

## High School Principals' Use of Time in the State of Missouri, USA

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### Abstract

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Accepting educational responsibility among educators depends on how they use their time. Time management and use among high school principals signals what is valued – and what is not. This study describes how public high school principals in the state of Missouri reported spending their time to various leadership tasks using selected items from International Successful School Principalship Project (ISSPP) survey questionnaire. **Design.** Principals from all public non-chartered high schools in Missouri were asked to complete either a paper or online survey. **Findings.** Principals spend more time on management-related activities than curriculum and instruction-related activities. There is a strong association between time-use on curriculum and instruction with both gender and school size. The more leadership experience a principal has, the less time they are likely to spend on school management activities. Time-use on organization management is strongly associated with school size. **Conclusion.** If instructional leadership is a fundamental priority for principals, then development and support of principals to lead successful schools will require a redesign of their roles to free time for instructional leadership. School districts that hire their principals from a pool of assistant principals or invest in principal pipelines, need to develop a strategy to build the instructional and leadership skills of assistant principals as well.

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**Keywords:** High school principals, principals' time-use, principals' roles, successful principals, instructional leadership.

### International Successful School Principalship Project (ISSPP)

This study evolves from an on-going larger study, the Dimensions of School Leadership Study (DSLS), which examined leadership among high school principals in the state of Missouri. While the DSLS uses the International Successful School Principalship Project (ISSPP) items (Day, 2007), this study utilized Horng et al. (2009) instrument to examine high school principals' use of time to improve their capacity as instructional leaders and increase student achievement. ISSPP began in England in 2001 and aimed to: (1) collect data from a multiplicity of perspectives, (2) compare successful principal leadership in contexts ranging from small to large schools, (3) identify personal qualities and professional competencies generic to successful school principalship, (4) re-examine existing theoretical perspectives on school leadership through insight derived from new empirical research, and (5) contribute to the scholarly debate on the relationship between principal leadership and school effectiveness and improvement (Day & Leithwood, 2007). Simply put, ISSPP aims to understand what principals do in today's demanding accountability context.

The International Successful School Principalship Project (ISSPP) guiding framework is grounded in four specific models of leadership: (1) leading schools in times of change (Day et al., 2000), (2) successful school leadership (Gurr et al., 2003), (3) leadership for school–community partnerships (Kilpatrick et al., 2002), and (4) leadership for organizational learning and improved student outcomes (Mulford et al., 2004). The focus of ISSPP framework is to study and provide a better understanding and insights into what successful principals do to improve schools, regardless of context. According to Leithwood (2005), key areas of inquiry that guide this framework include: (1) practices successful principals use, (2) variability of practices across contexts,

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(3) attributes of successful principal leadership, (4) conditions under which such attributes are heightened or diminished, and (5) characteristics that link principals' influence to student learning.

According to Green (2013), successful principals lead schools where students are learning, parents are eager to enroll their students, and teachers clamor to teach. These principals are "able to create a community of teachers and parents united in a mission to ensure the best possible education for all of the students. These remarkable leaders have an uncanny ability to successfully respond to the changing needs of schools and students" (p. vii).

## 1. The Work of School Principals

Most states and school districts have established a series of frameworks; policy levers, professional educator standards, partnerships, and whole-school initiatives (Grissom et al., 2019; Manna, 2015) aimed at the development and support of effective school leaders. These frameworks have put pressure on school principals to be effective instructional leaders by requiring them to have substantive knowledge of supervisory skills, strategies, and structures that lead to high student achievement. Many experts point out that, while the influence a principal has on fostering school effectiveness is indirect (e.g., Leithwood et al., 2010; Hallinger & Heck, 1996a; Hallinger & Murphy, 1985), his or her behavior has a direct effect on the school's overall climate and on its instructional organization (Sergiovanni & Green, 2015). According to Leithwood et al. (2004), "there are virtually no documented instances of troubled schools being turned around without intervention by a powerful leader. Many other factors may contribute to such turnarounds, but leadership is the catalyst" (p. 5). Studies describe principals as agents of change, managers, personnel directors, disciplinarians, policymakers, and instructional leaders (e.g., Hallinger, 1996; Grissom & Loeb, 2012; Horng et al., 2009; Green, 2013; Sergiovanni & Green, 2015).

Leithwood and Riehl (2005) conducted a comprehensive review of literature on successful school leadership and concluded that, regardless of context, successful principals focus on four core practices: (1) setting direction, (2) developing people, (3) redesigning the organization, and (4) managing the instructional program. The focus on these areas explains the increased emphasis placed on individual principals to perform and to be held accountable to state standards, which have been developed to guide them as they continually reflect upon and improve their effectiveness throughout their careers.

Contentious in studies on principals is the appropriate balance of these roles and the extent to which principals have the time, expertise, and skills to function as instructional leaders. Effective instructional leaders focus on improving student achievement and are "hands-on leaders, engaged with the curriculum and instruction issues, unafraid to work directly with the teachers, and often present in classrooms" (Horng & Loeb, 2010, p. 66). How time gets allocated signals what is valued and what is not (Fiarman, 2017). A considerable knowledge base of research (e.g., Grissom et al., 2015; Murphy, 1990; Horng et al., 2010; May & Supovitz, 2011; May et al., 2012) reveal that principals spend minimal amounts of time on instructional leadership activities.

While there are interventions such as the Wallace Foundation National School Administration Manager (SAM) Innovation Project (NSIP) (Goldring et al., 2015) that are meant to assist principals to free up time to focus on instruction, there is need for more research to understand how principals use their time in different contexts, including schools located within a range of economic and socio-cultural settings (e.g., rural, town, suburban, urban), schools led by male vs. female principals, and schools in which principals have varied leadership experience.

## 2. Methodology

### 3.1 Survey Design and Sample Selection

The Dimensions of School Leadership Survey (DSLS) comprised selected items from the ISSPP survey instrument (Leithwood & Day, 2007), which were applicable to the study. The wording of some items was modified to fit a United States context. Items in the DSLS survey instrument included information on demographics and professional experience, school characteristics, principals' work and time use, and principals' measures of their work practices; analysis is ongoing. The DSLS form and protocol were reviewed and approved by Missouri State University's Institutional Review Board (IRB) in March 2019.

The names, school addresses, and email addresses of all non-chartered public high school principals in the state of Missouri were obtained from a database maintained by the Missouri State Department of Elementary and Secondary Education (DESE) in July 2019.

Two modes of completing the survey were utilized simultaneously, namely: a link to an online version of the survey designed using Qualtrics (<https://www.qualtrics.com/reference>) and a paper version of the survey.

An envelope containing a cover letter including instructions and a link to the online version of the survey, an informed consent document, the paper survey instrument, and a postage-paid return envelope were mailed to each school address. As per the instructions, each principal was guided to complete either the online or paper version of the survey by a three-week mailing deadline. A blanket email alerting the principals of the impending survey mailing was sent to them one week in advance and three email follow-up reminders were sent at one-week intervals after the mailing.

Surveys were mailed to 503 high school principals. Thirty-one surveys were returned as undeliverable by the United States Postal Services. Twenty-three emails were received stating that the targeted principal had either retired or changed jobs. Following the first weekly reminder, twenty-six principals sent out-of-office automatic email responses indicating that they were unavailable until after the survey deadline. One hundred twenty-two surveys were returned (65 paper and 57 online). The response rate, based on the number of high schools, was 122 of 503 (24%). Based on the number of principals who received the survey before the deadline, the response rate was 29% (122 of 423). Twenty-four of the returned surveys (20%) were dropped from analysis because they were insufficiently complete, leaving a final sample of 98. Due to the relatively small size of the final sample, I conducted an analysis to examine the representativeness of these 98 schools relative to all non-chartered public high schools in Missouri. Based on the results, the schools led by the principals comprising the final sample constitute a representative sample of all chartered public high schools in Missouri in 2018, with the exception of the variable *instructional region*.<sup>2</sup> A summary of the analysis is available in the Appendix.

Forty (41%) surveys were completed online and the remaining 58 (59%) were completed on paper. It was noted that 45 (78%) of the principals who completed the paper version of the survey were from high schools classified as rural (DESE, 2018). The completed paper survey data was entered into an Excel worksheet and the resulting records were combined with those derived from the online responses. Unique identifiers were added to the records in the combined file. The Excel worksheet was imported into SPSS version 24.0 (2016) for data cleaning and analysis.

### 3.2 Description of Time-use Measurements

This paper focuses on the section of the survey instrument in which principals were asked to estimate the average number of hours per week they spent working in total and on various leadership activities, which were categorized into five leadership categories/tasks (see Table 2).

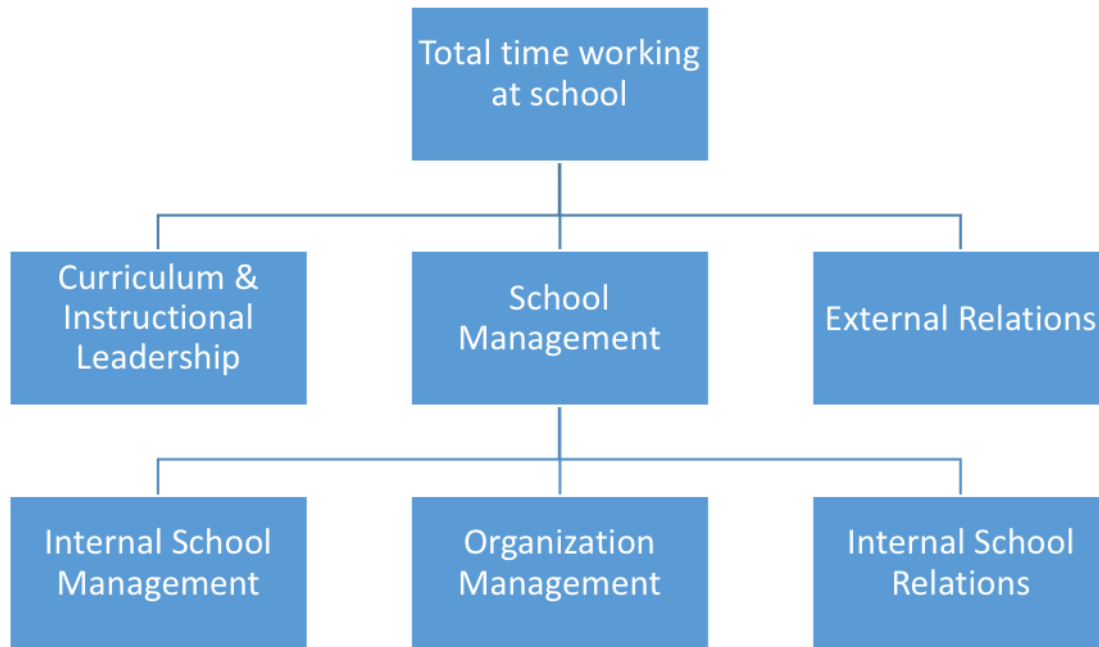
These categories and the related activities are similar to the ones used by Horng et al. (2009) to conduct an observational time-use study for all high school principals in Miami-Dade County Public Schools. For the purposes of these analyses, the five tasks are assumed to be non-overlapping and to encompass all possible activities such that, theoretically, total work time comprises time spent on each of the five tasks. Similarly, internal school management, organization management, and internal school relations are considered to be the three non-overlapping components of *school management*.

Response choices to the time-use item eliciting total hours worked per week were given as intervals in the following manner:  $\leq 10$ ; 11-20; 21-30; 31-40; 41-50; 51-60;  $> 60$ . Response choices to each of the remaining time-use items were given as follows:  $\leq 10$ ; 11-20; 21-30; 31-40;  $> 40$ . Values representing range midpoints were substituted to ease interpretation and to allow items to be added together. The interval ' $\leq 10$ ' was assumed to mean '0-10'. The open intervals ' $> 40$ ' and ' $> 60$ ' were assumed to have a width equivalent to the closed intervals, i.e., 10 (Hanneman, 2012). The calculated midpoints were rounded down to the nearest integer to ease discussion and visualization. The resulting substituted midpoint values for total hours worked per week included: 5; 15; 25; 35; 45; 55; 65. Substituted midpoint values for all other time-use items were: 5; 15; 25; 35; 45. The substituted values were utilized to compute two new time-use measurements for the analyses, specifically: (1) the sum of all five leadership task items and (2) the sum of the three leadership task items comprising school management. The hierarchical nature of the time-use measurements is depicted in Figure 1.

<sup>2</sup> Two eastern regions, St. Louis and Southeast, had especially low percents of schools in the response group (i.e., 11% and 9%) compared to the overall percent of 18.5. Refer to the Appendix for additional details.

**Table 2***Principals' time-use categories*

| Category                                | Associated tasks   |
|---|--|
| Curriculum and instructional leadership | <p>Focus on learning and teaching.<br/> Curriculum, instruction, and assessment.<br/> Focus on instructional time.<br/> Utilizing school meetings.<br/> Planning, directing after-school/summer instruction.<br/> Planning, facilitating professional development for teachers and prospective principals.<br/> Developing an educational program across the school.<br/> Releasing or counseling-out teachers.<br/> Evaluating teachers, providing instructional feedback.<br/> Coaching teachers.<br/> Using data to inform instruction.</p> |
| Internal school management              | <p>Managing student services (e.g., records, reporting).<br/> Supervising students (e.g., lunch duty, busing).<br/> Managing schedules (for the school and personal schedule).<br/> Fulfilling compliance requirements/paperwork.<br/> Preparing, implementing, administering standardized tests.<br/> Managing student attendance activities.<br/> Fulfilling Special Ed. requirements (e.g., meeting with parents).</p>  |
| Organization management                 | <p>School resources and budgets.<br/> Managing non-instructional staff.<br/> Developing and monitoring a safe school environment.<br/> Dealing with concerns from staff.<br/> Hiring personnel.<br/> Interacting or networking with other principals.</p>  |
| Internal school relations               | <p>School resources and budgets.<br/> Managing non-instructional staff.<br/> Developing and monitoring a safe school environment.<br/> Dealing with concerns from staff.<br/> Hiring personnel.<br/> Interacting or networking with other principals.</p>  |
| External relations                      | <p>Parents and community involvement and outreach.<br/> Federal, state, and district mandates.<br/> Utilizing district office meetings or other communications initiated by the district office.<br/> Communicating with district office to obtain resources for the school.<br/> Fundraising.</p>   |

**Figure 1***Hierarchy of time-use measurements*

### 3.3 Statistical Tests

Somers'  $d$  is a nonparametric measure of association which can be utilized when one of the two variables in a cross tabulation is dependent and both variables have an ordinal level of measurement. Its value ranges from -1 to +1, indicating a strong negative or strong positive association, respectively. For this paper, time-use variables were treated as the dependent variable whenever Somers'  $d$  was utilized. It is important to note that any dichotomous variable can optionally be regarded as an ordinal variable (Agresti, 2010) and consequently, it is valid to use it to assess a relationship between a dichotomous and an ordinal variable. I also used Cohen's kappa coefficient, which is a measure of agreement between two variables when they are measured on the same response scale and take on a limited number of distinct values (Chen, 2019). The simple observed percent agreement is corrected for chance and is normalized such that the coefficient takes on values ranging from -1 to +1, indicating perfect disagreement to perfect agreement, respectively.

The nonparametric Wilcoxon signed-rank test can be utilized with paired variables that are measured on either an ordinal or interval level (Sheskin, 2011). An additional condition is that the paired differences are a sample from a symmetric distribution. The signed-rank test accounts for the magnitude of the paired differences in addition to their sign (- or +). The Spearman's rank correlation coefficient (Lehmann, 2006) measures the strength of a linear association between two ordinal- or interval-level variables, with values ranging from -1 to +1, indicating a strong negative or strong positive linear association, respectively.

### 3. Results

The demographic and school characteristics of public high school principals in the state of Missouri included in the final sample of 98 respondents are displayed in Table 3.

**Table 3***Personal and school characteristics of the survey respondents*

| Variable  | Percent (%) |
|---|-------------|
| <b>PERSONAL CHARACTERISTICS</b>                                 |             |
| <b>Gender</b>   |             |
| Female  | 26          |
| Male  | 74          |
| <b>Age in years</b>   |             |
| <=45  | 43          |
| >45   | 57          |
| <b>Highest degree</b>   |             |
| Masters   | 21          |
| Specialist  | 51          |
| Doctorate   | 28          |
| <b>No. of years served as principal</b>                         |             |
| <=5   | 41          |
| 6-10  | 29          |
| 11-15   | 19          |
| >=16  | 11          |
| <b>No. of years served as assistant principal</b>               |             |
| None  | 41          |
| <=5   | 36          |
| 6-10  | 17          |
| 11-15   | 6           |
| <b>No. of years served as schoolteacher</b>                     |             |
| <=5   | 17          |
| 6-10  | 46          |
| 11-15   | 19          |
| >=16  | 17          |
| <b>Total no. of years worked in current school</b>              |             |
| <=5   | 35          |
| 6-10  | 25          |
| 11-15   | 14          |
| >=16  | 26          |
| <b>Total no. of years worked as principal in current school</b> |             |
| <=5   | 55          |
| 6-10  | 27          |
| 11-20   | 18          |
| <b>SCHOOL CHARACTERISTICS</b>                                   |             |
| <b>Location</b>   |             |
| Urban   | 5           |
| Suburban  | 19          |
| Rural   | 76          |
| <b>Total no. of enrolled students</b>                           |             |
| <=100   | 8           |
| 101-500   | 56          |
| 501-1000  | 14          |
| 1001-1500   | 8           |
| 1501-2500   | 13          |
| <b>Total no. of teaching staff</b>                              |             |
| <=20  | 15          |
| 21-50   | 54          |
| 51-80   | 9           |
| 81-100  | 9           |
| >=101   | 12          |
| <b>Students on free or reduced-price lunch (%)</b>              |             |
| <=20  | 10          |
| 21-40   | 19          |
| 41-60   | 39          |
| 61-80   | 24          |
| 81-100  | 8           |

### 4.1 Principal’s Work and Time-Use Items

Table 4 displays the six items from the “Principal’s Work and Time-Use” section of the survey questionnaire eliciting the average number of hours per week spent at school in total and on each of five leadership tasks, plus the two computed time-use variables.

**Table 4**

*Descriptive statistics for the time-use items and computed variables*

| Survey Items   | Minimum | Maximum | Median | Median <sup>1</sup> |
|--|---------|---------|--------|---------------------|
| On average, how many total hours/week do you work at school?                             | 45      | 65      | 55     | 55.7                |
| On average, how many hours/week do you spend on Curriculum and Instructional Leadership? | 5       | 25      | 15     | 10.8                |
| Internal School Management?  | 5       | 45      | 15     | 13.6                |
| Organization Management?   | 5       | 25      | 5      | 10.2                |
| Internal School Relations?   | 5       | 45      | 15     | 16.8                |
| External Relations?  | 5       | 25      | 5      | 6.3                 |
| Sum of All Tasks <sup>2</sup> ( <i>computed variable</i> )                               | 25      | 105     | 55     | 57.8                |
| School Management <sup>3</sup> ( <i>computed variable</i> )                              | 15      | 85      | 45     | 41.1                |

*Note.* <sup>1</sup> Median value under assumption of grouped data.

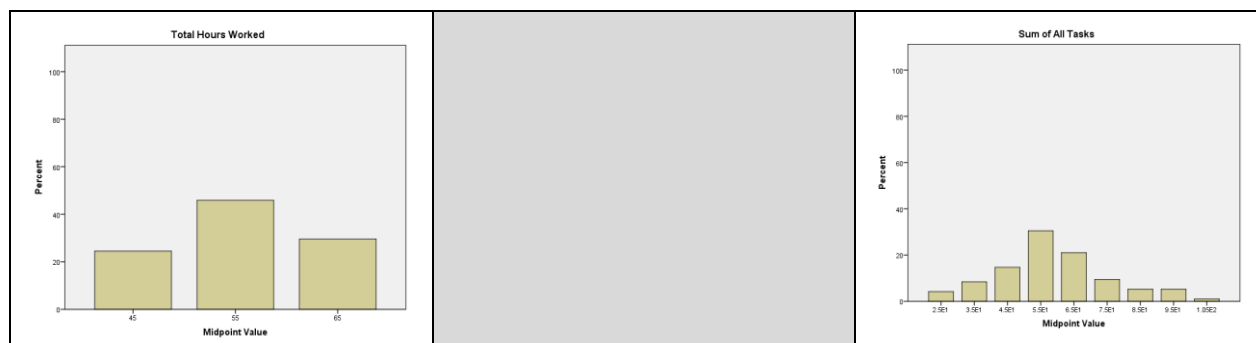
<sup>2</sup> The midpoint values assigned to each response level were summated for the five tasks for each respondent.

<sup>3</sup> The midpoint values assigned to each response interval were summated for the tasks Internal School Management, Organization Management, and Internal School Relations for each respondent.

Figure 2 shows the percent of respondents falling into each time interval, with the assigned midpoint values displayed as tick marks on the horizontal axes.

**Figure 2**

*Percent distributions of time-use variables*



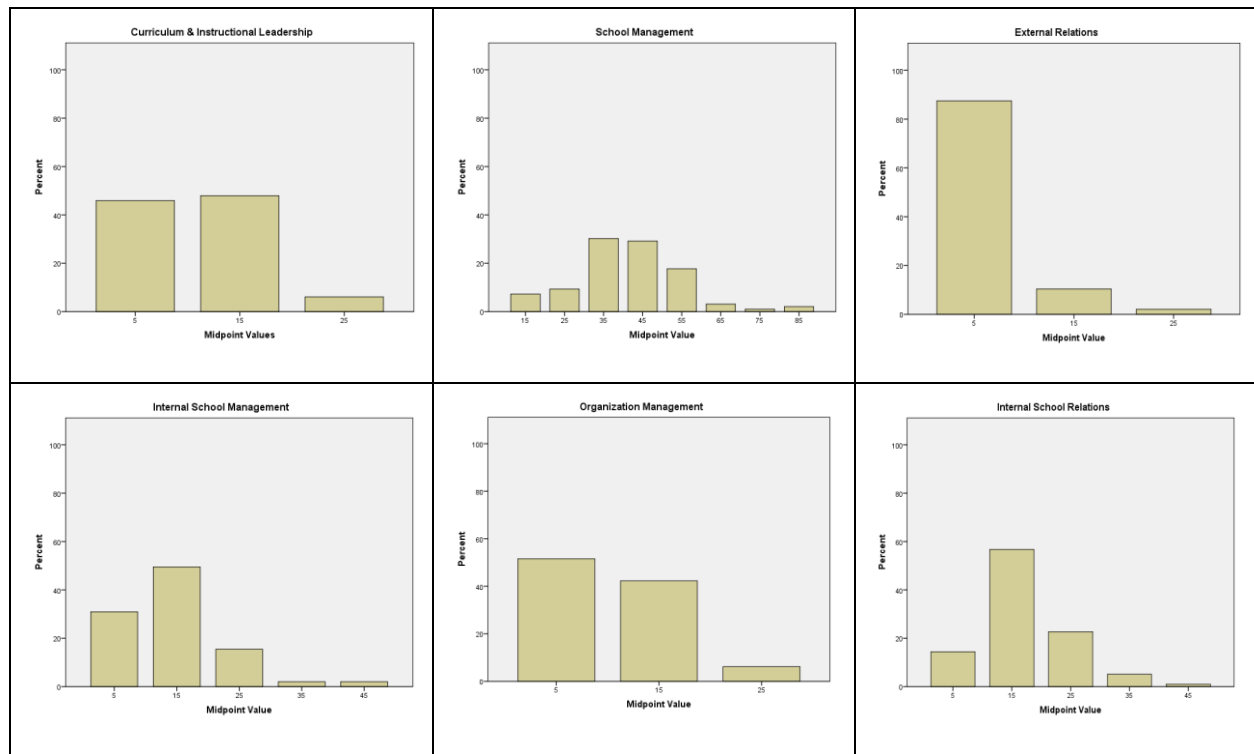


Figure 2 Row 1 allows a comparison of self-reported average total hours worked versus the computed total hours worked. The self-reported Total Hours Worked (THW) per week ranged from 45 to 65 (based on midpoints of the selected time intervals), with a median of 55 hours. The analogous computed variable *Sum of All Tasks* (SAT) ranged from 25 to 105 hours/week, with a median of 55 hours. As anticipated by virtue of the Central Limit Theorem, the frequency distribution of this computed variable simulates a normal distribution.

Figure 2 Row 2 permits a comparison of the three level-one divisions of time spent at work (see Figure 1). The self-reported hours per week spent on *Curriculum and Instructional Leadership* (CIL) ranged from 5 to 25, with a median of 15 hours. Only 6% of the respondents reported spending >20 hours/week on curriculum and instructional leadership activities. The computed variable *School Management* (SM) ranged from 15 to 85 hours/week, with a median of 45 hours. Like the computed variable SAT, its frequency distribution simulates a normal distribution in accordance with the Central Limit Theorem. Just 6% of respondents had a computed value corresponding to >60 hours spent on school management. Overall, principals reported spending less time on *External Relations* (ER). Responses ranged from 5 to 25, with a median of 5 hours. Only 2% reported spending >20 hours/week on external relations.

Figure 2 Row 3 displays the percent distributions of the three level-two divisions of time spent at work (see Figure 1), all of which are self-reported items. For the task *Internal School Management* (ISM), hours spent per week ranged from 5 to 45, with a median of 15. Just 4% indicated >30 hours/week spent on internal school management activities. Overall, principals reported spending fewer hours per week on *Organization Management* (OM), which ranged from 5 to 25 and had a median of 5 hours. Only 6% indicated >20 hours/week spent on organization management activities. Hours per week spent on *Internal School Relations* (ISR) ranged from 5 to 45, with a median of 15 hours. Just 6% reported spending >30 hours/week on internal school relations.

The reported value for total hours per week worked at school (*Total Hours Worked*) was cross tabulated against the computed variable *Sum of All Tasks* to examine congruence (see Table 5). For 30 principals, the values were the same (30/95 or 32%). For 26 principals, the reported value was greater than the computed value (26/95 or 27%). For the remaining 39 principals, the reported value was less than the computed value (39/95 or 41%). Cohen's kappa coefficient for this comparison was 0.10 ( $p=0.05$ ).

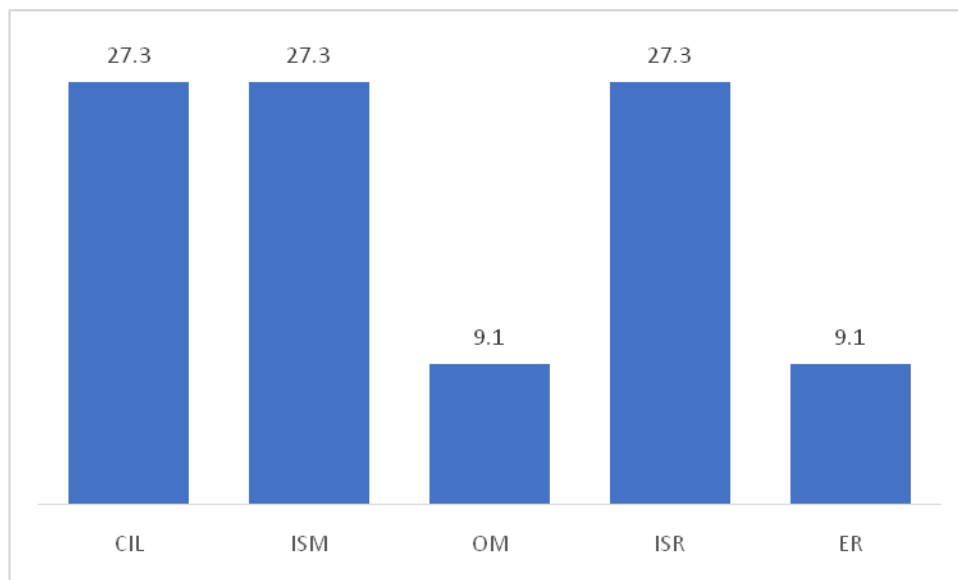


## 4.2 Estimated Allocation of Workweek by Leadership Categories

It was observed that the median value (55) for reported total worktime per week (*Total Hours Worked*) is the same as the median value (55) for computed total worktime per week (*Sum of All Tasks*). In addition, the sum of the median values for time spent per week on each of the five categories of leadership tasks is also 55, i.e.,  $15+15+5+15+5$  (see Table 4). This consistency provided reassurance that 55 hours per week could reasonably be chosen as the denominator for estimating the percent of the workweek spent in each of the five leadership categories by Missouri public high school principals. To this end, the median number of reported hours spent in each category was divided by 55. The results are displayed in Figure 3.

**Figure 3**

*Estimated Allocation of Workweek by Leadership Task*



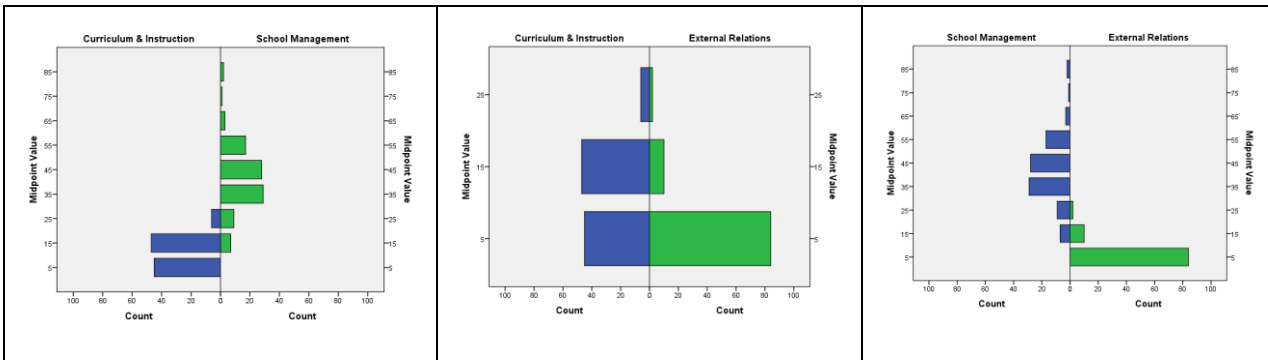
*Curriculum and Instructional Leadership*, *Internal School Management*, and *Internal School Relations* share the same estimated percentage (27.3), and *Organization Management* and *External Relations* share the same estimated percentage (9.1), of the workweek occupied by those tasks. Since *School Management* comprises ISM, OM, and ISR, the estimated percentage of time spent per week on *School Management* is 63.6, or just less than two-thirds.

## 4.3 Inter-relationships of Components of Total Worktime and School Management

The inter-relationships among the three component variables of total worktime were examined. The direction of each bivariate relationship can be discerned from the pyramid charts shown in Figure 4. Time spent on *Curriculum and Instructional Leadership* tasks is markedly shifted towards lower values, i.e., fewer hours/week, as compared to time spent on *School Management* tasks. In contrast, time spent on *External Relations* tasks is highly weighted towards the low end, with a majority of principals reporting <10 hours/week, as compared to either time spent on *Curriculum and Instruction* tasks or *School Management* tasks. It is noteworthy that *School Management* has a large, but nearly symmetric, spread of values in comparison to the other two components. This is an artifact of the manner in which it was computed.

**Figure 4**

*Pyramid charts of bivariate relationships of total worktime components*



The significance of these inter-relationships was assessed using the Wilcoxon signed-rank test. The results are displayed in Table 5. For each of the three paired comparisons, the difference in mean ranks was determined to be statistically significant by the Wilcoxon signed-rank test.

**Table 5**

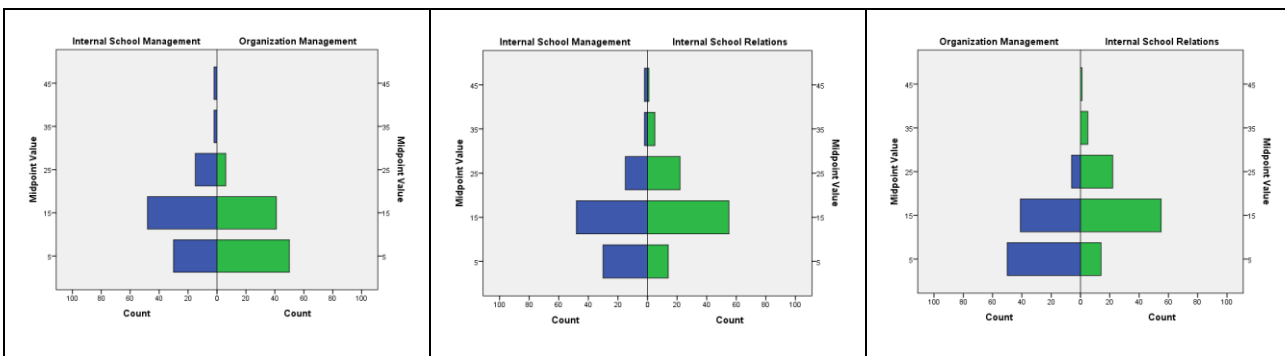
*Wilcoxon signed-rank test for components of total worktime*

|  | <i>CIL</i> |  | <i>SM</i>                            |           | <i>ER</i>  |
|--|------------|--|--------------------------------------|-----------|--|
| <i>Curriculum and Instructional Leadership (CIL)</i> |            |  | <i>z=8.434</i><br><i>p&lt;0.001;</i> | <i>2-</i> | <i>z= -5.294</i><br><i>p&lt;0.001;</i> <i>2-</i> |
| <i>School Management (SM)</i>                        |            |  |                                      |           | <i>z= -8.481</i><br><i>p&lt;0.001;</i> <i>2-</i> |

Similarly, the inter-relationships among the three component variables of *School Management* were examined (see Figure 5). Time spent on *Internal School Management* tasks is moderately shifted towards higher values, as compared to time spent on *Organization Management* tasks. In contrast, time spent on *Internal School Relations* tasks is moderately weighted towards higher values in comparison to time spent on *Internal School Management* tasks. *Organization Management* tasks is strongly shifted towards lower values, as compared to *Internal School Relations* tasks.

**Figure 5**

*Pyramid charts of bivariate relationships of School Management components*



The significance of these inter-relationships was tested using the Wilcoxon signed-rank test. The results are displayed in Table 6. The difference in mean ranks was determined to be statistically significant by the Wilcoxon signed-rank test for each of the three paired comparisons.

**Table 6**

*Wilcoxon signed-rank test for components of School Management*

|                                 | IM | OM                                    | ISR                                  |
|---------------------------------|----|---------------------------------------|--------------------------------------|
| Internal School Management (IM) |    | $z = -3.688$<br>$p < 0.001$ ; 2-sided | $z = 2.388$<br>$p = 0.017$ ; 2-sided |
| Organization Management (OM)    |    |                                       | $z = 5.884$<br>$p < 0.001$ ; 2-sided |

#### 4.4 Total Hours Worked by Personal and School Characteristics

Somers' *d* was used to examine principals' estimate of the average total hours worked per week by personal and school characteristics, including the following: gender, age, highest degree completed, years served as a principal, years served as an assistant principal, years served as a schoolteacher, years worked in current school, and years as the principal in current school. *Total Hours Worked* did not vary significantly by any of the personal characteristics using Somers' *d*. Next, the association between principals estimated total hours per week working at school was examined with respect to the three key school characteristics of interest, namely: location, enrollment, and percentage of students on free or reduced-price lunch. *Total Hours Worked* was not found to vary significantly by any of the school characteristics using Somers' *d*.

#### 4.5 Total Work time Components by Personal and School Characteristics

##### 4.5.1 Curriculum and Instructional Leadership (CIL)

Somers' *d* was used to examine the relationship between principals' estimated average number of hours per week spent on *Curriculum and Instructional Leadership* (CIL) activities and the eight key personal characteristics. Time spent on CIL activities was statistically significantly different based on gender (Somers'  $d = .283$ ;  $p = .014$ ). Female principals were more likely than male principals to report a greater number of hours spent on curriculum and instruction. The distribution of CIL did not vary significantly by any of the remaining personal characteristics. Hours spent on CIL activities was similarly assessed for its relationship with the three key school characteristics. Time spent on CIL activities was statistically significantly different based on enrollment ( $d = .280$ ;  $p = .008$ ), whereby principals in large schools (>500 enrolled) more frequently reported a greater number of hours as compared to principals in small schools. *Curriculum and Instructional Leadership* did not vary significantly by location or percentage of students on free or reduced-price lunch.

##### 4.5.2 School Management (SM)

The computed variable, *School Management* (SM) was assessed for its relationship with the eight personal characteristics of interest. Time spent on SM activities did not vary significantly by any of the personal characteristics based on Somers' *d*. Time spent on SM activities was likewise examined for its relationship with the three school characteristics of interest. *School Management* also did not vary significantly by any of the school characteristics based on Somers' *d*.

##### 4.5.3 External Relations (ER)

Principals' estimated average hours/week spent on *External Relations* (ER) activities was similarly assessed for its relationship with the key personal characteristics. Time spent on ER was statistically significantly negatively related to age (Somers'  $d = -.168$ ;  $p = .020$ ), years as a principal (Somers'  $d = -.117$ ;  $p = .024$ ), and years as principal in current school (Somers'  $d = -.117$ ;  $p = .032$ ), and weakly significantly related to years as an assistant principal (Somers'  $d = -.087$ ;  $p = .098$ ). Hours spent on ER activities did not vary significantly by the four remaining personal characteristics.

Further, an examination of time spent on ER activities was conducted to determine its relationship with the key school characteristics. *External Relations* did not vary significantly by any of the school characteristics based on Somers' *d*.

#### 4.6 School Management Components by Personal and School Characteristics

##### 4.6.1 Internal School Management (ISM)

Estimated average time spent on *Internal School Management* (ISM) was assessed for its relationship with the eight key personal characteristics. Time spent on ISM activities was statistically significantly positively related to highest degree completed (Somers'  $d=.171$ ;  $p=.044$ ). Amount of time spent on ISM activities was weakly significantly positively related to years spent as an assistant principal (Somers'  $d=.153$ ;  $p=.098$ ). *Internal School Management* did not vary significantly by the six remaining personal characteristics. Next, the relationship between principals' hours/week spent on ISM activities and the three key school characteristics was examined. *Internal School Management* did not vary significantly by any of the school characteristics using Somers' *d*.

##### 4.6.2 Organization Management (OM)

*Organization Management* (OM) was assessed for its relationship with the key personal characteristics. Estimated average time spent on OM activities was found to be weakly significantly positively associated with highest degree completed (Somers'  $d=.142$ ;  $p=.103$ ). *Organization Management* did not vary significantly by the seven remaining personal characteristics. Hours per week spent on OM activities was examined for its relationship with the key school characteristics. *Organization Management* was statistically significantly positively associated with school location (Somers'  $d=.248$ ;  $p=.035$ ), i.e., principals in suburban or urban schools were more likely to report a greater number of hours spent on this task than were their rural counterparts. Similarly, principals in large schools more frequently reported a greater number of hours spent on OM activities than did principals in small schools (Somers'  $d=.319$ ;  $p=.003$ ). However, time spent on OM activities did not vary significantly by the percentage of students on free or reduced-price lunch.

##### 4.6.3 Internal School Relations (ISR)

Estimated average time spent on *Internal School Relations* (ISR) activities was assessed for its relationship with the eight personal characteristics. *Internal School Relations* was statistically significantly negatively associated with years spent as an assistant principal (Somers'  $d=-.185$ ;  $p=.039$ ). Time spent on ISR activities did not vary significantly by the seven remaining personal characteristics. The estimated hours/week principals spend on ISR activities was assessed for its relationship with the key school characteristics. Principals from small schools reported a greater number of hours spent on ISR activities in comparison to principals from large schools (Somers'  $d=-.216$ ;  $p=0.045$ ). *Internal School Relations* did not vary significantly by either school location or the percent of students on free or reduced-price lunch.

#### 4. Discussion and Conclusions

Research from management studies indicate that time management skills can provide professionals in demanding workplaces with strategies for making more out of scarce time resources, allowing them to focus attention on high-priority matters in ways that may improve their overall job performance (Claessens et al., 2007). This study sought to describe how public high school principals in the state of Missouri reported spending their time to various leadership tasks. One question I sought to answer is whether the total time high school principals spend per week in school varies by personal and/or school characteristics. Principals reported working an estimated 41-70 hours per week at school, with most indicating 51-60 hours. The reported total work time was not found to be significantly related to any of the personal or school characteristics I examined. One explanation may be that the distribution of reported total work time was relatively narrow, i.e., all responses fell into one of three adjacent hours/week response intervals (41-50; 51-60; 61-70), with a central modal value of 51-60. Another explanation is that this variable is simply poorly measured, i.e., sensitive to recall error.

The work week of a principal can be relegated to three components, specifically, curriculum and instructional leadership (Blasé & Blasé, 2000; Spillane & Lowenhaupt, 2019), school management, and external relations (King, 2002), with the *expectation* that curriculum and instructional leadership will occupy the largest portion of time.

According to Green (2013), when a principal assumes a leadership role in a school, it is often expected that the individual will bring to the organization knowledge, expertise, and ideas that can be transformed into a shared vision for the enhancement of the school's programs and activities. Hence, I examined how principals distribute their total time at work per week performing leadership tasks among these three components.

The examination of these three time-use variables and their inter-relationships revealed the following worktime allocation pattern for Missouri high school principals: *School Management* >>*Curriculum and Instructional Leadership*>*External Relations*. The grouped median values provide clear evidence of this pattern (41.1>>10.8>6.3 hours/week). Using another approach, I estimated the percentage of time spent per week for each of the five leadership task categories and for the combined *School Management* category. The pattern of time spent based on percentages is the same as that based on median hours/week, i.e., *School Management* (63.7%) >>*Curriculum & Instructional Leadership* (27.3%) >*External Relations* (9.1%). This pattern is consistent with a large base of research that documents principals' spending more time on school operations/management (e.g., Leithwood et al., 2004; Lee et al., 1993; Knapp et al., 2006) compared to time on instructional leadership activities that are directly linked to student achievement.

I posit that principals who consider curriculum and instruction their highest priority are likely to 'find' time to allocate to instructional leadership tasks through better time management. This will require principals to focus simply on instructional leadership by knowing their time management priorities, which is just as important as knowing priorities for the role of the principal. By so doing, they will keep the main thing the main thing, to isolate and then focus on only the most vital, game-changing actions that ensure significant improvement in teaching and learning (Schmoker, 2017). Writing about change and leading knowledgeably, Fullan (2010) supports the stance of focusing on what matters saying, "There is too much overload and baggage on the current change journey. The skinny is about finding the smallest number of high leverage, easy-to-understand actions that unleash stunningly powerful consequences." (p. 16). According to Sergiovanni and Green (2015), principals who communicate the instructional vision and mission of the school, have a clear vision of the instructional excellence of the school they lead, and they develop a school climate in which instructional practices can be utilized. "They form partnerships with teachers and work collegially with their faculties, engaging them in building and sustaining learning cultures and identifying appropriate instructional strategies for different situations" (p. 203).

I also described the amount of time high school principals spend per week on the components of total work time, i.e., curriculum and instructional leadership, school management, and external relations, and explored their relationships to key personal and school characteristics. Nearly all principals reported spending, on average, 20 or fewer hours per week on activities related to curriculum and instructional leadership. Several studies (e.g., Day et al., 2009; Heck & Hallinger, 2009, 2010; Goldring et al., 2015; Loeb et al., 2013; Turnbull et al., 2019) provide support for the importance of principal's instructional leadership and advocate for increasing the time principals spend on curriculum and instruction for improved school outcomes, including teaching practices and higher student achievement. This finding is consistent with previous research showing a shortfall in this expectation (see e.g., Hallinger, 2005; Hallinger & Murphy, 1985; Grissom & Loeb, 2011; Grissom et al., 2015). In response to this shortfall, there are interventions such as The National School Administration Manager (SAM) Innovation Project (NSIP) (Goldring et al., 2015) that are aimed at supporting the principal to increase instructional time and decrease management time.

I found female principals and principals in large schools (>500 enrolled students) spent more hours per week than their counterparts on curriculum and instructional leadership activities. Principals in larger schools almost certainly have larger teaching staff to monitor and manage and are likely to have a larger number of course offerings to track. It is more difficult to hypothesize the gender association. Gender was not associated with any other time variable in our analyses. It was also not confounded with school size. While there is always the possibility that an association will be observed by chance, especially given a sample size of 98, principals' time use by gender warrants further research.

Time spent on school management activities per week was a computed variable and consequently had a spread larger than the reported values of its three individual components. I estimated most principals spent 30-60 hours per week on school management. Clearly, this would be a substantial portion of their workweek. Four of the eight personal characteristics of principals were found to be *negatively* related to time spent on school management, namely:

Age, years as a principal, years as a principal in the current school, and years as an assistant principal (weakly significant). The direction of these relationships suggests that older and/or more experienced principals have established management practices that are more efficient and/or effective than their younger or less experienced colleagues.

A large majority of principals reported spending 10 or less hours per week on activities pertaining to external relations. Not surprisingly, time spent on external relations was not found to vary by any of the personal or school characteristics that I examined. This may well be explained by the lack of spread in the responses.

According to Green (2017), school management is comprised of three components, namely: internal school management, organization management, and internal school relations. School management is associated with concepts such as organization, operations, resources, safety, efficiency, and effectiveness. I examined how principals distribute their time performing school management tasks among these three components and their inter-relationships. The examination revealed that Missouri high school principals are allocating their time on school management tasks in the following manner: internal school relations > internal school management > organizational management. The grouped median values corroborate this pattern (16.8 > 13.6 > 10.2 hours/week). This observation could be due to the distribution of school size in the sample (i.e., 64% of the principals led high schools with ≤ 500 enrolled students). Principals from smaller schools were found to spend more time on internal school relation and less time on organizational management than principals from larger schools.

Finally, I described the amount of time high school principals spend per week on the components of school management and examined their relationships to key personal and school characteristics. Most principals reported spending an average of 20 or less hours per week on internal school management activities. The principal's highest completed degree and years as an assistant principal (weakly significant) were both found to be positively related to time spent on internal school management. I noted that internal school management includes a variety of tasks that may appeal to different traits (see Table 2). Principals who have extended their formal education to the levels of specialist or doctorate may approach their job with a keener interest in meeting compliance requirements (e.g., standardized testing, IEPs) than principals with lesser degrees. Principals who spent a lengthy time as an assistant principal before ascending to the principal position may have become accustomed to managerial duties such as managing students as a significant focus of their job and have simply continued to do so as principal.

Nearly all principals reported spending 20 hours or less per week on organization management tasks. I found highest completed degree (weakly significant) was positively related to time spent on organization management, and principals in urban/suburban schools and those in larger schools (>500 enrolled students) spent more hours than their counterparts on organization management. In the sample, highest degree and location are both confounded with school size. Principals with a post-master's degree are more likely to work in larger schools and principals from urban/suburban schools are more likely to be from larger schools as compared to their respective counterparts. Larger schools have both bigger instructional and non-instructional staffs, more physical facilities, and more complex budgets to oversee as compared to smaller schools.

Most principals spent 20 hours or less per week on activities related to internal school relations. Years spent as an assistant principal was *negatively* related to time spent on internal school relations, and principals from smaller schools (≤ 500 enrolled students) spent more hours per week on internal school relations than their counterparts. In these data, years spent as an assistant principal was confounded with school size, i.e., current principals of larger schools are more likely to have spent a longer period of time in the role of an assistant principal than their smaller school counterparts. Principals of smaller schools may form closer relationships with students and parents, expressed as more one-on-one counseling or communication, compared to principals from larger schools. Additionally, in a smaller school, regular attendance at school activities, i.e., promoting school spirit, may take on more importance than in a larger school.

This study shows that time management matters for principals, especially at the high school level where principals face a larger number of competing time demands. If principals should engage in work which most improves teaching and learning, then they have to be deliberate in apportioning most of their time to those activities that have the greatest impact on teachers' instructional practices. State and district leaders may want to consider what additional supports, if any, are necessary for principals to be effective instructional leaders.

Further work is needed to examine principals work patterns to understand whether principals of schools at different school grade levels, poverty levels, or student performance in state exams allocate time differently based on different pressures or expectations.

Several limitations are underscored for this study. First, collected data is based on principals' self-reports. It is possible that principals either underestimated or overestimated time spent on the leadership tasks. Caution should be taken when interpreting the results. Second, and most important is that self-ratings on the time management instrument are likely to be imperfect assessments of actual time management skills and behaviors, raising the potential for bias. Third, the study focuses on high school principals and does not include middle or elementary principals. The pressure and expectations might be different for different school levels. Further exploration is recommended in this area with a large sample size.

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## Appendix

### Examination of the Representativeness of DSL Survey Respondents

#### File Construction

In July 2020, a data file was downloaded from the DESE data portal containing information on each currently operating public school in the state of Missouri in 2018, including the county district code, school code, and 2018 Missouri School Improvement Program (MSIP5) performance statistics. From this data file, schools with an end-grade <12 and any schools in operation for <3 years were excluded. There were 525 remaining records. These records are *assumed* to represent those high schools which were contacted in 2019 to complete and submit the DSL survey, either by mail or online. The unique identifier common to the working file containing the DSL survey instrument data was the school name (fieldname Building). The school names were reconciled to ensure that they were in the same text case (i.e., mixed case) and did or did not have extraneous letters or symbols. Both files were checked for



potentially duplicate school names (e.g., Central High School); those names were adjusted as needed to avoid a mismatch. Both data files were sorted on school name and matched by school name. One of the 98 DSL records was not matched to a DESE record. That record was for Success High School in the Kansas City 33 school district. A matching record was not found in either the 2018 or 2019 complete data files downloaded from DESE containing school-level information.

A third data file was downloaded from NCSE containing the Missouri county district and school codes, school name, and additional information, including a location code (i.e., rural, town, suburb, and city with subcategories), magnet (yes/no), charter (yes/no), number of students, number of teachers, student/teacher ratio, number of students on free lunch, and number of students on reduced-price lunch. The source of the NCSE data is the public-school data for 2018-19 from the Common Core of Data, U. S. Department of Education. Records for Missouri schools were selected whose highest grade was 12; 13 records for charter schools were deleted. There were 562 remaining records. The data file was checked for potentially duplicate key fields (i.e., county district code plus school code). The NCSE and merged DESE-DSL data files were sorted on the key fields and matched by the key fields. Nineteen of the 525 DESE-DSL records did not match an NCSE record. Only the records holding DESE information were retained, such that the merged NCSE-DESE-DSL data file contained  $n=525$  records. A new code was created to indicate those records belonging to the DSL survey respondents' schools ( $n=97$ ) and those belonging to *assumed* non-respondents' schools ( $n=428$ ).

A map was retrieved from DESE displaying the division of Missouri's 115 counties into nine instructional regions. The region labels and county codes were entered into an Excel worksheet and imported into SPSS. The county code was extracted from the county district code to create a matching field in the merged NCSE-DESE-DSL data file. Both data files were sorted on the key field (i.e., county code) and matched by the key field in order to add the instructional region label to the merged data file.

### Summary of Statistical Tests and Conclusions

Relevant variables in the merged NCSE-DESE-DSL data file were examined using appropriate statistical tests to compare responses between respondents' and non-respondents' schools. Respondents' schools did not differ significantly ( $p<.05$ ) from non-respondents' schools by location (i.e., rural, town, suburb, city) as tested by the chi-square test of independence ( $X^2 = 2.59$ ; 3 d.f.,  $p=.459$ ). However, a lack of independence between instructional region and response status was evidenced ( $X^2 = 24.2$ ; 8 d.f.,  $p=.002$ ). In particular, principals from high schools in the West Central and Southwest regions were more likely (33% and 30%, respectively) and principals from the St. Louis and Southeast regions were less likely (11% and 9%) than principals overall to be respondents.

The number of students or teachers, the student/teacher ratio, the number of students on free lunch, and the percent of students on free or reduced-price lunch did not differ significantly by response status as tested by the nonparametric Mann-Whitney  $U$  test of equality of mean ranks (see Table A1). The number of students on reduced price lunch was statistically significantly different between groups, wherein the mean rank was higher for respondents than for non-respondents (279.98 vs. 247.30).

Missouri mandated performance assessment statistics were compared by response status (see Table A2). The 2018 percent of students proficient or advanced among all students (SL-1) did not differ significantly by response status for communication arts or math based on the  $t$ -test for the equality of means, but did differ statistically significantly for social studies, wherein the mean was higher for respondents than for non-respondents (64.41 vs. 59.79). The current percent of students proficient or advanced among the super subgroup of students (SL-2) did not differ significantly by response status for communication arts, math, or social studies based on the  $t$ -test for the equality of means. SL-5, current 4-year graduation rate, was tested using the nonparametric Mann-Whitney  $U$  test of equality of mean ranks and did not differ significantly by respondent status.

I conclude that, on the basis of this analysis, the principals who returned completed survey instruments for the Dimensions of School Leadership Survey (DSLS), either by mail or online, led Missouri public high schools which were representative, with the exception of two eastern instructional regions, of the pool of all non-chartered Missouri public high schools in the year 2018 and therefore constitute an unbiased sample of principals of such schools. I acknowledge that the power to detect statistically significant differences between subgroups is not optimal because of the low return rate; however, the collective responses from those principals who returned completed DSL survey instruments are indeed valid.

**Table A1***Non-parametric tests of equivalency of mean ranks*

| Variable   | Mann-Whitney<br><i>U</i> | Significance<br><i>p</i> |
|--|--------------------------|--------------------------|
| <i>from NCES</i>                                   |                          |                          |
| No. of students                                    | 18,307.5                 | .287                     |
| No. of teachers                                    | 18,414.0                 | .326                     |
| Student/teacher ratio                              | 18,789.5                 | .490                     |
| No. of students on free lunch                      | 19,567.0                 | .930                     |
| No. of students on reduced price lunch             | 17,137.5                 | .048 <sup>a</sup>        |
| Percent of students on free or reduced-price lunch | 21,422.0                 | .177                     |
| <i>from DESE</i>                                   |                          |                          |
| SL-5: Current 4-year graduation rate               | 21,189.0                 | .693                     |

<sup>a</sup> mean rank: respondents 279.98; non-respondents 247.30**Table A2***T-tests of equivalency of means*

| Variable   | <i>t</i> | Significance<br><i>p</i> |
|--|----------|--------------------------|
| <i>Academic achievement</i>  |          |                          |
| SL-1: Current percent proficient or advanced in communication arts | 1.52     | .128                     |
| SL-1: Current percent proficient or advanced in math               | 1.79     | .075                     |
| SL-1: Current percent proficient or advanced in social studies     | 2.25     | .025 <sup>a</sup>        |
| <i>Subgroup achievement</i>  |          |                          |
| SL-2: Current percent proficient or advanced in communication arts | 0.88     | .377                     |
| SL-2: Current percent proficient or advanced in math               | 1.11     | .269                     |
| SL-2: Current percent proficient or advanced in social studies     | 1.57     | .117                     |

<sup>a</sup> mean (standard deviation): respondents 64.41 (15.59); non-respondents 59.79 (18.37)