

INVESTIGATING THE CONNECTION OF THE STUDENT-TO-ADMINISTRATOR RATIO
AND ADMINISTRATIVE ROLES IN RELATION TO STUDENT ACHIEVEMENT IN
INDIANA PUBLIC HIGH SCHOOLS

A RESEARCH PAPER

SUBMITTED TO THE GRADUATE SCHOOL

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE

DOCTOR OF EDUCATION

BY

CRAIG ANDREW MCCAFFREY

DR. JOSEPH MCKINNEY - ADVISOR

BALL STATE UNIVERSITY

MUNCIE, INDIANA

MAY 2014

Dedication

This dissertation was written in dedication to my parents Silas (Andy) and Priscilla McCaffrey. My father, Andy taught me to give of one's self to help others as he did as a member of the United States Army in the Vietnam War. The sacrifices my father made defending freedom and the rights of others permitted me to earn this doctorate tuition free as a result of the injuries he sustained in combat. My mother, Priscilla instilled in me a quiet calm and confidence that allowed me to endure this daunting task. She always led by example and no matter how stressful the situation she always remained calm and persevered.

I thank both of you for making me the person I am today!

Acknowledgements

First, I would like to acknowledge my loving and supportive wife Tracy without whom none of this would be possible. Her willingness to make sacrifices and sometimes be a single parent while I worked on my dissertation is truly what allowed me to reach this milestone. I will not be able to thank her enough.

Secondly, to my two daughters, Olivia and Alexa, no father could ask for more and I feel blessed to have both of you in my life. Both of you have sacrificed time with me and I will be forever grateful for the smiles and encouragement each of you has given me.

I would like to thank Dr. Joseph McKinney for stepping in and being my chair for the last half of this process. Your help and guidance are truly appreciated. To my committee members, I thank each of you for your time and dedication to maintaining the status of higher education and helping me obtain my. Dr. Lynn Lehman and Dr. Jeff Swensson thank you for stepping in to join my committee in the final stages of this process. I feel fortunate that quality educators such as you are members of my committee. Dr. James Flowers, thank you for your out-of-department perspective on my work and a special thank you for conference calling in while on vacation to give my feedback on my proposal. That is truly an example of a dedicated instructor.

I would also like to acknowledge Dr. William Sharp who was my advisor and mentor during a majority of my Educational Leadership program and was with me all the way through the proposal process. You are a big reason why I made it this far.

Finally, I would like to recognize all of the hardworking public educators in our state and the United States. Keep doing what is right for students and continue to be students yourself. Don't let anyone convince you that it is easy to be an educator. Get as many degrees as you can!

Table of Contents

List of Tables.....	iii
List of Figures	vi
Chapter 1: Introduction to the Study	1
Statement of the Problem.....	3
Purpose of the Study.....	5
Significance of the Study	6
Research Questions.....	6
Delimitations.....	7
Definitions.....	8
Chapter 2: Review of Related Literature	10
Evolution of the Principal’s Job Description.....	10
Analysis of Three Key Studies Focused on the Principal’s Duties	21
How the Principal Duty Pyramid was Constructed from the Three Major Studies.....	39
Review of Research Relating to Student Ratios and School Finance.....	46
Summary	62
Chapter 3: Research Methodology	63
Population	63
Instrumentation	65
Research Design.....	67
Procedures.....	70
Data Analysis.....	72
Chapter 4: Results.....	75
Demographic Results	77
Research Question 1.....	80
Research Question 2.....	89

Research Question 3.....	98
Research Question 4.....	103
Chapter 5: Summary of the Study.....	104
Discussion of the Findings.....	105
Research Question 1.....	107
Research Question 2.....	110
Research Question 3.....	116
Research Question 4.....	117
Implications for Practice	119
Recommendations for Further Research	121
Appendix A: Principal Duty Pyramid (PDP).....	124
Appendix B: Survey Instrument.....	125
Appendix C: Informed Consent.....	131
Appendix D: IRB Proposal.....	134
References.....	161
Curriculum Vitae.....	173

List of Tables

Chapter 2: Review of Related Literature

Table 2.1: Norton's Rating Index of Problem Comparison	16
Table 2.2: Principal Leadership Responsibilities: Average r.....	25
Table 2.3: 42 Tasks of an Effective School Principal and Related General Categories...28	
Table 2.4: Instructional Management Ratings of the Principals.....	37
Table 2.5: Comparison of School Administrators/Student Ratios & School Rankings...48	
Table 2.6: Summary of Major Class Size Reduction Studies.....	52

Chapter 3: Research Methodology

Table 3.1: Required Sample Sizes for N=363 Based on % Confidence & % Error.....	64
---	----

Chapter 4: Results

Table 4.1: Participants Gender.....	77
Table 4.2: Participants' Age Range.....	78
Table 4.3: Years of Teaching Experience (non-administrative).....	78
Table 4.4: Years in Current Position.....	79
Table 4.5: Total Years of Administrative Experience.....	79
Table 4.6: Participants Classification of School Setting.....	80
Table 4.7: Degree Level of Respondents.....	80
Table 4.8: Student-to-Administrator Ratio Categories.....	82
Table 4.9: Total Administrator Plus Support (TAPS) to Student Ratio Categories.....	82
Table 4.10: Student Overall Academic Achievement Determinations.....	83
Table 4.11: Final School Classifications using Administrator Ratio and Overall Academic Performance.....	84
Table 4.12: Tests of Normality on Dependent Variables.....	85

Table 4.13: Comparison of F and L Statistics in Nonparametric Multivariate Analysis of Variance.....	85
Table 4.14: Homogeneity of Variance Test Results for the Ratio Total Administrator (RTA) Group.....	86
Table 4.15: Comparison of F and L Statistics in Nonparametric Multivariate Analysis of Variance (MANOVA).....	87
Table 4.16: Least Significant Difference (LSD) Pairwise Comparisons for Administrator -to-student Ratio Groups Comparing High Ratio to Low Ratio.....	88
Table 4.17: t-Test Results Two Sampling Assuming Equal Variances Comparing Responses from High Student-to-Administrator and Low Administrator-to-Student Ratio Schools.....	90
Table 4.18: Principals who Keep the Responsibility for Specific Administrative Duties	91
Table 4.19: Areas of Highest Connection of Administrative Duties.....	92
Table 4.20: Areas of Least Connection of Administrative Duties.....	92
Table 4.21: % of Principals who Keep the Responsibility for Specific Instructional Duties.....	93
Table 4.22: Areas of Highest Connection of Instructional Duties.....	94
Table 4.23: Areas of Least Connection of Instructional Duties.....	94
Table 4.24: % of Principals who Keep the Responsibility for Specific Organizational Duties.....	96
Table 4.25: Areas of Highest Connection of Organizational Duties.....	97

Table 4.26: Areas of Least Connection of Organizational Duties.....	97
Table 4.27: Summary of School Demographic, Performance, and Characteristic Data...	99
Table 4.28: At Risk Demographic Student Achievement Comparisons.....	101
Table 4.29: Student-to-Administrator Ratio and Administrative Support Ratio Compared to Overall Academic Performance.....	103

Chapter 5: Summary of the Study

Table 5.1: Average % of Duties Kept by High School Principal Based on Level of Student Achievement.....	111
Table 5.2: Duties Identified as Important Based on Responses from Principals with High Student Achievement.....	115
Table 5.3: Most Common Responses (median) to Key School and Principal Demographic Information Compared to their Ratio (high/low).....	116

List of Figures

Chapter 3: Review of Literature

Figure 1: The Principal's Duty Pyramid (PDP).....	23
---	----

Chapter 1: Introduction to the Study

The daily responsibilities of managing a high school in the United States of America can severely impact a principal's ability to lead a building and facilitating the changes necessary to improve student achievement. In the United States of America, principals of small schools and schools with inadequate fiscal and human capital resources may have similar job responsibilities as other principals even though they may have the same resources to complete daily tasks. These daily responsibilities have been made more difficult by the inception of the RISE evaluation system in Indiana which requires every teacher in the school be evaluated every school year (Indiana Department of Education, 2013). Completing a teacher evaluation is time consuming and can add many hours to the work day of a principal. While some school districts have added extra administrators to help compensate for the time consuming task, many have not. For those principals who have not received assistance for teacher evaluation, meeting the state-imposed mandate is extremely difficult. Inadequate human resources will hamper the ability of those principals to effectively enact change in their schools.

Educational research (Waters, Marzano, & McNulty, 2003) have shown two consistent factors in improving student performance: quality teachers and quality school leaders. The work of Waters et al. (2003) yielded a correlation of 0.25 between student achievement and building leadership. Similarly, in his meta-analyses, Hattie (2012) illustrated that quality administration had an effect size of 0.36 on student achievement, as compared to quality teaching which had an effect size of 0.44. An effect size of 0.44 correlates to an increase of 0.44 standard deviations on the student achievement outcome. One standard deviation increase is typically associated with advancing student achievement by two to three years, improving the rate of learning by 50% or

more (Hattie, 2012). The results of Hattie's work in relation to student achievement are significant, considering that school administrators do not instruct the students directly, and their impact on student achievement may at times be overlooked. Brown (2001) found a mean effect of $d = 0.57$ of leadership influences on student achievement and $d = 0.54$ on affective outcomes, which demonstrated that this impact could not be disregarded. Hattie (2012) pointed out two main types of leadership: instructional and transformational leadership. He states that instructional leadership creates a positive learning environment focused on high expectations and clear objectives (Hattie, 2012). Hattie then defines transformational leadership engages teachers in a way that inspires them to increase their levels of energy and commitment (Hattie, 2013). "The effects gained by principals were greater on instructional leadership dimensions (e.g., organization, $d=0.66$) than on transformational leadership dimensions (consideration $d=0.36$, inspiration $d=0.40$)" (Hattie, 2012, p. 83). The specific instructional leadership dimensions with the most impact on student outcomes were promoting and participating in teacher learning and development ($d=0.91$); planning, coordinating, and evaluating teaching and the curriculum ($d=0.74$); strategic resourcing ($d=0.60$); establishing goals and expectations ($d=0.54$); and ensuring an orderly and supportive environment ($d=0.49$).

While the impact of quality administration is an important factor in student achievement, the number and overall functions of administration are often overlooked by local and national communities. This is evidenced by the National Center for Education Statistics, which published a staff and student count report in May 2011 (Chen, 2011). This report provided tables showing the teacher-to-student ratio in each state, with Indiana having 3,187 school-level administrators. While the report broke down the student-to-teacher ratio for each state, it did not give a student-to-administrator ratio or a teacher-to-administrator ratio. Instead, the report set forth an

administrator and all other support staff-to-student ratio, which also included district-level administrators. In Indiana, this ratio was 24.2 to 1, as compared to 87.2 to 1 in Illinois, 15.0 to 1 in Kentucky, 27.2 to 1 in Michigan, and 23.0 to 1 in Ohio (Chen, 2011). The obvious problem with these statistics was that they included administrators (building and district levels) with all support staff and therefore did not provide an accurate picture of this ratio in terms of the building-level administrator.

The researcher has not been able to discover any studies that focus on student-to-administrator ratio as compared to student achievement. This brings up the question of if the number of administrators in a school is related to a positive outcome on student achievement. Is this number impacted by school size, socioeconomic status, student diversity, number of teachers, and/or geographic location?

Statement of the Problem

Recruiting and retaining competent administrators is a problem faced by many school districts. Malone and Caddell (2000) reasoned that the talent pool is declining because of time commitments and compensation. This shortage is more prevalent in high school than in elementary where an elementary assistant principal is almost two times as likely to pursue a principal position as compared to high school assistant principals (65% compared to 34%) (Pijanowski, et al. 2012). Pijanowski, et al. (2012, p. 92) state, “Principals identified stress (91%) and time required at work (86%) as the top two occupational deterrents for people who chose to opt out of school leadership after they meet the credential requirements.”

According to Salary.com (2012), the average salary of a top-of-the-pay-scale teacher was \$64,888. The National Association of Secondary School Principals (2010) listed the average pay

of a high school principal at \$102,387. Based on a 40-hour work week, on average a high school principal may make only \$5 per hour more than a top-paid teacher.¹ Too often the job of the principal is perceived as a position of ease and high pay when, in reality, it is a job of massive responsibility and full time commitment. Principals work full time but also will have evening commitments to attend school functions, meet parents, and meet other community members (U.S. Bureau of Labor Statistics, 2012). Many principals do not get the summer off and work year around preparing for the upcoming school year (U.S. Bureau of Labor Statistics, 2012). A report completed by the Connecticut Association of High School Principals found that in a survey of principals in the state that on average, high school principals put in 60–70 hour work weeks (Arpin, et al., 2004). This fact does skew the researcher’s prior data when calculating the hourly salary of both the teacher and the principal, since some teachers and some principals regularly work more than 40 hours per week. Along with a higher salary comes the tremendous responsibility of being a high school principal. Only those who have experienced working in this position can describe the degree of district, political, community, and self-imposed stress that can be put on a high school principal daily. These challenges cause potential and current principals to rethink their decision of entering the field of public school administration (Malone, Sharp, & Thompson Jr., 2000; Gilman & Lanman-Givens, 2001).

The focus of this research is to examine the relationship between student-to-administrator ratios in relation to student achievement and how principals share their responsibilities. A principal with limited resources may have difficulty completing day-to-day management responsibilities, let alone addressing teaching and learning. The researcher attempted to examine

¹ Figures were calculated on 40 hours per week and a 260-day contract for principals and a 184-day contract for teachers.

how many administrators a public high school required to fulfill all the daily job requirements, while providing a positive impact on student achievement.

Purpose of the Study

It is generally recognized that the job responsibilities of the high school principal are vast and wide ranging (Grissom & Loeb, 2011; Hallinger & Murphy, 1985; Waters, et al., 2003). It is also acknowledged by Grissom & Loeb (2011), Hallinger & Murphy (1985), and Waters, et al. (2003) that the responsibilities of a principal are the same, no matter what the size, demographics, and resources of the school district as demonstrated by the general similarities in the tasks they surveyed. When researchers address the job responsibilities of the principal, little consideration is given to the size of the school, the poverty rate, the special education percentage, or the number of administrators available in support positions. A principal who possess more administrative personnel in support will delegate duties to subordinates to complete daily while still maintaining the responsibility for the task. A principal with no additional administrative personal not only retains all of the responsibilities but also the completion of the day-to-day duties of each.

While previous research has identified the impact of class size on student achievement, no studies have been found that focus on the administrative personnel in a school, in relation to the student-to-administrator ratio and student achievement. Currently, there is no commonly agreed upon formula for determining the number of administrators a high school requires to be effective. Because there are no researched-based guidelines for school boards and superintendents, this study aims to establish the relevant factors to consider when deciding how much administrative support to provide a high school principal. In most cases, school size is the

related factor used to determine administrative capacity, with little attention given to other criteria, such as poverty rate or percentage of special education students. This study attempts to examine the relationship between administrator-to- student ratios in relation to student achievement and how principals share their responsibilities with others.

Significance of the Study

The merits of this study include providing a greater depth of knowledge on how the number of administrators in a school (expressed as a ratio of students to administrators) may have a connection with student achievement on various standardized measures. Currently, no known research addresses this issue. This study can provide research-based guidelines to superintendents in determining the administrator staffing requirements at a high school. This study also attempts to recognize the most successful high schools and analyze how the principal divides assigned duties among administrative assistants.

The results of this research will suggest to the leaders of public school districts the suggested factors that could impact how many high school administrators to employ at high schools of various sizes. This research will also guide principals on the best ways to delegate the assigned duties in order to reach optimum student achievement. Information gathered from this study could contribute to the limited body of knowledge currently available about appropriate administrative numbers in public high schools and encourage other researchers to further investigate this topic.

Research Questions

1. Is there a relationship between the student-to-administrator ratio of a high school and student achievement?

- a. Hypothesis: Schools with low student-to-administrator ratios have students who perform higher academically.
2. For high schools that have the following designations, what are the patterns of delegation (job duties) administrative team's exhibit in their day-to-day operations?
 - a. high student achievement and low student-to-administrator ratio
 - b. low student achievement and low student-to-administrator ratio
 - c. high student achievement and high student-to-administrator ratio
 - d. low student achievement and high student-to-administrator ratio
 3. Is the student-to-administrator ratio in each high school influenced by the factors of school size, geographic location, school socioeconomic status, number of teachers, and/or number of minority students in the school?
 4. Does the evidence gathered from the results of this study suggest a method for determining the number of administrators to employ in a high school based on the number of students enrolled?

Delimitations

1. Only public high school principals in Indiana were included in this study.
2. Some public high school principals are also responsible for other grade levels, for example a 7-12 format. These principals were asked to only answer the survey questions based on their work with grades 9-12. This may be a difficult separation for them to make.
3. Some principals have very little experience in this position because they may be new to the district, which has the potential to impact their survey responses.

4. The financial situation of each school district was not taken into account in this study.
5. The experience level of other administrators (assistant principals, deans, etc.) will not be taken into consideration in this study.

DEFINITIONS:

Definitions with no source listed are defined by the researcher for the purpose of this study.

ADMINISTRATIVE LEADERSHIP – The leadership duties of the principal that focus on the more routine tasks that comply with local, state, and federal regulations, procedures, and policies (Grissom & Lobe, 2011; Waters et al., 2003; Hallinger & Murphy, 1985).

ASSISTANT PRINCIPAL or VICE PRINCIPAL - The administrator(s) directly under the principal in terms of building authority.

ASSOCIATE PRINCIPAL – Some schools have an administrative format where the associate principal falls solely and directly under the principal in terms of school authority. The assistant principal(s) then become(s) third in line in terms of building authority.

DEAN OF STUDENTS –The administrator or quasi-administrator under the assistant principal(s) in terms of building authority and whose primary duties are student discipline and attendance. In some schools, the dean of students is not required to have an administrator’s license.

GUIDANCE COUNSELOR - A counselor and an educator in a high school who provides advice and direction to students on academic, career, college access, and personal matters.

GUIDANCE DIRECTOR – A guidance counselor who is the head or lead counselor in the high school.

INSTRUCTIONAL LEADERSHIP – The principal’s leadership duties that focus on curriculum, instruction, evaluation of instruction, evaluation of teachers, professional development, and monitoring student progress (Grissom & Lobe, 2011; Waters et al., 2003; Hallinger & Murphy, 1985).

EFFECT SIZE (*d*) – Expression of the magnitude of study outcomes for many types of variables. Example: An effect size of 1.0 indicates an increase of one standard deviation on the outcome (Hattie, 2012).

ORGANIZATIONAL LEADERSHIP – The principal’s leadership duties that focus on building school culture, setting goals and direction, working with stakeholders, and managing resources. These leadership duties are greatly influenced by the ideals and beliefs of the principal (Grissom & Lobe, 2011; Waters et al., 2003; Hallinger & Murphy, 1985).

PRINCIPAL – The school’s lead administrator designated by the school corporation and listed by the Indiana Department of Education.

PRINCIPAL'S DUTY PYRAMID (PDP): Figure created for this study illustrating the principal's 51 job duties spread across three general categories: organizational, instructional, and administrative leadership (Figure 1 in Chapter 2 and Appendix A).

PSEUDO AMINISTRATOR: A member of the school personnel who is not employed as an administrator, but may complete one or more administrative tasks (as defined by the PDP) during the school day or academic year.

TEACHER ON SPECIAL ASSIGNMENT (TOSA) - A classroom teacher who has been assigned duties during the school day other than directly instructing students. Examples include, but are not limited to grant writing, student discipline, and instructional coaching. For the purpose of this study, a teacher who supervises the lunchroom during the school day is not considered a TOSA.

TRADITIONAL PUBLIC HIGH SCHOOL – Defined as a public high school in the United States of America that is not a charter nor an online high school.

Chapter 2: Review of Related Literature

Evolution of the Principal's Job Description

This section reviews research and literature on the role of the principal in the United States of America and how this role has evolved in some ways and stayed the same in others over the past 85 years. This section outlines how the core responsibilities have changed only slightly since the 1920's, with the loss of teaching responsibilities and addition of new duties over time with few deletions. While this research was not an in-depth study on the evolution of the principal's responsibilities over time, it is important to understand how these factors have impacted the current duties of the position.

The 1920's Principal

What are a principal's duties involving the day-to-day operations of a high school? Feelhaver (1927) conducted research on high school principals in Nebraska to analyze their daily tasks and how much time they spent on these activities. Some of the activities listed were as follows: meetings (with superintendent, teachers, parents, and students), managing the school schedule, managing buildings and grounds, discipline and attendance, visiting classrooms, committee work, professional reading, supervising students, attending events, completing reports, and participating in community activities. While anyone who is a current or past principal will agree that these items are very familiar, many will find it remarkable that his research was completed in 1927. Admittedly, other items on Feelhaver's list (teaching classes, class preparation, helping pupils, and grading papers) date his work, since most public school principals today do not teach a regular course load as is shown in the work of Waters, Marzano,

and McNulty (2003), Hallinger and Murphy (1985), and Grissom and Loeb (2011) none of which list “teaching classes” as a duty of the principal in their research.

Interestingly, Feelhaver’s work (1927) created principal subgroups based on school size, i.e., the number of students, namely, less than 100, 100–199, 200–299, 300–399, 400–499, and 500 and over. He stated, “In the largest schools, approximately one-third of the school day is devoted to instructional supervision. From these findings it is shown that the principal in the largest schools is primarily an administrator and supervisor” (Feelhaver, 1927). Prior to and during the 1920s, the term principal was derived from “principal teacher” or “head teacher”. The head teacher was the most senior teacher, leader, and manager of the school. In Feelhaver’s study, principals of schools with less than 100 students spent on average 56% of their day teaching, while those with 100 to 199 students devoted 47% of their day teaching. In schools of 200–299 and 300–499 students, the principal’s teaching time dropped to 29% and 24%, respectively. In schools with 500 or more students, no data was recorded by Feelhaver, implying a negligible amount of teaching time spent by the principal.

The 1950’s Principal

As the principal’s job progressed into the 1950s, Fulton (1951) published a paper which outlined some of the major criticisms against school administrators. The first criticism was the age of the principal as being either too old or too young. The older administrator was viewed as being set in his/her ways and just cruising to retirement. The younger administrator might make a lot of mistakes in judgment and have too many new ideas. We see this dichotomy of the age and experience of the principal going through changes, as reported in the Schools and Staffing Survey 2010. “The percentage of experienced public school principals was lower in 2007–2008

than in 1999–2000 at both secondary and elementary schools” (Aud, et al., 2010). The report showed that in 2007–2008, about 36% of public secondary school principals had 3 or fewer years of experience as a principal, compared to 30% in 1999–2000.

Fulton also stated that principals were often criticized by teachers for getting top pay sitting in an office the entire day. “The daily administrative routine is a bit of a mystery to the average teacher” (Fulton, 1951). Fulton also pointed out that principals were often criticized for “promising and forgetting”: “This could be an accurate statement. An administrator may have so many problems, he forgets his promises” (1951).

As examined by Conant (1959), the rise of the comprehensive high school as a result of school consolidation created a high school that was more democratic and could service the needs of all students. One of Conant’s big concerns was that many high schools were too small to provide a truly comprehensive education.

He states, "the prevalence of such schools - those with graduating classes of less than one hundred students - constitutes one of the serious obstacles to good secondary education throughout most of the United States. I believe that such schools are not in a position to provide a satisfactory education for any group of their students--the academically talented, the vocationally oriented, or the slow reader" (p. 80).

This push toward comprehensive and consolidated high schools slowly began to change the role of the principal to focus on all students including those who are academically talented, vocationally oriented, and/or may have problems reading. The diverse needs of many students, all now under one roof, caused the principal to evolve and develop many skills that allowed him/her to serve many needs from creating a rigorous high level honors program along with a

robust vocational training program. All of these programs had one goal which was to make our students productive citizens of a democracy.

The principal was also charged with making sure that the classroom could serve the needs of all students. While Conant did not believe in tracking he did believe in courses tailored to the specific student needs in subjects like math. However, Conant did not believe that social studies classes should be divided by student skill level. He thought it was an important part of a democracy for social studies classes to represent a cross section of many different types of students so that discussions could truly represent a cross section of our country.

The 1960's Principal

In the 1960s, Moody (1968) described the "Plight of the Principal".

Pity the poor principal! He must be a manager, supervisor, psychologist, financial wizard, master of law, public relations specialist, public speaker, school and community leader, a first aid specialist; and through it all, he must be a good guy as well. He must be understanding, fair, reasonable, flexible, patient, stable, and always available – at school and elsewhere. He must inspire, ameliorate, mediate, organize, sponsor, attend, and react properly to pressures. He must try to avoid controversial comments about civil rights, segregation, integration, busing, socialism, automation, strikes, boycotts, unions, protests, the draft, Vietnam, George Wallace, the Dow Chemical Company, and even Custer's last stand. (p. 543)

When reading the first half of this passage, one would think that Moody was describing the typical day-to-day job of a high school principal in 2014. It is not until the last sentence about

issues like ‘civil rights’ and ‘Vietnam’ that the reader begins to realize this article is dated. However, one could substitute words like ‘homosexuality’, ‘Iraq’, and 9/11 while still keeping words like ‘protests’, ‘unions’, and ‘racial inequality’.

From 1927 to 1968, some of the job responsibilities of the school principal seemed homogeneous with many similarities to that of today. The one major evolution was the gradual movement of the principal out of the classroom from the 1920s and 1930s into being a full-time administrator by the 1960s. The next major evolution occurred in the 1970s, as studied by Norton in 1972. Norton surveyed 121 high school principals ranging in experience from first year to 25 years, with the average being 7 years. The school sizes ranged from 50 to 2,100 students. Norton pointed out that while school size was reported, no data was analyzed based on school size because of the qualitative nature of the study. The questions to the respondents were open ended and answers were analyzed for common response themes. The purpose of the study was to identify common problems that principals faced.

The 1970’s Principal

According to Sizer (1976) the culture of American society now demanded pluralism and a “smorgasbord” of educational opportunities in opposition to “one best system” concept.

It is increasingly clear that persistent reassertion of “the one best system” simply will not do. There will inevitably be a powerful, if small, group of political “ins” who will persistently argue for the existence of a school system to hammer kids into their molds, in fact to assimilate all youngsters into nativist norms and patterns which this group finds minimally acceptable. (p. 34)

As the country begins to see a larger influx of non-public schools, alternative education and the push back to neighborhood schools the public school sector was forced to offer a new and different type of curriculum and experience that allowed students to be individuals and begin to move schools away from being the force to assimilate our students into our society which was in contrast to the “melting pot” concept.

Creating pluralistic concept schools added a new dynamic to the job of the high school principal. Now the principal must create a curriculum that offers individual options for students in contrast to the one size fits all model where students were either on a vocational track or an academic (college bound) track. Now a student could be on one, two, or many different tracks depending on everything from their personal interests to their cultural background. This pluralism would create extra stress on the resources of the school, both financial and human, to become experts in many areas. This was a daunting task as that everything from curriculum and instruction to scheduling and organization to policies and communication began to drastically change and create a new reality of problems for the principal to balance. This challenge was also compounded by a “small political power” (Sizer 1976) that wanted schools to stay the same and be the melting pot of assimilation for our country. This dichotomy of community and cultural needs would permeate every component of the principal’s job. A study of the problems principals face was completed by Norton (1972) and reviewed the 10 most common principals were facing at the start of this decade.

Norton’s study (1972) used a ratings index for each of 10 common problems/issues that principals encountered on the job. To calculate this index, he determined a degree of difficulty factor and multiplied it by the total number of responses for each classification. Norton noted the wide variance in the respondents as to the relative difficulty of each item and therefore he

understood that there would be questions raised about his determining a degree of difficulty for each. He explained that he had to use some arbitrary judgment to determine these factors. The researcher concurs that using arbitrary means to assign a difficulty rating to each area could lead to skepticism about his results. It appeared that Norton may not have taken much time in planning his work, as his data table seemed to be an afterthought. If the needed data had been collected, it could have helped quantify and justify this difficulty rating. If Norton had considered this issue before collecting his data, he could have developed a method of calculation. Below is Norton's table that classifies the kind of problems ranked by the principals along with their comparative index.

Table 2.1

Norton's Rating Index of Problem Comparison (1972)*

Rank	Kind of Problem	Comparative Rating Index
1	Problems of Pupil Personnel	1,741
2	Curriculum and Instruction	857
3	Problems of Teacher Personnel	847
4	Scheduling and Organization	662
5	General Problems	532
6	Parental Relations	441
7	Business Affairs	192
8	Records and Reporting	155
9	Communication	68
10	Policies and Regulations	32

*Ranked from most to least problematic.

An interesting finding on Norton's list was the item curriculum and instruction, which was listed as second most prevalent type of problem. This represented one of the foci on educational leadership in the 1970s, which corresponded to one of the main studies to be explored later in this review conducted by Waters, et al. (2003). Waters, et al. (2003) reviewed 30 years of research dating back to the 1970s. Curriculum, instruction, and assessment are one of

21 key leadership responsibilities studied in their research. This shows the importance of curriculum and instructional practices has been at the top of a principal's job responsibilities for the past 40 years. While this is at the top of Norton's list, second only to student issues, it cannot be ignored that 90% of this 'top ten' were items of organizational management which still continues to take most of the principal's time during the regular school day.

The 1980's Principal

In 1983 the publication for "A Nation at Risk" (ANAR) propelled The United States of America's educational system back into the spotlight with information that gave education reformers the information they needed to begin the accountability movement that still is present today. According to Ravitch (2011) this report called on states to create genuine curriculum standards in many subjects. The movement foundered when history standards came under attack due to state by state differing opinions about historical outcomes of many key events such as the civil war. This caused us as a nation the United States to fall back to the safety of standardized testing for basic skills which Ravitch (2011) states "...is a poor substitute for a full-fledged program of curriculum and assessments. In the tradeoff, our education system ended up with no curricular goals, low standards, and dumbed-down tests" (p. 22).

The start of the accountability movement, which will later lead to No Child Left Behind (NCLB), created a new world for the principal and now required schools to devote time and resources to administering standardized tests and work to undo the radical reforms of the 1960's and 1970's and begin the push back toward a one size fits all system that prepared students for these exams.

As Ravitch (2011) points out the irony of the ANAR report is what it did not say in its findings. ANAR did not support former US President Ronald Reagan's wish to abolish the U.S. Department of Education, it did not discuss heavy handed accountability and only briefly mentioned standardized testing. Even with this the ANAR report was used to launch accountability movement and change, yet again, the expectations of the school principal who was now a key figure connected to school accountability and student success.

This key focus on the principal continued to advance into the 1980s with one more significant evolution outlined by Trider and Leithwood (1988). This study was conducted using qualitative methods and focused on five key tasks of an effective principal in regard to students with special needs, as follows (Trider & Leithwood, 1988):

- Task 1: The identification of students with special needs
- Task 2: The modifications and implementation of student programs following identification
- Task 3: The identification, placement, and review of students
- Task 4: Interacting with parents
- Task 5: Post-placement programming and monitoring

This study focused on the attitudes and beliefs of the school principals and how they impact the school culture, as well as the students themselves. While Trider and Leithwood's work (1988) only used qualitative means to determine the impact on student achievement, it established the importance of the principal in relation to students with special needs. This focus on special education was noted in Grissom and Loeb's (2011) work, one of the three key studies outlined later in this dissertation. In their research, Grissom and Loeb (2011) pointed out that meeting special education requirements is a key responsibility of the school principal.

The Principal of the 1990's and 2000's

This era of education brought about the 2001 federal No Child Left Behind Act (NCLB), which increased the amount of accountability directly placed on schools by requiring adequately yearly progress toward a final goal of 100% proficiency by 2014. NCLB also placed hard sanctions on schools and school districts for not making progress toward this goal. The sanctions ranged from required remediation of students to the removal of all school staff (including the principal) and a private organization takeover of the school. Principals quickly began to realize that not only was their job attached to the performance of the students but also the jobs of many others.

Clotfelter et.al. (2007) studied the distribution of teachers and principals in high-poverty schools in North Carolina during this time of high accountability. Clotfelter et.al. (2007) found that principals in high poverty schools not only scored lower on their administrative exams but that they were also more likely to be forced out by a superintendent or moving to a school with a lower poverty rate. Clotfelter et.al. (2007) stated,

In addition, principals are under the scrutiny of the district and the public to a much higher degree than teachers and are more likely to be held individually accountable for school performance. As a result they may be more likely than teachers to leave the principalship or move to another school under duress or at the behest of a superintendent. This public scrutiny and accountability for student achievement could well result in higher turnover of principals in high-poverty schools, and also higher rates than before accountability pressures became widespread (p. 1368).

While there was distress in the principalship in this time period there was also a greater focus on building level leadership and copious amounts of research were completed and/or reviewed to determine the importance of the building principal as related to student achievement. The developments in the 1990s and 2000s have caused the current evolution in the principal's position. The first of these is the abundance of research that finds that effective building leadership has a positive impact on student achievement (Hattie, 2012; Marzano, Waters, & McNulty, 2005). The three major studies described later in this paper (Waters, et al. ,2003; Hallinger & Murphy, 1985; Grissom & Loeb, 2011) arrived at the same conclusion that there was an interest in studying the impact of building leadership on student achievement. Recent research by Robinson (2007) outlined five major factors related to the building principal, and stated that these particular factors "have substantial impacts on student outcomes". These factors are as follows: establishing goals and expectations, strategic resourcing, planning/evaluating/coordinating the curriculum, promoting and participating in teacher learning and development, and ensuring an orderly and supportive environment (Robinson, 2007).

This time period also marked a decrease in the experience level of principals. According to the Conditions of Education report released in 2010, in 1999–2000 10% of elementary principals were under age 40, compared to 2007–2008 when that number increased to 19%. The report also stated that 30% of secondary school principals² had 3 or fewer years of experience in 1999-2000 compared to 36% in 2007-08 (National Center for Education Statistics, 2010).

The changing ages and experience levels of principals are not viewed positively by all influential educators. As pointed out by Ravitch (2011), in recent years a number of programs

² For the purpose of this study the authors defined secondary principals to include "principal, vice principals, and assistant principals."

have recruited and trained young and inexperienced teachers to be principals, as well as non-educators who have never taught in a school. “Because the principal must decide which teachers will receive tenure, it is crucial that principals have prior experience as teachers and understand what good teaching is and how to recognize it” (2011). Ravitch’s concern primarily revolved around inexperienced principals solely relying on data to evaluate teachers and ignoring the value of on-site evaluation by a seasoned and knowledgeable professional.

In summary, the job duties of a principal have evolved in some ways and have stayed the same in others. While the principal no longer exercises the concurrent duties of teaching classes, there is now the responsible for being an instructional leader. The reviewed research demonstrated that through the decades, the issues and controversies are not as different as one might expect. However, with administrators becoming younger and having less experience in the classroom, it remains to be determined if further evolutions of the position will be necessary.

Analysis of Three Key Studies Focused on the Principal’s Duties

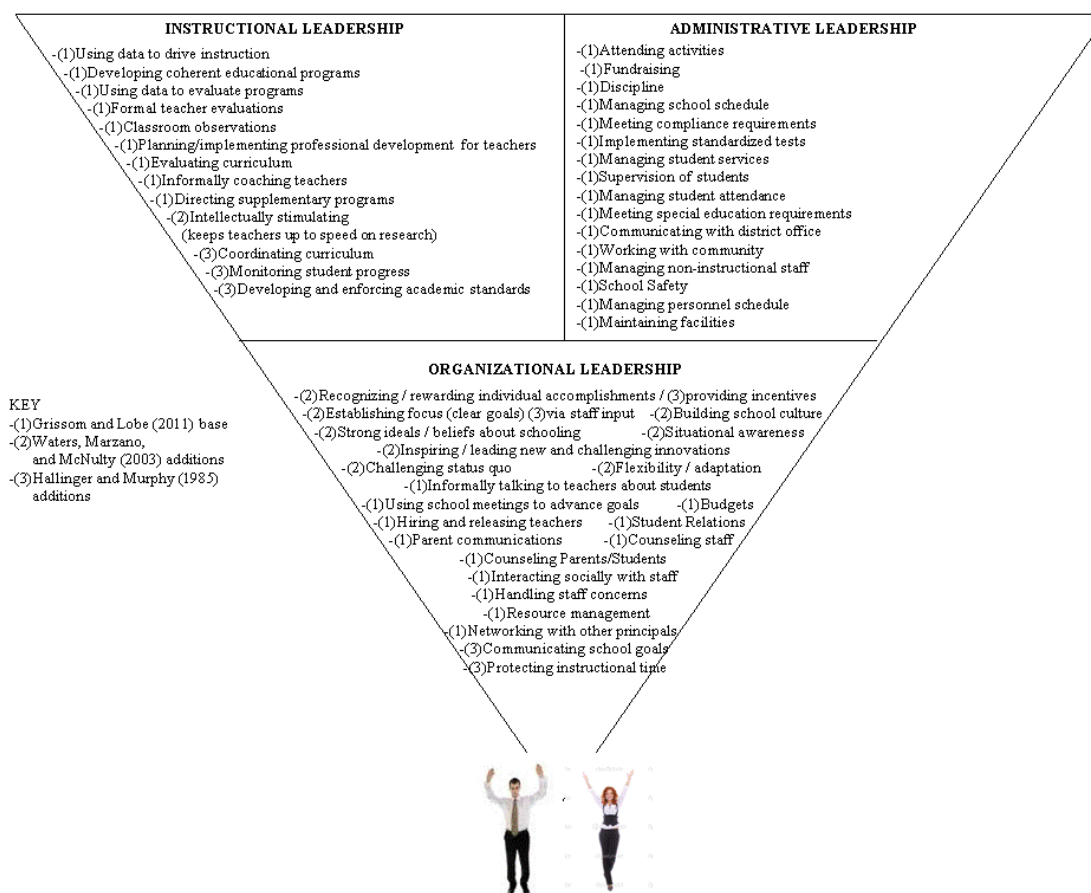
The Principal’s Duty Pyramid

This section will deconstruct the central diagram created by the researcher (Figure 1: The Principal’s Duty Pyramid (PDP)) that illustrates the pressure imposed on a building principal, along with the daily “balancing act” to maximize student achievement in the school. This will also lead to an analysis of the central question of this study, which is to determine how principals share their responsibilities and if the student-to-administrator ratio demonstrates any relation to student achievement. The importance of this diagram lies in its visual depiction of the job responsibilities of the principal and how they are divided into three major categories.

First, the design of the PDP and the layout of all its components will be described. The purpose of the PDP's inverted triangle shape is twofold. First, the shape demonstrates the immense pressure that a principal can be put under on a day-to-day basis. Using an analogy in contrast, a figure skater is able to skate easily along the ice because his/her physical weight puts a great amount of pressure on the skates' thin blades. This pressure causes the ice to melt under the blades and the residual water produces a plane of low friction to skate across. While this force benefits the skater, it may not be advantageous to the principal in running the school. The inverted triangle design places the principal at the tip, signifying the great pressure imposed on him/her every day when running a high school. The shape of the triangle also defines a 'funnel type', which demonstrates that all issues involving the school are directed back to the principal in all situations. The second component of the PDP's shape is the balancing of the workload, as it relates to how much help a principal needs. The PDP was created from research found in three landmark studies; Waters, Marzano, and McNulty (2003), Hallinger and Murphy (1985), and Grissom and Loeb (2011) .

Key Study #1: Waters, Marzano, and McNulty (2003)

The first of these studies was conducted in 2003 by Waters, Marzano, and McNulty. Their findings came from a meta-analysis of 254 separate studies in this field over the past 30 years, identifying the 21 key principal leadership responsibilities with the most impact on student achievement. These responsibilities include culture, order, discipline, resources, and curriculum/instruction/assessment.

Figure 1: *The Principal's Duty Pyramid (PDP)*

The meta-analysis conducted by these authors included a review of numerous available studies, including doctoral dissertations that focused on the effects of leadership on student achievement reported since the 1970s. From the 5,000 studies reviewed, only 70 met the criteria set forth by the authors in the areas of design, control, data analysis, and rigor. The criteria were quantitative student achievement data, student achievement measured on standardized, norm-referenced tests or some other objective measure of student achievement, student achievement as the dependent variable, and teacher perceptions of leadership as the independent variable. These studies involved 2,894 schools, approximately 1.1 million students, and 14,000 teachers.

Research in this area focused not only on knowing what to do but also when to do it. Many studies have demonstrated that principals believe a majority of their time should be spent in classrooms and working with teachers on improving instruction. According to Hallinger and Murphy (1985), there was a discrepancy between the norm response and principal behavior. Research showed that principals have not allocated a significant amount of time in managing instructional activities (Hallinger & Murphy, 1985). In other words, they prioritized instructional leadership as being their top responsibility, but do not spend an appropriate amount of time doing so.

Regardless of where principals want to and actually spend most of their time, the research conducted by Waters, Marzano and McNulty (2003) determined the direct correlation between positive school leadership and school wide student achievement. Comparing schools with similar populations, schools with effective principals score higher in school wide student achievement than those with only average principals.

Table 2.2 shows the 21 key principal responsibilities, their average correlation (r) to student achievement, and the number of schools studied and studies analyzed. A value of +1 is a direct correlation between the two variables and a value of -1 is an indirect correlation between the two variables. A value of zero means there is no correlation between the two variables.

This study was key to this research because it establishes the complexity of a principal's job and therefore justifies the need for an appropriate support structure to complete required tasks. Due to its breadth and simplified presentation of the 21 responsibilities, this study will be the baseline point of comparison for subsequent analyses. Other studies identifying between 42 and 71 specific tasks related to the principal's position were referenced. The Waters, et al.

(2003) study allowed the researcher to triangulate and compare other studies as they provide more details for these 21 base categories.

Table 2.2

Principal Leadership Responsibilities: Average r (Waters, et al., 2003)

Responsibility	Average r	Number of schools	Number of studies
Situational awareness	.33	91	5
Intellectual stimulation	.32	321	5
Input	.30	504	13
Change agent	.30	479	7
Culture	.29	709	13
Monitors/evaluates	.28	1071	30
Outreach	.28	478	14
Order	.26	456	17
Resources	.26	570	17
Affirmation	.25	345	7
Ideals/beliefs	.25	526	8
Knowledge of curriculum, instruction, assessment	.24	327	8
Discipline	.24	397	10
Focus	.24	1109	30
Communication	.23	245	10
Flexibility	.22	151	2
Optimizer	.20	444	9
Relationship	.19	497	12
Visibility	.16	432	11
Curriculum, instruction, assessment (involvement)	.16	636	19
Contingent rewards	.15	420	7

The researcher's criticism about this study was that the results focused on 21 general categories of principal responsibilities that did not provide enough detailed description of the specific tasks. This specific detail is needed to further understand the specificity in which each task must be completed. In contrast, Grissom's research (2011) included 42 tasks of an effective principal and it seems that these findings provided a more focused approach to the original categories. In an earlier study conducted by Hallinger and Murphy (1985), the development of the Principal Instructional Management Rating Scale (PIMRS) determined 71 individual tasks or

responsibilities for an effective principal that focus on instruction. Similar tasks were only covered in approximately half of the 21 categories determined by Waters, et al. (2003).

A final concern about the Waters, Marzano, and McNulty (2003) meta-analysis was that three of their categories had a small sample size of studies, which may lead to a larger confidence interval (CI). The area of 'flexibility' had only two studies reviewed, while 'situational awareness' and 'intellectual stimulation' each had 5 studies reviewed, compared to the rest of the areas of responsibility, which had between seven and 30 studies analyzed. The two studies reviewed in regard to 'flexibility' produced a 95% CI range of .32, compared to the rest of the attributes with ranges between .11 and .26. This illustrates that more research on principal flexibility, situational awareness, and intellectual stimulation may be necessary before conclusions are able to be drawn on the importance of these characteristics.

Key Study #2: Grissom and Loeb (2011)

A second key study reviewed was conducted by Grissom and Loeb (2011). The authors listed 42 tasks that principals were surveyed and asked to rate their own effectiveness. Later in this section the analysis of the researcher will demonstrate that the 42 tasks developed are directly related to the 21 responsibilities determined by Waters et al. (2003).

Grissom and Loeb (2011) divided their 42 tasks into 5 different categories: instructional management, internal relations, organizational management, administration, and external relations. Of these, only organizational management consistently showed as a predictor for student growth and achievement (Grissom & Loeb, 2011). In the organizational management category, there were eight tasks: 1) developing a safe school environment, 2) dealing with concerns from staff, 3) managing budgets and resources, 4) hiring personnel, 5) managing

personnel, school-related schedule, 6) maintaining campus facilities, 7) managing non-instructional staff, and 8) interacting/networking with other principals.

Recognizing that a principal impacts student achievement is quite different from determining how it is accomplished. As shown in the preceding paragraph, eight tasks are already listed as having the most effect on student achievement, but it should not be overlooked that there are 34 additional tasks in four additional categories that a principals also completed in their daily duties. Grissom and Loeb (2011) noted that most research that had created a measurement tool had focused on classroom instruction. They also mentioned Hallinger and Murphy's (1985) Principal Instructional Management Ratings Scale (PIMRS) that had been cited by over 100 recently published studies. Grissom and Loeb (2011) also pointed out that later work by Hallinger (2005) and Marks and Printy (2003) had further narrowed the research to focus solely on the actions of an effective instructional leader, while failing to address the other required tasks of the building principal. Table 2.3 outlines the 42 tasks in the 5 major categories studied by Grissom and Loeb (2011). Each category is ranked from the highest to the lowest level of principal confidence.

In completing their study, Grissom and Loeb (2011) recognized the perspective that most of the principal's day is not consumed by the "core business" of teaching and learning. This is why their study looked at all of the tasks a principal may complete in the day-to-day administration of a school. The authors also pointed out that they diverged from many previous studies by focusing not only on the tasks, but also on the effectiveness with which they are completed by the principal. "By complementing frequency of practice studies with our analysis of effectiveness of practice, we emphasize the competency dimension that likely matters in uncovering principal effectiveness" (Grissom & Loeb, 2011, p. 1093). For example, a principal

who spends a great deal of time focusing on the building budget attempts good stewardship of the taxpayer money, but may not have solid budgetary strategies and practices in place that would reduce time spent on this task.

Table 2.3:
*42 Tasks of an Effective School Principal and Related General Categories Grissom and Loeb (2011)**

TASK	General Category
Using data to drive instruction	Instructional Management
Developing a coherent educational program	Instruction Mgt.
Using assessment results for program evaluation	Instruction Mgt.
Formally evaluating teachers and providing feedback	Instruction Mgt.
Classroom observations	Instruction Mgt.
Utilizing school meetings to enhance school goals	Instruction Mgt.
Planning professional development for teachers	Instruction Mgt.
Implementing professional development	Instruction Mgt.
Evaluating curriculum	Instruction Mgt.
Informally coaching teachers	Instruction Mgt.
Directing supplementary, after school or summer programs	Instruction Mgt.
Releasing/counseling out teachers**	Instruction Mgt.
Planning professional development for prospective teachers	Instruction Mgt.
Developing relationships with students	Internal Relations
Communicating with parents	Internal Relations
Attending school activities (i.e., sports events)	Internal Relations
Counseling students or parents	Internal Relations
Counseling staff about conflicts with other staff	Internal Relations
Informally talking to teachers about students	Internal Relations
Interacting socially with staff	Internal Relations
Developing a safe school environment	Organizational Management.
Dealing with concerns from staff	Organization Mgt.
Managing budgets and resources	Organization Mgt.
Hiring personnel	Organization Mgt.
Managing personnel, school-related schedule	Organization Mgt.
Maintaining campus facilities	Organization Mgt.
Managing non-instructional staff	Organization Mgt.
Interacting/networking with other principals**	Organization Mgt.
Managing school schedules	Administration
Managing student discipline	Administration
Fulfilling compliance requirements and paperwork	Administration
Implementing standardized tests	Administration

Managing student services (e.g., records, reporting)	Administration
Supervising students	Administration
Managing student attendance-related activities	Administration
Fulfilling special education requirements	Administration
Communicating with the district to obtain resources	External Relations
Working with local community	External Relations
Utilizing district office communications to enhance school goals	External Relations
Fundraising	External Relations

*Only 40 tasks are listed on the above table.

**For the purpose of the research, Grissom and Loeb (2011) combined two different tasks due to their close relationship.

Data for Grissom and Loeb's study (2011) came from a survey given to 314 principals from the Miami-Dade County Public Schools. In this survey, the principals were asked to rank their competency on each of the 42 tasks listed in Table 2.3. The same survey was given to 585 assistant principals who were asked to rank their own principal on his/her effectiveness for each task. The response rate for these two groups was 85%. The study also surveyed 15,842 teachers, with an 83% response rate, as to their general satisfaction with the school they worked in, as well as how well their principal completed the 42 tasks.

In the area of instructional management, the principals generally expressed confidence in their ability to effectively complete all listed tasks. However, Grissom and Loeb (2011) noted that while 65% ranked themselves with the highest score in the area of using data to drive instruction (average of 3.7 out of 4) only 35% gave themselves a similar rating for their ability to plan professional development for teachers (averaging the lowest at 3.2).

Interpersonal relations refer to the tasks related to a principal's ability to build strong relationships within the school. The two areas that ranked the highest in this category were counseling staff about conflicts with other staff members and counseling students or parents. The data shows that there is less variation of principal effectiveness ratings in this area compared to

instructional management. At least half the principals surveyed gave themselves the highest rating in these areas, showing their confidence in their ability to complete these tasks. Seventy-two percent of the principals ranked themselves a four in the area of building relationships with students and 70% had the same high ranking for communicating with parents. At the other end of the spectrum, only 54% ranked themselves highly effective in the area of informally talking with teachers about students and even less, 50% rated themselves high in the area of interacting socially with staff.

Organizational management includes tasks that the principal would complete all year long in the pursuit of a school's long- and medium-range goals. The three areas that principals ranked themselves the highest were developing a safe school environment (68%), dealing with concerns with staff (65%), and managing the budget (64%). The item that ranked the lowest in effectiveness (47%) was networking with other principals.

Grissom and Loeb (2011) defined administration as the more routine duties of a principal to comply with local, state, and/or federal regulations. The area includes managing student attendance, discipline, and appropriate supervision. In this category, principals felt the most effective at managing student discipline and managing student schedules with two-thirds of the respondents ranking themselves at the highest levels on these tasks. Principals also ranked themselves highly in the areas of compliance requirements and administering standardized tests. The lowest ranked items were fulfilling special education requirements with only 40% of the principals ranking themselves as highly effective.

External relations refer to the principal's ability to work with stakeholders outside of the school. In this category, there are only four tasks, which include communicating with the district

to obtain resources, working with local community members and organizations, utilizing district office communication to enhance goals, and fundraising. This area had the lowest rankings of all other components of this study. Only 38% of principals ranked themselves at the highest level of effectiveness in working with the district to obtain resources and working with the local community. Thirty-three percent said they were very effective at utilizing district communications and 18% expressed a high level of confidence in their effectiveness at fundraising.

The overall results of the study, as linked to student achievement, showed that principals at schools with “A” ratings, as assigned by Florida’s grading system, ranked themselves as more effective on all five of the prior mentioned dimensions. Grissom and Loeb (2011) pointed out that while school grading systems were imperfect methods of measurement, they had been consistently used to measure a school’s impact on student achievement. In order to support their findings and compensate for the letter grade system, Grissom and Loeb (2011) also analyzed the student data from Florida’s standardized student assessment.

The area that stood out as having the most association to student performance was organizational management and the areas with the least association to student performance were instructional management and external relations. In looking at the difference between elementary and secondary schools, the results demonstrated that while instructional management had a slightly higher impact on secondary than elementary schools, the overall proportions remained similar and continued to point to organizational management as having the most impact on student achievement.

The study also compared student achievement on the Florida Comprehensive Assessment Test's (FCAT) reading and math scores for grades 3 through 10. The results of this analysis are generally consistent with the prior analysis of principal effectiveness ranking as compared to the school's letter grade and show that organizational management effectiveness is positively associated with student achievement gains. "The research also suggests that one standard-deviation increase in a principal's organization management effectiveness is equivalent to about 3 years' experience in terms of student gains in math and reading" (Grissom & Loeb, 2011. p. 1097).

The results of this study are important to this research, as it showed that narrowing a principal's daily tasks to only overseeing instruction and observing teachers at the expense of managing key organizational functions would not necessarily yield improved student achievement. This supported the stance that while a principal is ultimately responsible for all 42 tasks, it is not possible for him/her to exhibit proficiency in each task, even if his/her skill is effective in this area. This leads again to the question of how many supporting administrators a principal needs to be effective where it is necessary and still complete all the required tasks. Referring back to the PDP shows the complexity of the job and how hard it would be for one person to master all these tasks. Even large business corporations in have high ranking leaders with titles such as Chief Executive Officer, Chief Operations Officer, Director of Human Resources, and Chief Financial Officer. In some high schools, these would all be contained in one job title, principal.

Grissom and Loeb stated that organizational management does have a direct connection to instructional management, in that hiring personnel and appropriately allocating resources have direct impacts on instruction. As is common knowledge, teacher quality is the number one

influence on student achievement. In his meta-analysis, Hattie (2012) identified 108 influences on student achievement (103 positive and 5 negative influences). Fifty-seven out of the 103 positive influences are teacher-related, which is a significant 55% of the total (Hattie, 2012). This supports the fact that the organizational management task of hiring teachers does have a direct impact on instruction and should be an important duty of the principal. Knowing this, Grissom and Loeb (2011) called for “reorientation” of what it means to be an effective instructional leader and also included the tasks listed in organizational management that have not typically been included under instructional management. This movement was also supported by Marks and Printy (2003), who called for an integration of leadership perspectives and use of a more holistic view of school leadership.

While Grissom and Loeb’s work (2011) is significant, the researcher does have some concerns about their findings. One concern is that they have included district office personnel under the external relations category, specifically communicating with the district office to obtain resources. In a well-run school district, all stakeholders, which include all schools and the district office, are focused on the same goals and heading in the same direction. Treating district administration as an external source is not appropriate. Resource allocation is an important part of organizational management and some of these resources will come from the central office, as the school works toward meeting the district goals. The researcher suspects that in a school district as large as Miami-Dade, a significant disconnection exists between the central office and the local building, which is maybe why the central office is considered external, or maybe Miami-Dade lacks a comprehensive district improvement plan and/or focused goals.

Grissom and Loeb (2011) could have explored the work of the assistant principal to further support their study. While their study asked assistant principals how effective their

principal was in administering the 42 tasks, it could have been expanded to determine what tasks the principal is primarily responsible for and what the assistant principals complete during the day-to-day operations of the school. It would have been interesting to see how different principals in Miami-Dade use their assistant principals and what duties the former assigns to the latter.

Key Study #3: Hallinger and Murphy (1985)

Within the daily responsibilities of the principal is the task of instructional leadership. The third key study used to develop the PDP was published by Hallinger and Murphy (1985). This study surveyed elementary principals on the specific instructional tasks and listed 71 individual items under 11 categories. The authors pointed out that many studies revealed the principal's great influence on instruction and student success, but few studies focused on what principals do to manage curriculum and instruction. This study examined the instructional behavior of 10 elementary school principals in a single school district. Even though this study focused on elementary school principals it can be reasonably said that in the area of instructional behavior that there is little difference between high school and elementary schools. In regard to instructional behavior (and related items) no studies reviewed in this research separated elementary from high school when reporting on these matters.

One purpose of this study was to suggest a research-based definition of the specifics of a principal's instructional role. Hallinger and Murphy (1985) stated that principals believed they should be highly involved in instruction, but generally had not allocated a significant amount of their time to managing instructional activities.

Hallinger and Murphy (1985) used two different methods of collecting data for their study. The first source was a questionnaire to assess the principal's instructional management behavior that was distributed to the principals, their staff, and the district office. Secondly, the questionnaires were supplemented by other documents, including observations, teacher evaluation reports, school goal statement, newsletters, etc. The Principal Instructional Management Rating Scale PIMRS was developed from this data with the 71 items classified into 11 categories. The PIMRS was then distributed to ten principals from the same school district. The data was collected over six weeks and consisted of principal self-assessments, district office feedback, and teacher feedback. Most of the data used in the study were derived from the teacher questionnaire responses.

The results of the study focused on two areas. The first area consisted of practices and behaviors for which the principal scored higher or lower, based on the traditional Likert scale of 1 to 5, where 1 is equivalent to 'almost never' and 5 is equivalent to 'almost always.' In the second area of focus, the authors targeted personal and organizational factors associated with the principal's level of activity in instructional management. Table 2.4 shows the results of Hallinger and Murphy's research (1985). This table provides the mean principal rating as completed by teachers, the principal's supervisor, and the principal, along with the standard deviation for each result.

Defining the mission of the school relates to the principal's framing and communicating the goals of the school. The results suggested that the principals' awareness of this, as the teachers' mean rating was a 3.8 (out of a possible 5) on framing goals and a 3.7 on communicating goals. These ratings indicate that the building principal reported that he/she frequently performed these tasks. Hallinger and Murphy (1985) mentioned that principals in this

district frequently used student data to frame the school goals, and most included a plan for achieving the goals with target dates and responsible persons. Hallinger and Murphy (1985) also noted that the principals in this study were less active in obtaining teacher input in the development of school goals.

Hallinger and Murphy (1985) added that this study would have benefited from further data gathered using interviews and observation data. The focus of this study was on the frequency and effectiveness of the tasks. It would have been beneficial to see how student achievement varied among the principals. It was demonstrated that some principals frequently framed the schools' goals with the staff using teacher input while others rarely reviewed them with the staff, nor did they gather teacher input. Seeing a breakdown of effectiveness and how it related to student achievement would have further strengthened the results and would have allowed Hallinger and Murphy to further expand their study and address effectiveness as well as frequency.

Measuring effectiveness would have carried on to one of the next interesting findings of this study, supervising and evaluating instruction. The principals in this study ranked themselves high, with an overall average of 4.2 out of 5 in this area. They had all been going through an intensive staff development program that focused on supervision of instruction. This three-year process was mandated by the superintendent who "had made explicit his expectations that the principals would put the skills acquired in the training to use in their schools" (Hallinger & Murphy, 1985, p. 229). The fact that all principals had participated in this intense training explains the high frequency rating from this study. This training would have also added validity to any data gathered on the effectiveness of each principal in this practice, had it been gathered.

Either way, the results suggest that a strong district leadership with a focus on supervision of instruction can have a direct impact on the day-to-day activities of the building principal.

Table 2.4:
Instructional Management Ratings of the Principals (5=almost always, 1=almost never)
Hallinger & Murphy, 1985

Category	Teacher Rating	Principal Self-Report	Supervisory Rating	Comparison Mean of Principal Self to Teacher Rating
Framing goals	Mean = 3.8 (SD = 1.2)	4.2 (.6)	4.3 (.5)	0.4
Communicating goals	3.7 (1.0)	3.8 (.8)	3.1 (1.6)	0.1
Supervising and evaluating instruction	4.2 (.8)	4.4 (.5)	3.9 (.8)	0.2
Coordinating curriculum	4.0 (1.0)	4.2 (.6)	3.9 (.7)	0.2
Monitoring student progress	3.9 (1.0)	4.2 (.5)	4.1 (.5)	0.3
Protecting instructional time	3.6 (1.0)	3.9 (.7)	3.6 (1.2)	0.3
Promoting professional development	3.9 (.9)	4.0 (.4)	3.7 (.8)	0.1
Maintaining high visibility	3.8 (1.0)	4.2 (.5)	4.2 (.5)	0.4
Providing incentives for teachers	3.7 (1.0)	4.0 (.6)	3.0 (1.3)	0.3
Enforcing academic standards	4.2 (.9)	4.3 (.6)	4.4 (.5)	0.1
Providing incentives for learning	4.0 (1.1)	4.3 (.5)	2.6 (2.0)	0.3

Teachers ranked the principals lowest in the area of protecting instructional time, with a mean rating of 3.6. This rating falls between ‘sometimes’ and ‘frequently’ on the Likert scale. The data collected confirmed that instructional time was often interrupted by the public address system or requests of students from the office. As a general rule, students did not have to make up for time lost from instruction due to unexcused absences or tardiness. According to Hallinger and Murphy (1985), this data showed that the principals did not generally exercise controls over the use of time in their schools.

The results of the study suggest that this lower mean rating is not characteristic of all principals in the study and points out quite a variation in practice. The standard deviation for the teacher rating was 1.0 and 1.2 for the supervisor rating of the principals. As previously stated, a direct connection of this variation to student achievement would again have been valuable. It would have been feasible to connect the results of these practices and the frequency with which a principal exhibited them to a standardized exam.

The results of this study indicate that the teachers' ratings are the most accurate, followed by those of the principal's supervisor. The least consistency was noted in the self-ranking of each principal. Hallinger and Murphy (1985) reasoned that even in the absence of outcome data, this study showed that generally, the principals were more actively involved in the management of curriculum and instruction. While this may be true for the school corporation included in the study, it is difficult to say that this data could be applied outside the district, especially in 1985. Since these principals had received three years of intense training in the area of clinical supervision, it would be fair to say that these results may not mirror those of other school districts who did not provide principals similar training. It is also noted that while the results show more time spent in this area, there is no measure of the training's effectiveness.

The results of this study are valuable to this research by providing a set of 71 indicators under 11 categories that help define the areas to be explored. The comprehensive set of indicators focused on many of the principal's daily tasks. However, Hallinger and Murphy's study (1985) failed to address any assistance in the day-to-day operations that a principal may have received from another administrator or pseudo administrator to allow more time to be devoted to supervising instruction. The study did not analyze varying support systems for each principal. This study aims to expand on Hallinger and Murphy's work by analyzing the

administrative support systems of a building principal and how they relate to student performance.

How the PDP was Constructed from the Three Major Studies:

This section will describe how the three major research studies were used to construct the three specific sections of the PDP (Figure1). The text in the PDP are numbered in relation to the three studies. Waters, et al.'s work (2003) had 21 indicators, Grissom and Loeb's study (2011) had 41 indicators spread over 5 categories, and Hallinger and Murphy's research (1985) had 71 indicators classified into 11 categories. The researcher decided to use the Grissom and Loeb (2011) piece as the baseline and insert their indicators (#1) into the three designated categories. This study was chosen first merely because it had the middle number of indicators. Next, the Waters et al. (2003) study was used to add any indicators (#2) that were not adequately represented by Grissom and Loeb (2011). Finally, additional items (#3) from the Hallinger and Murphy (1985) study covered what was missing from the other two studies. In developing the PDP, all indicators from these research studies were grouped into three categories: instructional leadership, administrative leadership, and organizational leadership. These three categories were chosen because they were the most common themes in each study.

First, the 'instructional leadership' portion of the diagram will be described. The Hallinger and Murphy study (1985) was based on instructional leadership; to obtain the results for this research, they created an assessment tool for principals to measure their effectiveness in this area. Some may assume that all of the Hallinger and Murphy indicators would be put directly into this section of the PDP. After further analysis, four of the components were moved from this section to the organizational leadership section of the PDP.

In Hallinger and Murphy's study, the indicators of establishing and communicating goals using staff input are critical to instruction, but school wide goals can and often include those that relate to cultural, emotional, behavioral, and socio-economic needs. Locke and Lantham (1990) stated that setting goals is imperative to the school as an organization and helps that school keep a laser-like focus on everything they do to help the students be successful. This shows that building and communicating goals with stakeholders is fundamental to all components of the school, and therefore should be moved from instructional to organizational leadership. Hallinger and Murphy (1985) also had providing incentives to teachers in their instructional study, but again it was moved to organizational leadership. Waters et al.'s study (2003) had an indicator related to recognizing the accomplishments of individuals and the staff as a whole. Their findings did not only focus on accomplishments directly related to instruction, but also on other personal and professional accomplishments of teachers: "...many different kinds of prestige should be made available to reflect the many different perfect performances the organization wants to encourage and that the administrative leader must be proactive in recognizing the varying abilities of staff members" (Marzano, Waters, & McNulty, 2005, p.44). Their research focused on the organization as a whole, not just instruction, and Hallinger and Murphy's (1985) indicator of providing incentives also relates to this area, which is why both were put in the organizational leadership section as well. Grissom and Loeb's study (2011) did not address the issue of recognizing or rewarding staff.

The final component that Hallinger and Murphy (1985) had listed as instructional leadership that was placed in organizational leadership was "protects instructional time." They stated, "Principals who successfully implement policies that limit interruptions of classroom learning time can increase allocated learning time and, potentially, student achievement"

(Hallinger & Murphy, 1985). In their own words, Hallinger and Murphy (1985) acknowledged that school wide policy impacts protecting instructional time. In the PDP, items concerning school wide policy are placed in the organizational leadership portion.

One of the items Grissom and Loeb (2011) listed as instructional leadership, releasing teachers, was moved to the organizational side of the PDP to ensure consistency. In their study, they placed hiring teachers in organizational management, but releasing teachers in instructional management. The studies by Hallinger and Murphy (1985) and Waters et al. (2003) did not address hiring and releasing teachers. Research by Kimbal (2011) in the area of managing human capital stated,

“Principals who have just gotten used to the idea that they should be instructional leaders must now adapt to a new concept: the principal as strategic talent manager. Being a strategic talent manager requires not only acquiring and developing talented staff, but also creating the working conditions in which staff fully commit their time and energy” (p. 15).

The task of creating proper working conditions supports the decision to put these two items, hiring and firing teachers, in organizational leadership. With this viewpoint, these items coincide with Waters et al.’s building school culture and leading new innovations, which further supports the hiring and firing of teachers being part of organizational leadership.

The next section of the PDP is administrative leadership, which is in the upper right corner of the inverted triangle. For the purpose of this study, *administrative leadership* is described as the day-to-day operations that a principal completes as part of his/her assigned duties. These items may not be viewed by non-administrators as important or having an impact

on instruction or the organization. Generally, these tasks take a considerable time to finish and quite often go unnoticed when they are completed well. In reality, they are important, and a principal who does not put in the time to complete these tasks will face multiple hardships that will cause even more time away from the other two areas of the PDP. Inexperienced administrators may view these items as distracting time wasters, but veterans quickly learn that failure to take these seriously can have a major impact on the entire school.

The question could be raised on what is excluded from this section of the PDP. The PDP places the budget and resource management under organizational leadership, instead of administrative leadership as some would expect. These two items were placed under organizational management as well in Grissom and Loeb's (2011) research. Managing a school's budget and resources is paramount to a successful school. A principal who sets a clear vision and goals for a school, and then allocates funds and resources toward meeting those goals, will have the best shot at improving student performance. Childs and Shaft (1986) stated, "There is a minimal relationship between the two (expenditure and student achievement) and the most positive relationship is related directly to the costs of instruction."

While the other sections of the PDP contain overlapping indicators from all three studies, the administrative leadership section has duplicate concepts from Grissom and Loeb (2011) and Waters, et al. (2003), but none from Hallinger and Murphy's (1985) research. As mentioned previously, Hallinger and Murphy's (1985) study identified the lack of research on the principal as an instructional leader: "Instructional leadership has meant anything and everything; an administrator trying to be an instructional leader has had little direction in determining just what it means to do so." This explains why there are no indicators from Hallinger and Murphy in this section of the PDP.

Based on the researcher's experience as a principal, 12 of the 16 items listed in this section of the PDP would traditionally be assigned to an assistant principal, if one were available. These items are fundraising, discipline, managing school schedule, meeting compliance requirements, implementing standardized tests, managing student services, managing student attendance, meeting special education requirements, managing non-instructional staff, school safety, managing personnel schedule, and maintaining facilities. Assigning these duties to assistant principals is supported by research conducted by Scott (2012), who listed eight roles they perform:

1. Serve as disciplinary official
2. Assist teachers with disciplinary problems
3. Conduct parent conferences concerning student behavior problems
4. Administer attendance problems
5. Follow-up on pupils with prolonged or suspicious absences
6. Confer with teachers concerning teacher complaints
7. Assist in the orientation of new teachers
8. Confer with parents concerning parent complaints

While a majority of the duties listed in this section are best suited for the role of assistant principal, a building leader of a smaller district with no assistant principal will be required to perform these duties, taking valuable time away from other areas.

The final section of the PDP is "organizational leadership", which is located at the bottom of the inverted triangle. The placement of this section is as relevant as its content. The functional design of PDP shows that organizational leadership is foundational in successfully leading a school, and the pointed base represents the immense pressure that is put on a principal

while performing the balancing act of all the responsibilities in the triangle. Organizational leadership includes 12 items from the Grissom and Loeb study (2011); instructional leadership lists 9 items; and administrative leadership contains 16 items; all focusing on ‘triangulating principal effectiveness’. This further demonstrates that Grissom and Loeb’s research (2011) emphasized overall building leadership even though they stated it was merely instructional in nature.

More generally, however our findings do argue against narrowing the principal’s focus to only overseeing day-to-day instructional practices and observing teachers in classrooms at the expense of managing key organizational functions, such as budgeting and maintaining campus facilities. Rather, we might conceive of effective instructional leadership as combining an understanding of the instructional needs of the school with an ability to target resources where they are needed, hire the best available teachers, and keep the school running smoothly. (p. 1119)

The construction of the PDP points out the items that are recommended to be in place before a principal focuses on other areas. Tasks such as building a school culture, setting the direction and vision for the school, appropriately managing resources toward meeting these goals, inspiring others, and hiring the right people are just some examples of these crucial items that need to be an initial focus of the building principal.

Two items that may draw attention in this section are budgets and resource management. Some may argue that these tasks should be in the administrative section. The researcher believes allocating the appropriate budget and resources toward meeting school goals is crucial for student success. Deering, Dilts and Russell (2003) state, “To be successful, leaders need to create

organizations fluid enough to respond quickly to new circumstances. This involves the alignment of several levels of resources necessary to analyze, plan, and take action in response to opportunities and threats that the future brings”. This fluidity is a crucial part of any organization and further strengthens the placement of resources in this section of the PDP.

The construction of the ‘organizational leadership’ section of the PDP focused on creating a definition of the recommended items that a principal first address as the basic needs of the school. While all of the items in instructional leadership can easily be argued as equally important, it should be considered that if the appropriate focus, clear goals, and allocation of resources are not put into place first, there can be no expected positive outcome that is reproducible and consistent. All of these items can be accomplished by developing a positive school culture that focuses on learning and student growth, which is also a component of organizational leadership. As Hanson (2001) stated:

Schools have their own unique cultures that are shaped around a particular combination of values, beliefs, and feelings. These school cultures emphasize what is of paramount importance to them as they strive to develop their knowledge base in a particular direction ... Although the culture of a school is not visible to the human eye, its artifacts and symbols reflect specific cultural priorities. (p. 243)

The shape of the PDP, as an inverted triangle, is also important since concentrating a large amount of weight on one point creates exponentially more pressure than if that weight is distributed across a large area. Putting too much emphasis on one section of the triangle and too little emphasis on the other can also cause the triangle to become out of balance and eventually topple the structure of the school.

As stated in the research questions, how much administrative help does a principal need not only to help bear the weight of the PDP, but also to keep it in balance? How many people does it take and who are these people that can help the principal balance the duties of this position to effectively help students grow? The duties are vast and the responsibility is enormous, as the future of students hangs in the balance. As the famous basketball player Michael Jordan stated, “Talent wins games, but teamwork and intelligence wins championships.”

Review of research relating to student ratios and school finance:

This section will review research in the areas of student/teacher/administrative ratios, as well as the impact of school finance on student achievement. While this research will not analyze the finances of individual school corporations as related to allocation of personnel resources, it is important to understand how these factors can impact student achievement.

Teacher-to-Student Ratio and Student-to-Administrator Ratio

First, an analysis of data on administrative ratios, as either explained by ratios to students and/or teachers, was conducted. The National Center for Education Statistics (NCES) analyzed student and staff counts for the 2009-2010 school year. This report noted that the national breakdown of school staff was as follows: 51% teachers, 15% instructional aides, instructional coordinators, guidance counselors, or librarians, 24 % student and other support staff, and 4% school/district administrators. The final 7% were comprised of administrative support staff (Chen, 2011). This report also stated that student/teacher ratio was 15.4 on average, with the highest being Utah at 22.9 and the lowest being Vermont at 10.6.

Immediately, these student-to-teacher ratios would be questioned, as many educators would argue that few public schools have class sizes this small. However, Chen’s (2011) report

defined this ratio as the total number of students in a school district divided by the number of full-time equivalent (FTE) teachers and does not represent class size. It is important to note this difference, as many misunderstand this ratio that is commonly published in the media and often assumed by the public to be representative of class size.

Interestingly, the NCES report did not calculate administrative ratios as compared to other areas. This report listed the number of school administrators in each state, but did not provide an analysis related to student ratios. In Indiana, the ratio of student to other instructional and student support staff was 33.9, student to administrative support staff was 242.3, and student to administrative and all other support staff was 24.2 (Chen, 2011).

In an attempt to quantify this data, the researcher created a ratio for the state of Indiana as compared to other states, using the total number of students reported as compared to the total number of administrators reported (Table 2.5). This comparison includes the administrative-to-student ratios and overall school ranking for 2012, as reported by Education Weekly (2012), and compares Indiana to its bordering states, as well as to the top five- and bottom five-ranked states. This calculation method will provide a way of comparing Indiana to other states, but will be flawed in that it will not divide elementary and secondary administrators into separate categories. The calculation will also be flawed because it will look at the state-reported numbers as a whole, instead of individual school district averages. This calculation will not break out high schools from middle and elementary schools, as the focus of this study is high schools only.

The results of this comparison show that the bottom five-ranked states in education have an average of 1 administrator to every 256 students, compared to 297.1 for Indiana and border states, and 302.9 for the top five states.

Table 2.5:
Comparison of School Administrators/Student Ratio and School Rankings (Education Weekly 2012)*

State	2012 School Ranking by Education Weekly	School Administrator/Student Ratio (expressed as 1 administrator to # of students)
Maryland	1	227.1
Massachusetts	2	221.1
New York	3	292.6
Virginia	4	267.0
Arkansas	5	271.8
Ohio	10	348.9
Kentucky	14	187.0
Michigan	19	338.8
Indiana	22	328.4
Illinois	29	282.4
Idaho	47	377.5
Nevada	48	420.1
Washington D.C.	49	136.7
Nebraska	50	286.5
South Dakota	51	293.5

*This table compares Indiana to its bordering states, and to the top 5 and bottom 5 states. Washington D.C. is considered the 51st state in this study.

These results initially demonstrate the opposite hypothesis and show that a higher student-to-administrator ratio is correlated with a higher ranking in the study by Education Weekly (2012). As stated previously, this study does not separate high school ratios from other grade levels. The Education Weekly report also took other factors into consideration besides student achievement, such as ranking a state's standards, the teaching profession, transitions, and chance for success. Only one-third of the data comprising a state's ranking was based around student achievement. Another report completed by the Center for Applied Economic Research ranked Indiana 10th in student achievement with Maine in 1st place. This report also ranked Maryland 22nd, compared to its 1st place ranking in the Education Weekly report (Clayson, 2010). In a third report, the Annie Casey Foundation (2012) ranked Indiana 36th and Maryland 6th, compared to their 22nd and 1st place rankings, respectively, from the Education Weekly report.

While these results are not consistent, they demonstrate the many ways to rank educational systems and the results will depend on the measures used. In some of these prior reports, the organization used standard test data like the Scholastic Aptitude Test, while others combined this data with their own measures, such as class size ratio, school finance, and other factors. The next two sections will review research on the class size ratio of student to teacher, as well as financial research, to explore how these results may impact student achievement and how they relate to this study of the comparison of administrative ratios to student achievement.

Class Size Reduction

“It is not difficult to find claims for both sides of the argument about whether or not reducing class sizes leads to enhancements in learning outcomes” (Hattie, 2012). Fan (2012) reviewed the findings of many researchers as well and came to the same conclusions as Hattie. F.A. Fan (2012) referenced a study by Krueger (2000) showing that positive effects on class size are almost 60% more prevalent than studies with negative effects. One concern of the reporting of Krueger’s research is that it only compared positive to negative effects. It would have been valuable to report on any studies that had shown no effect on class size and student achievement. Fan (2012) noted that Ferguson (1991) found a significant relationship among teacher quality and class size, especially in grades 1 through 7, using student-teacher ratio as a measure of class size. Ferguson (1991) found that student achievement fell as the ratio climbed above eighteen to one. Fan (2012) also indicated that research by Wenglinsky (1997) and Molnar et al. (1999) pointed to the social factors of smaller class sizes. Smaller class sizes lead to classrooms that are more easily managed and have fewer discipline problems and a positive classroom culture is more important in areas with economically disadvantaged students.

On the opposite side of the argument, Fan (2012) reasoned that research completed by Hanushek (1997), Hanushek (1999), Hoxby (2000), and Johnson (2000) found no significant influence between class size and student performance. Fan stated,

“Those who found no significant influence of class size on academic performance may have had other favorable environmental factors in their study such as availability of computers, large classroom space, and adequate ventilation” (p.97).

He explained that those who found a significant influence of class size on academic performance emphasized that the effects were greatest among schools with high numbers of disadvantaged students, minority students, and/or students of low socioeconomic status.

While Fan’s (2012) analysis appeared to be thorough in its review of recent research and the presentation of both sides of the findings, there is bias in his report. Fan specifically outlined the research studies that supported smaller class sizes and explained their findings in detail. However, he grouped all the contrasting studies into one paragraph with very little analysis of the findings. While he did not claim his work as being a meta-analysis, he should have given both areas of research equal consideration.

Fan’s results and conclusion should have been that the research findings are inconclusive at best. Sixty percent of reviewed research in favor versus 40% against could be argued by some to be non-conclusive as to the impact of reduced class sizes. There were variables mentioned, such as teacher quality, environment, socio-economic status, and resources. A true meta-analysis would have considered these variables and provided a less biased analysis. Fan did claim that “oversized” classrooms would be out of control and give less individual attention to students.

Most would agree with this statement, but at this point there does not appear to be a specific determination for the term ‘oversized’ and if it would vary at different grade levels.

Further research by Graue and Rauscher (2009) supported the confounding nature of the impact of class size on student achievement. “By contrasting the logic and assumptions embedded in pupil-teacher ratio, class size, and class size reduction studies, we conclude that sometimes research conflates these constructs and their associated theories of action, and such distortion poorly serves the needs of policymakers and stakeholders in education” (Graue & Rauscher, 2009) . In a review of research on class size reduction (CSR), Graue and Rauscher (2009) pointed out that CSR has been popular with the public as a way of compensating for poverty, but is more supported by ‘kitchen table wisdom’ than an actual review of all the literature available. They also noted that in the last ten years, 40 states have implemented CSR programs, and the federal government has a program that infused teachers into the employment ranks. The authors pointed out that CSR research is voluminous and highly varied in both quality and foci. Research in CSR is primarily founded on four major implementations: a large-scale experiment in Tennessee, statewide policies in Wisconsin and California, and a comparison of large and smaller classes in the United Kingdom. Table 2.6 summarizes these results.

The Tennessee study is the first to be analyzed in Table 2.6. The concern is that by only taking volunteer schools the sampling may not have been appropriate, even though it was stated that the school had to have enough sections for treatment and control. The socioeconomic status of the different schools or their percentage of minority students may have been varied enough in the voluntary schools to affect the results. This study did have merit, due to the students being tracked in grades K-3 and kept in cohorts with the same treatment conditions, which would provide some good longitudinal data. One interesting finding of the study was that the full

classrooms with an aide showed no added academic benefit. This result would be surprising to most people, as most would assume that an aide would be beneficial in helping maintain order in the classroom at the bare minimum.

Table 2.6:

Summary of Major Class Size Reduction Studies (Graue & Rauscher, 2009)

	Student Teacher Achievement Ratio (STAR)	Student Achievement Guarantee in Education (SAGE)	California Class Size Reduction	Class Size & Pupil Adult Ratio Project (CSPAR)
Location	Tennessee	Wisconsin	California	United Kingdom
Treatment Conditions	Students and teachers randomly assigned to one of 3 conditions: 1) small class (13-17) 2) full size class (22-25) or 3) full size class with aide. Cohort of students followed K-3, with students kept in same treatment conditions.	Piloted with 30 high poverty schools, rolled out to almost 500, with 4 elements: 1) class size reduced to 15 2) rigorous curriculum 3) professional development 4) providing social services at the school. Funding: \$2000 per low-income student.	Universal implementation K-3 throughout state. Districts received \$650 per student and facilities grants for \$25,000 in classes limited to 20 students.	Examined natural variation in class sizes in early years of schooling rather than imposing a treatment.
Class Size	1) small class (13-17) 2) full size class (22-25) 3) full size class with aide.	Class size of 15 through 15:1 classes, 30:2 shared space, 30:2 team-taught in which second teacher is added for literacy or math.	20 students per class K-3	Four groups: 1) Under 20 2) 20-25 students 3) 26-29 students 4) 30+ students
Research Design	Random assignments experiment comprised of volunteer schools with enough sections for treatment and control. Data included measurement of student achievement, observations of classroom process, and follow-up beyond the 4 years to graduation.	Quasi-experiment comparing treatment to control schools of similar composition. Comparison group had class sizes on average of 22-25 per teacher. Data included Terra Nova testing, teacher survey, teacher logs, classroom observations, and student records.	CSR Research Consortium studied 432 schools and conducted surveys of 1,485 teachers, 336 principals, and 2,113 third grade parents. Compared to schools who did not implement CSR. Data included standardized test scores, administrative data, data on special education students, surveys, observations, and case studies.	Mixed method inquiry examining whether CSR affects student achievement. Also studied the underlying relationships between class size and classroom process. Data included case studies, teacher reports, observations, teacher ratings of student behavior, and teacher estimates of time use.
Results	Students in small classes outperformed students in larger groups or classes with aides. Addition of an aide to full size class not beneficial. Reduced race-based achievement gap. Fewer discipline problems, more interaction in the class.	SAGE students outperformed comparison group in literacy and math K-1 with the biggest outcome for African-American Students. Fewer discipline problems, more time on instruction. Implementation influenced by physical space constraints and teacher adaptation to team teaching situations.	Qualified teachers and classroom space became rarer for many low-income students, thus widening the resource gap. Overall benefits included a slight increase in test scores, more time teaching, less discipline, and more reported parent-teacher contact time.	Enhanced literacy instruction, student talk, and participation in smaller classes. Teachers used more instructional strategies and there were more opportunities for social interaction, but generally a lower quality of peer relations. Classroom assistants positively influenced classroom interactions but did not measurably affect academic outcomes.

The Wisconsin study was of particular concern due to the researchers introducing too many variables to determine specifically if class size was the main contributing factor. The treatment in the study not only included reducing class size, but also invoked a more rigorous curriculum, professional development, and increased social services at the school. The three

additional major treatments could have contributed to the academic achievement and may have been more impactful than reducing the class size. Adding these three components was a strength of the study in that it reflected good educational practice and showed the importance of these components in improving student achievement. However, it would have been more beneficial to add a treatment of rigorous curriculum, professional development, and social services to all of the schools and make the smaller classrooms the experimental group.

The other studies in Table 2.6 were masterful, compared to the California study, which used a non-targeted method of giving all schools money to reduce class sizes versus targeting a specific need. This shows that when politicians get involved in research, the design and analysis may not be of the highest academic standard. In this study, the governor proposed legislation to reduce class sizes to 20 or less for K-3. The state provided \$650 per student and a facilities grant of \$25,000 to help outfit more classrooms as needed. There was no prior selection for the study; any school could be a part of it as long as it met the criteria of class size. The results of the study showed a slight increase in academic performance, more time teaching, and more contact with parents. However, the study also revealed an issue with finding qualified teachers and a lack of classroom space for many low-income students, thus widening the resource gap between wealthy and poor schools. In reality \$25,000 is not a significant amount of money for upgrading facilities, even in 1996. Also the \$650 of extra money given per student was probably a great bonus to wealthy schools that also had enough supplemental money, where needed. However, for poorer schools that did not have enough extra cash, this money could have been barely enough to hire the staff needed, especially if the school was focused on hiring anyone with experience.

The final study on Table 2.6 was completed in the United Kingdom and presents itself as one of the most reliable studies. This study provided no treatment; it just studied classes across

the United Kingdom and grouped them into four size categories. The researchers then used a mixed-method approach to study the underlying relationships. The data collected included case studies, teacher reports, observations, teacher ratings of student behavior, and teacher estimates of time use. The results showed that the smaller classes had enhanced literacy instruction and increased student participation. The teachers also used more instructional strategies and there was more time for social interactions, but it was noted that these were of lower quality peer relations. This study also noted that classroom aides had a positive influence on classroom interactions, but no measurable effect on academic outcomes. While this study had a strong design, there was limitation in the validity of the measurement of teacher quality. If this study would have employed a valid measure of teacher quality, the outcomes would have been rooted in a stronger foundation. This appears to be a good study, but the quality of the teacher cannot be ignored, as it was in all of these studies.

In response to these four studies, Grause and Rauscher (2009) stated: “We recommend that future inquiry focus on mechanisms of change, particularly instruction – both in terms of instructional strategies that capitalize on the resource of a smaller group and the types of support needed for teacher and administrator professional development”. The researcher agrees with the authors because it is not enough just to make classes smaller; it is also important to help the teachers and administrators learn to facilitate and support a classroom with fewer students.

In his book, *Visible Learning*, Hattie (2012) addressed the concept of class size as a part of a meta-analysis. The researcher believes that his findings provide the most comprehensive conclusion to the mystery of the impact of class size. As quoted earlier in this paper, Fan (2012) stated that 60% of the studies on class size show favorable results for student achievement and 40% do not.

Hattie (2012) conducted 3 meta-analyses covering 96 studies, 785 different effects, and 550,339 students. His overall analysis suggests a positive impact on student achievement in smaller class sizes, but the results are systematically small. Hattie also pointed out that the studies supporting smaller class sizes are actually more related to teacher and student work-related conditions, and the studies that are not supportive of smaller class sizes are more related to the small effects on student learning. He noted that reducing a class size from 25 to 15 has an effect size of $d = 0.10-0.20$, which shows that there is not a lot of variance in this change and that this effect size is remarkably consistent across all the studies.

Hattie (2009) addressed one earlier concern about the lack of focus on teacher quality when he wrote “One reason for these small effect sizes relates to teachers of smaller classes adopting the same teaching methods as they were using in larger classes and thus not optimizing the opportunities presented by having fewer students” (2012). The researcher feels great teachers are great in any environment, and poor teachers are poor all the time. This statement reflects an earlier comment that a quality teacher is very important. Hattie (2012) ranked 133 positive effects on student achievement and 6 out of the top 10 were related to teacher quality. He rated smaller class size 106 out of 133 and said that while this has a slight impact on student performance, it is surely not worth the billions of dollars spent on implementation.

One criticism for Hattie’s (2012) work could target the statement, “...reducing class sizes has not been a powerful moderator on outcomes (although the positive of the average effect size suggests that increasing class size is poor policy)”. The criticism could be that while Hattie did not suggest increasing class size, he also did not propose an upper limit to it. In fact, no studies reviewed have proposed an upper-level limit on class size and no studies have shown an example of a decrease in student achievement once the class increases above a certain point. This further

leads to the question of at what level (class size) quality teaching is nullified in terms of student achievement.

The research on class size ratio was reviewed to gain direction and base of knowledge to develop this research on administrative ratios and their impact on student achievement. It could be argued that the administrative side of this ratio differs from the class size studies, in that the goal is to free up the administrator(s) to be able to provide instructional support to the teachers most in need and be good instructional leaders in the school. While teachers have duties outside of their instructional periods, some would attest that their required tasks are not as voluminous or varied as the administrator. All the studies reviewed involved the elementary level in class size, while this study is focused solely on the high school level, which could lead to some variations in the results. However, it is possible that the same results could be found about administrative ratios in that they have an impact, but not significant enough that would warrant spending a large sum of money on the venture.

Impact of Finances on Student Achievement

The concepts of money and school resources are factors to be considered in this research, even though the researcher does not plan to take into account financial expenditures or availability of financial resources for a school district to hire more administrators. This section will review three studies that analyze the impact of school spending on student achievement.

The first study to be reviewed was completed by Greenwald, Hedges, and Laine (1996), who analyzed the many different studies produced in the past 30 years. The authors stated that they had to “narrow the universe” of studies due to the wide variety that existed and to provide clarity in their literature review. They created a set of six criteria which would be their rules for

inclusion in the study, as follows: 1. Data are presented in a refereed journal or book; 2. Data originate from schools in the United States; 3. The outcome measure is some form of academic achievement; 4. The level of aggregation is at the level of school districts or smaller units; 5. The model controls for socioeconomic characteristics or is either longitudinal or quasi-longitudinal; and 6. The data are stochastically independent of other data included in the universe (Greenwald, et al., 1996). Once the studies were chosen, two different meta-analytic methods were used that combined significance testing and effect magnitude estimation. The research looked at “production functions” as points of emphasis, and these areas included per-pupil expenditure, teacher ability, teacher education, teacher experience, teacher salary, teacher/pupil ratio, and school size.

Of all the results posted, those related to teacher-pupil ratio were of most interest to this research as this ratio was the closest to the area of study. The results in this area, which included 68 studies, showed that 19% added a positive and significant impact, and 50% showed a positive non-significant impact (Greenwald, et al., 1996). These results closely mirror Fan’s (2012) findings that 60% of studies show a positive influence on student achievement as related to student/teacher ratio. The areas of this research that showed the most significance were “teacher ability”, which had a 50% significant positive impact and 38% non-significant positive impact (24 studies analyzed) along with per pupil expenditure which had a 44% significant positive impact and a 29% positive non-significant impact (34 studies analyzed) (Greenwald, et al., 1996).

The results of this study caused the authors to generally conclude that their meta-analysis showed that school resources are systematically related to student achievement and that these relationships are large enough to be educationally important. The authors emphasized that their

research should provide clear directions to policymakers, that while money is positively related to student achievement, they did not intend to specify any dollar allocations or infusion of new funds. The authors also stated that money is not everything, but how the money is spent is equally important.

Greenwald, et al. (1996) indicated some publication bias in their work, as it did not include data from unpublished papers or from published papers that did not present levels of statistical significance. While this may be of concern, it is also noted that the total body of works reviewed by the authors would have been large enough in scope to make their study significant and meaningful. The major bias lies in what was not addressed in the area of expenditure and what is normally attacked the most in the media. This is the area of ‘non-classroom’ expenditures, including all support staff and administrators. In the wide scope of this study, it would have been appropriate to include these expenditures to determine any type of connection between these expenditures and student achievement. For example, does a school that has enough custodians to keep the building in top shape create a better overall environment which would have an impact on the school climate and eventually student achievement? Or does the school with enough administrators to handle all disciplinary and attendance issues quickly and appropriately also create that environment that has a similar impact?

Condrón and Roscigno (2003) took a slightly different approach to their research on school spending and student achievement. Condrón and Roscigno (2003) criticized other studies: “The use of district-level data on spending limits the capacity of the researchers to measure true variation in spending among schools which leaves the causes of unequal spending unexamined”. To compensate for this apparent lack of examination, the authors studied 89 public elementary schools in the Columbus (Ohio) Public School District. The authors marked Columbus as an area

that would produce relatively generalizable results because during the period of their study, the city was comprised of over 700,000 people with a diverse racial and class composition.

The authors used four data points collected from the Ohio Department of Education and the school district itself. The department of education provided school report cards (achievement measures) and building/school profiles (spending and attribute data), while social class composition came from the food service department. The fourth measure was a variable constructed from physical condition reports. The school district had hired an outside firm to analyze the physical conditions of each school. The dependent variable was a measure of academic achievement of 4th graders who passed the state proficiency test in five categories (reading, writing, math, science, and citizenship). The authors' hypothesis was that showing a discrepancy in spending at each school within one school district would demonstrate a stronger connection between resources and student achievement than research focusing on the level of many districts and failing to drill down into individual schools.

The results of the research showed that as spending increased at a school to improve facilities and instruction, so did student attendance rates and eventually student performance. It was also noted that teacher quality was impacted by school spending as well. The study had indicated that while salaries were reported and adjusted based on salary level, teachers with the most experience tended to migrate to schools with greater instructional resources and more well-to-do student bodies.

Two clear patterns emerged from this study. The first pattern was that schools that spend more exhibit higher levels of student achievement. "A \$1,000 increase in local instructional spending per student leads to from about 6% to about 10% more students passing proficiency

tests” (Condrón & Roscigno, 2003). The second was that spending on school maintenance does not directly impact achievement, but affects the physical qualities of the school and therefore the quality of its teachers. The authors also noted three possible reasons why schools were not funded equally in this school district: (1) conscious decisions by local leaders that are race and class discriminating; (2) the likelihood that higher socio-economic status (SES) schools have more influence on political entities; and (3) the likelihood that higher SES schools are more bureaucratically and politically coordinated when it comes to writing and submitting such proposals.

Condrón and Roscigno’s (2003) findings are relevant and have an impact on the researcher’s view. Their approach to looking within a school district is very valuable, and it would be beneficial for them to conduct similar studies in other large and diverse districts to determine if the results are consistent across the United States or only hold true in Columbus. This leads to one identified bias in the research, which is without studies in other school corporations; can these results be applied to other schools around the United States? While the authors criticized other researchers for only looking at district-level data, this method applies to many areas of the country. Condrón and Roscigno’s final comments on the possible causes of a spending disparity raise some personal bias concerns, because they were not derived from research data, but mere speculations. The results produced powerful data that could have been valuable, but these comments could cause some to question the motivation and bias of the researchers as to whether their study was politically based or rooted in academics. The researchers would have been better served to present their data and let the reader make their own assumptions about the morals of those who run the school district.

The information presented in this section shows that school finances do have an impact on student achievement. Hattie (2008) further analyzed this issue by completing 4 meta-analyses of 189 different studies to determine if school finance has a positive impact on student achievement. However, it is more equivalent to that of class size, as he ranked it 99 out of 133 attributes that have a positive impact on student achievement. This means that there is a minimal relationship between these two variables (finances and student achievement) and he was not recommending that schools begin cutting budgets. Hattie enumerated the reasons for the limited impact of school finance on student achievement: 1) Most studies were conducted in well-resourced countries where variance in resources was not substantial; 2) most finances in schools are tied up in fixed costs (not discretionary expenditures); and 3) since spending differences are more prevalent between schools than within schools, the impact of finance may not be maximized (2008). In other words, why would a teacher work to maximize performance when most financial incentives are school-based and not teacher-based? Hattie then reiterated what others have stated that it is really not a factor of does the money make a difference, but rather how does money make a difference. Hattie quoted Deborah Meier's comment from Kozol's work, "Shame of the Nation", "I'll believe money doesn't count the day the rich stop spending so much money on their own children" (Kozol, 2006).

The findings in this section of the literature review demonstrate that appropriate resources supported by money do have a positive impact on student achievement, even though the magnitude of that impact is still in question. While this study will not take financial factors into account, the data does support the possibility of recommending the use of finances to make hiring additional administrative staff a feasible proposition.

Summary

The development of the Principal Duty Pyramid (PDP) was an important part of this research as it defined the conceptual framework of the study in relation to the three key studies used in its' development. This framework defined the three major categories of the principal's job description as well as the great balancing act that is completed every day to effectively run the school.

The importance of the student-to-administrator and to teacher ratios along with class size were explored in order to determine the findings of current research and how these results connect to this topic. While there have been multiple studies completed on class size and comparing the number of students to the number of teachers the results of these studies are widely varied. No studies were found that compare the number of students to the number of administrators and the possible impact this may have on student achievement. The gap in research is the driving force behind this study.

Funding plays an important role in the educational system of the United States. While many may argue adding teachers is the answer, the research may not be as clear as expected. While none of the research studied on finance addresses the number of administrators multiple discussions of the impact of resources have been studied and can show that some impact is noted.

The job of the high school principal is very complicated as that many factors have had an impact on this position as it has evolved over time. As the job of the principal has evolved over time the allocation of administrator personnel has gone unstudied which leads to a knowledge gap in determining if more administrative personnel will yield higher student achievement.

Chapter 3: Research Methodology

This chapter presents the research design which was utilized to examine the impact of the student-to-administrator ratio on student achievement in Indiana high schools. Credit should be given to Waters et al. (2003), Grissom & Loeb (2011), and Hallinger and Murphy (1985) who developed their respective lists of principal job responsibilities. All of these lists were combined to create one master list of responsibilities that were used in the survey instrument. The rest of chapter three includes a descriptive detail of the population, research design and instrumentation, collection procedures, and data analysis.

Population

The population targeted for this study included all traditional public high school principals in the state of Indiana. A traditional public high school is defined as a school that is a public school but is not classified as a charter or online high school. The state education employment directory was used to identify the population for this study. Listings and email addresses from the 2012-2013 Indiana School Directory were obtained from the Indiana Department of Education's website. Any missing email addresses were obtained from website information or by a phone call to the individual school. A total of 363 principals from traditional public high schools consisting of grades 9-12 and 7-12 configurations were identified as the population for this study and the survey instrument was sent to the entire group. Charter and private school principals were excluded from this sample because many states do not currently require the same administrative credentials for these principals as those of public school principals. According to the National Association of Secondary School Principals (2011), 25% of charter school administrators do not have traditional administrative training, with only 38% having worked in traditional public schools. Private school principals were also excluded from

this study because the Indiana Department of Education does not collect data on the AP, SAT, ACT, and College and Career Readiness results of these schools. Since this data is a part of the student achievement analysis of this study these school principals were not included in this study.

The minimum sample size requirements for a population of 363 are defined in Table 3.1, which was created by Krejcie and Morgan (1970).

Table 3.1

Required Sample Sizes for N= 363 Based on % Confidence and % Error

95% Confidence				
% Error	5%	3.5%	2.5%	1.0%
Sample Size	187	248	294	350
99% Confidence				
% Error	5%	3.5%	2.5%	1.0%
Sample Size	235	287	320	355

The present study used the minimum standard of 95% confidence with 5% error, which required 187 principals to respond to the survey. In determining the sample size, the study by Grissom and Loeb (2011) was reviewed, which yielded an 89% rate for a sample size of 314. While this was a good rate of return, it should be noted that the study was completed in one school corporation, Miami-Dade Public Schools, and was part of a district-level supported study, so it could be assumed that principal responses to the survey were expected by the superintendent. In a study by Scott (2011), who surveyed all the high school assistant principals in Indiana, she received a 54.5% response rate; 283 surveys were returned out of a possible 525 respondents. At a 95% confidence with a 5% error, the researches study required a 51% return rate or 187 out of a possible 363 respondents, which seems reasonable in relation to Grissom and Loeb (2011) and Scott (2011).

Instrumentation

The survey instrument (Appendix B) used for collecting information contained 62-items and was developed by the researcher. It contained basic demographic information on the high school principals, along with the job duties assigned to others in the building, in contrast to the duties each principal chose to keep. The survey was created using the duties listed in the PDP along with general demographic data. The survey was administered to principals using online survey software. The principals were contacted via email on June 1, 2013 where they received the link to survey and the informed consent. The principals had until July 31, 2013 to complete the survey.

The job duties of the respondents were examined using the definitions used in the three major studies cited earlier in this paper. Each of these studies identified key tasks or job responsibilities that a principal must be able to manage in order to be successful. The results of Waters et al.'s (2003) meta-analysis identified twenty-one leadership responsibilities exhibited by high performing principals. Hallinger and Murphy's research (1985) used the Principal Instructional Management Rating Scale, a 71-question survey focusing on 11 key areas of leadership responsibility for principals. Grissom and Loeb's study (2011) revealed 42 areas of task effectiveness spread out over 5 main categories.

All of the responsibilities/tasks identified in these three studies were combined into the Principal Duty Pyramid (see Figure 2.1 or Appendix A). In creating this figure, all duplicate or similar items from the research studies were combined into one item. The final diagram was comprised of 51 different responsibilities grouped into three major categories: instructional

leadership, administrative leadership, and organizational leadership as they best captured the three main areas of responsibility defined by the research.

Administrative leadership refers to the leadership duties of the principal that focus on the more routine tasks that comply with local, state, and federal regulations, procedures, and policies. Items that fall into this category include, but are not limited to school safety, discipline, managing student attendance, managing facilities, and implementing standardized exams. The category of organizational leadership reflects items that affect the overall organization of the school and have a significant impact on school culture. These items include, but are not limited to challenging the status quo, establishing clear goals, recognizing the accomplishments of others, student and staff relations, and inspiring/leading new and challenging innovations. This category focuses on building important relationships, as well as the principal having a finger on the 'pulse' of the building. The third category, instructional leadership, deals with the expected component of teaching and learning in the school. Items in this category include, but are not limited to using data to drive instruction, teacher evaluations, coordinating the curriculum, and monitoring student progress.

The overall purpose of this survey was to gather demographic and descriptive data on high school principals in Indiana in order to determine how each divides their time according to the three established categories (instructional, administrative, and organizational leadership), and how responsibilities are delegated to others. Student-to-administrator ratios were gathered and compared to student performance data. The administrative data, number and type of administrators, came from the individual principals surveyed. Student performance data was retrieved from the Indiana Department of Education using the school's name or state assigned code and was entered by the researcher after surveys were returned. The data retrieved from the

Indiana Department of Education was as follows: percentage of minority students, percentage of free-reduced lunch students, percentage of special education students, percentage of English language learner students, number of teachers, student enrollment, percentage of students passing math ECA, percentage of students passing English ECA, percentage of students passing both ECA exams, graduation rate, average SAT composite score, average ACT composite score, percentage of graduates passing at least one AP exam, school college and career readiness percentage, and state assigned school letter grade.

Research Design

This quantitative design utilized the entire population of 363 traditional public high school principals in Indiana. Specifically in this research design, the collected data from public high school principals in Indiana was combined with student achievement data gathered from the Indiana Department of Education.

This study employed a questionnaire survey, created by the researcher, which was broken down into five sections:

Items 1 – 10 Demographic/descriptive information about principal/school

Item 11 Descriptive information about school's current administrative personnel

Item 12 – 27 Administrative leadership duties and assignee

Items 28 – 40 Instructional Leadership duties and assignee

Items 41 - 62 Organizational Leadership duties and assignee

For questions 1–11, dropdown menus and text entry blanks allowed the respondent to enter the appropriate information. Data collected in this section are demographic and informational in nature. The principal was asked the name of his/her school, gender, age range, number of years of teaching experience, number of years in current position, total years of administrative experience, school setting, degree level of principal, and license type of principal. Question 11 asks the principal to designate the number of employees in the following positions: assistant/associate principals, deans, guidance directors, guidance counselors, department chairs/team leaders, and teachers on special assignment (TOSA). Questions 12–62 were provided with selections that allow the principal to quickly designate the person primarily responsible for the day-to-day tasks assigned with each duty. The answer choices for questions 17–62 were principal (myself), assistant/associate principal, dean of students, guidance director, guidance counselor, department chair/team leader, TOSA, regular classroom teacher, support staff member (secretary, instructional assistant, custodian, etc.), central office administrator, or central office support staff member (secretary, maintenance director, food service director, etc.).

All survey responses were considered to be factual based on the first hand knowledge of the responding principal. In questions 1 thru 10 the principal was answering questions about his/her own self as well as general information about the school. This information was not based on the principal's opinion. In the remainder of the survey the principal was noting personnel numbers and duties assigned to personnel. Since the principal was the person who delegates these duties it is expected that the information is factual as to each assignment. The key to this response set was a clear explanation given to the principal noting that while the principal is responsible for all activities in the school, the survey asked who was assigned the daily duty of completing the daily tasks for each responsibility.

An internet-based survey was the preferred type of data collection procedure for this study. According to Rea and Parker (2012), a web-based survey has the following advantages: convenience, rapid data collection, cost-effectiveness, no time pressure for respondent, ease of follow-up, confidentiality and security, ease in sending to specialized populations, and ability to utilize more complex questions. The disadvantages of a web-based survey are that it limits the respondent base to those who have access to email and a computer; respondent self-selection bias can lead to lower response rates, especially for those who are not comfortable with web-based technology; and lack of interviewer involvement does not allow the respondent to ask clarifying questions. The survey given was cross-sectional, with the data collected at one point in time rather than longitudinal, with data collected over time (Creswell, 2008).

In addressing the disadvantages of a web-based survey, email access is not of concern since the Indiana Department of Education required that all principals have an email address registered in order to receive statewide communications. It is safe to say that all principals in the state of Indiana have access to email and a computer. It is plausible that some respondents will not feel comfortable submitting information over the internet due to their perceived security issues. A limitation with this information being given via a survey rather than by an interviewer was the lack of opportunity for the respondent to ask for any clarification. The researcher needed to write the survey clearly to be easily interpreted, to avoid any confusion of the respondent, and to ensure the reliability and validity of the instrument.

In this survey respondents are likely to differ from non-respondents in that respondents who know the researcher are more likely to respond than those who do not. Also principals who are dissatisfied with their current number of support personnel may be more likely to respond than those who feel they have adequate support.

Procedures

The researcher secured the approval of the doctoral committee, as well as the Institutional Review Board through Ball State University (Appendix D), before proceeding with gathering and analyzing survey data.

A list of 363 traditional high school principals in the state of Indiana was generated using the information provided by the Indiana Department of Education. If a principal's name or email address needed to be confirmed and the school website did not have this information, a phone call was made to the school.

The researcher created the survey under the guidance of Dr. Kianre Eouanzoui of Ball State University's Research and Academic Effectiveness Department. Dr. Eouanzoui reviewed the survey and provided feedback. The researcher then convened an expert panel to review the survey instrument and ensure that it would produce the expected data. The expert panel consisted of Dr. William Sharp, former superintendent and building level administrator; Dr. Serena Salloum, Ball State University instructor in the Educational Leadership Department; Dr. Libbie Conner, superintendent and former building level administrator; Dr. Stephen Stephanoff, assistant superintendent, former superintendent, and former building level administrator; Dr. David Clendening, superintendent and former building level administrator; and Dr. Marylyn Quick, Ball State University professor in the Educational Leadership Department. The expert panel reviewed the survey on the following items: question clarity (Will the respondent understand the questions?), questionnaire comprehensiveness (Are the questions and response choices comprehensive enough to cover a complete range of choices and alternatives?), and questionnaire acceptability (Are questions the right length, respectful of the respondents'?

privacy, and do they comply with moral and ethical standards?) (Rea & Parker, 2012). After the survey was deemed appropriate by the expert panel who felt that it had construct validity, it was emailed to all high school principals in the state.

Each survey included a cover letter explaining the purpose of the research project, a letter of consent to participate, and a link to the survey (Appendix C). Each survey was tagged with the email address of the respondent, to be used if the follow-up letter is needed to solicit a higher rate of return. Included in this information was an explanation that the respondent's identity would be known to the researcher for connection of follow-up data. It was also explained to the respondent that student achievement, such as End of Course Assessments (ECA) and SAT scores, will be compared to the information given back to the researcher. In order to save the principal time and increase the number of responses, it was determined that it was more beneficial for the researcher to look up this data using the Indiana Department of Education website, rather than relying on each individual principal. Each respondent was also reassured in the letter that no names or personal information would be shared to other parties by the researcher and that only general cumulative information would be published.

To obtain a higher rate of return, the researcher utilized two different modes of distribution, emailing the survey and mailing a hard copy to those subjects who have not completed the survey. Subjects who had not completed the survey one week after initial contact received a follow-up email asking for their participation. By the end of the second week, subjects who had not responded received second follow-up emails, along with hard copy mailers to be sent directly to their schools. Subjects who still had not completed the survey by the end of weeks three and four received third follow-up emails. The survey system used was Qualtrics, which was provided to the researcher by Ball State University. Qualtrics is survey software

utilized by over 1,300 universities worldwide. This software gave the researcher the ability to create, distribute, and administer surveys via the internet, distribute them by email, and then retrieve, record, and access the responses.

Data Analysis

For this research study, the independent variable was the student-to-administrator ratio and the dependent variables were student achievement. The remainder of this section will outline the data analysis used for each research question.

Research Question #1: Is there a relationship between the student-to-administrator ratio of a high school and student achievement?

- a. Hypothesis: Schools with low student-to-administrator ratios have students who perform higher academically.

The student-to-administrator ratio for each respondent was calculated using information from the Indiana Department of Education and the respondent's completed survey. This ratio was connected to the following student achievement measures: school letter grade, graduation rate, ECA algebra scores, ECA English scores, percent of academic honors diplomas, percent of core 40 diplomas, percent passing at least one Advanced Placement exam, and SAT composite score. To aid in answering question #2, an overall achievement score using all of these achievement factors was calculated for each school. These data points represented all of the available data for school in which large groups of students were tested. Schools were divided into high and low achievement groups based on the data gathered in question 1 and the already determined ratios will be analyzed to determine if there is a commonality in the ratio for each group.

Research Question #2: For schools that have the following designations, what are the patterns of delegation (job duties) administrative team's exhibit in their day-to-day operations? The definitions of high and low ratio were determined by taking the average enrollment of all respondents and then determining the standard deviation value of the data. The student-to-administrator ratios for all schools were used in a calculation that used the mean of the standard deviation as the cutoff point. Schools above this mean were considered high ratio schools and schools below the mean were considered low ratio schools. This method was used to divide the schools into high student-to-administrator ratio and low student-to-administrator ratio. The same method was used to determine a school's level of academic achievement. The school's combined academic scores were used in a standard deviation calculation. The mean of these values was used as the cut-off point and schools above the mean were considered high achievement schools and schools below this mean were considered as schools with low academic achievement.

- a. high student achievement and low student-to-administrator ratio
- b. low student achievement and low student-to-administrator ratio
- c. high student achievement and high student-to-administrator ratio
- d. low student achievement and high student-to-administrator ratio

The researcher completed an overall achievement score based on the information from question #1. Respondents were classified into one of the four categories listed above. For each category, an analysis was conducted on what duties the principal keeps and what is delegated to others. The researcher attempted to find patterns or commonalities in how high achieving schools divide their administrative duties among available administrators.

Research Question #3: Is the student-to-administrator ratio in each high school influenced by factors such as school size, geographic location, school socioeconomic status, number of teachers, and/or number of minority students in the school? An analysis of the student-to-administrator ratio was compared with each of the above factors to determine current trends in Indiana. For example, do schools with high rates (as defined in Chapter 4) of free and reduced lunch students tend to have a higher or lower student-to-administrator ratio or do schools with low ratios have higher academic achievement on the SAT exam?

Research Question #4: Does the evidence gathered provide a clear method for determining the appropriate number of administrators to employ in a high school based on the number of students enrolled in order to maximize student achievement? If the data suggested that a lower student-to-administrator ratio directly correlates to student success an attempt was made to develop categories of schools based on geography and other characteristics and provide recommendations for student-to-administrator ratios based on similar schools who exhibit high academic success.

Chapter 4: Results

While previous research has identified the impact of class size on student achievement, no studies have been found that focus on the administrative personnel in a school, in relation to the student-to-administrator ratio and student achievement. Currently, there is no commonly agreed upon formula for determining the number of administrators a high school requires to be effective. Because there are no researched-based guidelines for school boards and superintendents, this study aims to establish the relevant factors to consider when deciding how much administrative support to provide a high school principal. In most cases, school size is the related factor used to suggest administrative capacity, with little attention given to other criteria, such as poverty rate or percentage of special education students. This study attempts to examine the relationship between administrator-to- student ratios in relation to student achievement and how principals share their responsibilities with others.

Surveys were sent electronically to 363 public high schools in Indiana from schools consisting of either 9-12 or 7-12 configurations. The overall response rate using this electronic method was 30% even after following the aforementioned recruiting steps (see page 85). The total number of principals who responded to the survey was 109. This sample size yielded a margin of error of 7.86% which is above the targeted 5% threshold outlined in Table 3.1. The sample size also yielded a confidence level of 79% which is 16% lower than the desired outcome also stated on Table 3.1. It is suspected that these deficiencies will later impact the significance of some or all of the results of the data analysis.

Four research questions guided this study:

1. Is there a relationship between the student-to-administrator ratio of a high school and student achievement?
 - a. Hypothesis: Schools with low student-to-administrator ratios have students who perform higher academically.
2. For high schools that have the following designations, what are the patterns of delegation (job duties) administrative team's exhibit in their day-to-day operations?
 - a. high student achievement and low student-to-administrator ratio
 - b. low student achievement and low student-to-administrator ratio
 - c. high student achievement and high student-to-administrator ratio
 - d. low student achievement and high student-to-administrator ratio
3. Is the student-to-administrator ratio in each high school influenced by the factors of school size, geographic location, school socioeconomic status, number of teachers, and/or number of minority students in the school?
4. Does the evidence gathered from the results of this study suggest a method for determining the number of administrators to employ in a high school based on the number of students enrolled?

Although this chapter is framed around these four questions, the demographic data provided by the public high school principals responding to the survey is also of interest.

Demographic Results

Tables 4.1 to 4.7 in highlight the demographic characteristics of the respondents in this study. The demographic information included on the survey focused on personal information represented by:

1. Gender
2. Age range (under 30, 30-40, 41-50, 51-60, or over 60)
3. Years of teaching experience
4. Years in current principal position
5. Total years of administrative experience
6. Highest degree level (Bachelor's, Master's, Specialist, or Doctorate)
7. Type of administrative license (Emergency, Initial Practitioner, Established Practitioner, or Other)
8. School setting (Urban, Suburban, Town, or Rural)
9. School enrollment (as reported on the IDOE website)

Before answering the research questions, data from the demographics used to profile the respondents are reported in Tables 4.1 to 4.7. Gender was the first demographic portrayed in Table 4.1. The results reflect that 82.6% of the respondents were male while 17.4% were female.

Table 4.1
Participants' Gender

Gender	N	Percent
Male	90	82.6%
Female	19	17.4%
Total	109	100%

Participant age is depicted in Table 4.2. The results illustrate that highest number of responses came from principals in the age range of 41 to 50 years of age at 36.7% of the respondents. The group with the lowest number of respondents was principals of the age range of less than 30 years of age which represented 1.8% of the respondents.

Table 4.2
Participants' Age Range

Age Range	N	Percent
Under 30	2	1.8%
30 to 40	24	22.0%
41 to 50	40	36.7%
51 to 60	32	29.4%
Over 60	11	10.1%
Total	109	100%

Years of teaching experience (non-administrative) is depicted in Table 4.3. The results illustrate that the average number of years of teaching experience for the respondents was 10.7 years. The largest group of respondents was from the teaching years of experience range of 6 to 10 years which accounted for 42.2% of the respondents.

Table 4.3
Years of Teaching Experience (non-administrative)

Age Range	N	%
5 years or less	21	19.3%
6 to 10 years	46	42.2%
11 to 15 years	22	20.2%
16 to 20 years	11	10.1%
21 or more years	9	8.3%
Total (avg. 10.7 years)	109	100%

Participant years in current principals' position are set out in Table 4.4. The results demonstrate that a majority of the respondents (55.0%) have been in their current principals' position 5 years or less. The results also show that the smallest respondent group was principals with 16 to 20 years in their current position at 3.7%. The respondent group had an average of 5.5 years of experience in their current position.

Table 4.4
Years in Current Position

Range of Years	N	%
5 or less	60	55.0%
6 to 10	39	35.8%
11to15	6	5.5%
16 to 20	4	3.7%
Total (avg. 5.5 years)	109	100%

Participant's total years of administrative experience are revealed in Table 4.5. The results demonstrate that participants with total years of administrative experience ranging from 6 to 10 years was the largest group at 28.4% with 11 to 15 years coming in second at 25.7%. The average years of total administrative experience of the 109 participants in this survey was 13.3 years.

Table 4.5
Total Years of Administrative Experience

Range of Years	N	%
1 to 5 years	12	11.0%
6 to 10 years	31	28.4%
11 to 15 years	28	25.7%
16 to 20 years	21	19.3%
21 to 25 years	7	6.4%
26 to 30 years	9	8.3%
31 years and over	1	0.9%
Total (avg. 13.3 years)	109	100%

Participant's classification of their school setting is included in Table 4.6. Participants self reported based on the definitions provided for them in the survey by the researcher. The survey shows that a majority of respondents classified their school as in a 'town' setting at 40.4% with the lowest number being urban at 14.7%.

Table 4.6
Participants Classification of School Setting

Setting	N	%
Urban	16	14.7%
Suburban	17	15.6%
Town	44	40.4%
Rural	32	29.4%
Total	109	100%

Table 4.7 outlines the highest degree level of each of the survey respondents. The data shows that a vast majority, 70.6%, of the respondents hold a master's degree as their highest level earned.

Table 4.7
Degree Level of Respondents

Highest Degree Type	N	%
Bachelors	0	0.0%
Masters	77	70.6%
Specialist	24	22.0%
Doctorate	8	7.3%
Total	109	100%

Findings related to the Research Questions

Research Question 1: Is there a relationship between the student-to-administrator ratio of a high school and student achievement?

- a. Hypothesis: Schools with low student-to-administrator ratios have students who perform higher academically.

In order to complete this calculation the 109 responding schools were placed into one of four categories based on their ratio and academic achievement. Schools were first divided into one of two categories based on their ratio as either a high or low student-to-administrator ratio.

The ratio category was calculated by using the mean of the sample of the student-to-administrator ratios which was 315 and the standard deviation which was calculated to be 123. The mean of the sample was used as the cutoff point for the determination of high and low ratio schools. Schools that were above the mean were considered high ratio schools and schools that were below the mean were considered low ratio schools. For this study schools in the low ratio category were located in the range of zero to two standard deviation below the mean. Schools in the high ratio category were located in the range of zero to four standard deviations above the mean. A similar calculation was used to include other administrative support staff, such as teachers on special assignment and department chairs, as a ratio compared with the student enrollment. This ratio is classified as student-to-TAPS (Total Administrator Plus Support staff) ratio and includes the number totaling the number of administrators plus any quasi-administrative support staff. The ratio of this category was calculated by using the mean of the ratios which was 75 support staff members and the standard deviation which was calculated to be 35.3. Schools that ranged to 3 standard deviations above the mean were categorized as having a high ratio of support staff-to-students and schools that fell two standard deviations below the mean were categorized as having a low ratio of support staff-to-students.

Next the schools were split into two categories, high student achievement and low student achievement. Student achievement was measured by first creating an overall academic score for each school. This overall academic score comprised a school's SAT average, ACT average, Advanced Placement test average passing percentage, Math ECA average passing percentage, English ECA average passing percentage, graduation rate, and college career readiness percentage.

Table 4.8
*Student-to-Administrator Ratio Categories**

Student-to-Administrator Ratio Category (expressed as 1 administrator to X students)	Range	N	%
Low Ratio <i>Between (1: 92) and (1: 315)</i>	Between 0SD and -2SD	0 to -1 SD = 48 <u>-1 to -2 SD = 15</u> Total = 63	0 to -1 SD = 44.0% <u>-1 to -2 SD = 13.8%</u> Total = 57.8%
High Ratio <i>Between (1: 315) and (1 :807)</i>	Between 0SD and 4SD	0 to 1 SD = 30 1 to 2 SD = 14 2 to 3 SD = 1 <u>3 to 4 SD = 1</u> Total = 46	0 to 1 SD = 27.5% 1 to 2 SD = 12.8% 2 to 3 SD = 0.9% <u>3 to 4 SD = 0.9%</u> Total = 42.2%
Total		109	100%

*Mean = 315 SD = 123

Table 4.9
*Total Administrator Plus Support (TAPS) to Student Ratio Categories**

TAPS to Student Ratio Category (expressed as 1 TAPS to X students)	Range	N	%
Low Ratio <i>Between (1 to 4.4) and (1 to 75)</i>	Between 0SD and -2SD	0 to -1 SD = 39 <u>-1 to -2 SD = 20</u> Total = 59	0 to -1 SD = 35.8% <u>-1 to -2 SD = 18.3%</u> Total = 54.1%
High Ratio <i>Between (1 to 75) and (1 to 180)</i>	Between 0SD and 4 SD	0 to 1 SD = 35 1 to 2 SD = 9 <u>2 to 3 SD = 6</u> Total = 50	0 to 1 SD = 32.1% 1 to 2 SD = 8.3% <u>2 to 3 SD = 5.5%</u> Total = 45.9%
Total		109	100%

*Mean = 75 SD = 35.3

The mean of the overall academic score was 1276 with a standard deviation of 216.5. Using these two figures any school that fell down to 2 standard deviations below the mean were classified as having low academic achievement. Schools that ranged 2 standard deviations above the mean were classified as having high academic achievement. The purpose of this calculation is descriptive and the information derived will not be a part of the statistical analysis in the next section of this chapter. The information gathered was used to divide the schools so that responses

to principal duties could be analyzed. A relationship appears to exist where schools that perform high on one assessment analyzed in this research also tend to perform high on other analyzed assessments. The trend appears to also be true for low performing schools. This trend is thought to be due to the interrelated nature of all exams in regard to content connections and student performance. For example students who scored well on the ECA Math exam could reasonably be forecasted to do well on the SAT Math portion as well. In this calculation the impact of the ACT exam was deemphasized because the SAT is the predominate exam in the State of Indiana and some schools had so few students taking the exam that the data was not reported by the Indiana Department of Education.

Table 4.10:

*School Overall Academic Achievement Determinations**

School Overall Academic Score	Range	N	%
Low Achievement (between 843 and 1276)	Between 0SD and -2SD	0 to -1 SD = 33 <u>-1 to -2 SD = 5</u> Total = 38	0 to -1 SD = 30.3% <u>-1 to -2 SD = 4.6%</u> Total = 34.9%
High Achievement (between 1276 and 1709)	Between 0SD and 2SD	0 to 1 SD = 69 <u>1 to 2 SD = 2</u> Total = 71	0 to 1 SD = 63.3% <u>1 to 2 SD = 1.8%</u> Total = 65.1%
Total		109	100%

*Mean = 1276 SD = 216.5

With this second classification complete schools were finally categorized as one of the four following groups:

- a. high student achievement and low student-to-administrator ratio
- b. low student achievement and low student-to-administrator ratio
- c. high student achievement and high student-to-administrator ratio
- d. low student achievement and high student-to-administrator ratio

Schools with scores between 1276 and 1709 were classified as schools with high student achievement and schools with scores between 843 and 1276 were classified as schools with low student academic achievement.

Table 4-11:

Final School Classifications using Administrator Ratio and Overall Academic Performance

Category	N	%
High student achievement and low student-to-administrator ratio	33	30.3%
Low student achievement and low student-to-administrator ratio	30	27.5%
High student achievement and high student-to-administrator ratio	38	34.9%
Low student achievement and high student-to-administrator ratio	8	7.3%
Total	109	100%

Next a parametric analysis was completed on the dependent variables to determine if the data was normally distributed which is important when using many dependent variables. The results from this analysis are located in Table 4.12.

In the test for normality, when the p value is less than .05 the data violates the researcher's normalcy assumptions. In Table 4.12, all values fell below .05 except for percent college career readiness, which means that the dependent variables are not normally distributed. In order to compensate for the lack of a normal distribution the nonparametric MANOVA using rank transformed and the Puri & Sen's L statistic were used. A normal distribution is a theoretical idea that is based on theory rather than real data. Normal distributions are typically the goal a researcher strives for.

Table 4.12
Tests of Normality on Dependent Variables

Dependent Variable	Significance (p-value)
Percent passing both ECA exams	.005
Average SAT composite score	.001
Average ACT composite score	.009
Percent students passing AP exam	.000
Percent passing ECA math	.001
Percent passing ECA English	.005
Percent graduation rate	.003
Percent college career readiness	.686

Table 4.13
Comparison of F and L Statistics in Nonparametric Multivariate Analysis of Variance

Factor	Pillai's Trace	dF	F	<i>p</i>
Raw Data				
Ratio Total Admin	.280	8,71	3.458	<.01
Ratio TAPS	.121	8,71	1.225	ns
	Pillai's Trace	dF	L	<i>p</i>
Ranked Data				
Ratio Total Admin	.271	8	29.268	<.05
Ratio TAPS	.163	8	12.528	ns*

* χ^2 critical=15.51

Table 4.13 shows that the level of significance of the ratio total administrators is significant between both a parametric and a nonparametric test. The table also shows that there is no level of significance between the ratio TAPS (Total Administrator Plus Support). Since there is no significance in both calculations for TAPS no further statistical analysis was run. However with significance in the nonparametric, ranked data, a MANOVA (multi-variant analysis of variance) can be run to suggest any relationship between the total student-to-administrator ratio and a combination of the multiple dependent variables, which are the academic areas of achievement. A MANOVA test allows the researcher to compare multiple

dependent variables, as an entirety, to the independent variable or in this case the total ratio of administrators to students.

Next homogeneity of variance was run to suggest if each of the dependent variables satisfied this requirement before putting them into the next set of calculations to determine any significance. The results of this test are included in Table 4.14.

Table 4.14
Homogeneity of Variance Test Results for the Ratio Total Administrator (RTA) Group

Dependent Variable	Type of Test	<i>p</i>	Assumption Outcome
% Pass Both ECA	Nonparametric homogeneity of variance	.804	Satisfied
SAT Composite Score	Nonparametric homogeneity of variance	<.001	Violated
ACT Composite Score	Nonparametric homogeneity of variance	.005	Violated
% Passing an AP exam	Nonparametric homogeneity of variance	.001	Violated
% Passing ECA Math	Nonparametric homogeneity of variance	.290	Satisfied
% Passing ECA English	Nonparametric homogeneity of variance	.909	Satisfied
% Graduation Rate	Nonparametric homogeneity of variance	.392	Satisfied
% College / Career Readiness	Levene's parametric homogeneity test*	.266	Satisfied

*The Levene's parametric homogeneity test was able to be used for this variable since it passed the test for normalcy from Table 4.13.

Table 4.14 shows that three of the dependent variables did not satisfy this test and are therefore being removed from the remainder of the statistical analysis. When looking at these three dependent variables a reasonable statistical conclusion can be drawn. These three measures of academic success are skewed toward students on a college bound track whereas the remaining five variables reflect the entire student population of the school. The researcher feared that leaving these variables in the statistical analysis could contaminate the rest of the results and

essentially water them down and ultimately impact the p value of each. The potential contamination would create a non-normal distribution and favor schools with a higher percentage of students performing at college preparation levels, which was not a focus of this study.

Next a nonparametric MANOVA was run on the 5 remaining dependent variables and the outcome is reported in Table 4.15. A MANOVA was run because there were multiple dependent variables that were all analyzed at the same time as compared to one independent variable.

Table 4.15
Comparison of F and L Statistics in Nonparametric Multivariate Analysis of Variance (MANOVA)

Factor	Pillai's Trace	dF	F	p
Raw Data				
Ratio Total Admin	.095	5,97	2.031	.081
	Pillai's Trace*	dF	L**	p
Ranked Data				
Ratio Total Admin	.075	5	7.65	ns***

* R^2 =Pillai's Trace

** $L=(N-1)R^2$

*** χ^2 critical = 11.07

This table shows that when the three variables were removed from the data that the significance of the MANOVA calculation dropped below the .05 level of significance. The chi-squared critical value for the L statistic was 11.07, but the actual value was 7.65. This low value for this L statistic is thought to be due to the lower power of the research due to the sample size being rather small at 109 respondents. If the researcher was able to obtain a sample size of 300 out of a possible 365 respondents it is felt that this value would have reached the chi-squared critical value and then signified significance. Table 4.15 did demonstrate that the p statistic increased to a value of significance of .081 when the three dependent variables were dropped.

Next a pairwise comparison for the two different ratio groups (low and high) was completed.

The results are displayed in Table 4.16.

Table 4.16

Least Significant Difference (LSD) Pairwise Comparisons for Student-to-Administrator Ratio Groups Comparing High Ratio to Low Ratio

Dependent Variable	Mean Weight Difference (High Ratio to Low Ratio)	Std. Error	p
% Passing Both ECA	13.430	5.965	.027*
% Passing ECA Math	13.431	6.033	.028*
% Passing ECA English	8.853	6.083	.149
% Graduation	4.754	6.058	.434
% College / Career Readiness	7.974	5.898	.179

*p<0.05

Table 4.16 shows that the impact of the low L statistic from table 4.15 impacted the significance of the dependent variables of ‘passing both ECA exams’ and ‘passing ECA Math’ dropping both of them to a p-value of below 0.05 at 0.027 and 0.028 respectively. However, the remaining three variables ‘passing ECA English’, ‘graduation rate’, and ‘college / career readiness’ all maintained a significance value over 0.05. Graduation rate and college/career readiness had the highest levels of significance at .434 and .179 respectively. The mean weight differences demonstrate that schools with larger student-to-administrator ratios performed better in ECA English, graduation rate, and college/career readiness than the schools with lower ratios. This trend is mirrored in percent passing both ECA’s and ECA math, but as was stated prior those values fell below the significance value of 0.05 which would mean that the power of their results could be questioned. The standard error of all variables in table 4.16 is similar, around 6.000, which demonstrates that the results as a whole do show consistency across this measure.

Research Question 2: For schools that have the following designations, what are the patterns of delegation (job duties) administrative team's exhibit in their day-to-day operations?

- a. high student achievement and low student-to-administrator ratio (High SA/Low Ratio)
- b. low student achievement and low student-to-administrator ratio (Low SA/Low Ratio)
- c. high student achievement and high student-to-administrator ratio (High SA/High Ratio)
- d. low student achievement and high student-to-administrator ratio (Low SA/High Ratio)

The following tables represent the percentage at which principals, as related to their level of student achievement and student-to-administrator ratio, reported that they are primarily responsible for the listed duty. For example a response of 90% denotes that 90% of the responding principals reported to completing the task themselves and 10% of responding principals reported that they assigned the duty to someone else. The 53 duties listed in Tables 4-18, 4-19, and 4-20 are split up into three categories; administrative duties, instructional duties, and organizational duties respectively.

Table 4.17 denotes the results of a t-test that was used to determine if there was any significant difference between how high and low ratio school principals responded to duties assigned versus duties kept. The researcher's hypothesis was schools with lower student-to-administrator ratios would exhibit a significant difference in duties delegated than schools with higher student-to-administrator ratios. The results from table 4.17 demonstrate that the t-Stat

(0.5) is less than the t-Critical (1.7 / 2.0) which means that there is no significance difference between the percentages of both groups.

Table 4.17:

t-Test Results Two Sampling Assuming Equal Variances Comparing Responses from High Student-to-Administrator and Low Student-to-Administrator Ratio Schools

	Low Ratio Schools	High Ratio Schools
Mean	65.5	63.4
Variance	619.3	874.0
Observations	102	102
Pooled Variance	746.6	
Hypothesized Mean Difference	0	
df	202	
t Stat	0.5	
P(T<=t) one-tail	0.3	
t Critical one-tail	1.7	
P(T<=t) two-tail	0.6	
t Critical two-tail	2.0	

Since there is no significant difference between the two groups the researcher analyzed the percentages of high and low achieving schools in each group to suggest if any assumptions could be made based on the differences in the percentage of kept versus delegated duties. Since the t-test demonstrated there is no significant difference between the groups, the researcher set the standard of a 10 percent difference as a notable area that would separate high and low achieving schools.

Items defined as administrative duties are defined as the duties of the principal that focus on the more routine tasks that comply with local, state, and federal regulations, procedures, and policies.

Table 4.18

% of Principals who Keep the Responsibility for Specific ADMINISTRATIVE Duties

Administrative Duty	High SA – Low Ratio	Low SA – Low Ratio	% Difference (Comparing high SA to low SA)	High SA – High Ratio	Low SA – High Ratio	% Difference (Comparing high SA to low SA)
Attending activities (extra curricular)	54.5	60.0	-5.5	50.0	50.0	0.0
Communicating with district office	97.0	96.7	0.3	94.7	100.0	-5.3
Student discipline	9.1	20.9	-10.9	10.5	25.0	-14.5
Fund-raising (coordinating)	36.4	33.3	3.0	18.4	25.0	-6.6
Implementing standardized tests	9.1	3.3	5.8	10.5	12.5	-2.0
Managing maintenance of facilities	30.3	46.7	-16.4	28.9	62.5	-33.6
Managing non-instructional staff	72.7	63.3	9.4	57.9	62.5	-4.6
Managing personnel schedule (non-teaching employees)	60.6	60.0	0.6	50.0	25.0	25.0
Managing school schedule (teacher / master schedule)	39.4	50.0	-10.6	28.9	12.5	16.4
Managing student attendance	9.1	16.7	-7.6	0.0	25.0	-25.0
Managing student services	36.4	23.3	13.0	26.3	25.0	1.3
Meeting state / federal / local compliance requirements	81.8	63.3	18.5	81.6	100.0	-18.4
Meeting special education requirements	33.3	23.3	10.0	23.7	37.5	-13.8
School Safety	63.6	50.0	13.6	26.3	50.0	-23.7
Supervision of students (during the school day and school related events)	60.6	46.7	13.9	36.8	50.0	-13.2
Working with the community (in an administrative capacity)	90.9	93.3	-2.4	89.5	87.5	2.0
Total	49.1	46.9	2.2	39.6	46.9	-7.2

The respondents to this survey reported they kept 45.6% of the administrative duties for themselves and assigned 54.6% of the duties to others. In regard to administrative duties (Table 4-18) the four groups (high SA/low ratio, low SA/low ratio, high SA/high ratio, and low SA/high ratio) suggests that the following items may be connected in that at least 70% of principals in each group reported completing these duties themselves: ‘communicating with district office’ and ‘working with the community in an administrative capacity’.

Table 4.19

Areas of Highest Connection of ADMINISTRATIVE Duties (least amount of % difference)

Administrative Duty	High SA – Low Ratio	Low SA – Low Ratio	% Difference (Comparing high SA to low SA)		High SA – High Ratio	Low SA – High Ratio	% Difference (Comparing high SA to low SA)
Communicating with district office	97.0	96.7	0.3		94.7	100.0	-5.3
Working with the community (in an administrative capacity)	90.9	93.3	-2.4		89.5	87.5	2.0

In regard to administrative duties (table 4-20) the four groups (high SA/low ratio, low SA/low ratio, high SA/high ratio, and low SA/high ratio) suggests that the following items may be the least connected in that there was a difference of 10% or higher in the responses of principals in all groups reporting completing these duties themselves: ‘managing maintenance of facilities’, ‘meeting compliance requirements’, ‘school safety’, and ‘supervision of students during the school day’.

Table 4.20

Areas of Least Connection of ADMINISTRATIVE Duties (difference of 10% or greater)

Administrative Duty	High SA – Low Ratio	Low SA – Low Ratio	% Diff (Comparing high SA to low SA)	High SA – High Ratio	Low SA – High Ratio	% Diff (Comparing high SA to low SA)
Managing maintenance of facilities	30.3	46.7	-16.4	28.9	62.5	-33.6
Meeting state / federal / local compliance requirements	81.8	63.3	18.5	81.6	100.0	-18.4
School Safety	63.6	50.0	13.6	26.3	50.0	-23.7
Supervision of students (during the school day and school related events)	60.6	46.7	13.9	36.8	50.0	-13.2

In this study the instructional duties, table 4-21, of the principal are defined as the duties that focus on curriculum, instruction, evaluation of instruction, evaluation of teachers, professional development, and monitoring student progress.

Table 4.21

% of principals who keep the responsibility for specific INSTRUCTIONAL duties

Instructional Duty	High SA – Low Ratio	Low SA – Low Ratio	% Difference (Comparing high SA to low SA)		High SA – High Ratio	Low SA – High Ratio	% Difference (Comparing high SA to low SA)
Classroom observations (not formal evaluations)	84.8	83.3	1.5		78.9	87.5	-8.6
Coordinating curriculum	66.7	60.0	6.7		65.8	62.5	3.3
Developing coherent educational programs	75.8	76.7	-0.9		84.2	62.5	21.7
Developing and enforcing academic standards	81.8	76.7	5.2		65.8	62.5	3.3
Directing supplementary programs (AP, ACP, IB, etc)	21.2	36.7	-15.5		23.7	37.5	-13.8
Evaluating curriculum	54.5	50.0	4.5		55.3	50.0	5.3
Formal teacher evaluations	84.8	93.3	-8.5		92.1	87.5	4.6
Informally coaching teachers	72.7	60.0	12.7		52.6	50.0	2.6
Intellectually stimulating teachers (keeps teachers up to speed on current research)	81.8	60.0	21.8		65.8	75.0	-9.2
Monitors student progress (student data)	48.5	43.3	5.2		42.1	25.0	17.1
Planning / implementing professional development for teachers	75.8	80.0	-4.2		65.8	87.5	-21.7
Using data to drive instruction	57.6	43.3	14.2		47.4	75.0	-27.6
Using data to evaluate programs	81.8	66.7	15.2		71.1	87.5	-16.4
Total	68.3	63.8	4.5		62.3	65.4	-2.6

The respondents to this survey reported keeping 65.0% of the instructional duties for themselves and assigning 35.0% of the duties to others. In regard to instructional duties (Table 4-22) the four groups (high SA/low ratio, low SA/low ratio, high SA/high ratio, and low SA/high ratio) suggests that the following items may be connected in that at least 70% of principals in

each group reported completing these duties themselves: ‘completing classroom observations’ and ‘completing formal teacher evaluations’.

Table 4.22

Areas of Highest Connection of INSTRUCTIONAL Duties (least amount of % difference)

Instructional Duty	High SA – Low Ratio	Low SA – Low Ratio	% Difference (Comparing high SA to low SA)		High SA – High Ratio	Low SA – High Ratio	% Difference (Comparing high SA to low SA)
Classroom observations (not formal evaluations)	84.8	83.3	1.5		78.9	87.5	-8.6
Formal teacher evaluations	84.8	93.3	-8.5		92.1	87.5	4.6

In regard to instructional duties (table 4-23) the four groups (high SA/low ratio, low SA/low ratio, high SA/high ratio, and low SA/high ratio) suggests that the following items may be the least connected in that there was a difference of 10% or higher in the responses of principals in all groups reporting completing these duties themselves: ‘directing supplemental programs’, ‘using data to drive instruction’, and ‘using data to evaluate programs’.

Table 4.23

Areas of Least Connection of INSTRUCTIONAL Duties (difference of 10% or greater)

Instructional Duty	High SA – Low Ratio	Low SA – Low Ratio	% Difference (Comparing high SA to low SA)		High SA – High Ratio	Low SA – High Ratio	% Difference (Comparing high SA to low SA)
Directing supplementary programs (AP, ACP, IB, etc)	21.2	36.7	-15.5		23.7	37.5	-13.8
Using data to drive instruction	57.6	43.3	14.2		47.4	75.0	-27.6
Using data to evaluate programs	81.8	66.7	15.2		71.1	87.5	-16.4

In this study the organizational duties, Table 4-24, of the principal are defined as the duties that focus on building school culture, setting goals and direction, working with

stakeholders, and managing resources. These leadership duties are greatly influenced by the ideals and beliefs of the principal. For example a principal who believes that all students should challenge themselves in AP courses might develop policies that allowed students of varying academic abilities the opportunity to take the course. In contrast another principal may believe that AP courses are only for the top 10% of academic performers may create a set of prerequisites that limits which students can take the course.

The respondents to this survey reported keeping 77.8% of the organizational duties for themselves and assigning 22.2% of the duties to others. In regard to organizational duties (Table 4-25) the four groups (high SA/low ratio, low SA/low ratio, high SA/high ratio, and low SA/high ratio) suggests that the following items may be connected in that at least 70% of principals in each group reported completing these duties themselves: 'building school culture', 'managing budget', 'communicating goals to stakeholders', 'establishing a school focus', 'handling faculty and staff concerns', 'hiring and releasing teachers', 'inspiring innovation', 'networking with other principals', 'protecting instructional time', 'recognizing and rewarding individuals', 'using meetings to advance goals', 'change agent', 'flexible decision making', 'keeping a finger on the pulse of the school', and 'making decisions based on strong beliefs'.

In regard to organizational duties (Table 4-26) the four groups (high SA/low ratio, low SA/low ratio, high SA/high ratio, and low SA/high ratio) suggests that the following items may be the least connected in that there was a difference of 10% or higher in the responses of principals in all groups reporting completing these duties themselves: 'interacting socially with staff', 'internal and external parent communications', and 'managing school level resources'.

Table 4.24

% of Principals who Keep the Responsibility for Specific ORGANIZATIONAL Duties

Organizational Duty	High SA – Low Ratio	Low SA – Low Ratio	% Difference (Comparing high to low)	High SA – High Ratio	Low SA – High Ratio	% Difference (Comparing high to low)
Building school culture	87.9	86.7	1.2	97.4	100.0	-2.6
Managing school level budget	78.8	76.7	2.1	94.7	75.0	19.7
Communicating school goals to stakeholders	90.9	86.7	4.2	97.4	100.0	-2.6
Counseling parents/students (both academic and non-academic needs)	15.2	23.3	-8.2	0.0	12.5	-12.5
Counseling faculty and staff (personal and/or professional needs)	75.8	83.3	-7.6	63.2	75.0	-11.8
Establishing focus (establishing clear goals with stakeholder input)	90.9	86.7	4.2	92.1	75.0	17.1
Handling faculty / staff concerns	87.9	90.0	-2.1	84.2	100.0	-15.8
Hiring / releasing teachers	97.0	86.7	10.3	94.7	87.5	7.2
Informally talking to teachers about students	42.4	56.7	-14.2	34.2	37.5	-3.3
Inspire / lead new and challenging innovations	84.8	86.7	-1.8	92.1	87.5	4.6
Interacting socially with staff	57.6	73.3	-15.8	52.6	37.5	15.1
Networking with other principals	90.9	90.0	0.9	94.7	100.0	-5.3
Parent communications (internal and external)	72.7	56.7	16.1	57.9	100.0	-42.1
Ensuring school day is organized in a way that protects instructional time	93.9	86.7	7.3	84.2	87.5	-3.3
Recognizing and rewarding individual accomplishments of faculty / staff and providing incentives	81.8	66.7	15.2	86.8	87.5	-0.7
Managing school level resources	72.7	90.0	-17.3	89.5	37.5	52.0
Student relations	45.5	40.0	5.5	34.2	25.0	9.2
Using school meetings to advance school goals	87.9	90.0	-2.1	89.5	100.0	-10.5
Acts as the change agent of the school (challenging the status quo)	87.9	93.3	-5.5	94.7	100.0	-5.3
Exercises flexibility and adaptation when making school based decisions	90.9	93.3	-2.4	89.5	100.0	-10.5
Maintaining situational awareness and the 'pulse' of the school	84.8	86.7	-1.8	84.2	100.0	-15.8
Making decisions based on strong ideals / beliefs about schooling	87.9	86.7	1.2	92.1	100.0	-7.9
Total	77.5	78.0	-0.5	77.3	78.4	-1.1

Table 4.25:

Areas of Highest Connection of ORGANIZATIONAL Duties (least amount of % difference)

Organizational Duty	High SA – Low Ratio	Low SA – Low Ratio	% Difference (Comparing high to low)	High SA – High Ratio	Low SA – High Ratio	% Difference (Comparing high to low)
Building school culture	87.9	86.7	1.2	97.4	100.0	-2.6
Managing school level budget	78.8	76.7	2.1	94.7	75.0	19.7
Communicating school goals to stakeholders	90.9	86.7	4.2	97.4	100.0	-2.6
Establishing focus (Establishing clear goals with stakeholder input)	90.9	86.7	4.2	92.1	75.0	17.1
Handling faculty / staff concerns	87.9	90.0	-2.1	84.2	100.0	-15.8
Hiring / releasing teachers	97.0	86.7	10.3	94.7	87.5	7.2
Inspire / lead new and challenging innovations	84.8	86.7	-1.8	92.1	87.5	4.6
Networking with other principals	90.9	90.0	0.9	94.7	100.0	-5.3
Ensuring school day is organized in a way that protects instructional time	93.9	86.7	7.3	84.2	87.5	-3.3
Recognizing and rewarding individual accomplishments of faculty / staff and providing incentives	81.8	66.7	15.2	86.8	87.5	-0.7
Using school meetings to advance school goals	87.9	90.0	-2.1	89.5	100.0	-10.5
Acts as the change agent of the school (challenging status quo)	87.9	93.3	-5.5	94.7	100.0	-5.3
Exercises flexibility and adaptation when making school based decisions	90.9	93.3	-2.4	89.5	100.0	-10.5
Maintaining situational awareness and the 'pulse' of the school	84.8	86.7	-1.8	84.2	100.0	-15.8
Making decisions based on strong ideals / beliefs about schooling	87.9	86.7	1.2	92.1	100.0	-7.9

Table 4.26

Areas of Least Connection of ORGANIZATIONAL Duties (difference of 10% or greater)

Organizational Duty	High SA – Low Ratio	Low SA – Low Ratio	% Difference (Comparing high SA to low SA)	High SA – High Ratio	Low SA – High Ratio	% Difference (Comparing high SA to low SA)
Interacting socially with staff	57.6	73.3	-15.8	52.6	37.5	15.1
Parent communications (internal and external)	72.7	56.7	16.1	57.9	100.0	-42.1
Managing school level resources	72.7	90.0	-17.3	89.5	37.5	52.0

Research Question 3: Is the student-to-administrator ratio in each category of high schools influenced by factors such as school size, geographic location, school socioeconomic status, number of teachers, and/or minority students in the school?

Schools were divided into one of four categories (high student achievement / low student-to-administrator ratio, low student achievement / low student-to-administrator ratio, high student achievement / high student-to-administrator ratio, or low student achievement / high student-to-administrator ratio). Demographic, performance, and school characteristic data were gathered from two sources. Demographic and performance data, including percent minority, percent special education, percent English language learner, academic scores, and enrollment were all gathered from the Indiana Department of Education. Information on the characteristics of the school and school personnel, including location, gender of the principal, age range of the principal, years in current position, total years of administrative experience, principals degree level, total number of administrators, and total number of administrative support staff were all reported by each of the 109 principals who responded to this survey. The student-to-administrator ratio was calculated using the school's enrollment from the Indiana Department of Education and the number of administrators reported by each survey respondent.

Table 4.27 shows an unequally small sample size in reporting principals in the category of low student achievement/high student-to-administrator ratio. This category consisted of eight reporting principals in comparison to the remaining three categories having an average of 34 reporting principals. The small number of respondents in this category could impact the results as that the averages are only derived from 8 respondents (which is four times less than the other categories).

Table 4.27
Summary of School Demographic, Performance, and Characteristic data

	High SA / Low Ratio	Low SA / Low Ratio	High SA / High Ratio	Low SA / High Ratio
N	33 Category = N = %	30 Category = N = %	38 Category = N = %	8 Category = N = %
Gender of Principal	Female = 5 = 15.2% Male = 28 = 84.8%	Female = 7 = 23.3% Male = 23 = 76.7%	Female = 5 = 15.2% Male = 33 = 86.8%	Female = 2 = 25.0% Male = 6 = 75.0%
Location	Urban = 3 = 9.1% Sub = 1 = 3.0% Town = 20 = 60.6% Rural = 9 = 27.3%	Urban = 5 = 16.7% Sub = 1 = 3.3% Town = 17 = 56.7% Rural = 7 = 23.3%	Urban = 5 = 13.2% Sub = 14 = 36.8% Town = 5 = 13.2% Rural = 14 = 36.8%	Urban = 3 = 37.5% Sub = 1 = 12.5% Town = 2 = 25.0% Rural = 2 = 25.0%
Age Range of Principal	Under 30 = 0 = 0.0% 30-40 = 6 = 18.2% 41-50 = 13 = 39.4% 51-60 = 11 = 33.3% Over 60 = 3 = 9.1%	Under 30 = 1 = 3.3% 30-40 = 6 = 20.0% 41-50 = 11 = 36.7% 51-60 = 9 = 30.0% Over 60 = 3 = 10.0%	Under 30 = 1 = 2.6% 30-40 = 11 = 28.9% 41-50 = 15 = 39.5% 51-60 = 7 = 18.4% Over 60 = 4 = 10.5%	Under 30 = 1 = 12.5% 30-40 = 1 = 12.5% 41-50 = 2 = 25.0% 51-60 = 3 = 37.5% Over 60 = 1 = 12.5%
Avg. years in current position	6.5	5.2	5.0	4.4
Principal Avg years of Total Admin Experience	13.4	13.0	13.0	15.0
Degree Type	Bachelor's = 0 = 0.0% Master's = 24 = 72.7% Specialist = 7 = 21.2% Doctorate = 2 = 6.0%	Bachelor's = 0 = 0.0% Master's = 23 = 76.7% Specialist = 5 = 16.7% Doctorate = 2 = 6.7%	Bachelor's = 0 = 0.0% Master's = 27 = 71.1% Specialist = 8 = 21.1% Doctorate = 3 = 7.9%	Bachelor's = 0 = 0.0% Master's = 4 = 50.0% Specialist = 2 = 25.0% Doctorate = 2 = 25.0%
Avg # of Admins	2.3	2.2	3.6	2.9
Avg # of Admins and Admin Support	10.3	8.6	18.4	17.1
Avg Student Enrollment	574	500.7	1549.7	1173.4
Avg Student to Admin Ratio	1 to 241.6	1 to 217.4	1 to 433.2	1 to 426.9
Avg Student to Admin + Support Ratio	1 to 70.4	1 to 63.4	1 to 87.4	1 to 65.9

Avg % minority students	7.7	14.1	17.1	22.7
Avg % Free-Red students	33.6	44.9	30.2	53.1
Avg% SPED students	13.6	13.9	12.1	17.3
Avg % ELL students	0.6	1.7	2.2	3.6
Avg % passing both ECA	75.4	64.9	79.9	58.3
Avg SAT composite score	988.2	927.5	1024.0	939.4
Avg ACT composite score	22.3	20.7	23.3	21.1
Avg % passing AP	9.5	4.1	23.9	5.7
Avg % passing ECA Math	86.1	79.1	89.4	72.1
Avg % passing ECA E/LA	82.0	75.2	83.9	66.8
Avg Grad rate	89.7	86.5	90.1	86.4
Avg % college / career ready	43.2	41.0	50.3	33.4
Avg combined academic score	1316.9	1109.6	1383.0	1222.1

For example principals in the category of low student achievement/high student-to-administrator ratio initially appears to have three times as many principals holding doctorates than the other

categories. In actuality the number is a representation of two respondents but equals 25% of the sample. It could easily have been argued that a sample size equal to the other three would have different results that were more consistent with the other three.

Schools with low student achievement, regardless of administrator ratio, reported a higher frequency of the school being located in urban areas. On average 27.1% of the schools with lower student achievement reported being located in urban areas as compared to 11.1% of the schools with high student achievement, regardless of the administrator ratio. Schools with lower student academic achievement had a higher rate of minority students, free/reduced lunch students, English language learner students, and special education students as compared to schools with high student achievement. The area of highest discrepancy is in the percentage of free-reduced lunch students with the difference between low and high student achievement being at 17.1%. The area of lowest discrepancy between low and high achieving students is in English language learners at 1.27% followed closely by special education students at 2.7%. These results are demonstrated in Table 4.28.

Table 4.28
At Risk Demographic Student Achievement Comparisons

	Combined avg. for schools with LOW SA	Combined avg. for schools with HIGH SA	Avg. % Difference
Avg % minority students	18.4	12.4	6.0
Avg % Free-Red students	49.0	31.9	17.1
Avg% SPED students	15.6	12.9	2.7
Avg % ELL students	2.6	1.4	1.3

In regard to the individual experience levels of the responding principals there was a reported average of 5.3 years of experience in their current principals position with the highest average being reported at 6.5 years for principals in schools with high student achievement / low student-to-administrator ratio and the lowest average being reported for principals in schools with low student achievement / high student-to-administrator ratio at 4.4 years. For overall administrative experience (total number of years regardless of position) the reported average was 13.6 years with the highest average of total experience being 15.0 years for principals in schools with low student achievement / high student-to-administrator ratio.

The student-to-administrator ratios for the schools categorized in the low ratio category have an average of 229.5 students to every administrator as compared to schools in the high ratio category which report an average of 430 students to each administrator. The category with the lowest ratio was schools with low student achievement and low student-to-administrator ratio at 217.4 students per administrator and the schools reporting the highest ratios were schools with high student achievement and high student-to-administrator ratio at 433.2 students per administrator. Principals were also asked to report the number of administrative support personnel (including but not limited to department chairs, teachers on special assignment, athletic directors, etc.) and a comparison of these numbers was also calculated as a per student ratio. The category of schools with the lowest ratio were schools with low student achievement and low student-to-administrator ratio reported at 63.4 students per one administrative support personnel as compared to the category with the highest ratio, high student achievement and high student-to-administrator ratio, at 87.4 students per one administrative support personnel. Results from this section are reflected in Table 4.29.

Table 4.29
Student-to-Administrator Ratio and Administrative Support Ratio Compared to Overall Academic Performance

	High SA / Low Ratio	Low SA / Low Ratio	High SA / High Ratio	Low SA / High Ratio
Avg. # of Admins	2.3	2.2	3.6	2.9
Avg. # of Admins and Admin Support	10.3	8.6	18.4	17.1
Avg. Student Enrollment	574	500.7	1549.7	1173.4
Avg. Student to Admin Ratio	1 to 241.6	1 to 217.4	1 to 433.2	1 to 426.9
Avg. Student to Admin + Support Ratio	1 to 70.4	1 to 63.4	1 to 87.4	1 to 65.9
Avg. Combined Academic Score	1316.9	1109.6	1383.0	1222.1

Research Question #4: Does the evidence gathered provide a clear method for determining the appropriate number of administrators to employ in a high school based on the number of students enrolled in order to maximize student achievement?

The category with the highest overall academic performance is high student achievement / high student-to-administrator ratio. This group consisted of a ratio of 1 administrator for every 433 students and a ratio of one administrator and support staff for every 87 students. In regard to total number of administrators and support staff combined this category averaged 18.4 people. The data shows that on average schools with higher student-to-administrator ratios have higher overall student academic performances. This trend also holds true when adding in additional administrative support personnel into the overall ratio. Results from this section are reflected in Table 4-15. Information from the three prior research questions will be used in Chapter 5 of this research to suggest if a method for recommending a ratio of student-to-administrator can be made that could have the most impact on student achievement.

Chapter 5

Summary of the Study

It is generally recognized that the job responsibilities of the high school principal are vast and wide ranging (Waters, et al., 2003; Hallinger & Murphy, 1985; Grissom & Loeb, 2011). It is also acknowledged that the responsibilities of a principal are similar, no matter what the size, demographics, and resources of the school district (Waters, et al., 2003; Hallinger & Murphy, 1985; Grissom & Loeb, 2011). One objective of this study was to determine if the student-to-administrator ratio in a school had an impact on student achievement. In other words of the 51 identified duties of a principal (Waters, et al., 2003; Hallinger & Murphy, 1985; Grissom & Loeb, 2011) do school leaders with more support and therefore a lower student-to-administrator ratio have higher performing schools? In 1968, Moody offered commentary on the job of the principal in the article the “Plight of the Principal”.

Pity the poor principal! He must be a manager, supervisor, psychologist, financial wizard, master of law, public relations specialist, public speaker, school and community leader, a first aid specialist; and through it all, he must be a good guy as well. He must be understanding, fair, reasonable, flexible, patient, stable, and always available – at school and elsewhere. He must inspire, ameliorate, mediate, organize, sponsor, attend, and react properly to pressures. He must try to avoid controversial comments about civil rights, segregation, integration, busing, socialism, automation, strikes, boycotts, unions, protests, the draft, Vietnam, George Wallace, the Dow Chemical Company, and even Custer’s last stand. (p. 543)

The problem addressed in this study was to suggest a method by which school boards and superintendents could determine the appropriate number of administrators to employ at a school. The study also attempted to determine which of the 51 duties presented in the study were most important for the principal to keep and which could be assigned to others to complete.

The guiding research questions led to the development of a 67-question survey to help identify key demographics of each school, the administrative support available at each school, and how administrative duties are delegated in relation to the student-to-administrator ratio and student academic performance. Data from the Indiana Department of Education (graduation rate, ECA algebra scores, ECA English scores, percent of academic honors diplomas, percent of core 40 diplomas, percent passing at least one Advanced Placement exam, and SAT composite score) were used to determine the academic achievement data for each school. To further understand the divisions of duties in each school, respondents were asked to provide the number of employees in various roles at the school as well as additional information including their administrative experience level, and level of highest earned degree. Respondents also listed who in their school was responsible for each of the assigned 51 duties. The administrative duties were categorized into three groups: Instructional Leadership, Organizational Leadership, and Administrative Leadership.

Discussion of the Findings

The current study produced some interesting findings describing the demographic information gathered from this research. The findings were based upon the 109 responses to the survey from Indiana public high school principals. Of the 109 respondents, 82.6% were male.

Almost 37% of the respondents (36.7%) were between the ages of 41 and 50 with the second largest group reporting that 29.4% were between the ages of 51 and 60.

In regard to years in their current principal position, respondents indicated that 55% had 5 or less years of experience in their current principal position and that number jumps to a surprising 90.8% when you extend that parameter out to 10 or less years in their current position. For the demographic of years of experience the largest reporting group was 6 to 15 years of total administrative experience at 54.1%. A majority of respondents held a masters degree (70.6%) with the specialist degree coming next (22%) and the doctorate degree at (7.3%).

While this data was interesting and will be analyzed in more detail in research question three, only 109 out of 363 public high school principals responded to the survey which did create some issues with the level of significance of the findings. These areas will be analyzed later in this chapter.

Previous research has attempted to identify the impact of class size on student achievement, “It is not difficult to find claims for both sides of the argument about whether or not reducing class sizes leads to enhancements in learning outcomes” (Hattie, 2012). No studies were found that focused on the administrative personnel in a school in relation to the student-to-administrator ratio and student achievement. There is no commonly agreed upon formula for determining the number of administrators a high school associated with a high level of effectiveness. Because there are no researched-based guidelines for school boards and superintendents, this study was an attempt to establish the relevant factors to consider when deciding how much administrative support to provide a high school principal.

Research Question 1

Is there a relationship between the student-to-administrator ratio of a high school and student achievement?

Hypothesis: Schools with low student-to-administrator ratios have students who perform higher academically.

The researcher hypothesized there would be a significant difference in student achievement between schools with low student-to-administrator ratios and schools with high ratios. Specifically schools with low ratios would have higher academic achievement. Three measures of academic performance (SAT composite score, ACT composite score, and AP pass rates) were statistically eliminated in the homogeneity of variance test and therefore had to be eliminated from the study, as described in chapter 4.

Table 4.16 displays the results of the comparison of high ratio to low ratio schools. This table shows that the schools with higher student-to-administrator ratios actually performed better than schools with low ratios in the combined significant areas of graduation rate ($p=.434$), percent college/career readiness ($p=.179$), and ECA English passing rate ($p=.149$), which contradicted the researcher's hypothesis. This table shows the mean weight difference for schools with high ratios is greater in all categories when connected to higher academic performance. While this finding is contradictory to the researchers original hypothesis, further analysis does show that the original premise of total human capital may hold some significance to student achievement. It is commonly accepted that larger schools tend to have more administrators as well as more administrative support. Administrative support may come in the form of instructional coaches, department chairs, curriculum directors, etc. It could be said that

every high school principal would like to employ one person who is directly responsible for curriculum development and instructional practice. Generally one person to facilitate this area would be sufficient regardless of the school size. In other words ‘curriculum development’ being defined as a finite task in general would look similar in large and small schools. The difference lies in that large schools have the resources to assign someone the sole task of curriculum development where a smaller school does not have the same resources, mostly financial, and therefore must give this administrator several other duties which would ultimately detract from focusing on this important task. Hattie’s (2012) meta-analysis of over 800 studies lists 138 influences on student achievement and their impact on student achievement. Of the 125 influences that had a positive impact on student achievement and that the school can directly influence 20% are related to curriculum. Knowing this statistic a further assumption could have been drawn that schools with full time curriculum coordinators would have higher performing students due to the importance of having a well developed school curriculum.

The areas of greatest significance in this study were graduation percentage at $p=.434$ followed by percent college/career readiness at $p=.179$. One plausible explanation is that these are both items in that a school administration could have a direct impact. In today’s school culture graduation rates are most often impacted by programs such as credit recovery and other intervention programs that assist students in getting back on track by obtaining lost credits. College and career readiness percentages are impacted by schools that have robust AP, dual credit, and job programs that allow students to have advanced preparation for life after high school. According to Grissom and Loeb (2011), “organization management skills, consistently predicts student achievement growth and other success measures” (p. 1). Schools that have the human capital to run and facilitate these programs, often organized by administrators, would

have an advantage over other schools that do not have either the financial resources or the human resources to effectively facilitate such programming.

Prior chapters have mentioned the probable impact of administrative support personnel on student achievement. The acronym TAPS (Total numbers of Administrators Plus administrative Support) was used and an attempt was made to find any significance in this number as related to student achievement. Table 4.13 shows that the ratio TAPS was not significant across the sample and therefore not included in any further analysis. Even though this was not included the researcher feels that there are some important survey results that demonstrate the possibility of a connection. Table 4.26 shows that schools with the highest student achievement on average had 0.5 more administrators per school and 1.5 more TAPS personnel. This leads to an average of two more TAPS persons per high performing school as compared to low performing schools taking into account school size. When considering that these two extra TAPS could facilitate curriculum, instruction, academic interventions, and advanced programs the overall impact could be said to be significant depending on the experience level of the extra personnel. Research by Robinson (2007) outlined five major factors related to the success of a building principal, and stated that these particular factors have substantial impacts on student outcomes. These factors are as follows: establishing goals and expectations, strategic resourcing, planning/evaluating/coordinating the curriculum, promoting and participating in teacher learning and development, and ensuring an orderly and supportive environment. While the principal is responsible for all of these items of high impact, the researcher feels that it is not possible for one person to effectively facilitate all of these programs in addition to all other duties without proper support.

Research Question 2

For schools that have the following designations, what are the patterns of delegation (job duties) administrative team's exhibit in their day-to-day operations?

- a. high student achievement and low student-to-administrator ratio
- b. low student achievement and low student-to-administrator ratio
- c. high student achievement and high student-to-administrator ratio
- d. low student achievement and high student-to-administrator ratio

Findings demonstrated there is no significant difference in the student achievement for schools with high and low student-to-administrator ratios. In response to this fact the researcher adjusted the review of the findings of this question to find if principals of schools with high student achievement demonstrate different characteristics in the duties they keep for themselves as opposed to delegated duties in the three overall categories of administrative leadership, instructional leadership, and organizational leadership.

Regardless of where principals want to and actually spend most of their time, the research conducted by Waters, Marzano and McNulty (2003) suggested a direct correlation between positive school leadership (defined as the ability to enact second order change) and school wide student achievement. Comparing schools with similar populations, schools with effective principals score higher in school wide student achievement than those with only average principals. The overarching question is what do high performing principals do differently?

Holistically analyzing all three categories (administrative, organizational, and instructional leadership) the rate of responsibilities kept was consistent on average between both low and high performing schools. Table 5.1 shows these relationships.

Table 5.1: Average Percentage of Duties Kept by High School Principal Based on Level of Student Achievement

School Classification	% of Administrative Duties Kept by Principal	% of Instructional Duties Kept by Principal	% of Organizational Duties Kept by Principal
High Student Achievement	44.3%	65.3%	75.8%
Low Student Achievement	46.9%	64.6%	76.6%

At first glance the general results do not appear to depict any difference between high and low performing schools, but a closer look at individual tasks in each category will show some distinct differences between the two groups. Since the two groups (high and low achievement) are so close in their overall duty distribution averages and the results of the t-test (Table 4.14), a difference of 10% or higher between high and low performing schools was recommended by the researcher to be noteworthy.

Administrative leadership is defined by the researcher as duties of the principal that focus on the more routine tasks that comply with local, state, and federal regulations, procedures, and policies. Survey results indicated that principals of high performing schools had an outcome 12.8% higher than low performing schools in the area of ‘managing the personnel schedule of non-teaching staff’. Just because a staff member is not a teacher does not mean that they do not impact student achievement. The careful and strategic placement of all human capital in a school is a very important job that a principal must take seriously. Research by Kimbal (2011) in the area of managing human capital stated,

“Principals who have just gotten used to the idea that they should be instructional leaders must now adapt to a new concept: the principal as strategic talent manager. Being a

strategic talent manager requires not only acquiring and developing talented staff, but also creating the working conditions in which staff fully commit their time and energy” (p. 13.

Schools with low student achievement had principals who had responses 25% higher than schools with high student achievement in the area of ‘managing school facilities’. Managing a school building is an important task since in most communities the high school is one of the central structures that is used by many outside groups. However, it is not a task central to improving student achievement and should be delegated to someone other than the principal. Principals of low performing schools also responded 16.3% higher than schools with high student achievement in managing student attendance and 12.7% higher for managing student discipline. Again while these items are important for a safe and orderly school they can take up a significant amount of time and should be the focus of someone other than the principal.

Instructional leadership is generally defined as leadership duties that focus on curriculum, instruction, evaluation of instruction, evaluation of teachers, professional development, and monitoring student progress. Survey results show that principals of high performing schools had an outcome 10.4% higher in the area of ‘developing coherent educational programs’ and 11.1% higher in the area of ‘using data to monitor student progress’ than schools with low student achievement. Being proficient in these areas as a principal would allow a lead administrator to set the focus and vision of the school and are viewed as responsibilities with a wide scope that help set a direction for a school. In contrast, principals of lower performing schools reported that they are 14.6% more likely to ‘direct supplemental programs’ and 13.0% higher for ‘planning and implementing professional development for teachers’ than principals in schools with high student achievement. On the surface these items may appear as something a principal should do,

but closer examination would suggest the contrary. Directing supplemental programs and planning professional development are both items that require a large amount of time and grunt work. The job of the principal should be to set the direction of these programs using student data and the plan for the coherent educational programs as their guide. The actual work needed to complete these difficult tasks may be considered by the principal to be delegated to another person depending on the individual principal's skills and leadership style.

Organizational leadership is defined by the researcher as duties that focus on building school culture, setting goals and direction, working with stakeholders, and managing resources. These leadership duties are greatly influenced by the ideals and beliefs of the principal. Survey results show that principals of high performing schools responded at a rate 17.4% higher in the area of 'managing school level resources', 10.9% higher at 'managing the school budget', and 10.7% higher at 'establishing the focus of the school' than schools with low student achievement. Grissom and Loeb's research (2011) emphasized overall building leadership even though they stated it was merely instructional in nature.

More generally, however our findings do argue against narrowing the principal's focus to only overseeing day-to-day instructional practices and observing teachers in classrooms at the expense of managing key organizational functions, such as budgeting and maintaining campus facilities. Rather, we might conceive of effective instructional leadership as combining an understanding of the instructional needs of the school with an ability to target resources where they are needed, hire the best available teachers, and keep the school running smoothly. (p. 1119)

In most schools resources are of a limited supply and the resources can include everything from human capital to money. In order to appropriately allocate these resources the principal must first set a focus for the school then allocate these key resources based on the that focus. This premise directly connects these items and may demonstrate why principals who focus on these items have schools where student achievement is higher.

In contrast principals of low performing schools were 10.3% higher for in the area of ‘counseling students and parents’ and 13.0% higher in ‘responsible for parent communications’ in keeping these duties for themselves than principals in schools with high student achievement. Counseling and communicating with parents and students is important but these activities should happen based on the focus set by the principal and a majority of the leg work should be completed by others. The hard part about a principal’s work day is that he/she only has so many hours in the day with faculty and staff. Principals work full time but also will have evening commitments to attend school functions, meet parents, and meet other community members (U.S. Bureau of Labor Statistics, 2012). A good idea or plan that is thought up at 6:00 PM is lost until the next school day and if the principal takes too much of that time up with these routine tasks, rather than delegating to others, most of these ideas will never develop into programs that impact student growth.

In conclusion there were five key areas that have been identified by the survey respondents as possible areas of importance when a principal decides which duties to take on and which to delegate to others. These identified duties are listed in Table 5.2.

Table 5.2: Duties Identified as Important Based on Responses From Principals with High Student Achievement.

Leadership Category	Specific Duty	% Response difference as compared to schools with low student achievement
Administrative Leadership	Managing school personnel schedule for non-teachers	+12.8%
Instructional Leadership	Developing coherent educational programs	+10.4%
Instructional Leadership	Using data to monitor student progress	+11.1%
Organizational Leadership	Managing school budget	+10.9%
Organizational Leadership	Establishing the focus of the school	+10.7%
Organizational Leadership	Managing school level resources	+17.4%

When reviewing Table 5.2 it is apparent that duties in the areas of instructional and organizational leadership weigh the most in connection to student achievement with only one item from administrative leadership showing a possible impact. While it may appear that this list simplifies what a principal should focus upon and keep these duties for him/herself it is not always as easy as one might think in this complicated job. Fulton (1951) stated that principals were often misunderstood by teachers for getting top pay sitting in an office the entire day. “The daily administrative routine is a bit of a mystery to the average teacher” (Fulton, 1951). Sometimes the duties of the principal can even be a mystery to the principal without some clear job expectations and some guidelines on how to complete them. The PDP created in this study develops a coherent job description for a principal and the duties in table 5.2 assist a principal in determining some of the most important to keep in his/her direct care.

Research Question 3

Is the student-to-administrator ratio in each high school influenced by factors such as school size, geographic location, school socioeconomic status, number of teachers, and/or number of minority students in the school?

Table 5.3 shows the relation between the demographic information of each school and its principal as compared by their ratio.

Table 5.3: Most Common Responses (median) to Key School and Principal Demographic Information Compared to Their Ratio (high /low)

Demographic Indicator	Low Ratio Schools	High Ratio Schools
School Location	Town or Rural: 84.0%	Urban or Suburban: 73.2%
Age of the Principal	41-50 years : 38.5%	41-50 years: 32.3%
Principal Years in Current Position	5.9 years	4.7 years
Principal Total Years of Administrative Experience	13.2 years	14.0 years
Most Common Degree Held by Principal	Masters: 74.7%	Masters : 60.6%
School Enrollment	537.4	1361.6
% Minority Students	10.9%	19.9%
Free / Reduced Lunch Students	39.2%	41.7%
Special Education Students	13.8%	14.7%
English Language Learners	1.1%	2.9%

Schools with low student-to-administrator ratios tend to have the following qualities that separate themselves from schools with higher ratios: a) being located in a town or rural location, b) having an enrollment that was about 40% the size of large ratio schools at an average of 537.4 students, c) having a minority student rate that is 9% less than large ratio schools, and d) an average of 1.1% of its student being English language learners, which is almost three times less

than large ratio schools. No characteristics of the school principal are of notable difference between the two groups. Table 5.3 shows a 14% difference in the most common degree level of each ratio type. While both demonstrate that the Master's degree is the most common it does not necessarily reflect that high ratio schools have more principals with either a specialist or doctorate degree. This discrepancy is most likely due to the small sample size in the category of "low student achievement / ratio". There were only eight respondents in this group, as compared to an average of around 34 respondents for all other categories.

While the four prior stated demographic areas of focus demonstrate some differences between low and high ratio schools and provide potential predictors of high and low student-to-administrator ratio, as defined by the researcher in this study, they do not provide an indicator of student achievement. The researcher hypothesized that schools with lower student-to-administrator ratios would have a higher level of student achievement. The researcher then hoped that these lower ratio schools would have demographic characteristics that would allow him to transition to research question 4 and propose a method for recommending the number of administrators per student in low performing schools in order help them improve and also provide relief to the principals and ultimately increase the retention rate.

Research Question 4

Does the evidence gathered provide a clear method for suggesting the appropriate number of administrators to employ in a high school based on the number of students enrolled in order to maximize student achievement?

From the results of the prior research questions the data does not show a clear method for suggesting the number of administrators to employ at an Indianan public high school.

Conclusions

The following conclusions were formulated based on the findings of this study:

1. Schools with higher student-to-administrator ratios outperformed schools with low ratios in the areas of graduation rate, college career readiness, and ECA English. However, in looking at the data closely there are high performing schools in both the low and high ratio groups. In the low ratio group the ratio is 1 administrator to every 241.6 students and for the high ratio group it is 1 to 426.9.
2. Overall principals reported (see table 5.2) they kept 76.5% of the organizational duties, 65% of the instructional duties, and 47% of the administrative duties in their direct control. This shows that principals in general are focused on an area supported by research. Grissom and Loeb (2011) and Hattie (2012) by their findings on hiring quality teachers, concluded that only organizational management (leadership) consistently showed as a predictor for student growth and achievement (Grissom & Loeb, 2011). In their organizational management category, there were eight tasks: 1) developing a safe school environment, 2) dealing with concerns from staff, 3) managing budgets and resources, 4) hiring personnel, 5) managing personnel, school-related schedule, 6) maintaining campus facilities, 7) managing non-instructional staff, and 8) interacting/networking with other principals. When looking at each category closer six specific areas stand out as key indicators (Table 5.2) of schools with a high level of student achievement as that schools with higher student achievement had principals that reported back a higher rate keeping these duties rather than assigning them to others. These duties are as follows: 1) managing school personnel schedule for non-teachers (administrative leadership), 2) developing

- coherent educational programs (instructional leadership), 3) using data to monitor student progress (instructional leadership), 4) managing the school budget (organizational leadership), 5) establishing the focus of the school (organizational leadership), and 6) managing school level resources (organizational leadership).
3. Whether a school has a high or low student-to-administrator ratio was found to be mostly related to the schools location, enrollment, percent of minority students, and percent of English language learner students. Larger schools located in urban or suburban locations as well as schools with a higher percentage of minority students (on average 9% higher) are more likely to have high student-to-administrator ratios. Larger ratio schools have shown to have a higher percentage of ELL students on average around 2% higher.
 4. No clear formula could be suggested to calculate the optimal student-to-administrator ratio for a school. Overall schools with larger ratios did outperform schools with lower ratios and detailed look at the data does demonstrate that there are several high performing schools with low ratios. These contradictory findings demonstrate that no singular formula can be developed based on the data gathered in this study.

Implications for Practice

This study sought to discover if there was a connection between the student-to-administrator ratio of a school and the academic performance of its students. The research showed that schools with larger student-to-administrator ratios performed higher than schools with low student-to-administrator ratios. However, closer examination of the data shows that there are schools with smaller student-to-administrator ratios that performed just as well as schools with large ratios. The results have also shown that what a principal does may have an

impact on student performance as that most principals in high performing schools kept a majority of the ‘organizational’ duties for themselves as compared to low performing school principals, which suggests that this category of job duties is important to improving student performance.

The study also produced the principal’s duty pyramid (PDP) which combined the duties from three major studies into one easy to read and understand graphic representation of the complex and difficult job of the principal. While this job is difficult, years of educational research (Waters, Marzano, & McNulty, 2003) had shown two consistent factors in improving student performance: quality teachers and quality school leaders. While the impact of quality administration is demonstrably an important factor in student achievement, the number and overall functions of administrators are often overlooked by local and national communities. This study has shown that there is a possible connection between these two factors that may be concluded with further research.

It is important as a profession that we identify the best and most sound ways to recruit, train, and support high school principals. Recruiting and retaining competent administrators is an important job of any school district. Pijanowski, et al. (2012) state, “Principals identified stress (91%) and time required at work (86%) as the top two occupational deterrents for people who chose to opt out of school leadership after they meet the credential requirements.” With proper support and training, relief can be provided in the areas of time required and work stress and therefore increase the longevity and effectiveness of our building level leaders.

Finding, taking care of, and keeping our high school principals is paramount to our success as an educational system. In order to best support our students the citizens of Indiana

must first support our school leaders. In 1968 Moody described the “Plight of the Principal” which still holds true today and further signifies why we must support our school leaders:

Pity the poor principal! He must be a manager, supervisor, psychologist, financial wizard, master of law, public relations specialist, public speaker, school and community leader, a first aid specialist; and through it all, he must be a good guy as well. He must be understanding, fair, reasonable, flexible, patient, stable, and always available – at school and elsewhere. He must inspire, ameliorate, mediate, organize, sponsor, attend, and react properly to pressures. (p. 543)

Recommendations for Further Research

The results of this study demonstrated a likely connection between schools with larger ratios and student performance in terms of graduation rate and college/career readiness. The results have shown that schools with high student-to-administrator ratios had a higher level of performance in these areas. However, closer examination of schools with small ratios and high academic performance also performed well in these two categories. It would be a logical assumption that the principal can directly impact these two areas of student achievement as that both would be impacted by school administrators as that supporting programs would be organized at the building level as opposed to other academic measures which are more directly impacted by the teacher at the classroom level. These supporting programs could include credit recovery, credit rescue, AP courses, dual credit courses, and vocational education programs.

Further research into these two areas of student achievement could be beneficial in determining specifically how the quality of the principal impacts these two important achievement areas which now account for a combined 45% (30% graduation rate and 15%

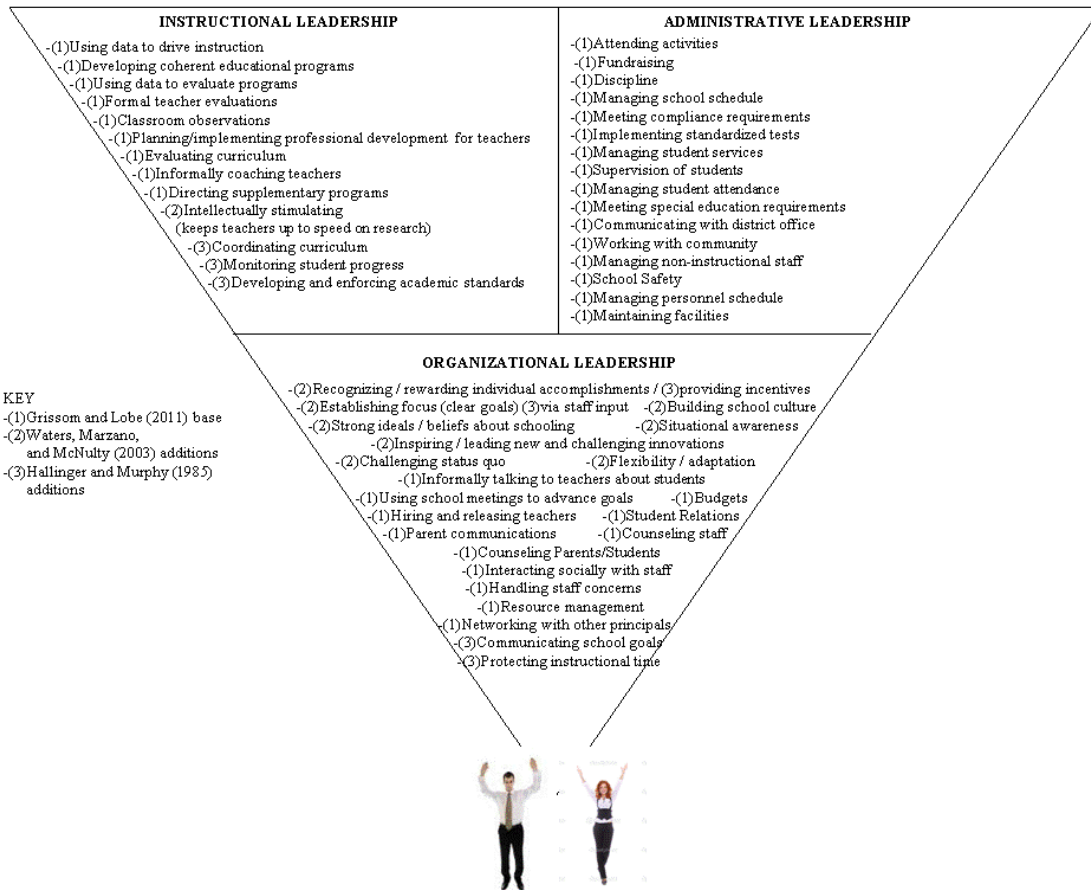
college/career readiness) of a high school's letter grade assigned by the state. A connection between the qualities of a principal or how he/she delegates duties focused on these two specific data points could lead to a better understanding of how to improve or sustain performance.

Another focus of further research could be merely focusing on the 'organizational leadership' component of the principal's duties. This study demonstrated that principals overwhelmingly kept more of these organizational duties for themselves compared to the other two areas (instructional and administrative). Grissom and Loeb (2011) stated, "Of these, only organizational management consistently showed as a predictor for student growth and achievement." This study modified the tasks that would be included in the 'organizational' category by adding tasks from two other studies. This study also collapsed two additional categories (internal and external relations) from the Grissom and Loeb (2011) study and diffused them into the other categories.

An interesting study would be to take the three categories from this research and use the same method from the Grissom and Loeb (2011) study to determine if a more simplified format would yield the same results. In the Grissom and Loeb (2011) study the authors pointed out that they diverge from many previous studies by focusing not only on the tasks, but also the effectiveness with which they are completed by the principal. "By complementing frequency of practice studies with our analysis of effectiveness of practice, we emphasize the competency dimension that likely matters in uncovering principal effectiveness" (Grissom & Loeb, 2011, p. 1102). This focus on effectiveness along with how a principal delegates duties could provide insight and recommendations for principals in the future to assist them in not only completing job tasks, but completing the right tasks and the right time.

A final area of further research would be in direct relation to the Hallinger and Murphy (1985) study. In this study the authors pointed out that many studies revealed the principal's great influence on instruction and student success, but few studies focused on what principals do to manage curriculum and instruction. One purpose of this study was to develop a research-based definition of the specifics of a principal's instructional role. Hallinger and Murphy (1985) stated that principals believed they should be highly involved in instruction, but generally had not allocated a significant amount of their time to managing instructional activities. Since this study occurred almost 30 years ago a re-creation of this study today may show some new results. The research conducted by Waters et al. (2003) determined the direct correlation between positive school leadership and school wide student achievement. There have been many changes since the Hallinger and Murphy (1985) study especially in the field of educational research and new information in regard to brain research and how student learn. A re-enactment of this study could possibly provide some new insight into not only what principals do, but also how effective they are at doing it. The Hallinger and Murphy study included the use of the PIMRS that was used by principals to self-assess and was given to teachers to the principal's closest supervisor as well. The summary results of this study indicate that the teachers' ratings are the most accurate, followed by those of the principal's supervisor. The least consistency was noted in the self-ranking of each principal. If the result of a reenacted study remained the same this could provide superintendents and schools boards an updated and recent tool to use to assess the effectiveness of a principal and benefit students by improving school leadership.

APPENDIX A: Principal Duty Pyramid (PDP)



APPENDIX B: Survey Instrument

Q1 Name of High School or School DOE Code (Note: The name of your school will not be published in any part of this research study. The name of your school will allow me to find data on the IDOE site and correlate it to your school.)

Q2

Your Gender

- Male
- Female

Q3

Your Age Range

- Under age 30
- 30 to 40 years old
- 41 to 50 years old
- 51 to 60 years old
- Over age 60

Q4

Your Race

- American Indian or Alaskan Native
- Asian
- Black or African American
- Hispanic or Latino
- Native Hawaiian or Other Pacific Islander
- White

Q5

How many years of TEACHING experience do you have? (Time you were not at administrator.)

Q6

How many years have you been in your CURRENT principal position?

Q7

How many years of TOTAL administrative experience do you have? (Regardless of type)

Q8

Which of the following best classifies your high school setting?

- Urban
- Suburban
- Rural

Q9

Current school enrollment for grades 9 - 12?

Q10

How many certified faculty are employed in your school?

Q11

% Minority Students in Your School

Q12

% Free - Reduced Lunch Students in Your School

Q13

% Special Education Students in Your School

Q14

What is your highest degree level?

- Bachelors
- Masters
- Specialist
- Doctorate

Q15

Administrative License: What is your current license status?

- Emergency License
- Initial Practitioner License
- Established Practitioner License
- Other (Please Specify)

Q16

Administrative Personnel: How many staff members are employed in the following positions in your school?

For reference: Teacher on Special Assignment / TOSA {Teacher(s) who are assigned one or more periods to fulfill duties during the school day that are not directly instructing students (please do not include teachers completing lunchroom supervision in this count). Examples: instructional coach, grant writing, assisting in the office with administrative duties, etc.}

Assistant / Associate/ Vice Principals

Dean of Students

Guidance Director

Guidance Counselor (not including Guidance Director)

Department Chair / Team Leader

Teacher on Special Assignment (TOSA)

Athletic Director

Q17

Below is a list of various administrative responsibilities that have been identified by research as part of the principal's job description. Even though all of these items are ultimately your responsibility it is highly likely that someone else has been assigned to handle the day to day operations of some or most of these items, following your direction and/or guidance. Below please signify who is PRIMARILY responsible for the day to day oversight of each of these duties. PLEASE FOCUS ON THE PERSON WHO YOU HAVE ASSIGNED PRIMARY RESPONSIBILITY FOR EACH TASK.

Choices for the remainder of the questions selected via a drop down menu:

- Principal (Self)
- Assistant / Associate Principal
- Dean of Students
- Guidance Director
- Guidance Counselor
- Department Chair / Team Leader
- Teacher on Special Assignment
- Regular Classroom Teacher
- Support Staff Member (Secretary, Instructional Assistant, etc)
- Central Office Administrator
- Central Office Support Staff
- Athletic Director
- Other
- Task not completed

Who is PRIMARILY responsible for each of the following?

- Attending activities**
- Communicating with district office**
- Student discipline**
- Fund-raising (coordinating)**
- Implementing standardized tests**
- Managing maintenance of facilities**
- Managing non-instructional staff**
- Managing personnel schedule**
- Managing school schedule (master schedule)**
- Managing student attendance**
- Managing student services**
- Meeting state / federal / local compliance requirements**
- Meeting special education requirements**

School Safety
Supervision of students
Working with the community



Who is PRIMARILY responsible for each of the following?

- Classroom observations**
- Coordinating curriculum**
- Developing coherent educational programs**
- Developing and enforcing academic standards**
- Directing supplementary programs (AP, ACP, IB, etc)**
- Evaluating curriculum**
- Formal teacher evaluations**
- Informally coaching teachers**
- Intellectually stimulating teachers (keeps teachers up to speed on current research)**
- Monitors student progress (student data)**
- Planning / implementing professional development for teachers**
- Using data to drive instruction**
- Using data to evaluate programs**



Who is Primarily responsible for each of the following?

- Building school culture**
- Managing school level budget**
- Communicating school goals to stakeholders**
- Counseling parents/students (both academic and non-academic needs)**
- Counseling faculty and staff (personal and/or professional needs)**
- Establishing focus (Establishing clear goals with teacher input)**
- Handling faculty / staff concerns**
- Hiring / releasing teachers**
- Informally talking to teachers about students**
- Inspire / lead new and challenging innovations**
- Interacting socially with staff**
- Networking with other principals**
- Parent communications (internal and external)**
- Ensuring school day is organized in a way that protects instructional time**
- Recognizing and rewarding individual accomplishments of faculty / staff and providing incentives**
- Managing school level resources**
- Student relations**
- Using school meetings to advance school goals**
- Acts as the change agent of the school (challenging the status quo)**

Exercises flexibility and adaptation when making school based decisions
Maintaining situational awareness and the 'pulse' of the school
Making decisions based on strong ideals / beliefs about schooling

Appendix C
Informed Consent

Investigating the Connection of the Student-to-Administrator ratio and Administrative Roles on
Student Achievement in Indiana Public High Schools

Dear Indiana High School Principal:

As you know the job of a principal is complex and can easily become overwhelming. My name is Craig McCaffrey and I am a graduate student completing my doctoral dissertation at Ball State University. The purpose of my study is to determine if there is a connection between the number of administrators a school has and student achievement. There have been many studies on class size (a.k.a. student to teacher ratio), but no studies done on the student-to-administrator ratio. The ultimate goal of my research is to develop a recommended method for determining the number of administrators a high school should employ based on size, poverty rate, percentage of special education, etc. I hope that these findings will help superintendents and school boards in the future as they explore the need of adding administrative resources to your school.

This study is being sent to public high school principals in the state of Indiana only. In order to participate in this study you must be a traditional public high school principal in Indiana with a minimum age of 18. There is no maximum age requirement to be a subject in this study.

As a participant in this study, I am asking that you complete the online survey, link enclosed below, which consists of 61-items, including a demographic section. The entire survey will take approximately 20 minutes to complete. I recommend that you approach this survey by reading the instructions and each question carefully and then answering each question to the best of your knowledge and taking time to consider the best option for each answer. During this survey you will answer some demographic questions, questions about the number of administrative and quasi administrative positions in your school, and how you divide up the daily administrative duties in your school. In this study it is recognized that you as the principal are ultimately responsible for everything that goes on in the school. However, it is also recognized that the responsibility of completing various daily tasks may be delegated to others.

Your survey responses will be kept confidential and collected on a secure website. A research consultant at Ball State University, Dr. Kianre Eounzoui, will assist in the transfer the data from the survey to a new statistical file. I will also receive assistance from Dr. William Sharp and Dr. Serena Salloum. They will provide help in the area of data analysis and will have access to your responses as well. The survey instrument will ask you to identify your school so that the primary researcher can accurately access the student achievement and demographic data for your school

from the Indiana Department of Education website. The primary researcher and the fore mentioned faculty advisors will be the only people who know the identity of the respondent. No individual information will be published in regard to a single respondent or a single school. The only data published will be cumulative data reflecting results from the entire sample of schools. All data will be kept on a password secure computer owned by the primary researcher and also on the secure survey website in which the primary researcher is the only person who has the access password and user name. The data from this project will be maintained until June 30, 2014. On June 30, 2014 all data associated with this project will be destroyed via a file deletion from the researcher's personal computer.

There are no anticipated risks associated with participation in this study. All individual data will be kept confidential and may only be viewed by the researcher and the fore mentioned faculty advisors. Your participation in this study is completely voluntary and you are free to withdraw your permission at any time for any reason without penalty or prejudice from the investigator. Please feel free to ask any questions of the investigator before signing this form and at any time during this study. Participation in the study will result in no direct benefit to you as a participant.

Even though this research will not ask you any questions about individual children, nor provide you the opportunity to write free response answers, I am required to inform you that I, as a researcher, am required by law to report special situations (such as child abuse) to the proper authorities.

I hope that you will assist me in researching student-to-administrator ratios in Indiana public high schools and the impact that this has on student achievement. Such research may provide you and/or your superintendent a method for determining the proper amount of administrators to employ at a high school.

For questions about your rights as a research subject, Please contact, Director, Office of Research Integrity, Ball State University, Muncie, IN 47306, (765) 285-5070, irb@bsu.edu.

By clicking on the survey link below I agree to participate in this research project entitled, "Investigating the connection of the Student-to-administrator ratio and Administrative Roles on Student Achievement in Indiana Public High Schools." I have had the study explained to me and my questions have been answered to my satisfaction. I have read the description of this project and give my consent to participate. I understand that I can print this email as my copy of this informed consent form to keep for future reference.

To the best of my knowledge, I meet the inclusion/exclusion criteria for participation (described earlier) in this study.

Survey link (clicking this link signifies your consent):

https://bsu.qualtrics.com/SE/?SID=SV_9LWO3f4GDN93jb7

Thank you very much for your help!

Principal Investigator

Craig McCaffrey
Email: c.mccaffrey@att.net
6233 Saw Mill Drive
Noblesville, IN 46062
Telephone: (317) 431-9352

Faculty Supervisor

Dr. William Sharp
Professor
Educational Leadership
Ball State University
Muncie, IN 47306
Telephone: (765) 285-8488
bsharp@bsu.edu

Appendix D
IRB Proposal



Office of Research Integrity

Institutional Review Board (IRB)

2000 University Avenue

Phone: 765-285-5070

Muncie, IN 47306-0155

Fax: 765-285-1328

IRB Human Subjects Research Application & Narrative

PRINCIPAL INVESTIGATOR INFORMATION

The Principal Investigator (PI) MUST be a Ball State University Faculty, Staff, or Student.

Principal Investigator (PI): Craig A. McCaffrey Degree: Ed.D.
 Department: Educational Leadership Telephone: 317-431-9352
 Email: c.mccaffrey@att.net

Affiliation (Pick one): BSU Faculty
 BSU Staff
 BSU Graduate Student
 BSU Undergraduate Student

Principal Investigator Research Experience:

1. Have you ever been a Principal Investigator? Yes No
2. How many years have you been conducting research in any capacity? 0 Years
3. Have any of your prior studies been suspended or terminated by BSU or a third party? Yes No
4. Have you or any member of your research staff ever been sanctioned for unethical behavior in research activities? Yes No

If yes, to #3 and/or #4, please explain:

FACULTY ADVISOR INFORMATION

If the Principal Investigator (PI) is a STUDENT (Graduate or Undergraduate) with Ball State University, a BSU Faculty member advising or supervising the research must be listed below.

Faculty Advisor: Dr. William Sharp Degree: Ed.D.
 Department: Educational Leadership Telephone: (765) 285-8488
 Email: bsharp@bsu.edu

FACULTY ADVISOR ASSURANCE STATEMENT

As the Faculty Advisor for this study, I certify that I have reviewed and support this protocol and approve the merit of this research project and the competency of the investigator(s) to conduct the project. My involvement in this study is as follows (**check one option**):

- I will be involved in this project. My name is listed and my responsibilities (described in the Key Personnel section) include supervision and oversight of this project.
- I will be involved in this project. My name is listed and my responsibilities (described in the Key Personnel section) are limited (e.g. data analysis only). I affirm this investigator has the competency to conduct this research study without my supervision or that of any other faculty or staff Member of Ball State University.

A Faculty Advisor MUST electronically sign this study for all student research projects before the protocol is submitted to the IRB for review. When you sign this study as the Faculty Advisor, you are also agreeing to the terms in the Faculty Advisor Assurance Statement above and accepting responsibility for ensuring that the terms of the Principal Investigator Assurance Statement are met.

HUMAN SUBJECTS RESEARCH TRAINING

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI)

As of January 1, 2010, Ball State University policy requires that all PI's, faculty advisors, and key personnel complete the CITI Training. To comply with the educational requirement, you (and all key personnel for this project, including faculty advisor) must have completed the online training modules on the protection of human subjects. For more information and link to CITI's website please go to the Office of Research Integrity website:

<http://cms.bsu.edu/About/AdministrativeOffices/ResearchIntegrity/CITITraining.aspx>

Have you and all Key Personnel completed the online training modules? Yes No

If no, please list who has not completed the CITI Training and a proposed date for completion:

***If this is your first BSU IRB submission, please include a PDF copy of your CITI Training certificates, along with other key personnel.**

PLEASE NOTE: If this is a Federally funded project, the PI and all key personnel must also complete the Responsible Conduct of Research (RCR) Training, along with the Basic/Refresher Course. The RCR training is located on CITI's website.

OTHER TRAINING

Are there any specialized training(s) required for your project (for example, certification for medical procedure, training in crisis response, etc.)? Yes No

If yes, please explain and state if key personnel have been trained:

KEY PERSONNEL

List all Key Personnel, other than the PI, who will have a role in the research project:

Name	Department/Other Institution, Organization, or School	Title (Co-PI, Research Asst., Faculty Advisor, etc.)	Responsibilities
Dr. William Sharp	Educational Leadership	Faculty Advisor	Oversight of the entire research project.
Dr. Serena Salloum	Educational Leadership	ID 705 Instructor and Advisor	Assistance in data analysis
Dr. Kinare Eouanzoui	Statistics Department	Advisor	Assistance in survey creation and data analysis

*Attach additional personnel, if necessary, as a separate document titled "Additional Key Personnel"

Principal Investigator Agreement:

I have read and understand Ball State University's "Policy for the Protection of Human Subjects in Research" as stated in the Faculty and Professional Personnel Handbook, and I agree:

- to accept responsibility for the scientific and ethical conduct of this research study,
- to obtain IRB approval prior to revising or altering the research protocol or the approved informed consent text, and
- to report immediately to the IRB any serious adverse events and/or unanticipated problems occur as a results of this study.

The Principal Investigator MUST electronically sign this study within IRBNet prior to submitting this protocol to the IRB for review. When you sign this study as the Principal Investigator, you are also agreeing to the terms in the Principal Investigator Assurance Statement above.

EXPORT AND DEEMED EXPORT CONTROL

The below questions are required by to be answered as part of Federal Export and Deemed Export Control Regulations and as part of Ball State University's Export/Deemed Export Control Program. These regulations apply to any transfer of, release of, or access to, controlled technologies/organisms either to a foreign country or by a non-permanent resident foreign national in this country.

Key definitions:

Foreign National: A foreign national who is any individual who is not a natural-born US citizen or:

(1) is granted permanent residence, as demonstrated by the issuance of a permanent resident visa (i.e., "Green Card");

(2) is granted U.S. citizenship; or

(3) is granted status as a "protected person" under 8 U.S.C. 1324b(a)(3).

Dual-Use: The technology/organism has both civilian and military uses.

Fundamental Research: "...basic and applied research in science and engineering where the resulting information is ordinarily published and shared broadly within the scientific community." (15 CFR §734.8) In general, for research to be considered "fundamental" it needs to have unrestricted access and/or dissemination (such as through publications, public presentations, available on the Internet, etc.). Proprietary results/data/products (or where these are will not be publically available) are generally not considered fundamental research.

Released: When technology or organisms are available to foreign nationals for visual inspection (such as reading technical specifications, plans, blueprints, etc.); when technology is exchanged orally; or when technology is made available by practice or application under the guidance of persons with knowledge of the technology.

Technology: Specific information necessary for the "development," "production," or "use" of a product.

Use: Specific information necessary for the operation, installation (including on-site installation), maintenance (checking), repair, overhaul and refurbishing of a product.

1. Does the research involve any of the below situations?

Yes (Complete this section)

No (Skip to next section)

- US Federally funded and the funder will control/restrict the release of research results/products.
- Research is funded by and/or will flow through a foreign government.
- Involves proprietary technologies and/or computer/communications source codes.
- Uses technologies/organisms that are classified as “dual-use.”
- The research/data/product has (or will have) release and/or access restrictions (beyond a reasonable/customary review period).
- Research involves classified information/technology.
- Technology/software/data being used is under the exclusive control of the US Government.
- Involves controlled/restricted weapons, law enforcement, security/surveillance, and/or non-publically available encryption technologies and/or information.
- Uses GPS technologies in a foreign country.
- Technology/software/information will be transferred to, released to and/or left in a foreign country.
- Involves items known to be on the Commerce Control List by the Government Printing Office (GPO). The file is updated every 48 hours. (<http://ecfr.gpoaccess.gov>)
- A member of the research team is a non-permanent resident foreign national (please also fill out question #3 below).

If yes to any, please explain:

2. Is the purpose/product of the proposed research to be “fundamental research?”

Yes No

3. Supplemental information about non-permanent resident foreign national research team member(s):

a. Is the foreign national(s) in this country?

Yes No Working both here and abroad

b. Has the foreign national(s) filed a new (revised) I-129 Form, or other appropriate Immigration form, with BSU’s Human Resources Office?

Yes No Do not know

c. What is the foreign national’s country of citizenship?

If the research/data/product is classified as “fundamental research” or determined to be exempt from Federal Export Control or Deemed Export Control regulations then no special license(s) will be required. If controlled Exports/Deemed Exports are (or will be) involved, then specific Federal licenses may be required.

RESEARCH PROJECT INFORMATION

PROJECT TITLE:

Investigating the Connection of the administrator-to-student ratio and administrative roles on student achievement in Indiana public high schools.

SUBJECT INFORMATION

Number of Subjects (Estimate or Range): 405

Sex: Male Female Both Male and Female

Age of Subjects- Minimum Age: 18 Maximum Age NA

SUBJECT POPULATION

- Normal Adult Population
- Students (≥ 18 years old)
- Minors/Students (≤ 17 years old)*
- Pregnant Women (for studies involving physical experiments, examinations, and medical research)*
- Prisoners*
- People with Diminished Capacities*
- Persons undergoing and/or receiving health, medical, rehabilitative, treatment/services, etc.*
- Persons undergoing Social/Psychological counseling*
- Other (explain):

*Protected Population: This will require either Expedited or Full Board Review. Please explain the purpose of using this population:

SUBJECT RECRUITMENT

Will the study be advertised on any media? Yes No

If yes, what media will be used? (Check all that apply)

- BSU Communication Center (Mass BSU Email)

- Radio
- Departmental Pool/Email
- Flyer/Print
- Television
- Social Media (Facebook, Twitter, etc.)
- Other (explain):

Recruitment Procedures:

Please describe your recruitment procedures:

A list of 405 public high school principals in the state of Indiana was generated using the information provided by the Indiana Department of Education. If a principal's name or email address needed to be confirmed and the school website did not have this information, a phone call was made to the school. Each survey will include a cover letter explaining the purpose of the research project, a letter of consent to participate, and a link to the survey. Each survey will be tagged with the email address of the respondent, to be used if the follow-up letter is needed to solicit a higher rate of return. Included in this information will be an explanation that the respondent's identity would be known to the researcher only for Connection of follow-up data. It was also explained to the respondent that student achievement, such as End of Course Assessments (ECA) and SAT scores, will be correlated to the information given back to the researcher. In order to save the principal time and increase the number of responses, it was determined that it was more beneficial for the researcher to look up this data using the Indiana Department of Education website, rather than relying on each individual principal. Each respondent was also reassured in the letter that no names or personal information would be shared with other parties by the researcher and that only general cumulative information for all respondents would be published.

To obtain a higher rate of return, the researcher will utilize two different modes of distribution, emailing the survey and mailing a hard copy to those subjects who have not completed the survey. Subjects who had not completed the survey one week after initial contact received a follow-up email asking for their participation. By the end of the second week, subjects who had not responded received second follow-up emails, along with hard copy mailers to be sent directly to their schools. Subjects who still had not completed the survey by the end of weeks three and four will receive third follow-up emails. The survey system used was Qualtrics, which was provided to the researcher by Ball State University. Qualtrics is a survey software utilized by over 1,300 universities worldwide. This software gave the researcher the ability to create, distribute, and administer surveys via the internet, distribute them by email, and then retrieve, record, and access the responses.

SUBJECT INCLUSION/EXCLUSION CRITERIA

State any Inclusion Criteria that the subject must meet to be considered for the study:

Inclusion Criteria:

-All subjects must be employed as a traditional public high school principal in Indiana and be over 18 years of age.

Exclusion Criteria:

-Principals of private schools and public charter schools were not selected as subjects for this research project. These subjects were not included in this study because public charter and private high school principals may not be required to be formally trained and/or licensed as an administrator and therefore not have the training necessary to effectively answer the survey questions.

State any Exclusion Criteria that would eliminate the subject prior to the study or after the study has started (e.g., the subject experiences symptoms that would put him/her at great risk, or the subject is not adhering to the protocol, etc.):

POTENTIAL RISKS/DISCOMFORTS TO THE SUBJECT

Will there be any anticipated potential risks or discomforts to the subject(s) during the study?

Yes No

If yes, indicate whether the study is minimal risk or greater than minimal risk and explain.

(The federal regulations (45 CFR 46) define minimal risk thusly: "...the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves that those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests."):

MINIMIZING THE SUBJECT(S) RISK

Describe the precautions and safeguards that will be in place to minimize the risks to the subject. For research involving the risk of physical injury, describe the available emergency care in the event of a research-related injury. For research involving psychological risks, describe any plans for intervention (including reporting that may be mandated by federal/state law or licensure) and the events or subject responses that would prompt the exercise of such plans:

All respondents identities will be protected by the reasearch and no individual information about the respondents will be published. Only cumulative survey information will be published. Only the

researcher, Dr. Sharp, Dr. Salloum, and Dr. Eouanzoui will have access to the data of individual schools and the cumulative data.

SUBJECT AND STUDY BENEFITS

Describe any potential benefits of the research to the subject and/or to society. Incentives and enjoyment of the study should not be considered as benefits. Keep in mind that some studies may not involve direct benefits to the subjects, but instead benefits may be accrued to society rather than to the individual. If there are no benefits to the participant, then state, "no direct benefits."

While previous research has studied the impact of class size on student achievement, no studies have been found that focus on the administrative capacity in a school. It can be reasonably said that one person, a principal, may have difficulty being highly effective in the assigned job responsibilities, leading to the need for trained administrative support. There is no recognized methods superintendents currently have for determining the number of administrators an Indiana public high school requires to be effective, other than looking at neighboring schools in an attempt to draw a corollary. In most cases, school size is the corollary factor used to determine administrative capacity, with little attention given to other criteria, like poverty rate and percentage of special education students.

Because there are no researched-based guidelines for school boards and superintendents to determine how many administrators to employ at a public high school, this study aims to establish the relevant factors to consider when deciding how much administrative support to provide a high school principal. This study will examine the importance of administrator-to- student ratios in relation to student achievement, as well as how principals share these duties with others.

The data will also provide superintendents with a tool to advise principals on way to effectively delegate tasks to their assistants or other support staff in order to maximize student achievement.

PROJECT SITE LOCATION

(Location of data collection, interviews, or site where study will be conducted)

- Ball State University/Burriss Laboratory School
Building/Lab: _____ Room Number(s): _____
- Off-Site Location
Location(s): _____
- Off-Site School
School Name and Location: _____
- Internet (Be sure to read any policy regarding data ownership and protection)
- Social Media (Facebook, Twitter, etc.)
- Online Survey
- Survey Monkey
- Qualtrics,
- InQisit
- Other:

Other Internet Sites:

IU Ball Memorial Hospital

Please contact Alfreda Bright- abright@iuhealth.org, BMH's IRB to coordinate IRB review.

International Countries

List Countries:

U.S. Based Field Study

Other (Explain):

PLEASE NOTE: For research conducted at non-BSU institutions or organizations, a Letter of Support is required. The Letter of Support must be on the institution or organization letterhead and signed by a person of authority to grant access to the site (ex. Director, Manager, Principal, Superintendent, etc.). The Letter of Support is to be uploaded on IRBNet as part of your package. An email message is NOT sufficient to meet this requirement.

In cases where sites, agencies, etc. have not been identified yet, please indicate this in the narrative and make sure to upload these into your protocol once the letter is obtained. This is handled as a Modification process once the project has been approved.

COLLATORATIVE/MULTI-SITE RESEARCH PROJECTS

Will the proposed research project be conducted as collaborative research (i.e., research that involves two or more institutions/organizations that hold Federalwide Assurances and have duly authorized IRB's)?

**Federalwide Assurance- An institution committing to Department of Health Human Services that will comply with the requirements in the HHS Protection of Human Subjects regulations at 45 CFR part 46.*

Yes (If yes, please fill out the section below)

No (skip this section)

Provide the name of the other institution(s) and IRB contact person(s) below:

Please check the items below that are applicable:

- All applicable IRB's will be reviewing the protocol independently of one another.
- PI of record is requesting that BSU act as the IRB of Record for the proposed project. The other institution(s) will accept BSU's IRB approval or will be defer IRB review to BSU. In the case of a deferral, please fill out and have all parties sign the IRB Deferral Request Form and submit that with the application package.

A complete and signed IRB Deferral Request Form is needed before final IRB approval can be granted.

- PI of record is requesting that BSU defer to another institution's IRB (must be duly authorized and the institutions must have a currently active Federal Wide Assurance on record with OHRP). In the case of a deferral, please fill out and have all parties sign the IRB Deferral Request Form and submit that to the Office of Research Integrity for review.
- The other institution(s) does not have an IRB and/or a current Federal Wide Assurance.

FUNDING

Is the project currently funded? Yes No

Is funding being sought for this project? Yes No

If yes to either question, please answer the following questions:

List the agency(s) and/or sources:

- BSU Funded/Support
- Federally Funded (**Please also fill out the Significant Financial Conflict of Interest section**)
Name of Federal Agency (i.e., NIH, DHHS, NSF, etc.): _____
- Private (Corporate, Foundation or Individual Sponsor)
Name: _____
- Other (explain):

If the title of the grant application or contract differs from the title of the IRB protocol, also specify the grant/contract title:

SIGNIFICANT FINANCIAL CONFLICT OF INTEREST, CONFLICT OF INTEREST/CONFLICT OF COMMITMENT STATEMENT

If this research project is **Federally funded**, either directly (ex. you are the grant recipient) or indirectly (ex. you are a sub-awardee), have you (PI) and your BSU research team members (faculty, staff, and/or students) filed the Annual Significant Financial Conflict of Interest (SFCI) Statement form?

Yes No

If no, please explain:

- I and all applicable BSU research team members **have also** reviewed the BSU “Policy on Conflict of Interest and Conflict of Commitment” and have filed, or will file, all necessary paperwork (if applicable). This includes student researchers. The policy can be found on pages 200-203 of the *Faculty and Professional Handbook*.

DATA CONFIDENTIALITY/ANONYMITY

Describe the provisions for maintaining the privacy and confidentiality of the subject and data, as appropriate. Data is considered to be **anonymous** only if there are no means by which the researcher may identify the subject with his/her data at any time during the study. When coding the identity of the subject and his or her data by using personal identifiers, there exists a means for identifying the subject, and therefore the data is considered to be **confidential**.

The subjects (high school principals) will be able to be identified by either entering their name or their school number into the survey instrument. This identification is necessary so that the researcher may access the correct student achievement data for that school for analysis. The student achievement data collected from the Indiana Department of Education website will be the following: ACT averages, SAT averages, Algebra 1 ECA averages, English 10 ECA averages, graduation rate, and state assigned school letter grade. (Note: Individual student data will not be used in this study, only cumulative school data. This cumulative school data is accessible to the public on the Indiana Department of Education website.) The identity of the subject will only be known to the researcher, Dr. Sharp, Dr. Salloum, and Dr. Eouanzoui. No individual information from any subject will be published. The only information published will be cumulative data that is produced after analysis. Only the researcher, Dr. Sharp, Dr. Salloum, and Dr. Eouanzoui will have access to individual subject responses.

DATA- COLLECTION, STORAGE AND SECURITY

1. Will any information regarding participant's identity (e.g., names, student IDs, etc.) be recorded?
 Yes No

If yes, please explain why and what security measures will be taken:

The subjects will be able to be identified by either entering their name or their state assigned school number into the survey instrument. No individual information from any subject will be published. The only information published will be cumulative data that is produced after analysis. Only the researcher, Dr. Sharp, Dr. Salloum, and Dr. Eouanzoui will have access to individual subject responses. During the collection period the data will be stored on a password protected secure website, Qualtrics. Once the collection period is over the data will be transferred to a data warehouse program on the researchers personal computer and erased from the Qualtrics website. Only the researcher possesses the password to the computer where the data will be stored.

If yes, will the identifying information be stored with participant's responses?

- Yes No

If yes, please explain why and what security measures will be taken:

Data will be secured because individual subjects will be able to be identified via their online survey submission. During the collection period all data will be housed on the secure Qualtrics website. Only the researcher possesses the username and password to access this data. After the collection period the data will be transferred to Microsoft Excel, SPSS, or another data warehouse type software on the researchers personal computer. Once the data is transferred to the researchers computer it will be erased from the Qualtrics website. The researchers personal computer is password protected and is only used by the researcher for the express purpose of this research project.

2. Are you planning to use the participant's identity on publications or presentations?
 Yes No

If yes, please explain:

3. Will you be using Audio or Video Recording for your study?
 Yes No

Will the recordings be used for presentations or publications?

- Yes* No

***If yes, you will need to have the participant sign the Media Permission Form (located on our website)**

4. Where will the data (electronic/paper) be stored during and after study is complete? (Check all that apply)
 Locked Cabinet/Office

Password Protected Computer/Flash Drive/CD/DVD

Home- Indicate the secure location the data will be stored in the house:

Other (explain):

5. How long will you keep the Until June 1, 2014 data?

If the data is being retained indefinitely, please provide an explanation for why and ensure that an easy to read version is also provided in the Informed Consent:

6. Who will have access to the raw data besides yourself? (Check all that apply)

Faculty Advisor

Research Team (Co-PI, Research Assistant, Graduate Assistant, etc.)

Off Campus Collaborator

Sponsor

Federal Agency (NIH, FDA, NSF, etc.)

Other (Explain):

SPECIAL TYPES OF DATA

1. Will educational records or information found in educational records, as defined under the Family Educational Rights and Privacy Act (FERPA) be used? Yes No

If yes, has the institution performed a FERPA assessment to determine if an exemption to the FERPA signed release authorization requirement been met, or will you get signed authorization for release information? Yes No

If yes, please include a copy of the assessment (or letter from appropriate school official) or a copy of the authorization form to be used.

If no, please explain:

2. Will health, medical or psychological records or information found in the medical records, as defined under the Health Insurance Portability and Accountability Act (HIPAA), be use?

Yes

No

If yes, has the applicable institution's Privacy Officer performed a HIPAA assessment to determine if an exemption to the HIPAA signed release authorization for research requirement exists, or will you get signed authorization for release of information for research? Yes No

If yes, please include a copy of the assessment (or letter from appropriate Privacy Officer) or a copy of the authorization form to be used.

If no, please explain:

3. Does this study involve any **deception** or **coercion**?

Deception- includes withholding information for the purpose of the study.

Coercion- includes intimidation, threats or force to participate.

Yes No

If yes, please describe the nature of the deception or coercion and include a copy of the debriefing script:

COMPENSATION

1. Are subjects being paid or receive incentives for participating in the study? Yes No
2. Are subjects being reimbursed for expenses? Yes No
3. Will students receive extra credit for a course if participating in the study? Yes No
4. Will students receive class or departmental research credit for their participation? Yes No
5. Is there a completion bonus? Yes No
6. Will there be compensation for research-related injury? Yes No
7. Other (explain):

If you answered "YES" to any question, provide an explanation. If you are paying participants, provide the source of those funds:

If you are using BSU funds, you will need to contact the BSU Office of University Controller (765-285-8444) or visit their website for procedures and policies regarding tax information to be collected from participants.

<http://cms.bsu.edu/About/AdministrativeOffices/Controller/Resources/APGI.aspx>

SUBJECT FINANCIAL EXPENSES

Will subjects have any financial expenses to participate in the study? (i.e., travel/gas, food, hotel, etc.)

NOTE: If a participant has to travel to the location site to participate in the study via car, plane, train, bus, etc., they will incur financial expense.

Yes No

If yes, please explain:

STUDY NARRATIVE/PROTOCOL

PURPOSE OF THE STUDY

State the objectives of the research and, when appropriate, any hypotheses you have developed for the research.

1. To determine if schools with low administrator-to-student ratios exhibit higher student achievement than those with high ratios.
2. For schools that have the following designations, determine what are the patterns of delegation (job duties) administrative team's exhibit in their day-to-day operations.
 - a. high student achievement and low administrator-to-student ratio
 - b. low student achievement and low administrator-to-student ratio
 - c. high student achievement and high administrator-to-student ratio
 - d. low student achievement and high administrator-to-student ratio
3. To determine if the administrator-to-student ratio in each high school appears to be influenced by factors such as school size, geographic location, school socioeconomic status, number of teachers, and/or number of minority students in the school.
4. Determine if the evidence gathered provides a method for determining the appropriate number of administrators to employ in a high school based on the number of students enrolled in order to maximize student achievement.

RATIONALE

Explain the need for the research. Describe the data that the project is expected to provide and how the data will contribute to existing information in the field. Provide a concise description of the previous work in the field.

While previous research has studied the impact of class size on student achievement, no studies have been found that focus on the administrative capacity in a school. It can be reasonably said that one person, a principal, may have difficulty being highly effective in the assigned job responsibilities, leading to the need for trained administrative support. There is no recognized methods superintendents currently have for determining the number of administrators an Indiana public high school requires to be effective, other than looking at neighboring schools in an attempt to draw a corollary. In most cases, school size is the corollary factor used to determine administrative capacity, with little attention given to other criteria, like poverty rate and percentage of special education students.

Because there are no researched-based guidelines for school boards and superintendents to determine

how many administrators to employ at a public high school, this study aims to establish the relevant factors to consider when deciding how much administrative support to provide a high school principal. This study will examine the importance of administrator-to-student ratios in relation to student achievement, as well as how principals share these duties with others. The data will also provide superintendents with a tool to advise principals on way to effectively delegate tasks to their assistants or other support staff in order to maximize student achievement.

RESEARCH REFERENCES/CITATIONS

List any references/citations that you researched based on your study purpose and rationale for your project. If no references/citations not used, please explain.

- 2010 Principal Salary Survey. (2010). National Association of Secondary School Principals. Retrieved from <http://www.nassp.org/Jobs/2010-Principal-Salary-Survey>
- Arpin, A., Addley, A., Hayward, D., Kennedy, F., Leslie, S., Wolak, L., & Yankowski, L. (2004). A Study of Connecticut High School Principals. The Connecticut Association of High School Principals' Professional Studies Committee.
- Aud, S., Hussar, W., Planty, M., Snyder, T., Bianco, K., Fox, M. A., ... National Center for Education Statistics (ED). (2010). The Condition of Education 2010. NCES 2010-028. National Center for Education Statistics.
- Balfanz, R. (2006). What Does It Cost to Operate a High School Organized into Small Learning Communities? When Are Additional Resources Needed? How Can Efficiencies Be Achieved? *Critical Issues in Development and Implementation: High School Small Learning Communities*, edited by Diana Oxley (Portland, Ore.: Northwest Educational Laboratory, 2006), 156.
- Blank, R. K. (1987). The Role of Principal as Leader: Analysis of Variation in Leadership of Urban High Schools. *The Journal of Educational Research*, 81(2), 69–80.
- Blaschke, C. (1971). Performance Contracting Costs, Management Reform, and John Q. Citizen. *The Phi Delta Kappan*, 53(4), 245–247.
- Blase, J., & Blase, J. (1999). Principals' Instructional Leadership and Teacher Development: Teachers' Perspectives. *Educational Administration Quarterly*, 35(3), 349–378.
- Blase, J., & Blase, J. (2000). Effective instructional leadership: Teachers' perspectives on how principals promote teaching and learning in schools. *Journal of Educational Administration*, 38(2), 130–141.
- Borland, M. V., & Howsen, R. M. (1992). Student academic achievement and the degree of market concentration in education. *Economics of Education Review*, 11(1), 31–39.
- Boyles, R. E. (1942). What Is a Satisfactory Pupil-Administrator Load? *NASSP Bulletin*, 26(103), 107–109.
- Brandes, L. G. (1956). The Position of the Subordinate Administrator in the Secondary School. *NASSP Bulletin*, 40(220), 46–52.
- Brown, L. I. (2001). A Meta-analysis of Research on the Influence of Leadership on Student Outcomes.
- Browne, J. D. (1981). The Formation of an Educational Administrator. *History of Education*, 10(3), 205–211.
- Bruner, A. L., & And Others. (1982). Stress Producing Conditions in the Secondary Classroom.
- Camburn, E. M., Huff, J. T., Goldring, & May, H. (2010). Assessing the Validity of an Annual Survey for Measuring Principal Leadership Practice. *The Elementary School Journal*, 111(2), 314–335.
- Chambers, J. G. (1978). Educational cost differentials and the allocation of state aid for elementary/secondary education. *Journal of Human Resources*, 459–481.
- Chen, C.-S., & National Center for Education Statistics (ED). (2011). Public Elementary and Secondary School Student Enrollment and Staff Counts from the Common Core of Data: School Year 2009-10. First

- Look. NCES 2011-347. National Center for Education Statistics.
- Childs, T. S., & Shakeshaft, C. (1986). A meta-analysis of research on the relationship between educational expenditures and student achievement. *Journal of Education Finance*, 249–263.
- City, E. A., Elmore, R. F., Fiarman, S. E., & Teitel, L. (2009). *Instructional rounds in education*. Harvard Education Press Cambridge, MA.
- Clayson, D. E. (2010). *Quality Rankings of Education in the Fifty States*. Center for Applied Economic Research.
- Cohen, D. K., Raudenbush, S. W., & Ball, D. L. (2003). Resources, instruction, and research. *Educational Evaluation and Policy Analysis*, 25(2), 119–142.
- Condron, D. J., & Roscigno, V. J. (2003). Disparities within: Unequal spending and achievement in an urban school district. *Sociology of Education*, 18–36.
- Creswell, J. W. (2008). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage Publications, Incorporated.
- Deering, A., Dilts, R., & Russell, J. (2003). Leadership cults and culture. *Leader to leader*, 28(2), 31–38.
- Eberts, R. W., & Stone, J. A. (1987). Teacher Unions and the Productivity of Public Schools. *Industrial and Labor Relations Review*, 40(3), 354.
- Elmore, R. (2003). *Knowing the right thing to do: School improvement and performance-based accountability*. Washington, DC: NGA Center for Best Practices.
- English, B. K. (2011). *A description of the influence of NCLB accountability mandates on administrator job satisfaction of a combined middle-high principal in rural Georgia*. Thesis.
- Fan, F. A. (2012). *Class Size: Effects on Students' Academic Achievements and Some Remedial Measures*. *Research in Education*, (87), 95–98.
- Farley-Ripple, E. N., Solano, P. L., & McDuffie, M. J. (2012). Conceptual and Methodological Issues in Research on School Administrator Career Behavior. *Educational Researcher*, 41(6), 220–229.
- Feelhaber, C. T. (1927). *The Duties of High-School Principals in the State of Nebraska*. *The School Review*, 35(3), 188–193.
- Ferguson, R. F. (1991a). Pay for public education. New evidence on how and why money matters. *Howard Journal on Legislation*, 28(2), 45–98.
- Ferguson, R. F. (1991b). Paying for public education: New evidence on how and why money matters. *Harv. J. on Legis.*, 28, 465.
- Fowler Jr, W. J. (2005). *Developments in School Finance: 2004. Fiscal Proceedings from the Annual State Data Conference of July 2004*. NCES 2005-865. National Center for Education Statistics.
- Fullan, M. (2003). *Education in Motion: Leading in a culture of Change*. Centre for Professional Excellence.
- Fulton, R. (1951). Answering 15 Charges against Administrators: Gripping Does Something to You. *The Clearing House*, 26(2), 74–77.
- Gilman, D. A., & Lanman-Givens, B. (2001). Where Have All the Principals Gone?. *Educational Leadership*, 58(8), 72–74.
- Graue, E., & Rauscher, E. (2009). Researcher Perspectives on Class Size Reduction. *Education Policy Analysis Archives*, 17(9), 1–26.
- Greenwald, R., Hedges, L. V., & Laine, R. D. (1996). The Effect of School Resources on Student Achievement. *Review of Educational Research*, 66(3), 361–396.
- Grosskopf, S., & Moutray, C. (2001). Evaluating performance in Chicago public high schools in the wake of decentralization. *Economics of Education Review*, 20(1), 1–14.
- Hallinger, P. (1992). The Evolving Role of American Principals: From Managerial to Instructional to Transformational Leaders. *Journal of Educational Administration*, 30(3).
- Hallinger, P. (2005). Instructional Leadership and the School Principal: A Passing Fancy that Refuses to Fade Away. *Leadership and Policy in Schools*, 4(3), 221–239.

- Hallinger, P. (2007). Research on the practice of instructional and transformational leadership: Retrospect and prospect. 2007 - The Leadership Challenge - Improving learning in schools.
- HALLINGER, P. (2003). Leading Educational Change: reflections on the practice of instructional and transformational leadership. *Cambridge Journal of Education*, 33(3), 329–352.
- Hallinger, P., & Heck, R. H. (1998). Exploring the Principal's Contribution to School Effectiveness: 1980-1995*. *School Effectiveness and School Improvement*, 9(2), 157–191.
- Hallinger, P., & Murphy, J. (1985). Assessing the Instructional Management Behavior of Principals. *The Elementary School Journal*, 86(2), 217–247.
- Hanson, M. (2001). Institutional Theory and Educational Change. *Educational Administration Quarterly*, 37(5), 637–661.
- Hanushek, E. A. (1997). Assessing the effects of school resources on student performance: An update. *Educational evaluation and policy analysis*, 19(2), 141–164.
- Hanushek, E. A. (1999). Some findings from an independent investigation of the Tennessee STAR experiment and from other investigations of class size effects. *Educational Evaluation and Policy Analysis*, 21(2), 143–163.
- Hartman, W. T. (1988). District Spending Disparities: What Do the Dollars Buy? *Journal of Education finance*, 436–459.
- Hattie, J. (2012). *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*. Taylor & Francis.
- Heck, R. H., Larsen, T. J., & Marcoulides, G. A. (1990). Instructional Leadership and School Achievement: Validation of a Causal Model. *Educational Administration Quarterly*, 26(2), 94–125.
- Hedges, L. V., Laine, R. D., & Greenwald, R. (1994). An Exchange: Part I: Does Money Matter? A Meta-Analysis of Studies of the Effects of Differential School Inputs on Student Outcomes. *Educational Researcher*, 23(3), 5–14.
- Hendershot, G. E., & James, T. F. (1972). Size and Growth as Determinants of Administrative-Production Ratios in Organizations. *American Sociological Review*, 37(2), 149–153.
- Hipp, K. A. (1997). Documenting the Effects of Transformational Leadership Behavior on Teacher Efficacy.
- Hoxby, C. M. (2000). The effects of class size on student achievement: New evidence from population variation. *The Quarterly Journal of Economics*, 115(4), 1239–1285.
- Indiana Association of School Principals. (2013). *2012-2013 Principal's Directory*.
- Indiana Department of Education. (2013). *Indiana School Directory 2013*.
- Jason A. Grissom, & Loeb, S. (2011). Triangulating Principal Effectiveness: How Perspectives of Parents, Teachers, and Assistant Principals Identify the Central Importance of Managerial Skills. *American Educational Research Journal*, 48(5), 1091–1123.
- Jason A. Grissom, & James R. Harrington. (2010). Investing in Administrator Efficacy: An Examination of Professional Development as a Tool for Enhancing Principal Effectiveness. *American Journal of Education*, 116(4), 583–612.
- Johnson, K. A. (2000). *Do Small Classes Influence Academic Achievement?: What the National Assessment of Educational Progress Shows*. Heritage Foundation.
- Jon Wagner. (1990). Administrators as Ethnographers: School as a Context for Inquiry and Action. *Anthropology & Education Quarterly*, 21(3), 195–221.
- Kimball, S. M. (2011). Principals: Human Capital Managers at Every School. *Phi Delta Kappan*, 92(7), 13–18.
- Kozol, J. (2006). *The shame of the nation: The restoration of apartheid schooling in America*. Three Rivers Press.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educ Psychol Meas.*

- Krueger, A. B. (2003). Economic considerations and class size*. *The Economic Journal*, 113(485), F34–F63.
- Ladd, H. F. (1996). *Holding Schools Accountable: Performance-Based Reform in Education*. Brookings Institution Press.
- Larsen, T. J. (1987, April). Identification of Instructional Leadership Behaviors and the Impact of Their Implementation on Academic Achievement.
- Lee, R. A. (1983). Financial and staffing ratio analysis: predicting fiscal distress in school districts. *Journal of Education Finance*, 256–263.
- Leithwood, K. (1994). Leadership for School Restructuring. *Educational Administration Quarterly*, 30(4), 498–518.
- Leithwood, K. A. (1992). The move toward transformational leadership. *Education Leadership*, 49(5), 8–12.
- Leithwood, K., & Jantzi, D. (2005). A Review of Transformational School Leadership Research 1996–2005. *Leadership and Policy in Schools*, 4(3), 177–199.
- Leithwood, K., & Jantzi, D. (2006). Transformational school leadership for large-scale reform: Effects on students, teachers, and their classroom practices. *School Effectiveness and School Improvement*, 17(2), 201–227.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Prentice-Hall, Inc.
- Malone, B. G., & Caddell, T. A. (2000). A Crisis in Leadership: Where Are Tomorrow's Principals? *The Clearing House*, 73(3), 162–164.
- Malone, B. G., Sharp, W., & Thompson Jr, J. C. (2000). The Indiana Principals: Perceptions of Principals, Aspiring Principals, and Superintendents.
- Marks, H. M., & Printy, S. M. (2003). Principal Leadership and School Performance: An Integration of Transformational and Instructional Leadership. *Educational Administration Quarterly*, 39(3), 370–397.
- Marshall, C., & Hooley, R. M. (2006). *The assistant principal: Leadership choices and challenges*. Corwin Press.
- Marzano, R. J., Waters, T., & McNulty, B. A. (2005). *School Leadership that Works: From Research to Results*. Association for Supervision and Curriculum Development.
- Meier, K. J., & Bohte, J. (2003). Span of Control and Public Organizations: Implementing Luther Gulick's Research Design. *Public Administration Review*, 63(1), 61–70.
- Miller, A. W. (2001). Finding time and support for instructional leadership. *Principal Leadership*, 2(4), 29–33.
- Molnar, A., Smith, P., Zahorik, J., Palmer, A., Halbach, A., & Ehrle, K. (1999). Evaluating the SAGE program: A pilot program in targeted pupil-teacher reduction in Wisconsin. *Educational Evaluation and Policy Analysis*, 21(2), 165–177.
- Moody, H. (1968). Plight of the Principal. *The Clearing House*, 42(9), 543–545.
- Morrison, D. E. (1977). Stress and the Public Administrator. *Public Administration Review*, 37(4), 407–414. doi:10.2307/974872
- NEA Rankings. (n.d.).
- Norton, M. S. (1972). Current Problems of the High School Principal. *The Clearing House*, 46(8), 451–457.
- O'Donnell, R. J., & White, G. P. (2005). Within the Accountability Era: Principals' Instructional Leadership Behaviors and Student Achievement. *NASSP Bulletin*, 89(645), 56–71.
- Ornstein, A. C. (1989a). Administrator/Student Ratios in Large School Districts. *Phi Delta Kappan*, 70(10), 806–08.
- Ornstein, A. C. (1989b). Administrator/Student Ratios in Large School Districts. *Phi Delta Kappan*, 70(10), 806–08.
- Printy, S. M., Marks, H. M., & Bowers, A. J. (2009). *Integrated Leadership: How Principals and Teachers*

- Share Transformational and Instructional Influence. *Journal of School Leadership*, 19(5), 504–532.
- Quality Counts 2012 - State Report Cards. (2012, January 12). Education Week.
- Ravitch, D. (2011). *The Death and Life of the Great American School System: How Testing and Choice Are Undermining Education*. Basic Books.
- Rea, L. M., & Parker, R. A. (2012). *Designing and conducting survey research: A comprehensive guide*. Jossey-Bass.
- Robinson, V. (2007). The impact of leadership on student outcomes: Making sense of the evidence. *The Leadership Challenge-Improving learning in schools, 2007-5*.
- Sagor, R., & Barnett, B. G. (1994). *The TQE Principal: A Transformed Leader*. Corwin Press, Inc.,
- Scott, V. M. (2012). An examination of expected versus actual tasks of public school secondary assistant principals throughout Indiana.
- Sheffield, W. R. (1978). In Defense of Principals. *NASSP Bulletin*, 62(421), 16–19.
- Southworth, G. (2002). Instructional Leadership in Schools: Reflections and empirical evidence. *School Leadership & Management*, 22(1), 73–91.
- Stevenson, P. R. (1925). Factors to Be Considered in Determining the High-School Student Load of Instruction. *Educational Research Bulletin*, 4(13), 267–278.
- Teacher High School Salary - Salary.com. (n.d.). Salary.com.
- Terry, P. M. (1996). *The Principal and Instructional Leadership*.
- The Annie E. Casey Foundation. (2012). *Kids Count: Data Across the States: Education Rank 2012*. The Annie E. Casey Foundation.
- Trider, D. M., & Leithwood, K. A. (1988). Exploring the Influences on Principal Behavior. *Curriculum Inquiry*, 18(3), 289–311.
- Valentine, J. C., Pigott, T. D., & Rothstein, H. R. (2010). How Many Studies Do You Need? A Primer on Statistical Power for Meta-Analysis. *Journal of Educational and Behavioral Statistics*, 35(2), 215–247.
- Verstegen, D. A., & King, R. A. (1998). The relationship between school spending and student achievement: A review and analysis of 35 years of production function research. *Journal of Education Finance*, 243–262.
- Waters, T., Marzano, R. J., & McNulty, B. (2003). *Balanced Leadership: What 30 Years of Research Tells Us about the Effect of Leadership on Student Achievement*. A Working Paper.
- Wenglinsky, H. (1997). *When money matters: How educational expenditures improve student performance and how they don't*. Policy Information Center, Educational Testing Service.
- Whitaker, B. (1997). Instructional Leadership and Principal Visibility. *Clearing House*, 70(3), 155–56.
- White, J. (2010). *The Facts About School Administrator Ratios*. Association of California School Administrators.
- Witzers, B., Bosker, R. J., & Kruger, M. L. (2003). Educational Leadership and Student Achievement: The Elusive Search for an Association. *Educational Administration Quarterly*, 39(3), 398.

METHODS AND PROCEDURES

Describe the study and design in detail and all procedures in which the subject will be asked to participate. If surveys and questionnaires are used for the study, how will be returned to the researcher? If the research involves more than one visit to the research location, specify the procedures to take place at each session, the amount of time for each session, the amount of time between sessions, and the total duration of the participation. If multiple researchers will be involved in the project, identify who will conduct which procedures.

Upload all surveys, questionnaires, interview questions, or any other study instruments to IRBNet as separate documents.

Research Methodology

Population

The population targeted for this study included all traditional public high school principals in the state of Indiana. The state education employment directory was used as the sampling for this study. Listings and email addresses from the 2012-2013 Indiana School Directory were obtained from the Indiana Department of Education's website. Any missing email addresses were obtained from website information or by a phone call to the individual school. A total of 405 principals from traditional public high schools consisting of grades 9-12 and 7-12 configurations were identified as the potential sample for this study. Charter and private school principals were excluded from this sample because many states do not currently require the same administrative credentials for these principals as those of public school principals. According to the National Association of Secondary School Principals (2011), 25% of charter school administrators do not have traditional administrative training, with only 38% having worked in traditional public schools.

The minimum sample size requirements for a sample of 405 are defined in Table 7, which was created by Krejcie and Morgan (1970).

Table 7: Required Sample Sizes for N= 405 Based on % Confidence and % Error*

95% Confidence

% Error	5%	3.5%	2.5%	1.0%	
Sample Size	197	267	321	389	

99% Confidence

% Error	5%	3.5%	2.5%	1.0%	
Sample Size	252	312	352	395	

*(Krejcie & Morgan, 1970)

This study used the minimum standard of 95% confidence with 5% error, which required 197 principals to respond to the survey. In determining the sample size, the study by Grissom and Loeb (2011) was reviewed, which yielded an 89% rate for a sample size of 314. While this was a good rate of return, it should be noted that this study was completed in one school corporation, Miami-Dade Public Schools, and was part of a district-level supported study where principals' responses to the survey were most likely expected. In a study by Scott (2011), who surveyed all the high school assistant principals in Indiana, she received a 54.5% response rate; 283 surveys were returned out of a possible 525 respondents. At a 95% confidence with a 5% error, this study will require a 49% return rate or 197 out of a possible 405 respondents, which seems reasonable in relation to Grissom and Loeb (2011) and Scott (2011).

Instrumentation

The survey (Appendix B) used for collecting information is a 62-item questionnaire developed to determine basic demographic information on the high school principals, along with the job duties assigned to others in the building, in contrast to the duties each principal chooses to keep for himself. The survey was administered to principals using online survey software.

This study examined the job duties of the principal, as defined by the three major studies cited earlier in this paper. Each of these studies identified key tasks or job responsibilities that a principal must be able to manage in order to be successful. The results of Waters et al.'s (2003) meta-analysis identified twenty-one leadership responsibilities exhibited by high performing principals. Hallinger and Murphy's research (1985) yielded the Principal Instructional Management Rating Scale, a 71-question

survey focusing on 11 key areas of leadership responsibility for principals. Grissom and Loeb's study (2011) revealed 41 areas of task effectiveness spread out over 5 main categories.

All of the responsibilities/tasks identified in these three studies were combined into the Principal Duty Pyramid (see Figure 1 in Chapter 2 or Appendix A). In creating this figure, all duplicate or similar items from the research studies were combined into one item. The final diagram illustrates 51 different responsibilities grouped into three major categories: instructional leadership, administrative leadership, and organizational leadership, as they best capture the three main areas of responsibility defined by the research.

Administrative leadership refers to responsibilities that primarily focus on the management of the school. While these duties are very important, they are often the least favorite of principals. Items that fall into this category include, but are not limited to school safety, discipline, managing student attendance, managing facilities, and implementing standardized exams. The category of organizational leadership reflects items that affect the overall organization of the school and have a significant impact on school culture. These items include, but are not limited to challenging the status quo, establishing clear goals, recognizing the accomplishments of others, student and staff relations, and inspiring/leading new and challenging innovations. This category focuses on building important relationships, as well as the principal having a finger on the 'pulse' of the building. The third category, instructional leadership, deals with the expected component of teaching and learning in the school. Items in this category include, but are not limited to using data to drive instruction, teacher evaluations, coordinating the curriculum, and monitoring student progress.

The overall purpose of this survey is to gather demographic and descriptive data on high school principals in Indiana in order to determine how each divides his time according to the three established categories (instructional, administrative, and organizational leadership), and how he delegates these responsibilities to others. Administrator-to-student ratios will also be gathered and correlated with student performance data. The administrative data, number and type of administrators, will come from the individual principals surveyed. Student performance data will be retrieved from the Indiana Department of Education using the school's name or code and will be entered by the researcher after surveys are returned.

Research Design

This quantitative design utilized the entire population of public high school principals in Indiana in order to be able to generalize the results for the rest of the country. Specifically in this research design, the collected data from public high school principals in Indiana was combined with student achievement data gathered from the Indiana Department of Education.

This study will employ a questionnaire survey, broken down into five sections:

- Questions 1 – 15 Demographic/descriptive information about principal/school
- Question 16 Descriptive information about school's current administrative manpower
- Questions 17 – 32 Administrative leadership duties and correlating assignee
- Questions 33 – 45 Instructional Leadership duties and correlating assignee
- Questions 46 - 67 Organizational Leadership duties and correlating assignee

For questions 1–16, dropdown menus and text entry blanks allowed the respondent to enter the appropriate information. Data collected in this section are demographic and informational in nature. The principal was asked the name of his school, gender, age range, race, number of years of teaching experience, number of years in current position, total years of administrative experience, school setting, school enrollment, grade levels of responsibility, split-format high school, school minority percentage, free/reduced lunch percentage, degree level of principal, and license type of principal. School minority and free/reduced lunch percentages will be confirmed by data from the Indiana Department of Education. Question 16 asks the principal to designate the number of his employees in the following positions: assistant/associate principals, deans, guidance directors,

guidance counselors, department chairs/team leaders, and teachers on special assignment (TOSA). Questions 17–67 are provided with selections that allow the principal to quickly designate the person primarily responsible for the day-to-day tasks assigned with each duty. The answer choices for questions 17–67 are principal (myself), assistant/associate principal, dean of students, guidance director, guidance counselor, department chair/team leader, TOSA, regular classroom teacher, support staff member (secretary, instructional assistant, custodian, etc.), central office administrator, or central office support staff member (secretary, maintenance director, food service director, etc.).

The data gathered from this survey assisted the researcher in determining the answers to the three research questions stated in Chapter 1.

An internet-based survey was the preferred type of data collection procedure for this study. According to Rea and Parker (2012), a web-based survey has the following advantages: convenience, rapid data collection, cost-effectiveness, no time pressure for respondent, ease of follow-up, confidentiality and security, ease in sending to specialized populations, and ability to utilize more complex questions. The disadvantages of a web-based survey are that it limits the respondent base to those who have access to email and a computer; respondent self-selection bias can lead to lower response rates, especially for those who are not comfortable with web-based technology; and lack of interviewer involvement does not allow the respondent to ask clarifying questions. The survey given was cross-sectional, with the data collected at one point in time rather than longitudinal, with data collected over time (Creswell, 2008).

In addressing the disadvantages of a web-based survey, email access is not of concern since the Indiana Department of Education required that all principals have an email address registered in order to receive statewide communications. It is safe to say that all principals in the state of Indiana have access to email and a computer. It is plausible that some respondents will not feel comfortable submitting information over the internet due to their perceived security issues. A limitation with this information being given via a survey rather than by an interviewer was the lack of opportunity for the respondent to ask for any clarification. The researcher needed to write the survey clearly to be easily interpreted, to avoid any confusion of the respondent, and to ensure the reliability and validity of the instrument.

Procedures

The researcher secured the approval of the doctoral committee, as well as the Institutional Review Board through Ball State University (Appendix ___), before proceeding with gathering and analyzing survey data.

A list of 405 high school principals in the state of Indiana was generated using the information provided by the Indiana Department of Education. If a principal's name or email address needed to be confirmed and the school website did not have this information, a phone call was made to the school.

The researcher created the survey under the guidance of Dr. Kianre Eouanzoui of Ball State University's Research and Academic Effectiveness Department. Dr. Eouanzoui reviewed the survey and provided feedback. The researcher then convened an expert panel to review the survey instrument and ensure that it would produce the expected data. The expert panel consisted of Dr. William Sharp, dissertation chair; Dr. Serena Salloum, ID 705 instructor; Dr. Libbie Conner, superintendent; Dr. Stephen Stephanoff, assistant superintendent; Dr. David Clendening, superintendent; and Dr. Marylyn Quick, Professor. The expert panel reviewed the survey on the following items: question clarity (Will the respondent understand the questions?), questionnaire comprehensiveness (Are the questions and response choices comprehensive enough to cover a complete range of choices and alternatives?), and questionnaire acceptability (Are questions the right length, respectful of the respondents' privacy, and do they comply with moral and ethical standards?) (Rea & Parker, 2012). After the survey was deemed

appropriate by the expert panel, it was emailed to all high school principals in the state. Each survey included a cover letter explaining the purpose of the research project (Appendix ___), a letter of consent to participate (Appendix ___), and a link to the survey (Appendix ___). Each survey was tagged with the email address of the respondent, to be used if the follow-up letter is needed to solicit a higher rate of return. Included in this information was an explanation that the respondent's identity would be known to the researcher for Connection of follow-up data. It was also explained to the respondent that student achievement, such as End of Course Assessments (ECA) and SAT scores, will be correlated to the information given back to the researcher. In order to save the principal time and increase the number of responses, it was determined that it was more beneficial for the researcher to look up this data using the Indiana Department of Education website, rather than relying on each individual principal. Each respondent was also reassured in the letter that no names or personal information would be shared to other parties by the researcher and that only general cumulative information would be published.

To obtain a higher rate of return, the researcher utilized two different modes of distribution, emailing the survey and mailing a hard copy to those subjects who have not completed the survey. Subjects who had not completed the survey one week after initial contact received a follow-up email asking for their participation. By the end of the second week, subjects who had not responded received second follow-up emails, along with hard copy mailers to be sent directly to their schools. Subjects who still had not completed the survey by the end of weeks three and four received third follow-up emails. The survey system used was Qualtrics, which was provided to the researcher by Ball State University. Qualtrics is a survey software utilized by over 1,300 universities worldwide. This software gave the researcher the ability to create, distribute, and administer surveys via the internet, distribute them by email, and then retrieve, record, and access the responses.

Data Analysis

For this research study, the independent variable was the administrator-to-student ratio and the dependent variable was student achievement. The remainder of this section will outline the data analysis to be used for each research question.

Research Question #1: In order to retain or improve the number of administrators employed by Indiana public high schools, is the number of administrators employed in a high school (expressed as an administrator-to-student ratio) directly correlated to the academic achievement of its students? The administrator-to-student ratio for each respondent was calculated using information from the Indiana Department of Education and the respondent's completed survey. This ratio was correlated with the following student achievement measures: school letter grade, graduation rate, ECA algebra scores, ECA English scores, percent of academic honors diplomas, percent of core 40 diplomas, percent passing at least one Advanced Placement exam, and SAT composite score. To aid in answering question #2, an overall achievement score using all of these achievement factors was calculated for each school.

Research Question #1a: Do schools with low administrator-to-student ratios exhibit higher student achievement than those with high ratios? Schools were divided into high and low achievement groups based on the data gathered in question 1 and the already determined ratios will be analyzed to determine if there is a commonality in the ratio for each group.

Research Question #2: For schools that have the following designations, what are the patterns of delegation (job duties) administrative team's exhibit in their day-to-day operations?

- a. high student achievement and low administrator-to-student ratio
- b. low student achievement and low administrator-to-student ratio
- c. high student achievement and high administrator-to-student ratio
- d. low student achievement and high administrator-to-student ratio

The researcher completed an overall achievement score based on the information from question #1.

Respondents were classified into one of the four categories listed above. For each category, an analysis was conducted on what duties the principal keeps for himself and what he delegates to others. The researcher attempted to find patterns or commonalities in how high achieving schools divide their administrative duties among available administrators.

Research Question #3: Is the administrator-to-student ratio in each high school influenced by factors such as school size, geographic location, school socioeconomic status, number of teachers, and/or number of minority students in the school? An analysis of the student-administrator ratio was compared with each of the above factors to determine current trends in Indiana. For example, do schools with high rates of free and reduced lunch students tend to have a higher or lower administrator-to-student ratio?

Research Question #4: Does the evidence gathered provide a clear method for determining the appropriate number of administrators to employ in a high school based on the number of students enrolled in order to maximize student achievement? If the data suggested that a lower administrator-to-student ratio directly correlates to student success an attempt was made to develop categories or schools based on geography and other characteristics and provide recommendations for administrator-to-student ratios based on similar schools who exhibit high academic success.

INFORMED CONSENT

Please indicate what type of Informed Consent (IC) will be used for this study. (Check all that apply):

- Adult
- Parental Permission (Minors)
- Child Assent (This needs to be written in age appropriate language)

Informed Consent Waiver Request:

Are you applying for an alteration of the IC process or a waiver of the IC signature requirement?

- Yes No

If **YES**, check all that apply and explain:

- Anonymous Online or Paper Survey
- Phone Interview
- Signed Informed Consent will be **the only** piece of identifiable information collected **and** there are risks associated with identification.
- There are significant (additional) risks to participants by signing the Informed Consent.
- International/Cultural Taboo
- Participants are illiterate or literacy comprehension is a significant concern.
- Other: An online survey will be conducted. The survey is not anonymous, but will be

confidential.

If any box is checked, please explain:

The subject is not required to complete this survey. The researcher would state in the email to all subjects that clicking on the survey link and taking the survey would be classified as their informed consent.

PLEASE NOTE: If English is not the primary language of the participants, then the IC form must also be written in the participants' native language. Include the translated IC forms with your package and a statement as to how (or by whom) the IC's were translated.

OTHER DOCUMENTS AND FORMS

List all additional documents and forms required for your study that you submitted on IRBNet. Make sure you attach the documents and forms with your IRBNet submission.

1. Research Application; 2. CITI Basic Course Completion Certificate; 3. Informed Consent letter (E-mail), 4. Survey instrument to be used for this study

The new package created for submission for this Human Subjects Research Application and Narrative must be electronically signed within IRBNet by the Principal Investigator (and Faculty Advisor, when applicable). Your electronic signature indicates your certification that the information provided in this document is accurate and current.

REFERENCES

- 2010 Principal Salary Survey. (2010). *National Association of Secondary School Principals*.
Retrieved from <http://www.nassp.org/Jobs/2010-Principal-Salary-Survey>
- The Annie E. Casey Foundation. (2012). *Kids Count: Data Across the States: Education Rank 2012*.
The Annie E. Casey Foundation.
- Arpin, A., Addley, A., Hayward, D., Kennedy, F., Leslie, S., Wolak, L., & Yankowski, L. (2004). A
Study of Connecticut High School Principals. The Connecticut Association of High School
Principals' Professional Studies Committee.
- Aud, S., Hussar, W., Planty, M., Snyder, T., Bianco, K., Fox, M. A., ... National Center for Education
Statistics (ED). (2010). *The Condition of Education 2010. NCES 2010-028*. National Center for
Education Statistics.
- Balfanz, R. (2006). What Does It Cost to Operate a High School Organized into Small Learning
Communities? When Are Additional Resources Needed? How Can Efficiencies Be Achieved?
Critical Issues in Development and Implementation: High School Small Learning Communities,
edited by Diana Oxley (Portland, Ore.: Northwest Educational Laboratory, 2006), 156.
- Blank, R. K. (1987). The Role of Principal as Leader: Analysis of Variation in Leadership of Urban
High Schools. *The Journal of Educational Research*, 81(2), 69–80.
- Blaschke, C. (1971). Performance Contracting Costs, Management Reform, and John Q. Citizen. *The
Phi Delta Kappan*, 53(4), 245–247.
- Blase, J., & Blase, J. (1999). Principals' Instructional Leadership and Teacher Development:
Teachers' Perspectives. *Educational Administration Quarterly*, 35(3), 349–378.

- Blase, J., & Blase, J. (2000). Effective instructional leadership: Teachers' perspectives on how principals promote teaching and learning in schools. *Journal of Educational Administration*, 38(2), 130–141.
- Borland, M. V., & Howsen, R. M. (1992). Student academic achievement and the degree of market concentration in education. *Economics of Education Review*, 11(1), 31–39.
- Boyles, R. E. (1942). What Is a Satisfactory Pupil-Administrator Load? *NASSP Bulletin*, 26(103), 107–109.
- Brandes, L. G. (1956). The Position of the Subordinate Administrator in the Secondary School. *NASSP Bulletin*, 40(220), 46–52.
- Brown, L. I. (2001). *A meta-analysis of research on the influence of leadership on student outcomes* (Doctoral dissertation, Virginia Polytechnic Institute and State University).
- Browne, J. D. (1981). The Formation of an Educational Administrator. *History of Education*, 10(3), 205–211.
- Camburn, E. M., Huff, J. T., Goldring, & May, H. (2010). Assessing the Validity of an Annual Survey for Measuring Principal Leadership Practice. *The Elementary School Journal*, 111(2), 314–335.
- Chambers, J. G. (1978). Educational cost differentials and the allocation of state aid for elementary/secondary education. *Journal of Human Resources*, 13, 459–481.
- Chen, C.-S., & National Center for Education Statistics (ED). (2011). *Public Elementary and Secondary School Student Enrollment and Staff Counts from the Common Core of Data: School Year 2009-10. First Look. NCES 2011-347*. National Center for Education Statistics.
- Childs, T. S., & Shakeshaft, C. (1986). A meta-analysis of research on the relationship between educational expenditures and student achievement. *Journal of Education Finance*, 249–263.

- City, E. A., Elmore, R. F., Fiarman, S. E., & Teitel, L. (2009). *Instructional rounds in education*. Harvard Education Press Cambridge, MA.
- Clayson, D. E. (2010). *Quality Rankings of Education in the Fifty States*. Center for Applied Economic Research.
- Clotfelter, C., Ladd, H. F., Vigdor, J., & Wheeler, J. (2006). High-poverty schools and the distribution of teachers and principals. *NCL Rev.*, 85, 1345.
- Cohen, D. K., Raudenbush, S. W., & Ball, D. L. (2003). Resources, instruction, and research. *Educational Evaluation and Policy Analysis*, 25(2), 119–142.
- Conant, James B. 1959. *The American High School Today: A First Report to Interested Citizens*. New York: McGraw Hill.
- Condron, D. J., & Roscigno, V. J. (2003). Disparities within: Unequal spending and achievement in an urban school district. *Sociology of Education*, 76(1), 18–36.
- Creswell, J. W. (2008). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage Publications, Incorporated.
- Deering, A., Dilts, R., & Russell, J. (2003). Leadership cults and culture. *Leader to leader*, 28(2), 31–38.
- Eberts, R. W., & Stone, J. A. (1987). Teacher Unions and the Productivity of Public Schools. *Industrial and Labor Relations Review*, 40(3), 354.
- Elmore, R. (2003). *Knowing the right thing to do: School improvement and performance-based accountability*. Washington, DC: NGA Center for Best Practices.
- English, B. K. (2011). A description of the influence of NCLB accountability mandates on administrator job satisfaction of a combined middle-high principal in rural Georgia. (Thesis).
<http://eaglescholar.georgiasouthern.edu:8080/jspui/handle/10518/3478>

- Fan, F. A. (2012). Class Size: Effects on Students' Academic Achievements and Some Remedial Measures. *Research in Education*, (87), 95–98.
- Farley-Ripple, E. N., Solano, P. L., & McDuffie, M. J. (2012). Conceptual and Methodological Issues in Research on School Administrator Career Behavior. *Educational Researcher*, 41(6), 220–229.
- Feelhaber, C. T. (1927). The Duties of High-School Principals in the State of Nebraska. *The School Review*, 35(3), 188–193.
- Ferguson, R. F. (1991a). Pay for public education. New evidence on how and why money matters. *Howard Journal on Legislation*, 28(2), 45–98.
- Ferguson, R. F. (1991b). Paying for public education: New evidence on how and why money matters. *Harv. J. on Legis.*, 28, 465.
- Fowler Jr, W. J. (2005). Developments in School Finance: 2004. Fiscal Proceedings from the Annual State Data Conference of July 2004. NCES 2005-865. *National Center for Education Statistics*.
- Fullan, M. (2003). *Education in Motion: Leading in a culture of Change*. Centre for Professional Excellence.
- Fulton, R. (1951). Answering 15 Charges against Administrators: Gripping Does Something to You. *The Clearing House*, 26(2), 74–77.
- Gilman, D. A., & Lanman-Givens, B. (2001). Where Have All the Principals Gone?. *Educational Leadership*, 58(8), 72–74.
- Graue, E., & Rauscher, E. (2009). Researcher Perspectives on Class Size Reduction. *Education Policy Analysis Archives*, 17(9), 1–26.
- Greenwald, R., Hedges, L. V., & Laine, R. D. (1996). The Effect of School Resources on Student Achievement. *Review of Educational Research*, 66(3), 361–396.

- Grissom, J.A. & Loeb, S. (2011). Triangulating Principal Effectiveness: How Perspectives of Parents, Teachers, and Assistant Principals Identify the Central Importance of Managerial Skills. *American Educational Research Journal*, 48(5), 1091–1123.
- Grissom, J.A., & Harrington, J.R.. (2010). Investing in Administrator Efficacy: An Examination of Professional Development as a Tool for Enhancing Principal Effectiveness. *American Journal of Education*, 116(4), 583–612.
- Grosskopf, S., & Moutray, C. (2001). Evaluating performance in Chicago public high schools in the wake of decentralization. *Economics of Education Review*, 20(1), 1–14.
- Hallinger, P. (1992). The Evolving Role of American Principals: From Managerial to Instructional to Transformational Leaders. *Journal of Educational Administration*, 30(3).
- Hallinger, P. (2005). Instructional Leadership and the School Principal: A Passing Fancy that Refuses to Fade Away. *Leadership and Policy in Schools*, 4(3), 221–239.
- Hallinger, P. (2007). Research on the practice of instructional and transformational leadership: Retrospect and prospect. 2007 - *The Leadership Challenge - Improving learning in schools*. Retrieved from http://research.acer.edu.au/research_conference_2007/7
- Hallinger, P. (2003). Leading Educational Change: reflections on the practice of instructional and transformational leadership. *Cambridge Journal of Education*, 33(3), 329–352.
- Hallinger, P., & Heck, R. H. (1998). Exploring the Principal's Contribution to School Effectiveness: 1980-1995*. *School Effectiveness and School Improvement*, 9(2), 157–191.
- Hallinger, P., & Murphy, J. (1985). Assessing the Instructional Management Behavior of Principals. *The Elementary School Journal*, 86(2), 217–247.
- Hanson, M. (2001). Institutional Theory and Educational Change. *Educational Administration Quarterly*, 37(5), 637–661.

- Hanushek, E. A. (1997). Assessing the effects of school resources on student performance: An update. *Educational evaluation and policy analysis, 19*(2), 141–164.
- Hanushek, E. A. (1999). Some findings from an independent investigation of the Tennessee STAR experiment and from other investigations of class size effects. *Educational Evaluation and Policy Analysis, 21*(2), 143–163.
- Hartman, W. T. (1988). District Spending Disparities: What Do the Dollars Buy? *Journal of Education finance, 436–459*.
- Hattie, J. (2012). *Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement*. Taylor & Francis.
- Heck, R. H., Larsen, T. J., & Marcoulides, G. A. (1990). Instructional Leadership and School Achievement: Validation of a Causal Model. *Educational Administration Quarterly, 26*(2), 94–125.
- Hedges, L. V., Laine, R. D., & Greenwald, R. (1994). An Exchange: Part I: Does Money Matter? A Meta-Analysis of Studies of the Effects of Differential School Inputs on Student Outcomes. *Educational Researcher, 23*(3), 5–14.
- Hendershot, G. E., & James, T. F. (1972). Size and Growth as Determinants of Administrative-Production Ratios in Organizations. *American Sociological Review, 37*(2), 149–153.
- Hipp, K. A. (1997). Documenting the Effects of Transformational Leadership Behavior on Teacher Efficacy. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/detail?accno=ED407734>
- Hoxby, C. M. (2000). The effects of class size on student achievement: New evidence from population variation. *The Quarterly Journal of Economics, 115*(4), 1239–1285.
- Indiana Association of School Principals. (2013). 2012-2013 Principal's Directory.
- Indiana Department of Education. (2013). Indiana School Directory 2013.

- Johnson, K. A. (2000). *Do Small Classes Influence Academic Achievement?: What the National Assessment of Educational Progress Shows*. Heritage Foundation.
- Kimball, S. M. (2011). Principals: Human Capital Managers at Every School. *Phi Delta Kappan*, 92(7), 13–18.
- Kozol, J. (2006). *The shame of the nation: The restoration of apartheid schooling in America*. Three Rivers Press.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Eduation Psychological Measures*. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/recordDetail?accno=EJ026025>
- Krueger, A. B. (2003). Economic considerations and class size*. *The Economic Journal*, 113(485), F34–F63.
- Ladd, H. F. (1996). *Holding Schools Accountable: Performance-Based Reform in Education*. Brookings Institution Press.
- Larsen, T. J. (1987, April). *Identification of Instructional Leadership Behaviors and the Impact of Their Implementation on Academic Achievement*.
- Lee, R. A. (1983). Financial and staffing ratio analysis: predicting fiscal distress in school districts. *Journal of Education Finance*, 256–263.
- Leithwood, K. (1994). Leadership for School Restructuring. *Educational Administration Quarterly*, 30(4), 498–518.
- Leithwood, K. A. (1992). The move toward transformational leadership. *Education Leadership*, 49(5), 8–12.
- Leithwood, K., & Jantzi, D. (2005). A Review of Transformational School Leadership Research 1996–2005. *Leadership and Policy in Schools*, 4(3), 177–199.

- Leithwood, K., & Jantzi, D. (2006). Transformational school leadership for large-scale reform: Effects on students, teachers, and their classroom practices. *School Effectiveness and School Improvement, 17*(2), 201–227.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Prentice-Hall, Inc.
- Malone, B. G., & Caddell, T. A. (2000). A Crisis in Leadership: Where Are Tomorrow's Principals? *The Clearing House, 73*(3), 162–164.
- Malone, B. G., Sharp, W., & Thompson Jr, J. C. (2000). The Indiana Principals: Perceptions of Principals, Aspiring Principals, and Superintendents. Retrieved from <http://www.eric.ed.gov/ERICWebPortal/recordDetail?accno=ED447076>.
- Marks, H. M., & Printy, S. M. (2003). Principal Leadership and School Performance: An Integration of Transformational and Instructional Leadership. *Educational Administration Quarterly, 39*(3), 370–397.
- Marshall, C., & Hooley, R. M. (2006). *The assistant principal: Leadership choices and challenges*. California: Corwin Press.
- Marzano, R. J., Waters, T., & McNulty, B. A. (2005). *School Leadership that Works: From Research to Results*. Association for Supervision and Curriculum Development.
- Meier, K. J., & Bohte, J. (2003). Span of Control and Public Organizations: Implementing Luther Gulick's Research Design. *Public Administration Review, 63*(1), 61–70.
- Miller, A. W. (2001). Finding time and support for instructional leadership. *Principal Leadership, 2*(4), 29–33.

- Molnar, A., Smith, P., Zahorik, J., Palmer, A., Halbach, A., & Ehrle, K. (1999). Evaluating the SAGE program: A pilot program in targeted pupil-teacher reduction in Wisconsin. *Educational Evaluation and Policy Analysis*, 21(2), 165–177.
- Moody, H. (1968). Plight of the Principal. *The Clearing House*, 42(9), 543–545.
- Morrison, D. E. (1977). Stress and the Public Administrator. *Public Administration Review*, 37(4), 407–414.
- The National Commission on Excellence in Education. (1983). A Nation at Risk: The Imperative for Educational Reform. Retrived from <http://www2.ed.gov/pubs/NatAtRisk/index.html> .
- Norton, M. S. (1972). Current Problems of the High School Principal. *The Clearing House*, 46(8), 451–457.
- Occupational Outlook Handbook for Elementary, Middle, and High School Principals. (2012). *United States Bureau of Labor Statistics*. Retrieved from <http://www.bls.gov/ooh/management/elementary-middle-and-high-school-principals.htm#tab-3>
- O'Donnell, R. J., & White, G. P. (2005). Within the Accountability Era: Principals' Instructional Leadership Behaviors and Student Achievement. *NASSP Bulletin*, 89(645), 56–71.
- Ornstein, A. C. (1989a). Administrator/Student Ratios in Large School Districts. *Phi Delta Kappan*, 70(10), 806–08.
- Ornstein, A. C. (1989b). Administrator/Student Ratios in Large School Districts. *Phi Delta Kappan*, 70(10), 806–08.
- Pijanowski, J. C., Hewitt, P. M., & Brady, K. P. (2009). Superintendents' Perceptions of the Principal Shortage. *NASSP Bulletin*, 93(2), 85–95.

- Printy, S. M., Marks, H. M., & Bowers, A. J. (2009). Integrated Leadership: How Principals and Teachers Share Transformational and Instructional Influence. *Journal of School Leadership*, 19(5), 504–532.
- Quality Counts 2012 - State Report Cards. (2012, January 12). *Education Week*.
- Ravitch, D. (2011). *The Death and Life of the Great American School System: How Testing and Choice Are Undermining Education*. New York: Basic Books.
- Rea, L. M., & Parker, R. A. (2012). *Designing and conducting survey research: A comprehensive guide*. Jossey-Bass.
- Robinson, V. (2007). The impact of leadership on student outcomes: Making sense of the evidence. *The Leadership Challenge-Improving learning in schools, 2007-5*.
- Sagor, R., & Barnett, B. G. (1994). *The TQE Principal: A Transformed Leader*. California: Corwin Press, Inc.
- Scott, V. M. (2012). An examination of expected versus actual tasks of public school secondary assistant principals throughout Indiana. (Doctoral Dissertation). Retrived from <http://cardinalscholar.bsu.edu/handle/123456789/195148>
- Sheffield, W. R. (1978). In Defense of Principals. *NASSP Bulletin*, 62(421), 16–19.
- Sizer, T.R. (1976). Education and Assimilation: A Fresh Plea for Pluralism. *The Phi Delta Kappan*, 58(1), 31-35.
- Southworth, G. (2002). Instructional Leadership in Schools: Reflections and empirical evidence. *School Leadership & Management*, 22(1), 73–91.
- Stevenson, P. R. (1925). Factors to Be Considered in Determining the High-School Student Load of Instruction. *Educational Research Bulletin*, 4(13), 267–278.

Teacher High School Salary - Salary.com. (Accessed May 20, 2012). *Salary.com*.

<http://swz.salary.com/SalaryWizard/high-school-teacher-Job-Description.aspx>

Terry, P. M. (1996). *The Principal and Instructional Leadership*. Retrieved from

<http://www.eric.ed.gov/ERICWebPortal/detail?accno=ED400613>

Trider, D. M., & Leithwood, K. A. (1988). Exploring the Influences on Principal Behavior.

Curriculum Inquiry, 18(3), 289–311.

Valentine, J. C., Pigott, T. D., & Rothstein, H. R. (2010). How Many Studies Do You Need? A Primer

on Statistical Power for Meta-Analysis. *Journal of Educational and Behavioral Statistics*, 35(2), 215–247.

Verstegen, D. A., & King, R. A. (1998). The relationship between school spending and student

achievement: A review and analysis of 35 years of production function research. *Journal of Education Finance*, 243–262.

Wagner, J. (1990). Administrators as Ethnographers: School as a Context for Inquiry and Action.

Anthropology & Education Quarterly, 21(3), 195–221.

Waters, T., Marzano, R. J., & McNulty, B. (2003). *Balanced Leadership: What 30 Years of Research*

Tells Us about the Effect of Leadership on Student Achievement. A Working Paper.

Wenglinsky, H. (1997). *When money matters: How educational expenditures improve student*

performance and how they don't. Policy Information Center, Educational Testing Service.

Whitaker, B. (1997). Instructional Leadership and Principal Visibility. *Clearing House*, 70(3), 155–

56.

White, J. (2010). *The Facts About School Administrator Ratios*. Association of California School

Administrators.

Witzers, B., Bosker, R. J., & Kruger, M. L. (2003). Educational Leadership and Student Achievement: The Elusive Search for an Association. *Educational Administration Quarterly*, 39(3), 398.

- Developed RTI interventions
- Use of professional learning communities to improve student learning
- Developed common grading practices and procedures
- Developed common assessments
- Increased graduation rate by 11% compared to 2005
- Increased ECA scores in Algebra and English by 7% and 6% respectively for total testers from 2010 to 2011
- Increased ECA scores for free/reduced students in Algebra and English by 13% and 3% respectively from 2010 to 2011
- Successfully organized and completed NCA school improvement process and accreditation visit

2005 – 2007 Westfield High School Westfield, Indiana

Assistant Principal

- Supervised special education program
- Supervised ENL program
- Assisted in the facilitation of freshman transition program
- Building public/community relations contact
- Building maintenance, grounds, and custodial management
- State/Standardized testing facilitator and coordinator
- Advanced placement testing coordinator
- Assisted in advanced placement curriculum development
- Responsible for collection, analysis, and implementation of instructional and testing data.
- Supervised and evaluated certified and non-certified staff
- Supervised extra-curricular activities
- Assisted in interviewing and hiring of staff positions
- Assisted in developing and implementing school improvement plan
- Building coordinator of state reports
- Building coordinator for managing and planning current and future use of building facilities

2003 – 2005 Taylor Middle School Kokomo, Indiana

Principal

- Fulfilled all responsibilities of the building principal
- Evaluated and supervised certified and non-certified staff
- Implemented and facilitated professional development
- Implemented and developed school improvement plan
- Facilitated building discipline and attendance procedures
- Facilitated building finances
- Managed building and grounds
- District ISTEP coordinator
- Prepared district ISTEP report
- Facilitated building public and community relations
- Supervised special education program, chaired case conferences

2000 – 2003 Noblesville High School Noblesville, Indiana

Science Teacher

- Instructed chemistry, physical science, and earth science classes
- Participated on homecoming committee
- Coached freshman girls basketball
- Participated on student support services committee
- Participated as a building level writing coach for writing across the curriculum initiative

1997 – 2000 Lawrence North High School Indianapolis, Indiana

Science Teacher

- Instructed chemistry and earth science classes
- Coached girls basketball as a varsity assistant, 1997-1998
- Coached freshman girls basketball as the head coach, 1998-2000

Other Employment

Summer 1997 Richwood Pharmaceuticals Indianapolis, Indiana

Quality Assurance Chemist

- Worked as a quality assurance inspector and chemist
- Analyzed and tested product samples for quality and accuracy

1994 – 1996 Indiana University Bloomington, Indiana

Resident Assistant

- Oversaw daily living of fifty residents
- Enforced university policy
- Organized and implemented educational and entertainment programs
- Advised Teter Quadrangle judicial board

Education

2008 – Present Ball State University Muncie, Indiana

Ed.S. and Ed.D. Programs

- Overall G.P.A. 3.92
- Ed.S. completed 4/2011
- Ed.D. completed 5/2014

2001 – 2002 Indiana University Bloomington, Indiana

Administrative Certification

- Overall G.P.A. 3.94

1999 – 2001 Anderson University Anderson, Indiana

Masters of Education

- Overall G.P.A. 4.0

1992 - 1996 Indiana University Bloomington, Indiana

B.S. Secondary Education (Grades 5-12)

- Primary – Chemistry
- Supporting – Earth Science, Physical Science, and General Science
- Overall G.P.A. 3.2

Extracurricular Activities

(Previous Activities)

Student Support Services Committee

Building Level Writing Coach

Sports Support Activity Worker

Freshman Girls Basketball Coach

Professional Memberships

(Former Membership) Hoosier Association of Science Teacher Incorporated (HASTI)

Indiana Association of School Principals

National Association of Secondary School Principals

References

Furnished as a part of application

Awards Received

1996 Indiana University Fall Dean's List

1994 Indiana University Spring Dean's List

1992 Paul Shonk Memorial Scholarship