related to teachers' perceptions; though this negative relationship is only significant in one of the models.

Table 4: Principal Time-Use and Staff Assessments

	School Climate Survey (% staff agreeing with statement)					
	"At my school I feel safe and secure."		"I believe children at my school are receiving a good education."		"The overall climate or atmosphere at my school is positive and helps students learn."	
	Full	Concise	Full	Concise	Full	Concise
Organization Management %	0.249 (0.200)	0.302* (0.176)	0.327* (0.175)	0.396** (0.179)	0.706** (0.302)	0.829*** (0.259)
Day-to-Day Instruction %	-0.228 (0.169)	-0.142 (0.159)	-0.118 (0.150)	-0.00868 (0.160)	-0.470** (0.172)	-0.321 (0.204)
Instructional Program %	0.181 (0.238)	0.129 (0.186)	0.283* (0.150)	0.280** (0.116)	0.567** (0.265)	0.595*** (0.216)
Internal Relations %	0.0994 (0.217)	0.0518 (0.157)	0.225 (0.153)	0.212* (0.121)	0.155 (0.285)	0.130 (0.210)
External Relations %	-0.410 (0.251)	-0.233 (0.190)	-0.131 (0.195)	-0.0375 (0.183)	-0.596 (0.357)	-0.357 (0.323)
Other %	-0.120 (0.214)	0.0219 (0.183)	-0.149 (0.160)	0.0163 (0.147)	-0.377 (0.255)	-0.118 (0.246)
Zone School Flag	0.664 (5.395)		-3.986 (3.607)		-4.426 (6.613)	
% Black	-0.0920 (0.269)		-0.101 (0.218)		-0.155 (0.460)	
% Hispanic	-0.0211 (0.262)		-0.0455 (0.208)		-0.0878 (0.459)	
% Asian	-2.649 (2.244)		-1.198 (1.669)		-1.898 (3.130)	
% Free or Reduced Price Lunch	-0.302 (0.197)		-0.180 (0.112)		-0.345 (0.209)	
Enrollment (in 100s)	-0.231 (0.135)		-0.237** (0.103)		-0.329* (0.171)	
Principal Experience (in months)	0.0476 (0.067)		0.0395 (0.061)		0.0817 (0.116)	
% Agreed in 2005	0.478*** (0.161)	0.621*** (0.109)	0.526*** (0.106)	0.734*** (0.0664)	0.562** (0.206)	0.816*** (0.114)
Constant	67.24** (24.35)	24.70* (12.20)	52.84** (21.29)	9.005 (7.082)	59.55* (31.62)	-4.667 (13.36)
Observations	39	39	39	39	39	39
Pseudo R-squared	0.715	0.657	0.853	0.797	0.786	0.710

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 5: Principal Time-Use and Teacher Satisfaction

	Teacher Satisfaction			
	... In General		... At Current School	
	Full	Concise	Full	Concise
Organization Management %	1.006 (0.916)	1.008 (0.941)	0.999 (0.161)	1.005 (0.617)
Day-to-Day Instruction %	1.024* (1.826)	1.015 (1.160)	0.983 (0.810)	0.988 (0.678)
Instructional Program %	1.014* (1.791)	1.007 (0.893)	1.008 (0.809)	1.012 (1.254)
Internal Relations %	1.005 (0.538)	1.002 (0.239)	1.025* (1.819)	1.027* (1.781)
External Relations %	1.018* (1.649)	1.018 (1.554)	0.967** (2.389)	0.978* (1.724)
Other Tasks %	1.013 (1.513)	1.013 (1.374)	0.982 (1.473)	0.988 (1.027)
Zone School Flag	1.112 (0.489)		1.186 (0.573)	
% Black	1.021** (2.170)		0.988 (1.078)	
% Hispanic	1.021** (2.041)		0.993 (0.646)	
% Asian	1.047 (0.587)		0.826* (1.958)	
% Free or Reduced Price Lunch	0.978*** (3.439)		0.986** (2.208)	
Enrollment (in 100s)	0.971*** (3.219)		0.986 (1.598)	
Principal Experience (in months)	0.999 (0.459)		1.001 (0.161)	
Grade in 2005 - B	1.377 (1.013)	0.980 (-0.114)	0.760 (0.922)	0.649* (1.877)
Grade in 2005 - C	1.805* (1.678)	1.117 (0.538)	1.157 (0.511)	0.960 (-0.199)
Grade in 2005 - D	1.551 (1.135)	1.117 (0.490)	0.596 (1.228)	0.470*** (3.195)
Grade in 2005 - F	1.414 (0.754)	0.993 (0.0236)	0.358** (2.206)	0.279*** (4.921)
Constant	3.479 (1.381)	4.741*** (2.641)	88.26*** (3.490)	8.516*** (3.290)
Observations	4228	4272	4203	4247
(Pseudo) R-squared	0.010	0.002	0.041	0.035

Odds ratios with z-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Principal Time-Use and Teacher Satisfaction

We also examine teachers' satisfaction – in general and at their current school – in relation to principals' time-use. Table 5 presents the results in odds ratios of logistic regressions of teachers' likelihood of reporting being satisfied with teaching at their current school and teaching in general. Principal time spent on Internal Relations activities is positively associated with teachers' satisfaction with teaching at their current school, but not with their satisfaction with teaching in general. Conversely, in the full models, principal time spent on either of the instruction related task categories – Day-to-Day Instruction or Instructional Program – is marginally positively associated with teacher satisfaction with teaching in general, but not with satisfaction with teaching at their current school. Interestingly, principal time spent on External Relations tasks appears to be significantly and negatively related to teachers' satisfaction – both in general and at their current schools. However, considering that over 50 percent of the External Relations observations were from only three principals, these results may not be generalizable.

Principal Time-Use and Parent Assessments of the School

Next we examine the relationship between principal actions and parents' assessments of the school. Specifically, we model parents' agreement

with the following statements: *my child's school is safe and secure*; *my child is getting a good education at this school*; and *the overall climate or atmosphere at my child's school is positive and helps my child learn*. Table 6 presents regression results of the percent of parents who agree with these three statements. Principal time spent on Day-to-Day Instruction activities is significantly and negatively related to parents' assessment of the school. Time spent on Internal Relations and External Relations activities are also sometimes significantly and negatively related to parents' perceptions. Conversely, while principal time spent on Organization Management tasks is not as consistently positive as it was for achievement and staff assessments, it is significantly and positively related to parents' agreement with one of the school climate statements (*My child's school is safe and secure*). This finding that time spent on Organization Management tasks is more consistently associated with perceptions of school safety than time spent on Administration tasks is particularly surprising given that many of the Administration tasks are traditionally associated with maintaining school safety – such as managing student discipline and supervising students. It may be however, that principals who devote more time to Organization Management tasks have been better able to delegate safety and discipline duties to other school staff members such as assistant principals.

Table 6: Principal Time-Use and Parent Assessments

	School Climate Survey (% parents agreeing with statement)					
	<i>"My child's school is safe and secure."</i>		<i>"My child is getting a good education at this school."</i>		<i>"The overall climate or atmosphere at my child's school is positive and helps my child learn."</i>	
	<u>Full</u>	<u>Concise</u>	<u>Full</u>	<u>Concise</u>	<u>Full</u>	<u>Concise</u>
Organization Management %	0.403* (0.200)	0.567* (0.287)	-0.0719 (0.195)	0.137 (0.188)	0.156 (0.231)	0.320 (0.266)
Day-to-Day Instruction %	-0.380** (0.140)	-0.0473 (0.209)	-0.452** (0.170)	-0.337 (0.285)	-0.443*** (0.118)	-0.181 (0.211)
Instructional Program %	0.154 (0.272)	0.173 (0.308)	-0.163 (0.185)	-0.113 (0.270)	-0.0601 (0.226)	0.0315 (0.251)
Internal Relations %	-0.316 (0.239)	-0.111 (0.261)	-0.583*** (0.181)	-0.440** (0.194)	-0.473* (0.268)	-0.229 (0.204)
External Relations %	-0.774** (0.312)	0.0113 (0.307)	-0.443 (0.267)	-0.196 (0.236)	-0.631** (0.276)	-0.148 (0.244)
Other %	-0.0862 (0.209)	0.285 (0.231)	-0.432* (0.220)	-0.159 (0.321)	-0.282 (0.242)	0.0673 (0.306)
Zone School Flag	15.94** (7.278)		-4.681 (5.436)		3.150 (8.128)	
% Black	-0.390 (0.346)		0.274 (0.268)		-0.187 (0.382)	
% Hispanic	-0.161 (0.343)		0.432 (0.254)		0.0343 (0.359)	
% Asian	-5.246** (2.282)		-1.286 (2.144)		-3.335 (2.485)	
% Free or Reduced Price Lunch	-0.379** (0.171)		-0.458*** (0.158)		-0.287* (0.167)	
Enrollment (in 100s)	-0.487*** (0.156)		-0.405*** (0.132)		-0.344* (0.198)	
Principal Experience (in months)	0.280*** (0.087)		0.177** (0.078)		0.228** (0.108)	
% Agreed in 2005	0.739*** (0.128)	0.742*** (0.0963)	0.544*** (0.144)	0.853*** (0.140)	0.757*** (0.158)	0.901*** (0.0773)
Constant	67.22** (29.51)	2.843 (12.55)	55.76* (28.16)	22.09** (9.814)	54.27* (28.94)	4.611 (10.91)
Observations	37	37	37	37	37	37
R-squared	0.900	0.775	0.793	0.561	0.863	0.768

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Discussion

This study illustrates the complexity of the job of a school principal. Our observational time-use data allow us to combine depth and breadth in examining the actions of principals. We measure 43 different tasks that a principal engages in daily, recorded at five-minute intervals over the course of a full school day. The data cover all high schools in the Miami-Dade County Public School District, the fourth largest district in the country.

On average, the activities on which principals spent the most time were overseeing student services, managing budgets, and dealing with student discipline issues. When we group principals' actions into six aggregate categories – Administration, Organization Management, Day-to-Day Instruction, Instructional Program, Internal Relations, and External Relations – we find that, on average, principals spent almost 30 percent of their day taking care of Administrative responsibilities, such as supervising students, managing schedules, and fulfilling compliance requirements. They spent an additional 20 percent of their day engaging in Organization Management activities, such as hiring and managing staff and managing budgets. In contrast, principals, on average, spent only a little over ten percent of their day on instruction-related tasks – roughly equally split between tasks related to Day-to-Day Instruction, such as conducting classroom observations, and those related to the broader Instructional Program, such as implementing professional development for teachers.

The relatively little time principals devoted to instruction is somewhat surprising given the research and district emphases on the principals as the instructional leader of the school. While time on task may not be the best measure of the importance a principal places on an activity, as some tasks may require more time to complete just by their nature rather than their status, the fact that the principals spent only about ten percent of their time engaged in instruction-related activities points to the potential importance of other tasks in the work of principals. Administration tasks, such as filling compliance requirements and managing school schedules and student services, require a substantial amount

of time from all principals, though some principals manage these tasks in less time than others.

The heart of the analyses in this paper examine the relationship between the time principals spent on different types of activities and school outcomes including student achievement, staff assessment of the school learning environment, teacher satisfaction, and parent assessment of the school. The results show that time on Organization Management activities is associated with positive school outcomes. In particular schools in which principals spent more time on Organization Management relative to Administration activities have seen greater gains in student test performance over the past three years. School staff are also more likely to rate the climate as positive and improving (i.e., controlling for a prior year's measure); and parents are more likely to perceive the school as safe and secure.

In contrast, Day-to-Day Instruction activities are marginally or not at all related to improvements in student performance and often have a negative relationship with teacher and parent assessments of the school. For example, the more time principals spent on Day-to-Day Instruction activities, such as conducting classroom observations, the *less* likely teachers and parents were to feel that the school climate is positive and contributes to student learning. It may be that teachers feel that visits by principals are intrusions into the classroom which tend to harm rather than promote a positive learning environment. Alternatively principals who spent more time on Day-to-Day Instruction simply may have sacrificed other activities that are important for a well-functioning school.

The lack of positive effects for Day-to-Day Instruction does not necessarily imply that a focus of instructional leadership is misguided. First, our results show merit to principals devoting time to developing the school's broader instructional program. Time spent on Instructional Program activities is positively associated with the staffs' perceptions of the school's educational environment and teachers' satisfaction with teaching in general. More importantly, Organization Management activities are central to instructional leadership defined broadly. For example, hiring personnel, an Organization Management task, may be the most influential role principals have in the instructional practices of their schools. Nonetheless, the paper does provide some evidence that a single-minded focus on principals as instructional leaders operationalized through direct contact with teachers (e.g., classroom visits) may be detrimental if it forsakes the important role of principals as organizational leaders.

The results in this paper are clearly not definitive. We are studying one district at one point in time in a non-experimental setting. As such, the best we can do in modeling the association between principals' actions and school outcomes is to control for the limited number school characteristics that the sample size will allow. While our controls for prior measures of the outcome variable do enable us to account for some unobserved school characteristics that are constant over time, the approach is still not ideal for causal analysis.

In addition, while our data provide an unprecedented ability to examine the daily activities of principals, they have a number of limitations. First, they are limited by the fact that we gathered them during one week of one school year in one school district. In future work, we would like to measure principals' actions at multiple times of the year, to see how their roles change throughout the academic cycle, as well as to better understand the variation across principals and over time. Additionally, we would like to compare the results for M-DCPS

with similar data in other large urban districts. We have recently collected data in two other districts which will help us to understand the extent to which the results presented here are generalizable to other district contexts. Second, our data collection was based on silent shadowing of principals to minimize disruption of a principal's typical day – i.e., researchers tried to minimize their interactions with the principals until a debriefing at the end of the day. Debriefings with principals allowed the researchers to gain some insights into the motivations of principals; however, our understanding of principals' intentions is limited. While we can report what principals do, we have little sense of why principals do what they do, and, thus, we are likely missing possible explanations for the patterns we find. In addition, this lack of information may lead us to miscode tasks in some instances. For example, a researcher may have interpreted a principal's informal conversation with a teacher about a student as developing their relationship whereas the principal may have intended for it to be an informal coaching opportunity. Finally, the relationships we observe between principal time-use and school effectiveness are limited to the range of time-use that we observe – for example, we cannot say anything about the efficacy of principals who spend 75 percent of their time engaging in Organization Management activities, because no principal in our sample did. Any benefits related to performing these tasks and detriments related to engaging in administrative tasks are likely to have limits.

In summary, this paper represents one of the first large-scale observational studies of principals' time-use. We find that principals spend much of their day on Administration and Organization Management tasks, and substantially less on Day-to-Day Instruction and Instructional Program tasks. Administration tasks appear to contribute less to the school's well being than other principal activities; however, those classified as Organization Management tasks appear very important, even more important than those associated directly with instruction.

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ENDNOTES

1. We intend to compare the actions of principals across different districts in future studies. However, for this initial study, we chose to focus on one school district so that our models would not be complicated by variation due to differences in district practices and policies.
2. The elementary and middle schools were chosen based on the percent of students eligible for the Free and Reduced Price Lunch program, with the elementary and middle schools with the highest and lowest percentages from each of the district's six administrative regions entering the sample.
3. Not that if one of the researchers used a task code as the primary task while the other considered the same task to be a secondary task, we considered this to still be consistent coding. However, in subsequent trainings we discussed the decision-rules on how to determine whether a task should be considered primary or secondary using these examples.
4. Since 1999, Florida has had its own accountability program independent of the accountability standards imposed by the federal No Child Left Behind Act. As part of this program, schools are assigned grades (on an academic A-F scale) based on student performance on state standardized tests. The grade is based, among other factors, on the percent of students at a given school who meet a particular threshold on exams including reading and math, measures of the percent of students who have demonstrated improvement on these exams, and the percent of the students who fell in the lowest quartile, statewide, in the previous year who have demonstrated improvement.
5. Note that even though researchers observed nearly three-quarters of the high school principals engaging in some External Relations tasks, over 50 percent of all External Relations observations are from just three principals.
6. Note that this may be an underestimate of the time spent off campus on a typical day if the principals were more likely to stay on campus as a result of the presence of the researchers.

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Appendix 1: Percent of Principal Time Spent on Individual Tasks

Task	Overall	Within Category
Administration	27.46	
Managing student services (e.g. records, reporting, activities)	6.99	25.73
Managing student discipline	5.05	16.44
Supervising students (e.g. lunch duty)	4.61	17.88
Managing schedules (for the school, not personal schedule)	4.33	17.25
Fulfilling compliance requirements and paperwork (not including special education)	4.31	15.01
Preparing, implementing and administering standardized tests	1.22	3.90
Managing students attendance-related activities	1.04	3.23
Fulfilling Special Education requirements (e.g. meetings with parents, compliance)	0.14	0.57
Organization Management	20.95	
Managing budgets, resources	5.99	28.64
Managing non-instructional staff	3.54	16.33
Maintaining campus facilities	3.14	14.49
Developing and monitoring a safe school environment	2.69	12.70
Dealing with concerns from staff	2.59	13.87
Hiring personnel	1.81	8.13
Interacting or networking with other principals	0.81	3.45
Managing personal, school-related schedule)	0.58	2.40
Day-to-Day Instruction	5.88	
Preparing or conducting classroom observations/walk-throughs	4.26	71.29
Formally evaluating teachers and providing instructional feedback	0.94	15.36
Informally coaching teachers to improve instruction or their teaching in general	0.61	10.16
Teaching students (e.g. tutoring, after-school)	0.07	0.22
Implementing required professional development	0.05	2.50
Using data to inform instruction	0.03	0.48

Instructional Program	6.73	
Utilizing school meetings (e.g. School Site Council, committees, staff meetings)	2.62	25.31
Planning or directing supplementary or after-school or summer school instruction	1.03	18.76
Planning or facilitating professional development for teachers	0.94	18.50
Planning or facilitating professional development for prospective principals	0.65	6.39
Developing an educational program across the school	0.62	13.81
Releasing or counseling out teachers	0.43	7.69
Evaluating curriculum	0.39	2.85
Using assessment results for program evaluation and development	0.11	6.70
Internal Relations	14.64	
Interacting socially with staff about school-related topics (e.g. "shop talk")	3.97	25.49
Interacting socially with staff about non-school related topics	3.19	21.56
Developing relationships with students	2.91	20.99
Counseling students and/or parents	1.79	13.29
Attending school activities (sports events, plays, celebrations)	1.13	5.75
Communicating with parents	0.72	5.32
Counseling staff (about conflicts with other staff members)	0.61	4.14
Informally talking to teachers about students, not related to instruction	0.44	3.47
External Relations	4.70	
Working with local community members or organizations	2.48	32.73
Utilizing district office meetings or other communications initiated by the district office	1.58	36.81
Communicating with district office to obtain resources for school (initiated by principal)	0.44	24.28
Fundraising	0.24	6.17
Other	18.75	
In transition between activities	5.24	27.22
Email, fax, call, or paperwork when topic or recipient is uncertain	4.87	27.24
Interacting with the researcher	4.30	20.74
Personal time (e.g. bathroom, lunch, personal call)	4.14	21.99
Engaging in self-improvement/professional development	0.32	2.46

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