HIGH SCHOOL ADMINISTRATIVE STAFFING IN WASHINGTON STATE: PRINCIPAL PERSPECTIVES ON RESOURCE NEEDS AND UTILIZATION

By

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To the Faculty of Washington State University:

The members of the Committee appointed to examine the dissertation of John C. Steach find it satisfactory and recommend that it be accepted

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Acknowledgment

I wish to acknowledge the assistance of my chair, committee, and colleagues in helping me complete my dissertation. Also, without the participants’ willingness to answer my questions and provide encouragement this study would not have happened.
This mixed methods study explored how high school principals prioritize their work and utilize available human resources to adjust to inadequate administrative staffing. Analysis of staffing levels across the state of Washington and specifically inside two eastern Washington districts framed interview questions for central office administration and high school principals. This analysis indicates how current administrative staffing levels are influenced by student enrollment, school size, student poverty, and district size. The interviews were the basis for grounding a theory to describe how human resources are allocated to schools and how principals invest those resources. The emergent Proactive-Reactive Relationship Resource Theory frames how principals invest in relationships to both mitigate the magnitude of emergent managerial work and create resources through relationship capital to support school administrative work demands.
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Dedication

This dissertation is dedicated to my wife and children

who gave me time and emotional support

as well as much patience and understanding.

Cheers!
Chapter One: Introduction

Research Context

A high school principal sits across from the head of Human Resources (HR) and the Superintendent in the early spring discussing staffing allocations for their school. The three spend nearly 20 minutes in a conversation to determine the total teaching staff allocation for the school. Issues discussed include projected student enrollment, contractual class overload limits, class sizes for Advanced Placement classes, Response to Intervention class size reduction allowances, and the impact of Physical Education (PE) waivers on the number of sections of PE with its relation to the overall school class size average. At the risk of showing weakness to their supervisors, the principal chooses what he/she feels is the optimal time to resurface earlier requests for additional support for their building administrative team. While their school has grown from 1200 to 1500 students over the past three years and the poverty level of the community has nearly doubled, the number of assistant principals, secretaries, and counselors has remained constant. Many of the administrators and support staff in the school regularly comment to the principal on the increased amount of work and need for additional help. Some secretaries and assistant principals have even left the school citing the unreasonable workload as the primary reason for leaving. While the principal, superintendent, and HR director are in agreement that something needs to be done, this portion of the staffing conversation ends rather quickly with no resolution other than an agreement for further consideration.

From this principal’s perspective, a seed has been planted and now he/she will wait for some future time, when for reasons that are not fully explained, the principal will be notified that either an additional secretarial position or assistant principal has been authorized for their school. At the central office, the conversation relative to additional administrative support for the high
school continues over the next several days in the absence of the principal. The superintendent and HR director weigh such factors as the validity of the need, the impact on the budget, and how any addition in staff would be viewed by the other high school administration, the administrators at the middle and elementary schools, individuals in the community, and the teacher’s union leadership.

Until the time arrives when additional staffing is allocated from the central office, this principal will deal with questions such as how adjustments can be made in staff assignments to deal with the growing workload, what additional justification can be presented to support a decision to increase staffing, and how additional help might be found within existing resources. The answers remain unclear and of concern.

**Problem Statement and Purpose**

Inquiries to the Washington Association of School Administrators, Washington State Personnel Association, and Association of Washington State Principals, along with several individual districts, have failed to identify any systematic method of staffing allocation for school administration beyond possible student enrollment trigger points referenced by a few districts. It is highly unlikely that student enrollment is the sole independent variable driving the overall administrative workload in a school. Large comprehensive high schools provide principals with a team of administrative staff comprised of various combinations of assistant principals, athletic directors, secretaries, counselors, administrative assistants, activity directors and teachers. Through an assumption of a distributed leadership model (Spillane, Halverson, & Diamond, 2001; Yukl, 2010) this team might act as an extension of the principal to perform both the management and leadership functions for the school, thus sharing leadership and
responsibility for work that needs to be done. But little is known about how the principal makes these decisions to do this in the high school.

This study examines three issues relevant to administrative staffing of high schools. First, what factors do principals perceive as determining the total administrative staffing allocation needed for individual high schools? Second, how do high school principals identify and utilize their available staff resources to perform the administrative functions of the school? Third, how do principals compensate for inadequate administrative resources?

Using a grounded theory approach, this study uses the data gathered to identify the factors that influence the administrative workload in a high school and explain how building principals react in an attempt to balance the resulting workload with the available administrative human resources.

**Background**

In 2008, the Richland School District (RSD) central office administration discussed with representatives of the principal group how to determine adequate and equitable staffing for school administration. It became clear to those involved that this determination was more complex than just looking at the student-to-administrator ratios. The focus of this discussion quickly aligned with the Washington State legislature work on a revised school funding formula which addressed insufficiencies in the present system (Conley & Rooney, 2007) and weighted student formula studies (e.g., Miles & Roza, 2006) indicating that contextual factors should be considered when making resource allocation decisions.

The RSD first initiated a search for a school administration staffing resource allocation model through professional organizations and school districts. The e-mail and telephone contacts made during this search were only able to identify a few districts with any established
methodology to determine the recommended number of administrators needed at a given school based on the specific characteristics of the school. These methodologies were limited to student enrollment trigger points such as the Seattle School District weighted staffing standards (2007). In an attempt to validate and extrapolate these enrollment trigger points, a scatter plot of the number of students to number of administrators per high school was generated. This plot was analyzed for high schools larger than 350 in eastern Washington. A linear regression of the resulting plot ($y=0.002x + 1.28$, $y=$administrators & $x=$students, $R^2=.7936$) illustrated both that schools of the same size were staffed differently and that the ratio of students to administrators varied with size of school. This relationship is not consistent with the concept of a universal student enrollment trigger point for determining when to add additional administrators at a school.

Therefore, the RSD (under the direction of John Steach, Assistant Superintendent of Human Resources) embarked on a process to develop their own decision-making model. In alignment with the Plecki et al. (2007) statement that “effective leaders know how to use data strategically to inform resource allocation decisions and to provide insights about the productivity, efficiency, and equity of resources” (p. 6) the RSD goal was to identify contextual factors beyond student enrollment that act as independent variables which influence the amount of administrative work present in a school and quantify their respective influence on the total workload.

The RSD study followed a spreadsheet based method outlined in Strategic Decision Making (Kirkwood, 1997) which began with a time-on-task survey of principals in southeastern Washington. The survey used in the study (Appendix A) was developed from traditional work tasks performed by school administrators (e.g., Cumings & Coryn, 2009; Rayfield & Diamantes,
and administered as a way to determine how principals and assistant principals spend their work time. Eight mandatory categories were included based on initial interviews of two RSD principals. Administrators were allowed to identify and quantify other tasks that consumed a significant amount of their time. The results of this survey were combined with school size by enrolment and poverty level as determined by free and reduced (F&R) lunch percentage (Appendix A, Table A1).

Each task in the survey was coded to identify specific independent variables that were logically connected with the quantification of the amount of time spent on the tasks listed. Some tasks were split between one or more code variables. The relative proportion of total administrative time within each school was then determined for each primary variable. A total sample proportion was then calculated for each variable and these proportions were used to develop weighting of each contextual factor for its overall contribution to the total workload of the school (Appendix A, Table A2 & Figure A1). An example of this is the calculation of the poverty related time spent which was done by summing the hours attributed to Becca/truancy court, the time spent on the phone, and half of the time identified in parent meetings, putting out fires, and on data/student placement. The average percentage of time attributed to poverty was 13.8% for principals and 8.9% for assistant principals. The average of these ratios was applied as a weighting for the poverty factor.

With the relative contribution of each variable determined, the sensitivity of each variable was further refined through RSD principal focus group interviews to quantify the characteristics of a possible function curve within each variable over its range of possible values. An example of this was the determination of the amount of impact on the workload of the principal of F&R lunch percentage of students in the school over the range of 0% to 100% F&R. The final product
of this work revealed that a school’s F&R percentage was determined to contribute 12% of the total administrative workload at a baseline value of 40% F&R students. However, the sensitivity analysis determined that no contribution occurs below 30% F&R and the contribution ceases to increase above the maximum contribution for F&R percentage values greater than 80%.

The sensitivity analysis process created value functions (Appendix A, Figures A2-A8) for each variable and refined the final weighting of the independent variables such that their summations would produce total workload or “school stress factors” for each school based on the actual school contextual factors. These value functions are similar to those depicted in studies by Baker (2009) and Bersin, Kirst, and Liu (2007) in their general shape and purpose.

The term “School Stress Factor” evolved during the development of the model as a replacement for workload and to signify that when the workload is not supported by adequate levels of human resources, the excess workload creates stress on the school administrative staff. For the contribution of number of students, it is noteworthy that the impact was related to both the number of students per administrator and the total school size. Therefore, the value functions for each of these two effects combine to produce the overall workload impact from the number of students attending a given school.

To ensure validity, each school stress factor was then calculated based on the school’s contextual variables and found to be of similar proportional makeup to the initial survey data relative to the demand on administration for each school (Appendix A, Table A3). For each school, the total stress is calculated by inputting each contextual variable into its corresponding value function(s) and then summing the resulting stress contributions.

Through a similar focus group process with RSD principals, the supportive value of various administrative and quasi administrative staff was determined. In line with Louis, Jones,
and Barajas (2001), counselors were included as quasi administrative as their role has evolved over the years to include many traditionally administrative duties. The weighting of these staff was a proportionality of what was defined through principal focus group discussions as the administrative capacity of the “competent principal.” This hypothetical competent principal was presented as an individual, who without delegation of the administrative and leadership roles of the school, could successfully manage and lead the “full load high school” (400 students, 25 certification staff, five classified staff, 40% F&R lunch, 24 total sports/activities, and in a district with seven schools). This same competent principal value was used as a normative reference to produce a total school stress factor on a percentage scale. As an example, a total stress of 200 would require the equivalent of two competent principals in staffing which could be accomplished by one principal, one assistant principal, and extra counselor time. The counselor time would be sufficient to make up the difference between the assistant principal capacity and that of a competent principal.

In comparing this to a supply and demand relationship of human capital, the RSD Decision Model weights various contextual factors to determine the relative administrative workload or “school stress factor” for a school and balances this “school stress factor” with weighted administrative employee resources (assistant principals, secretaries, counselors, deans, and administrative assistants). This model extends beyond the assumption that the administrative workload is directly proportional to the number of students and includes the impact of the poverty level of these students, the number of certificated staff at the school, the number of classified staff supervised, the size of the district, and the number of sports teams and/or student activities offered at the school.
In addition to developing the administration allocation model for high schools, the RSD also developed a decision model for both elementary schools and middle schools. The development process for these two school levels was similar to that of the high school model. However, the survey for elementary and middle schools was not expanded beyond the nine elementary schools and three middle schools within the district. Since the elementary model was the first one completed, the definition of the capabilities of the competent principal at the high school has as its foundation the definition of the “full load elementary school” or 100% stress elementary school characteristics. While the full load high school was modified some through focus group interactions, there still exists great similarity to the full load elementary school definition.

The result of the RSD study was a decision-making model spreadsheet that provides great insight for discussion of staffing adequacy and comparisons. However, the model lacks insight into both the interaction between administrative personnel at the building level and the impact of how these resources are invested by the school principal.

In seeking to enhance the RSD Decision Model, initial reviews of research revealed “with the exception of a few studies (e.g., DeArmond, Gross, & Goldhaber, 2008; Smylie & Wenzel, 2007) there has been relatively little research explicitly focusing on Human Capital Management (HCM) at the school level” (Kimball, Milanowski, & Heneman, 2010, p. 3). Even the Kimball et al. study looked at HCM specifically from the perspective of how the principal manages the human resources of the instructional staff and did not address how the principal manages the school’s administrative resources.

Given the impact of principal leadership on student learning (e.g., Leithwood & Riehl, 2003; Portin, Alejano, Knapp, & Marzolf, 2006; Waters, Marzano, & McNulty, 2003) as second
only to that of the teacher, providing adequate leadership resources is critical to school success. As stated by Bottoms and Fry (2009):

Without such on-the-ground leaders, high schools stand little chance of helping more students meet grade-level or higher standards, stay in school, and graduate prepared for the next steps in their education and careers. Yet having such leaders in place is not enough. Even the most talented and best-trained principals will fail if their working conditions do not support their improvement efforts.

Principals’ working conditions are largely determined by leaders in the school district central office. And a recent National Academy of Sciences study concluded that purposeful district-level support of high school reform is even more critical than that of elementary- or middle-level school reform.

High school principals need training, technical support, adequate resources and supportive policies to become instructional leaders who can focus more clearly on teaching, learning and the needs and interests of students. (p. iii)

By studying how high school principals invest the resources they are allocated, this may provide insight to what additional resources are needed to ensure the working conditions are present to support future school improvement efforts and how future funding formulas could provide such resources.

**Significance**

This study is significant at a minimum for the following reasons:

- At the school level, the study may inform high school principals on how best to utilize allocated resources to meet the administrative demands of the school.
- At the local level, the results of this study may be used to inform district decision makers on contextual factors that should be considered when establishing administrative staffing levels for large high schools.
- At the state level, as Washington State continues to work on a revised funding allocation model, this study may provide insights into possible modifications of the administration funding formula such that it includes contextual factors beyond the current ones of student enrollment and district size.
- Relative to furthering research, current studies identify how principals invest the human resources they are allocated. This study, however, will attempt to identify how principals create additional administrative human resource potential from their non-administrative employees.

**Objectives of the Dissertation Research**

The study will aim to identify the basis for how high school principals distribute administrative work within available staff to meet the workload demands. This research will also identify the contextual factors that principals feel determine the amount of administrative work required at the school. Through a mixed method approach, the study will create a grounded theory toward what contextual factors may influence building administrators’ workload and therefore should drive both funding and staffing allocations. The resulting information may be useful to inform future staffing decisions at the building and district as well as state funding formulas.

**Specific Research Questions**

The following research question will guide the study: What factors influence principals’ decisions relative to administrative resource investment in large comprehensive high schools?
The supporting questions for the study are:

- What factors/variables influence principals’ prioritization of the administrative work in the school?
- From the principal perspective, what factors/variables drive the workload of building principals?
- What employee resources (including teachers) are used by building principals to distribute administrative work and how are they used?
- How do resource limitations influence the principal’s prioritization of administrative work?

As a point of comparison and contrast, the perspective of the central office will be explored with the following questions:

- What factors/variables are considered by central office administrators when making administrative staffing allocations to high schools?
- What insight can be provided to central office administrators to assist in making high school administrative staffing allocation decisions?

**Assumptions and Limitations**

The following are assumptions and limitations expected for the study:

- This study dealt with principals in high poverty schools who did not have the scope of authority over the provided administrative resources. Resource allocations were defined for the schools by the central office administration.
- During development of the RSD Model, the researcher held a position of authoritative power over the focus group participants. This relationship may have influenced the information gathered and the results of the study.
• The competent principal standard for work load capacity was estimated by the RSD focus groups through relative comparisons of example schools. This value has not been validated by additional research.

• The SAE relative value relationships of administrative staff to the competent principal standard were estimated by the RSD focus groups. These values have not been validated by additional research.

• As the sample for the study was identified as districts containing at least two high schools in south eastern Washington, district size will not be a factor in the study.

• Clerical activities of the secretarial staff will not be considered separately from administrative activities.

• The principal will be viewed as the primary controller and allocator of human resources within the school.

• Given the current state of funding in Washington, it will be assumed that the administrative staffing in the sample schools is less than what is perceived as adequate to the principal. This will be verified in the interviews.

• The researcher is a superintendent level administrator in a neighboring school district and has had professional interactions with some of the participants.

• Historical staffing framework analysis will be limited to Washington State funded schools.

• Not all districts in the state of Washington consider positions equally when determining which activity and duty codes to utilize when reporting personnel on the state S-275 staffing report submittal. Therefore, there is some variation in the
recording of the baseline data for the number and type of administrators at high schools.

Definition of Terms

**Categorical funding.** A term used to describe revenue provided in addition to basic education funding that is targeted to meet specific student needs based upon identified contextual variables. Current examples in Washington State are: Learning Assistance Program (LAP) funding is provided based upon identified learning deficiencies as demonstrated by state standardized testing, Title I Grant funding is provided based upon national census poverty information and distributed according to federal free and reduced (F&R) lunch percentages, Special Education (SpEd) funding based on disability qualifying criteria, and English Language Learner (ELL) funding provided on a per student basis according to scores of language proficiency testing.

**Competent principal.** A term used in the RSD Decision Model from the pilot study to identify a standard value of administrative work contribution by a principal. The value of 100 equates to a single administrator performing at a level that meets standard on all evaluation criteria in a hypothetical school of 400 students (with a poverty level of 40% F&R), 25 certificated staff, five classified staff, 25 total combined sports teams/activities, and in a district with only seven total schools.

**Distributed leadership.** A perspective of organizing leadership where power sharing and political activities are inevitable and not something determined by a single leader (Yukl, 2010), but rather through the pooled expertise of the members of the collective organization to distribute out leadership.
**Grounded theory.** A theory derived from data systematically gathered and analyzed through the research process. This type of research begins with a selection of an area of study and the researcher develops the theory from the research data. This differs from traditional research where the theoretical framework is established prior to performing the research (Strauss & Corbin, 1998).

**Relationship capital.** The work capacity that a principal may draw upon in times of need that is driven by a feeling of obligation by staff members to the principal. This obligation can be developed through multiple avenues by the principal with each staff member and is closely associated with both the referent power and positional power of the principal.

**Resource dependence theory.** A theory based upon the power relationship between organizations where an organization seeks to increase control over its own resource allocation by either minimizing its dependence on others or increasing the dependence other organizations have upon them (Pfeffer & Salancik, 1978).

**Resource investment.** A concept that goes beyond allocating resources for the specific and immediate needs of a classroom, school, or district but instead considers the types of approaches and strategies for investing resources in coherent, effective, equitable, and sustainable ways. This approach assumes that calculated risks must be taken at times and that strategies should be monitored and adjusted on a regular cycle, in light of changing conditions and accumulated evidence over time regarding the effectiveness and equity of particular investment strategies (Plecki, Knapp, Castañeda, Halverson, LaSota, & Lochmiller, 2009).

**School stress factor.** A school stress factor is the cumulative amount of administrative work generated by the contextual factors of a given school divided among the administrative staffing resources available in the school. This value is derived according to the RSD Decision
Model. The word “stress” is used in context of “a perceptual phenomenon which arises from a demand that is made on the person and his/her ability to cope with it. If there is an imbalance in this mechanism and the individual cannot respond, then stress occurs” (Tsiakkiros & Pashiardis, 2006, p. 101).
Chapter Two: Review of the Literature

Introduction

With 87% of Washington State’s $5 billion public school district basic education expenditures allocated for personnel (Office of Superintendent of Public Instruction statistics, 2010), district administrators annually struggle through staffing processes that far exceed in intricacy and complexity the formulas used to provide funding. This annual staff allocation ritual balances the goals of providing the best instructional program for students with maintaining district long term financial stability. Each time this interaction occurs and especially when resources become scarce, communities often question the value of school administration and whether the cost of these individuals provides adequate impact on student learning to justify their continued existence.

Washington State School Funding Structure

The current funding system in the State of Washington is built upon the cornerstone of two court cases which followed and aligned with the landmark California case of Serrano v. Priest (1971) where the courts upheld that disparities in local tax support of education violated the equal protection clause of the Fourteenth Amendment of the United States Constitution and the California Constitution. Best known as the Duran Decisions I and II or School Funding I and II respectively, in Seattle School District No. 1 v. State of Washington (1976) and Seattle et. al. v. State of Washington (1982), Superior Court Judge Robert Doran found that the state of Washington did not meet its constitutional obligation. As stated in Article IX, Section 1 of the Washington State Constitution, “it is the paramount duty of the state to make ample provision for the education of all children residing within its borders, without distinction or preference on account of race, color, caste, or sex” (p. 35). As a result of Duran Decision 1 (Seattle School
District No. 1 v. State of Washington, 1976) the state legislature passed the Basic Education Act, Wash. ex.s. c 359 § 1 (1977) to define the minimum limits for basic education and associated funding. This act was then supplemented by the Levy Lid Act, Wash. AGLO No. 55 (1977) which limited the amount of local property taxes to be used for education and ensured these local funds were limited to funding programs defined as above and beyond basic public education such as extracurricular sports.

While the funding allocation formula developed for the Washington State legislature in 1977 has been adjusted over the years to reflect nuances in district poverty and local property valuation, the basis of the formula and its relationship to determining staffing has remained constant relative to the determination of basic education funding. Revised Code of Washington (RCW) 28A.150.260 paragraph 2.b sets the number of staff positions funded per each 1000 full time equivalent (FTE) students enrolled and attending within the district. According to the statute, each 1000 FTE K-3 students generate funding for 49 teachers. In grades 4-12 1000 FTE students fund 46 teachers. Funded teachers include any position that requires a valid teaching certificate or educational staff associates certificate such as classroom teachers, psychologists, therapists, and counselors. Classified staffing (employees not holding a valid teaching certificate such as secretaries, administrative assistants, paraeducators, custodians, maintenance workers, grounds crew members, technology support, and supervisors of classified employees) is set at 16.67 employees per 1000 FTE students while these same students create an allocation of four certificated administrators. RCW 28A.150.260 establishes that “Certificated administrative staff shall include all those persons who are chief executive officers, chief administrative officers, confidential employees, supervisors, principals, or assistant principals” (Wash. Gen. Laws Ch. 28A § 150). While this ratio of one administrator for each 250 students may appear more than
adequate at a building level, after allowing for district central office support, the actual ratios of administrators to students in the school buildings often falls short of the prototypical schools that create the foundation of the recommended formula as presented in the Washington Adequacy Funding Study (Conley & Rooney, 2005).

“Education is a human-capital-intensive enterprise, with around 80 percent of most school district budgets spent on staff salaries and benefits” according to Milanowski and Kimball (2010, p. 1). The Washington state formula produces results consistent with Milanowski and Kimball’s statement in that approximately 88% of basic education funding for staff related costs are salary and benefits. Non-employee related costs (NERCs) are specifically funded through the formula and account for approximately 12% of basic education revenue. Additional categorical funds provided to districts based on student demographics such at Title 1 Grant, LAP, SpEd, and ELL are also intended primarily for personnel expenditures with each having limitations on the amount of district overhead that can be deducted, the amount of NERCs that can be purchased or both. Local Maintenance and Operation (M&O) property tax levies do allow districts a revenue source with complete discretion over allocation. However, the erosion of basic education funding over the past 30 years has resulted in much of current M&O levies being designated to fund personnel (Conley & Rooney, 2007). The only two programs in Washington that do not follow the trend toward a large majority of the funding being for personnel are transportation and food services which both operate close to 60% personnel costs and 40% NERCs, are independently funded based upon reimbursement for student participation, and are not considered part of basic education.

As the state of Washington is moving toward reform of school funding, it appears the pattern of expenditures as being predominantly personnel-related will continue as a trend. The
prototype high school proposed by researchers at the Center on Reinventing Public Education (Odden, Goetz, & Picus, 2007) dedicated only $680 out of a total allocation of $9,391 per year per student or 7% to NERCs and 93% to personnel again demonstrating the employee-intensive nature of public education.

**Education as Personnel Resource-Based Enterprise**

Washington is not unique in this high ratio of expenditures between personnel and NERCs. In a report by the Southern Regional Education Board (Bottoms & Fry, 2009) on principal working conditions and school reform, the authors presented the Odden et al. (2007) study as a baseline for high school expenditure breakdown, implying that the Washington example is applicable in other areas of the United States. Additional studies on school finance in New York (Monk, Roellke, & Brent, 1996), on school finance in Texas and Ohio (Miles & Roza, 2005), on elementary school resource allocation studies in New Jersey (Odden, Goertz, Goetz, Archibald, Gross, Weiss, & Mangan, 2008), and on administrative cost and staffing allocation comparison between public and private school types in Ohio (Roza, Davis, & Guin, 2007b) each presented similar evidence supporting that over 80% of public education expenditures are directly related to personnel.

The National Center for Educational Research noted “personnel represent the predominant resource in a social service enterprise like education and personnel can be readily measured in terms of some measurable physical quantities” (Chambers & Fowler, 1999, p 62). This working paper presented evidence on the relative benefits and drawbacks of utilizing an accounting approach versus a resource-based approach in tracking school-based resource allocations. “The accountant’s perspective emphasizes measurement in terms of dollars and focuses attention on the traditional mechanisms for organizing fiscal data around objects of
expenditure, function, and program” (p. 24). For contrast, Chambers and Fowler stated the following:

The perspective of the economist focuses on the way specific resources are combined to produce student outcomes. The economist places resource allocation within a model of human behavior based on optimization: maximizing outcomes within budget constraints or minimizing costs within the constraints imposed by the technology by which inputs produce outcomes. (p. 25)

It is this focus on student outcomes and the interpersonal contact between school personnel and students that makes the resource-based approach more appealing than the accountant’s approach to the practitioner concerned with ensuring equitable allocation of resources for equitable learning opportunities.

This emerging view of resources as people as opposed to dollars better matches the perspective of the principal as they seek to meet student needs. In analyzing how principals allocate their resources, the Center for the Study on Teaching and Policy (CTP) noted “resource allocation consists of more than assigning dollar amounts to particular schools or programs. Equally, if not more important, is the examination of the ways in which those dollars are translated into action by allocating time and people in productive ways” (Plecki, Alejano, Knapp, & Lochmiller, 2006, p. 2).

Supporting the use of a resource-based approach, CTP noted that “Besides the investment frameworks that district leaders create in approaching urban staffing challenges, several other conditions have an important role in shaping decisions about staffing resources: …sources of staffing supply, collective bargaining agreements, [and] the district’s human resource system…” (Plecki, Knapp, Castañeda, Halverson, LaSota, & Lochmiller, 2009, p. iii). In this summary
statement, they recognized the importance of translational documents such as local collective bargaining agreements in converting dollars to personnel in what sometimes may appear at the student level to be arbitrary and capricious methods of resource distribution.

Use of the resource-based approach has become a recognized method of evaluating funding distribution equity with studies seeking “to create a school-level, fiscal reporting structure that reports school-level resource use and simultaneously indicates as much as possible about the educational strategy those resource-use practices reflect” (Odden, Archibald, Fremanich, & Gross, 2003, p. 327). In this study, the school expenditure structure was broken down into nine categories that sought to reflect a school's spending as it related to the instructional program in the school.

Plecki et al. (2006) presented that resources from the principal’s perspective consist of money, human capital, and time where “no one level of the system has complete control of the flow, distribution, and expenditure of funds” (p. 8). As part of the analysis, Plecki et al. presented findings on changes in resource allocation at the building, district, and state policy level that could improve individual schools’ ability to adjust personnel allocation to best match building and student needs.

**Resource Dependence Theory and the Principal’s Role**

Both Odden et al. (2003) and Plecki et al. (2006) illustrated the relationship between the state, district, and school in the conversion of money into personnel and the allocation of resources to support instruction. One model of power dynamics between each of these levels in the resource allocation process is resource dependence theory as defined by Pfeffer and Salancik (1978). In this theory, Pfeffer and Salancik asserted that the social and organizational interdependence between different segments of an organization are contextual and act similarly
to supply and demand in that all exchanges are foundationally transactional. Their theory applies not only to the creation of resources but also to the flexibility allowed in the investment of these resources and the degree of control allowed by the provider to the user of resources. When applied to a school setting, the state and the district which allocate resource do so with the expectation of receiving a certain level of performance in return. This performance therefore validates the quality of the overall resource allocation process thereby influencing public opinion and support for work done by officials at the state and district administration levels. As each level is placed under external pressure to increase performance, they will react by exerting their power to influence the constraints on how resources are invested.

Casciaro and Piskorski (2005) elaborated on resource dependency and split the construct of interdependence into two aspects of power imbalance and mutual dependence. This distinction appears much better suited to public education with the mutual dependence of the state, the district, and the school upon the taxpayer with the power balance between the three levels tilting heavily toward the state over the district and the school and with the district over the individual school.

As resource dependence theory provides an attempt to describe power relations between an organization and its environment, Johnson (1995) explored what he felt was the political nature of this relationship and how organizations can react in compensation for power imbalances. As schools and districts are considered captive or powerless organizations with little ability to influence the state organization that provides resources, schools and districts must resort to the practices of buffering and bridging to increase their power position and personal autonomy over resource use. Relative to school districts, buffering would consist of the maintenance of unreserved excess fund balance to offset future funding shortages. Bridging
would be accomplished by creating links to other resource providers such as local property taxes and grant funding that are independent of the state basic education allocation. Both of the strategies reduce the reliance upon the state as the primary resource provider and therefore increase the autonomy and relative power of the individual district.

Johnson (1995) stated “over time, power accrues to those organizational leaders and sub-units who prove adept at reducing the constraints, uncertainties, and contingencies which accompany the flow of critical resources” (p. 12). He then asserted that these leaders are empowered to “determine which adaptive strategies the organization will pursue” (p. 12). This would imply that both district administrators and building principals who are able to create flexibility in resource allocation gain in political power. It is noteworthy that while Johnson indicated a cause and effect relationship between gaining political power by providing resources, Bottoms and Fry (2009), Portin et al. (2006), and Waters et al. (2003) indicated that the ability to provide and optimize resources within a school is also a characteristic of highly effective principals. This would suggest that beyond being a correlating factor to leading a highly successful school, principals who are skillful at creating resource flexibility and dependability likely benefit from an increased power base with their staff members that allows them to be more effective in other aspects of their job such as instructional leadership.

Johnson’s (1995) analysis of resource dependence theory was not specific to public education which becomes significant when evaluating the applicability of his three theory limitations. The most significant limitation presented was the inability to distinguish between the organization and the environment where Johnson asserted the relationship is more bi-directional. Since public education operates in the public domain and is ultimately controlled by the public through the local school board and the state legislature, the influence of the school or
the district on the public is transparent and minimal at best. This would suggest that the application of resource dependence theory to public education may not be confined by limitations that are more applicable to other types of organizations.

Beyond resource dependence theory’s need for flexibility to define resource allocation as needed within the building, Milanowski and Kimball (2010) stated “school administrators – especially principals - play a key role in attracting, retaining, and developing quality teachers” (p. 2). This study stressed the necessity for the organization to “free up principal’s time and energy for effective human capital management” (p. 15). “In education, this research suggests that the effectiveness of principals in managing the recruitment and advancement of teachers will contribute to improvements in student learning” (p. 1).

**Principal Impact on Student Learning**

In attempting to redefine the role of the principal in education, the CTP (Portin et al., 2006) reviewed literature related to the connection between principal leadership and student learning in their section: *Research on the connections between what leaders do and how students learn.*

Accumulating studies, punctuated by attempts to synthesize these findings (e.g., Hallinger & Heck, 1996; Leithwood & Riehl, 2003), have investigated a range of leadership effects on measures of student learning or other aspects of students’ school experience, such as their engagement in academic work (e.g., Leithwood & Jantzi, 1999). This body of scholarship (as well as Hallinger, Bickman, & Alpha, 1996) demonstrates various empirical connections, both direct and indirect, between leadership and learning outcomes, even though causal links are difficult to establish (Pounder & Ogawa, 1995). This work also underscores the fact that both principal and teacher leadership are
mediated by a variety of school conditions: purposes and goals, planning, organizational culture and learning, structure and organization, and information collection and decision making. Additional work from other countries (e.g., Barnett & McCormick, 2004; Sheppard, 1996) reinforces the importance of a focused learning vision and the interpersonal skills necessary to create a personalized environment. (p. 10)

Waters et al. (2003) in a more extensive analysis looked at research over the past 30 years on the relation between principal leadership and student learning. In this study 21 key leadership responsibilities were identified to have a significant impact on student learning with an average effect size of 0.25 where principal improvement of one standard deviation would translate into a 10% improvement on student test scores. The leadership responsibilities with the highest effect size were in order of significance: Situational awareness, Intellectual stimulation, Input (teacher involvement in decision making), Change agent, Culture, Monitors/evaluates, Resources, and Order (creating operational structures). Many of these relate specifically to the attributes recognized by resource dependence theory and Milanowski and Kimball’s (2010) emphasis on HCM.

Leithwood and Riehl (2003) agreed with this analysis in stating that “leadership has significant effects on student learning, second only to the effects of the quality of curriculum and the teachers’ instruction” (p. 2). The following year Leithwood, Louis, Anderson, and Wahlstrom (2004) restated this same position as part of the learning leadership project. In this 2004 study, Leithwood et al. went more in-depth to state “mostly leaders contribute to student learning indirectly, through their influence on other people or feature of their organization” (p. 13). Supporting this statement was a leadership influence diagram (see Figure 1) that illustrates
how school leadership influences school conditions, classroom conditions, and student/family background that each directly influence student learning.

In a report for the Southern Regional Education Board, Bottoms and Frey (2009) addressed how districts can support principals in improving teaching and learning. Their findings indicated the impact of the principal on student learning was through determining the environment and emphasized the need for the district to allow the principal autonomy in allocating the resources supplied by the district.

While Leithwood et al. (2004) emphasized the impact of the principal on the environment of the teacher; use of the transitive theory can demonstrate an impact of principal leadership on student learning. In this relationship, since the principal impacts the teacher through HCM

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**Figure 1.** Direct and indirect influences on student learning displaying relationship of interaction between all factors that can impact learning. Adapted from Investigating the links to Improved student learning. Final report of research findings. K.S. Louis, K. Leithwood, K.L. Wahlstrom and S.E. Anderson, 2010. Paper commissioned by the Wallace Foundation, Minneapolis, University of Minnesota. Reprinted with permission.
studies and teachers impact student learning as demonstrated by the findings of Linda Darling-Hammond’s work (1999), this syllogism suggests a link between principal leadership and student learning, albeit indirect.

From yet a third perspective of how the teacher experiences principal leadership, Wahlstrom and Louis (2008) stated their “data suggest that elementary, middle, and high school principals can all have a significant effect on instruction” (p. 479). This view places the primary influence on student learning with the teacher, but also identifies the impact of the principal on the teacher, which modifies the degree of influence exerted by the teacher on student learning.

While not looking specifically at the principal position, Brewer (1996) analyzed the New York schools to determine if there existed a negative correlation between the number of administrators or “the administrative blob” as he called it and student performance. The premise behind the hypothesized correlation was twofold; the displacement of resources from teaching positions to administration increases class size thus reducing instructional effectiveness and the creation of rules by excessive administration prohibits individual building flexibility thus inhibiting progress to improve instruction. To the relief of the New York school administration, no correlation existed between the ratio of administrators to students within the district and student performance of these students on standardized assessment tests.

Context and the Principal’s Environment

In the Learning from Leadership Project, Louis, Leithwood, Wahlstrom, and Anderson (2010) researched the contextual factors that influence leadership and its ability to impact student learning. As a framework to guide this study, the leadership influence diagram developed by Leithwood and Riehl (2003) was utilized (see Figure 1, p. 25). This figure was presented earlier to demonstrate the principal impact on student learning but also illustrates how many factors
influence the principal. It is now important to note that the three areas where a principal exerts influence to impact student learning are all depicted with the influence being two-way. In fact, every element of the diagram except Student Learning is shown to exert influence upon the school administration.

Looking at specific context variables of poverty, size, level, and location, Louis et al. (2010) sought to identify how these variables impact the type and degree of leadership present in schools. In this portion of the study where they referenced resource dependence theory along with a multiple linkage model and institutional theories as frameworks that emphasize the importance of context, they identified clear correlations between the contextual variables and teacher survey responses on how teachers experience leadership. The degree of impact on these contextual variables was great enough for the conclusions to state “there needs to be increased focus on how best to meet the different leadership needs associated with variable contexts (location and demography)” (p. 280).

These findings are consistent with an earlier study by Engels, Hotton, Devos, Bouckenoooghe, and Aelterman (2008) who found the following:

A number of structural characteristics of the school, such as school size, number of locations and background of the student population might influence task difficulty and workload. The financial funds of schools depend on the number of students. Therefore school size has immediate repercussions for the quantity of administrative support a school can afford, and thus for the principal’s workload. The composition of the student population might influence the level of stress as well. Some empirical findings (Tichatonga 1999) suggest that a strong representation of underprivileged students is a
potential stressor because it compels the principal to invest more time in dealing with disruptive students and problematic behaviour. (p. 163-4)

These findings of Engels et al. (2008) were in agreement with the environmental forces identified by Portin et al. (2006) where “increasing socioeconomic, racial, ethnic, and linguistic diversity in the student population, and the imperative to serve all these students well” (p. 17) were presented as one of the primary environmental forces affecting school leaders’ roles and responsibilities.

In an attempt to address the concern over possible impacts of contextual student demographic factors on resource needs, some districts have looked to the implementation of weighted student funding formulas to ensure equitable rather than equal funding for all students. In these formulas, students who are viewed as needing additional assistance or requiring more time from school personnel are funded at higher levels to provide the required support to ensure students’ equitable achievement. Studies by Baker and Duncombe (2004), Miles and Roza (2006), and Rodriguez (2004) sought to evaluate the adequacy of such weighted formulas.

Rodriguez pled for “vertical equity” in schools, a term she took from Berne and Stiefel (1984), in which the equity discussion was moved beyond analysis of equal treatment of equals to where it “should be an assessment of the ‘appropriate unequal treatment of unequals’ or the desired relation between resources and needs” (p. 8).

Baker and Duncombe (2004) noted that in 2004 75% of the states provided additional funding for students identified as “at-risk,” or of poverty. While the exact formula weighting variables vary across states, student needs which include an array of factors are “often proxied by measures of child poverty, limited English proficiency, and special needs that affect a child's effort and ability to master academic subjects” (p. 1). Miles and Roza (2006) agreed with this
assessment but also indicated that as imperfect as weighted student funding formulas are at representing the needs of individual students, the formulas also do not compensate for other critical factors such as: cumulative impacts of these students, the variability in the quality of personnel resources that can be purchased with the funding, or often the differing impact based upon the level of school. Each of these was viewed as adding an additional degree of possible inequity which standard formulas do not address. Roza continued to build upon this work (Rosa, Guin, & Davis, 2007b) where she asserted weighted funding formulas are needed but warned that “we do not yet have an efficient resource allocation system from which we can extrapolate that answer in any reliable way” (p. 6). To support this claim, Roza et al. provided a table summarizing 12 studies on student weighting which displayed the wide range of weighting factors identified between the 12 studies relative to the degree of additional compensation required for the student contextual categories of compensatory education, SpEd, gifted-talented education, bilingual education, and vocational education. Ranges of possible weighting factors varied from zero to 1.91 in the area of compensatory education.

**Inflexibility in Use of Funding**

This contextual variability between schools drives a necessity for flexibility by the principal as a decision-maker relative to resource allocation. According to Plecki et al. (2006):

The highly contextual nature of schools, the variation in which any particular improvement strategy is implemented, the motivational conditions that are present, and the need to adapt strategies to fit specific circumstances all interact with the resources brought to bear on learning improvement goals. Consequently, leaders act in response to particular needs and learning challenges with limited evidence of performance. (p. 10)
In response to this highly contextual nature and in agreement with the stance of Roza et al. (2007b) that weighted formulas are not yet developed to the point of being accurate, Plecki et al. (2006) suggested:

an overall rethinking of categorical programs, especially by policymakers at state and federal levels, that shifts them from an externally directed school finance system with fixed, multiple objectives to one more concentrated and embedded in a local context and more responsive and accountable to local needs and performance goals. (p. 27)

A review of the laws governing federal Title I Grant funds and Washington State LAP funds reveals a system of requirements that while assuring funds are spent on targeted students, creates inflexibility at the district and building level. Examples of this inflexibility are qualifying criteria, school distribution hierarchies, and restrictions on approved expenditures which supplant restrictions and limits on overhead and administrative funding (Fed. Title I, 20 U.S.C. 6301 et seq., 1965; WA Gen. Laws ch. 28A § 165, 1987). This was noted by Plecki et al. (2006) in referring to Title I Grant, SpEd services, and ELL programs that “these special funds come with strict guidelines and accountability measures that involve a great deal of documentation and compliance” (p. 26). The point being that often the inflexibility of the funding prevents students from receiving services that would benefit those students most. In addition to restrictions upon resource allocation, the additional program documentation requirements either remove a portion of the teacher’s time from working with students or create an additional administrative burden that is unfunded by the program.

The impact of the restrictions on these funds toward funding principals and administration was noted by Monk and Hussain (2000) in their study of New York schools. In looking at the impact of poverty on school staffing, they noted the following:
Here for the first time we see a larger elasticity for instruction relative to administration. This result is interesting since higher poverty levels can be expected to increase the presence of federal and other separately administered programs for students with special needs. As programs proliferate, one might expect to see increases in administrative staffing. (p. 12)

Rather, what they identified was an increase in instructional staff without a corresponding increase in administration to deal with escalating demands to meet both the needs of the student population as well as the extra administrative supervision required by larger numbers of subordinate staff members.

**Inadequacy of Washington State Basic Education Funding for Administration**

Over the past thirty years since Washington State redefined the funding of basic education, the state legislature has gradually shifted the burden of funding back to the local districts and local property tax-payers. This was clearly illustrated by Conley and Rooney (2007) in a presentation of historical average local levy collections relative to total revenues generated across the state.

Figure 2 shows how the percentage of funds dropped from 32.23% to 24.19% as a result of difficult economic times and then was reduced to 8% by legislative action in response to Duran Decision I (*Seattle School District No. 1 v. State of Washington*, 1976) and the Levy Lid Act (Wash. AGLO No. 55, 1977). It is also noteworthy that due to legislative response to the recession which started in 2008, the current levy ratio for 2010 is 29.32% as calculated from the Office of Superintendent of Public Instruction (OSPI) website.
School Districts have responded to this reliance upon local levy taxes for funding basic education by again bringing lawsuits against the state. The most current and significant case being McCleary v State of Washington (2010) where the court has found once again that Washington State funding of basic education is inadequate according to the provisions of the state constitution. While this case is currently under appeal, legislative action within a month of the original decision to raise the local M&O levy maximum limits from 24% to 28% does not bode well for the state’s appeal. An additional detriment for the state’s position and reasoning for the levy ratio exceeding the levy lid is the current practice by the state of counting revenue that is presently unfunded for voter approved cost of living adjustments and class size reduction in the total theoretical allocation to the districts. In 2008 the Washington State legislature in their annual state budget allocation process suspended voter approved mandatory cost of living adjustments for teacher wages and also began to reduce and eventually eliminate voter approved additional school funding for class size reduction and program enhancement. Through the 2009-2010 and 2010-2011 school years, these two voter mandated revenue streams that were unfunded
by the legislature have been included in the calculations of total district revenue used for the purpose of calculating local district M&O levy maximum amounts. This artificially inflates the basis of the calculation of the lid raising the lid from 28% to over 32% of actual revenue received by the district.

Conley and Rooney (2007) also presented trends of average teacher salaries for the state as referenced to 2005 dollar values. This plot was used to illustrate how the value of average teacher salaries has decreased by approximately 9% from 1987 to 2005. However, not stated was that in 2005, the average teacher salary provided, according to the established state mandatory salary schedule, was $45,718 while the standard formula used to provide reimbursement for administrative salaries on a ratio of one administrator for each 250 students was $51,995 or just 3.6% above the 1991 teacher average and 13.7% above the current average. This 1.6% increase does not reflect the number of work days per year. When adjusted to daily work wage based on 181 days for teachers and 220 days for administrators the difference becomes a pay reduction of 6.5% at current rates compared to the average teacher. When adjusted for days worked, administrator wages are funded at just 66% of the current top of the teacher salary schedule. This would indicate that not only is the number of administrators underfunded by the state but the amount of money provided for reimbursement falls far short of adequate.

Additional areas eroding the adequacy of funding are NERC expenditures and costs of unfunded federal and state mandates. In a working paper for the School Finance Redesign Project, Willis, Durante, and Gazzerro (2007) analyzed efficiencies in NERC expenditures related to transportation, health insurance, and facility maintenance where they concluded “the convergence of escalating benefit and fuel costs, flat state aid, local resistance to property tax
increases, and mounting pressure to increase student achievement per NCLB make effective resource use an immediate necessity” (p. 16). Focusing more specifically on the impacts of federal No Child Left Behind (NCLB) legislation Harris, Taylor, Levine, Ingle, and McDonald (2008) identified an estimated cost of compliance at the school level of approximately $100 per student per year attributed to a combination of test administration, professional development, and data management. With no additional revenue provided to fund these expenses, this unfunded mandate cuts into the already inadequate funding of basic education.

Baker and Duncombe (2004) in analyzing weighted student formulas presented data on the ratio of additional state funding based upon the contextual variable of student poverty. In this data, Washington State was shown to provide an additional 12.6% compared to a median weighting of 16.7%. This demonstrated that in addition to not providing adequate funding for basic education students, Washington was behind many of the other states in providing additional funding to overcome the issues related to poverty.

**Impact of Inadequate Funding on the Principal Position**

Without the needed resources to support the work of the principal, Phillips, Sen, and McNamee (2007) through a study of head-teachers in England indicated “a high prevalence of stress, excessive workload, and long hours may increase risks of health problems, lead to reduced productivity, and impact significantly on the head teachers themselves and the school, its staff, children, and the community as a whole” (p. 3).

With limited and diminishing resources combining with increasing expectations, studies such as Portin et al. (2006) and Printy and Marks (2006) on the impact upon the principal have identified “these responsibilities are more than a single individual can handle well, and more than one leader—or even a leadership team—can learn to do in a limited time frame” (p. 13).
Many principals have responded by focusing upon dealing with the crisis immediately at hand rather than long-term instructional improvement.

A reversal of this trend was identified in Kentucky where one county provided each school with a School Administrative Manager (SAM) to allow the principal to focus on instruction. Portin et al. (2006) pointed out that “prior to hiring SAMs, 29 percent of principals’ time, on average, was being spent on instruction, as compared with 65 percent following the redesign” (p. 26). Milanowski and Kimball (2010) also supported this with the sixth finding in their study which was to “find ways to free up principals’ time and energy for effective human capital management” (p. 15). This finding included additional administrative support and the use of teacher leaders for assistance. Bottoms and Frey (2009), Plecki et al. (2006), and Louis et al. (2010) all presented similar findings related to the importance of additional administrative assistance for principals.

Leithwood et al. (2004) agreed with this position of interdependence when they stated “neither superintendents nor principals can carry out the leadership role by themselves. Highly successful leaders develop and count on leadership contributions from many others in their organizations” (p. 27). Thus, Portin et al. (2006) provided a definition of “school leader” that included any of the following participants: Vice Principal, Teacher leaders, student leaders, parents, and community leaders.

Principals have recognized this fact and have responded by requesting additional resources to meet student needs. Bottoms and Frey (2009) documented this as “principals’ requests for more staff centered on special expertise provided by counselors, instructional coaches for literacy and mathematics, assistant principals, and school- and district-level
curriculum coordinators, as well as additional teachers to reduce class sizes” (p. 43). However, in spite of this request, Plecki et al. (2009) identified:

> Educational leaders tend to distinguish between investments for students, classroom teachers, and instructional leaders, and they have well-developed frameworks for thinking about support for the first two. But less frequently do they assume that people in leadership roles need support, too, and as a result, build an accompanying aligned system of leadership support related to the changes made in individual work responsibilities, supervisory relationships, or organizational structures. (p. 11)

Therefore, unless the principal can directly relate the allocation of resources to increased student performance, the likelihood of obtaining the resources is significantly decreased.

This leaves the principal in the position of utilizing the existing resources in the building to address the administrative needs of the school. Wahlstrom and Louis (2008) studied distributed leadership from the teachers’ perspective to identify a positive impact on teacher instructional practice as a result of shared decision-making on instructional issues. However, if administrative rather than instructional leadership tasks are shifted to instruction staff, this has the potential to impact the positive effect of shared leadership in a detrimental way.

**Summary of Current Literature**

The governing laws and court cases (e.g., *Seattle School District No. 1 v. State of Washington*, 1976; *Seattle et al. v. State of Washington et al.*, 1982; *Serrano v Priest*, 1971; Wash. Gen. Laws Ch. 28A § 150) have been presented to define the current method of basic education funding in Washington State. The literature demonstrated that a majority of the funds provided to public education translate into human resources (e.g., Bottoms & Fry, 2009; Chambers & Fowler, 1999; Milanowski & Kimball, 2010; Miles & Rosa, 2005; Monk et al.,
1996; Odden et al., 2007; Odden et al., 2008; Roza et al., 2007b). How these human resources are invested has been shown to define the programs available to students (e.g., Chambers & Fowler, 1999; Plecki et al., 2006).

With a desired focus on how school human resources impact student learning, a resource-based approach is identified as a preferred reference above the traditional accounting approach (e.g., Odden et al., 2003; Plecki et al., 2006; Plecki et al., 2009). Within the process of converting funds to personnel and programs, resource dependence theory (Pfeffer & Salancik, 1978) has been used to demonstrate how the principal is shown to both wield and potentially gain or lose power through this process (e.g., Casciaro & Piskorski, 2005; Johnson, 1995; Milanowski & Kimball, 2010). This ability for the principal to gain power through resource allocation was also shown to be congruent with characteristics of highly effective principals (e.g., Bottoms & Fry, 2009; Portin et al., 2006; Waters et al., 2003). In addition to general studies showing the impact of principal leadership on student learning (e.g., Leithwood & Riehl, 2003; Portin et al., 2006; Waters et al., 2003), the role of the principal as resource allocator and human resource manager has also been shown to exert impact student performance (e.g., Bottoms & Fry, 2009; Leithwood et al., 2004; Milanowski & Kimball, 2010).

Literature has been presented to support the case that contextual factors of a given school and district impact the resources required to meet student needs (e.g., Engels et al., 2008; Leithwood & Riehl, 2003; Louis et al., 2010; Portin et al., 2006). While many states have recognized this fact and provided targeted categorical funding to address these specific student needs (e.g., Baker & Duncombe, 2004; Miles & Roza, 2006; Rodriguez, 2004; Roza et al., 2007a), the resources to support the additional administrative work generated by these contextual factors and the additional programs generated by the categorical funding provided are either
limited or non-existent (e.g., Fed. Title I, 20 U.S.C. 6301 et seq., 1965; Monk & Hussian, 2000; Plecki et al., 2006; Roza et al., 2007a; WA Gen. Laws ch. 28A § 165, 1987). This restriction against funding administration with categorical funding creates an administrative deficit for the schools serving the most at-risk students. This problem is compounded in schools with significant at-risk student populations as a case has been presented that all school administration in the state of Washington is underfunded by the current basic education formulas (e.g., Baker & Duncombe, 2004; Conley & Rooney, 2007; McCleary v State of Washington, 2010; Harris et al., 2008; Willis et al., 2007).

With the job of school building administration identified as being too great for one person to accomplish (e.g., Portin et al., 2006; Printy & Marks, 2006) the need for additional administrative resources was presented (e.g., Bottoms & Frey, 2009; Leithwood et al., 2004; Portin et al., 2006; Plecki et al., 2006; Louis et al., 2010). While principals have recognized this need and responded by requesting assistance (e.g., Bottoms & Frey, 2009; Plecki et al., 2006) often these requests go unsupported leaving principals to seek assistance from within existing resources (e.g., Wahlstrom & Louis, 2008).

**Unanswered Questions in the Literature**

Highlighted by the importance of the impact of the principal on student performance and emphasized by the underfunding and therefore understaffing of school administration, the questions remain of how principals deal with the resultant stress of their position and how they seek out existing resources within the school for assistance.

Plecki et al. (2006) concluded their study with a series of questions for future study:

1. How, if at all, do particular resource strategies and decisions in a given state, district, or school setting reflect the leaders’ commitment to closing the
achievement gap? In what ways are these strategies and decisions shaped by (a) the leaders’ understanding of equity and resource adequacy, and (b) a coherent theory of action that connects resources with student learning?

2. How do policies, rules, structures, and leadership roles enable (or frustrate) leaders’ attempts to distribute resources in ways that encourage greater equity in learning outcomes? To align money, people, and time with learning improvement priorities?

6. Given the complexities of governance structures and the occasional conflicting expectations for education, how do leaders at any given level of the education system craft a coherent approach to allocating resources? What does a coherent approach look like across levels of the system?

9. At the school level especially, how do leaders organize the time of staff and students to align with instructional priorities and address inequities?

14. What do state-local systems do to guide, support, and enable the professional learning of leaders with regard to resource (re)allocation strategies and the effective provision of incentives?

15. How are school leaders, in particular, helped to learn what they need to know about resource (re)allocation, especially in settings where they are granted more resources and increased discretion over allocation decisions? (p. 36-39)

This study attempts to supplement the available literature and address the above questions by explaining how high school principals allocate resources to relieve their stress and address the imbalance between resources and work demands. Portin et al. (2006) also concluded their report with a series of questions, the final one being “how much and what kind of resources (people,
money, time, information) are states and localities investing in systems of support for school leaders? What explains the levels and direction of investments?” (p. 35). This study has potential to inform decision makers addressing these questions by delving into the resources the principal actually utilizes along with the prioritization of work within the context of inadequate human resources.
Chapter Three: Methods

Overview

The study is a mixed methods approach (Creswell, 2003) consisting first of a quantitative analysis of historical staffing allocations, school demographic information, and school performance data for all comprehensive high schools in the state of Washington larger than 400 students. I followed this with semi-structured interviews of the central office administrators responsible for administrative staffing allocation for the high schools. The final part of the study was interviews of the principals of each participating high school. To frame the interviews, I performed correlation and descriptive analysis using 2009-2010 school year data for all comprehensive high schools in the state of Washington and historical data for the four participating high schools.

I derived the original concept for this dissertation study from work done by the RSD human resource department in trying to address concerns by principals over the adequacy and equity of administrative staffing levels at the district’s schools. While the thrust of the RSD work sought to develop an analytical tool to assess resource adequacy based upon contextual factors, this study used mixed methods to explore central office and principal perspectives of not only resource allocation but how principals invest and utilize the resources available to them.

I used a grounded theory approach (Strauss & Corbin, 1998) to identify factors that influenced administrative workload in the participating high schools and explain how building principals reacted in an attempt to balance the resulting workload with available administrative human resources. I developed this theory through analyzing the interviews using open, axial, and then central coding (Strauss & Corbin, 1998) to identify categories, subcategories, and finally the grounded theory which addressed the primary study questions.
Site Selection

The study sites were in districts with two comprehensive high schools. Each participating district was in southeast Washington. The choice of multiple high school districts provided comparative information within a district and between districts. Additionally, multiple high school districts contain large high schools which increased the complexity of the school staffing. Multiple districts increased the variability in contextual factors between the schools and increased validity of the theory that emerged. One critical factor present within at least one district was relatively high poverty (F&R above 60%) which brought additional variability in funding sources.

I also identified desired characteristics of the schools to aid in determining the districts to be selected. Beyond the requirement for high F&R lunch percentage in at least one school, I sought a significant change in this percentage of the student population over the last decade to allow for insight into how this impacts the principal’s job. I also desired that the current principal had been in their present position at one or both schools during a majority of the demographic change so that they may have had insight into how this change has impacted resource needs and utilization.

In evaluating districts, I identified a specific case with potential for additional insight. This was due to a situation that resulted in dramatic changes in high school administrative staffing levels within the district over the past two years. A new high school opened in one district, splitting current high school staff. Additionally, the new school had no seniors its first year, resulting in a significant staffing level changes at the end of the first year. Based upon the recent timing, two-phased approach toward dividing the existing staff, and adding additional staffing, I viewed this district and its two high schools as optimal participants.
Site Description

The specific districts targeted for the study along with the reasoning for each were as follows:

- District A – District A has two large high schools of over 1500 students that have both been in existence for over 50 years. Alpha High School is 78% minority students with 74% qualifying for F&R lunch support. Beta High School is 56% minority students with 60% qualifying for F&R lunch support. This provides some differentiation between the two schools with both qualifying for additional federal funding based upon their demographics.

- District B – Gamma High School was the largest high school in the state of Washington until district B recently opened their second comprehensive high school, Delta High School. Decisions had to be made on dividing the existing administrative staff between the two schools. Presently both high schools are larger than 1600 students with poverty between 60% and 70% F&R and both being over 70% minority students. All individuals responsible for the decisions on how to divide and supplement administrative staff for both high schools were still working in the district at the time of this study. The potential value of recent change dealing with administrative staffing outweighed the loss of historical data for the high school that had only been in existence for two years.

Data Collection

Once I obtained permission from the districts for their participation, I contacted individuals to be interviewed (principals and central office administrators) and obtained their consent for participation. The impact on the participating districts was limited to one to two
hours of clerical time for data gathering and approximately one hour per interview for three staff members per district.

**Quantitative.** Initial data collection consisted of downloading the 2009-2010 school year OSPI data files on high school staffing (from the OSPI S-275 Staffing Report), high school demographics (Demographic Information by School for 2010), and high school performance (Measures of Student Progress and High School Proficiency Exam [HSPE] Results by School for 2010) for all high schools in the state of Washington. These were all public documents and were readily available. I merged these files as referenced by individual school in Microsoft Excel spreadsheet form, reduced the file to contain only comprehensive high schools, and loaded the spreadsheet into Statistical Package for the Social Sciences (SPSS) statistical analysis software.

The second phase of quantitative data collection was in the form of past staffing allocations and included all classified and certificated office or administrative employees from the schools in the study extending back 10 years (with the exception of one high school that opened in the 2009-2010 school year). In addition to the staffing information, contextual data on student enrollment, and F&R% was collected. All of the historical data was public information with much of it already existing in summative report format. Some assistance was needed from each district human resource department to reconstruct historical staffing levels for the schools. Once I obtained this information, I sent it to the principals of each respective high school for their review and validation. I used the numbers validated by the principals for the study.

**Qualitative.** I performed three sets of interviews for this study. The first interviews performed were field testing of questions with a principal and a central office administrator in my district to test the interview questions and identify improvements needed in the questions. This formed the baseline set of questions to be asked of all principals and central office
administrators in the study (Appendix A). I held these two interviews at the RSD central administration building at the end of the work day. These interviews were not recorded and only hand written notes were taken relative to adjustments needed to questions. One potentially significant insight provided during the principal test interview was the feeling that adults rather than students are the primary driver of workload. It was noted that most student issues are resolved fairly quickly until parents become involved. This insight resulted in the modification of at least two of the interview questions.

After I gathered and analyzed the historical data from each school district, I developed supplementary interview questions to add to the questions provided in Appendix A for both the central office administrators and the principals. I added the supplemental questions to address contextual factors and challenges specific to the interviewee’s position or school.

The second set of interviews was with the HR director of each of the two participating districts. I held these interviews during the school day during a time they had agreed upon at the office of each of the respective HR directors. I recorded these interviews using a digital recording device and transcribed them at a later date. The interview transcriptions from the central office administration interviews were reviewed for themes relative to individual high school contextual factors relevant to each school. This information was used to further adjust questions for individual high school principals (Appendix A).

The third set of interviews was with the principal of each of the participating high schools. Theses interviews occurred at the high school in the principal’s office at a mutually agreed upon time outside of the school day to minimize the possibility of interruption. All of the interviews were semi-structured (Merriam, 2009) in an attempt to probe beyond explaining the structure that presently exists and explore why these decisions were made and how the principals
have adjusted to their staffing allocations. I recorded these interviews using a digital recording device and transcribed them at a later date.

Data Analysis

Preparation of the quantitative database. Since the S-275 personnel staffing report contains all public school employees, I had to eliminate all of the non-administrative employees before merging the file with the final database. I identified from the S-275 personnel staffing report, administrators and secretaries according to Duty Codes and Activity Codes. I used the codes identified in Table 1 to filter the database. Personnel that were not assigned to at least one of these codes were eliminated from the staffing counts used in this study.

Table 1

<table>
<thead>
<tr>
<th>Activity Code</th>
<th>Description</th>
<th>Duty Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Supervision</td>
<td>23</td>
<td>Secondary Principal</td>
</tr>
<tr>
<td>23</td>
<td>Principal’s Office</td>
<td>24</td>
<td>Secondary Vice Principal</td>
</tr>
<tr>
<td>24</td>
<td>Guidance and Counseling Safety</td>
<td>25</td>
<td>Other School Administrator</td>
</tr>
<tr>
<td>25</td>
<td>Pupil Management and</td>
<td>40</td>
<td>Other Support Personnel</td>
</tr>
<tr>
<td></td>
<td>Safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Extracurricular</td>
<td>42</td>
<td>Counselor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>44</td>
<td>Social Worker</td>
</tr>
<tr>
<td></td>
<td></td>
<td>51</td>
<td>Extracurricular (Base Contract)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>94</td>
<td>Office/Clerical</td>
</tr>
</tbody>
</table>

After reducing the staffing database to include only administrative personnel, I created ratios of students to administrators, students to counselors, and students to secretaries. In alignment with the RSD Decision Model, I next calculated the ratio of students to “School Administrative Equivalents” (SAE) and utilized this SAE value to represent a summation of the school’s ratio of students to total administrative staffing. The basis for the SAE calculation is the
total student enrollment divided by the weighted summation of the schools administrative staff according to the following equation:

\[
SAE = P + 0.75*AP + 0.5*D + 0.2*C + 0.05*AA*Hrs.
\]

\(P\) = Number of Principals

\(AP\) = Number of Assistant Administrators and Athletic Directors

\(D\) = Number of Deans of Students

\(C\) = Number of Counselors

\(AA\) = Number of Classified Administrative Assistants

\(Hrs\) = Hours per day of Classified Administrative Assistant Contract Time

An example of an SEA calculation is a high school with one principal \((P=1)\), two assistant principals and one athletic director \((AP=3)\), one full time dean of students \((D=1)\), five counselors \((C=5)\), and one administrative assistant \((AA=1)\) for five hours per day \((Hrs=5)\). By inserting these values into the SAE equation a total SAE value of 5.0 is obtained. This implies that the total contribution of the 12 administrative or quasi-administrative staff at the school is equivalent to five full time, competent principal equivalents. If this school has 2,000 students, then the student to SAE ratio is 400 students for each SAE.

Each of the staffing numbers used in the SAE calculations was based on full time equivalent ratios as identified by the filtered state S-275 employee report. As stated in the limitations, clerical work is considered independent from administrative work in this study and therefore was not included in the calculation.

While reviewing the S-275 database, I identified an error in the RSD reporting of Assistant Principals and Athletic Directors. This error raised concerns about possible reporting errors by other schools, making the S-275 filtered database inaccurate. Therefore, during
analysis of the SAE ratios compared to predictive staffing levels determined from a linear regression of variables of the 207 schools, I identified several schools as potential outliers. I made this determination by comparing the number of schools outside of the range determined by two times the average of the standard deviations of the percentiles of students per SAE ratio with the average standard deviation being 35.66 students per SAE. With a target set that only 4.4% of the sample population, or nine schools, would be outside of this two sigma range of 71.32 students per SAE, I accessed individual school web sites for the schools with the largest variance between actual and predicted student per SAE ratios and through their staff listings identified the total number of counselors and administrators. This check consistently identified errors and omissions on the recorded S-275 data for these schools. Most of these outlier schools appeared initially to be understaffed in administration.

For nearly every potential outlier school, additional administrative staff members were identified on web pages and the corresponding numbers were adjusted on the filtered S-275 staffing database. One notable case that was confirmed to be outside of the two sigma range with a staffing level of 150 students per SAE less than predicted by the regression and not to be an error in S-275 reporting, was Marysville High School. As the largest high school in the state, Marysville has a considerably higher level of administrative staffing per student than nearly all other schools in the state. Eventually, all but 10 schools fell within the two standard deviation target. All statistical analysis was run again after the S-275 filtered database adjustments were completed.

Preparation of the databases for school performance and demographics was much simpler than for staffing. The indicators for school performance that were included were the percentage of students passing on the Washington State High School Performance Exam (HPSE) for
reading, math, writing, and science. The variables analyzed for demographics consisted of school and district size based upon student enrollment, percentage of white/Caucasian students, percentage of F&R students, percentage transitional bilingual, and student to teacher ratio. Each of these categories is well defined by OSPI for reporting and not subject to interpretation by local districts, unlike staff job assignment designations.

**Quantitative analysis.** I analyzed the staffing and contextual data for the sample schools along with all other comprehensive Washington State high schools using a combination of Microsoft Excel and the SPSS statistical analysis software. In Excel, I compiled the data and then generated scatter plots between variables to identify any possible significant relationships. I created linear regressions for these plots to identify slope and degree of fit (R Squared) of the data to the regression. The Excel data table was loaded into SPSS software. In SPSS, I ran general descriptive analysis on the data by quartiles and percentiles to determine the variability within bands of specific variables of school size and administrative staffing ratios (SAE). Using set of 207 high schools larger than 400 students, I tested staffing levels, student enrollment, and contextual variables with a multiple regression analysis to identify possible relationships between contextual factors and administrative staffing ratios.

To determine a matching data set with the sample schools for comparison, I eliminated all schools with enrollment below 1,600 students and ran the descriptive statistics in SPSS again for the remaining set. This set of Washington’s 57 largest high schools has a mean student enrollment equal to the mean of the four participating high schools. I used a comparison of the descriptive statistics and regression relationships of the participating schools to this similar sized group of schools to inform the specific interview questions for each principal. I accomplished
this by using the regression equations as predictive equations for the contextual variables and comparing the actual staffing levels of the participating schools to the predicted staffing levels.

**Qualitative analysis.** I coded the interview transcriptions for the principal interviews using open coding (Strauss & Corbin, 1998) to promote development of categories in an attempt to produce a theory on the basis for these staffing decisions. I then applied axial coding (Strauss & Corbin, 1998) to the emergent categories in an attempt to identify subcategories. I then used central coding in an attempt to generate the grounded theory for the study (Strauss & Corbin, 1998). I then applied this grounded theory to the data as a test for congruency and validation of the theory. I continued to make adjustments to the grounding theory categories in an iterative process until congruency was achieved between the theory and the interview data.

To increase the validity of the study, I sent the completed grounded theory and coded interview results to the participants for member checking review. No comments were received from the participants.
Chapter Four: Results

Descriptive Analysis of State Data

Since the school funding formula is based upon school size according to student population, I ran the first set of descriptive analysis for the number of students per administrator, counselor, secretary, and SAE for high schools larger than 400 to determine the correlation between the number of students and staffing levels. Table 2 provides the results of this descriptive analysis of these ratios and indicates a relationship between the number of students in a school and the number of administrators. As the RSD SAE shows the strongest correlation to the number of students in the school this indicates possible validity to the model. In other words, since the goal of the RSD model was to approximate actual overall administrative staffing which was assumed to represent local consideration of contextual factors, the fact that the calculated SAE correlates to actual staffing for the state wide sample indicates the model achieved its goal.

Table 2

Student per Staff Ratios for Washington State High Schools Over 400 Students

<table>
<thead>
<tr>
<th>Students per Staff (FTE)</th>
<th>Average</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Standard Deviation</th>
<th>R Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator</td>
<td>352</td>
<td>593</td>
<td>160</td>
<td>84.8</td>
<td>0.5803</td>
</tr>
<tr>
<td>Counselor</td>
<td>341</td>
<td>642</td>
<td>180</td>
<td>77.2</td>
<td>0.0339</td>
</tr>
<tr>
<td>Secretary</td>
<td>228</td>
<td>693</td>
<td>65</td>
<td>69.1</td>
<td>0.0117</td>
</tr>
<tr>
<td>RSD SAE</td>
<td>335</td>
<td>481</td>
<td>171</td>
<td>71.0</td>
<td>0.7126</td>
</tr>
</tbody>
</table>

Sorting these student staffing ratios into percentiles according to school size and performing a linear regression of the means of the percentiles provides a view of how staffing of school administration varies according to school size as shown in Table 3. These regressions illustrate that for counselors and secretaries there is a slight increase in student to staff ratio as school size increases with the slopes of the least squares fit regression line being 0.0317 and 0.0137 respectively. This corresponds to an increased responsibility for 3.17 and 1.37 students
for each 100 students in school size increase or when comparing two schools of 1,000 and 2,000 students, a change from 333 to 365 students per counselor and from 224 to 238 student per

Table 3

Regression of Percentile Means for Student to Staff Ratios for Washington State High Schools Over 400 Students

<table>
<thead>
<tr>
<th></th>
<th>Slope</th>
<th>Y-int.</th>
<th>R Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator</td>
<td>0.1478</td>
<td>216.2</td>
<td>0.9541</td>
</tr>
<tr>
<td>Counselor</td>
<td>0.0317</td>
<td>301.6</td>
<td>0.5062</td>
</tr>
<tr>
<td>Secretary</td>
<td>0.0137</td>
<td>210.9</td>
<td>0.1936</td>
</tr>
<tr>
<td>RSD SAE</td>
<td>0.1263</td>
<td>175.9</td>
<td>0.9627</td>
</tr>
</tbody>
</table>

secretary. For administrators and SAEs there is a more significant trend with these slopes being 0.148 and 0.126 respectively. Using the 1,000 and 2,000 student school comparison, this creates a difference from 364 to 512 students per administrator and 302 to 428 students per SAE. It is also noteworthy that the fit of the regressions for administrator ratio and students per SAE produced $R^2$ values of 0.954 and 0.963 respectively indicating a high degree of linearity.

As staffing appears to be greatly influenced by the size of the school, the descriptive analysis was done again excluding all schools under 1,600 students to more accurately represent the participating schools for this study which had an average enrollment of 1,884 students. By restricting this group to schools greater than 1,600 students the average school size for this group of 57 schools is 1,841. The descriptive summary of this analysis is shown in Table 4.

Table 4

Student per Staff Ratios for Washington High Schools Over 1,600 Students

<table>
<thead>
<tr>
<th>Students per Staff (FTE)</th>
<th>Average</th>
<th>Maximum</th>
<th>Minimum</th>
<th>Standard Deviation</th>
<th>R Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator</td>
<td>429</td>
<td>593</td>
<td>322</td>
<td>54.4</td>
<td>0.0913</td>
</tr>
<tr>
<td>Counselor</td>
<td>350</td>
<td>494</td>
<td>228</td>
<td>61.7</td>
<td>0.0409</td>
</tr>
<tr>
<td>Secretary</td>
<td>248</td>
<td>377</td>
<td>150</td>
<td>52.5</td>
<td>0.0296</td>
</tr>
<tr>
<td>RSD SAE</td>
<td>404</td>
<td>481</td>
<td>314</td>
<td>40.0</td>
<td>0.1550</td>
</tr>
</tbody>
</table>
The data collected from the participating schools was analyzed to determine the student to staff ratios for each participating school. Looking at how the four participating schools compare to the largest 57 schools which have similar mean enrollments, Table 5 presents the comparison of student to staff ratios for administration, counselors, secretaries, and SAE.

**Table 5**

Comparison of Sample High School Staffing Ratios to Average of Similar Sized Schools

<table>
<thead>
<tr>
<th></th>
<th>Students per Admin. FTE</th>
<th>Students per Counselor FTE</th>
<th>Students per Secretary FTE</th>
<th>Students per SAE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington High Schools</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Larger than 1600 Students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mean</td>
<td>429</td>
<td>350</td>
<td>248</td>
<td>404</td>
</tr>
<tr>
<td>Alpha High School</td>
<td>474</td>
<td>474</td>
<td>285</td>
<td>395</td>
</tr>
<tr>
<td>Beta High School</td>
<td>494</td>
<td>494</td>
<td>265</td>
<td>412</td>
</tr>
<tr>
<td>Gamma High School</td>
<td>408</td>
<td>408</td>
<td>266</td>
<td>408</td>
</tr>
<tr>
<td>Delta High School</td>
<td>409</td>
<td>327</td>
<td>182</td>
<td>327</td>
</tr>
</tbody>
</table>

Using the linear regression of the SAE percentiles from Table 3 to identify a predictive equation and applying it to the enrollment of each of the participating schools provides a reference point for comparison of each schools actual staffing. Staffing at the predicted level would place the participating school comparable to state averages (Table 6). This comparison shows that while actual staffing within individual categories at a school may not agree with predictive levels, the overall staffing of the school as calculated by SAE is fairly close to the total predicted staffing level for the school. The main exception to this is Delta high which was staffed for growth as a new school and not expected to receive additional staffing as enrollment increases.
Table 6

Actual Administrative Staffing Compared to Predicted Staffing Using Linear Regression of Percentile Means of Schools Larger than 400 Students

<table>
<thead>
<tr>
<th>School</th>
<th>Enrollment</th>
<th>Administrators</th>
<th>Counselors</th>
<th>Secretarial FTE</th>
<th>SAE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Actual)</td>
<td>1894</td>
<td>5</td>
<td>4</td>
<td>6.625</td>
<td>4.8</td>
</tr>
<tr>
<td>(Predicted)</td>
<td></td>
<td>3.8</td>
<td>5.2</td>
<td>8.0</td>
<td>4.6</td>
</tr>
<tr>
<td>Beta</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Actual)</td>
<td>1967</td>
<td>5</td>
<td>4</td>
<td>7.448</td>
<td>4.8</td>
</tr>
<tr>
<td>(Predicted)</td>
<td></td>
<td>3.9</td>
<td>5.4</td>
<td>8.3</td>
<td>4.6</td>
</tr>
<tr>
<td>Gamma</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Actual)</td>
<td>2041</td>
<td>5</td>
<td>5</td>
<td>7.68</td>
<td>5</td>
</tr>
<tr>
<td>(Predicted)</td>
<td></td>
<td>3.9</td>
<td>5.6</td>
<td>8.5</td>
<td>4.7</td>
</tr>
<tr>
<td>Delta</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Actual)</td>
<td>1634</td>
<td>5</td>
<td>5</td>
<td>8.96</td>
<td>5</td>
</tr>
<tr>
<td>(Predicted)</td>
<td></td>
<td>3.6</td>
<td>4.6</td>
<td>7.0</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Preliminary Regression Analysis

From the S-275 personnel staffing database, administrators and secretaries were identified according to Duty Codes (e.g., Supervision, Principal’s Office, Guidance and Counseling, Pupil Management and Safety, and Extracurricular) and Activity Codes (e.g., Secondary Principal, Secondary Vice Principal, Other School Administrator, Other Support Personnel, Counselor, Social Worker, Extracurricular/Base Contract, and Office/Clerical). These codes are defined by the state’s OSPI and each district in the state is required to classify employees into these categories.

The indicators for performance that were included were the percentage of students passing on the tenth grade Washington State High School Proficiency Exam (HSPE) for reading, math, writing, and science. The variables analyzed for demographics consisted of school and district size based upon student enrollment, percentage of white/Caucasian students, percentage of F&R students, percentage transitional bilingual students, and student to teacher ratio. Relative
to administrative staffing, ratios of students to administrators, students to counselors, and students to secretaries were created. In alignment with the RSD SAE model, the ratio of students to SAE was calculated and utilized to represent a summation of the school’s ratio of students to total administrative work capacity. The SAE value for each school was calculated by summing the number of principals, 0.75 times the number of assistant principals/athletic directors, and 0.2 times the number of counselors. There is presently not a consistent coding within the S-275 database requirements for the dean of student and administrative assistant positions so these are not included in the state database SAE calculations.

Linear regressions were used to identify slope and degree of fit (R Squared) of the data to the regression for various pairs of variables. These pairs were chosen to explore what significant correlations may exist relative to administrative staffing and to also determine what other types of staffing levels did or did not correlate to those same items. Table 7 shows the variable comparisons in order of statistical significance, the slope and intercept of the best fit line to the scatter plot, and the relative degree of fit of the regression line to the data. With district size, it was visually evident from the data plot that multiple schools of varying sizes within the Seattle School District potentially skewed the regression and correlation. For this reason, the District Size correlation to SAE was run both including and excluding Seattle schools. This analysis was performed to identify the adequacy of the variables selected for the study and determine whether either school demographics or performance variables should be broken down further or enhanced with additional data.

**Correlations in State Data**

A Pearson Correlation was performed between staffing, contextual, and performance variables in an attempt to identify gross relationships and trends. Staffing variables included the
Table 7

Exploratory Linear Regression Results between Variables

<table>
<thead>
<tr>
<th>X Variable</th>
<th>Y Variable</th>
<th>Slope (m)</th>
<th>Intercept (b)</th>
<th>R Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Size</td>
<td>Students/SAE</td>
<td>0.1243</td>
<td>178.6</td>
<td>0.7126</td>
</tr>
<tr>
<td>School Size</td>
<td>Students/Admin. FTE</td>
<td>0.1339</td>
<td>183.5</td>
<td>0.5803</td>
</tr>
<tr>
<td>F&amp;R %</td>
<td>% Caucasian</td>
<td>-0.8497</td>
<td>97.6</td>
<td>0.5207</td>
</tr>
<tr>
<td>School Size</td>
<td>Class Size Average</td>
<td>0.0023</td>
<td>15.8</td>
<td>0.2631</td>
</tr>
<tr>
<td>District Size (w/o Seattle)</td>
<td>Students/SAE</td>
<td>0.0041</td>
<td>292.8</td>
<td>0.2460</td>
</tr>
<tr>
<td>Students/Admin FTE</td>
<td>Class Size Average</td>
<td>0.0145</td>
<td>13.82</td>
<td>0.2256</td>
</tr>
<tr>
<td>Students/Counselor</td>
<td>Class Size Average</td>
<td>0.0084</td>
<td>15.8</td>
<td>0.0904</td>
</tr>
<tr>
<td>F&amp;R %</td>
<td>Students/SAE</td>
<td>-1.0570</td>
<td>373.5</td>
<td>0.0776</td>
</tr>
<tr>
<td>District Size (w/ Seattle)</td>
<td>Students/SAE</td>
<td>0.0015</td>
<td>316.7</td>
<td>0.0570</td>
</tr>
<tr>
<td>% Math Met Standard</td>
<td>Students/SAE</td>
<td>1.0400</td>
<td>289.7</td>
<td>0.0429</td>
</tr>
<tr>
<td>F&amp;R %</td>
<td>Students/Counselor</td>
<td>-0.7837</td>
<td>368.6</td>
<td>0.0364</td>
</tr>
<tr>
<td>School Size</td>
<td>Students/Counselor</td>
<td>0.0294</td>
<td>303.4</td>
<td>0.0339</td>
</tr>
<tr>
<td>% Reading Met Standard</td>
<td>Students/SAE</td>
<td>1.5160</td>
<td>211.4</td>
<td>0.0317</td>
</tr>
<tr>
<td>% Science Met Standard</td>
<td>Students/SAE</td>
<td>0.7960</td>
<td>298.8</td>
<td>0.0264</td>
</tr>
<tr>
<td>Students/Secretary FTE</td>
<td>Students/Admin. FTE</td>
<td>0.1669</td>
<td>297.5</td>
<td>0.0262</td>
</tr>
<tr>
<td>% Transitional/Bilingual</td>
<td>Students/SAE</td>
<td>-1.8160</td>
<td>343.3</td>
<td>0.0212</td>
</tr>
<tr>
<td>School Size</td>
<td>Students/Secretary</td>
<td>0.0147</td>
<td>209.9</td>
<td>0.0105</td>
</tr>
<tr>
<td>% Writing Met Standard</td>
<td>Students/SAE</td>
<td>0.8660</td>
<td>259.7</td>
<td>0.0065</td>
</tr>
<tr>
<td>F&amp;R %</td>
<td>Students/Secretary</td>
<td>-0.0898</td>
<td>231.7</td>
<td>0.0006</td>
</tr>
</tbody>
</table>

number of Administrators, Counselors, Secretaries, teachers, and SAE. Contextual variables included School Size, District Size, F&R%, percentage white students, percentage of Special Education students, and percentage transitional bilingual students. School performance included the percentage meeting standard in Math, Reading, Writing, and Science. The Pearson correlation analysis is presented in Table 8.

The correlations show a strong relationship between both SAE and the student to administrator ratio toward school building student enrollment and to a lesser degree both the free and reduced lunch percentage and total district enrollment. Relative to school performance variables, the Pearson Correlation validates the earlier pair wise regressions in that little if
Table 8

Pearson Correlation Analysis Between Student to Staff Ratios, School Performance Data, and School Demographic Factors

<table>
<thead>
<tr>
<th>Subscale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Students per Admin. (SAE)</td>
<td>-.82</td>
<td>.26</td>
<td>.16</td>
<td>.47</td>
<td>.84</td>
<td>.24</td>
<td>.28</td>
<td>.08</td>
<td>-.12</td>
<td>-.15</td>
<td>.20</td>
<td>.15</td>
<td>.08</td>
<td>.16</td>
<td></td>
</tr>
<tr>
<td>2. Students per Admin.</td>
<td>-.15</td>
<td>.14</td>
<td>.35</td>
<td>.71</td>
<td>.25</td>
<td>-.29</td>
<td>.09</td>
<td>-.08</td>
<td>-.11</td>
<td>.24</td>
<td>.19</td>
<td>.12</td>
<td>.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Students per Counselor</td>
<td>-.10</td>
<td>.30</td>
<td>.18</td>
<td>-.22</td>
<td>-.19</td>
<td>.12</td>
<td>-.17</td>
<td>-.13</td>
<td>.10</td>
<td>.12</td>
<td>.07</td>
<td>.11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Students per Secretary</td>
<td>-.25</td>
<td>.09</td>
<td>-.01</td>
<td>-.04</td>
<td>-.07</td>
<td>-.27</td>
<td>.10</td>
<td>.09</td>
<td>.09</td>
<td>.09</td>
<td>.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Class Size Average</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.51</td>
<td>.17</td>
<td>-.27</td>
<td>.09</td>
<td>-.22</td>
<td>-.17</td>
<td>.22</td>
<td>.15</td>
<td>.05</td>
<td>.18</td>
<td></td>
</tr>
<tr>
<td>6. Building Student Enrollment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.39</td>
<td>-.20</td>
<td>-.02</td>
<td>-.09</td>
<td>-.06</td>
<td>.16</td>
<td>.07</td>
<td>.01</td>
<td>.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. District Student Enrollment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.03</td>
<td>-.35</td>
<td>.07</td>
<td>.19</td>
<td>.08</td>
<td>-.11</td>
<td>-.09</td>
<td>.03</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Pct Free and Red. Price Meals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.72</td>
<td>.22</td>
<td>.74</td>
<td>-.78</td>
<td>-.85</td>
<td>-.71</td>
<td>-.82</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Percent Caucasian/White</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.01</td>
<td>-.81</td>
<td>.48</td>
<td>.67</td>
<td>.57</td>
<td>.56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Percent Special Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.06</td>
<td>-.36</td>
<td>-.26</td>
<td>-.27</td>
<td>-.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Pct Transitional Bilingual</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.47</td>
<td>-.67</td>
<td>-.58</td>
<td>-.55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Math Pct Met Standard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.83</td>
<td>.69</td>
<td>.91</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Reading Pct Met Standard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.83</td>
<td>.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Writing Pct Met Standard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Science Pct Met Standard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Schools (n = 207)
any significant correlation exists. The staffing ratios for counselors, secretaries, and teachers provide weak correlations, if any, which is consistent with earlier findings.

**Multivariate Regression Relationships in State Data**

The earlier correlation and regression analysis of variable pairs revealed that several variables utilized in this study were related. Most variables were associated with both the student to administrator and student to SAE ratios. The following trends correlated to a corresponding increase in the number of students per both administrator and SAE at a high school:

- Increase in school size,
- Increase in district size,
- Increase ratio of students per secretary FTE,
- Increase ratio of students per counselor,
- Increase ratio of students per teacher, and
- Decrease in percentage of students qualifying for F&R lunch.

Additional correlations identified that an increase in students per teacher corresponded to an increase in both students per counselor and school size.

The strongest correlation in this group was the SAE to school size, indicating that in larger schools, individual administrators have responsibility for more students than in smaller schools. However, two staffing ratios that appeared to be unrelated to school size were student to counselor and students to secretary FTE.

A multivariate regression analysis was run using the performance and demographic variables as independent variables and SAE as the dependent variable, allowing for stepwise elimination of variables. The results of this regression are presented in Table 9. As predicted by the correlation analysis, only three variables contribute significantly to the variability of the ratio
of students per SAE. The variables that loaded in the analysis were school size (student enrollment), poverty level (F&F%), and district size (total student enrollment). While the step 3 regression explains 72.4% of the variation, consistent with the current student-based funding model for Washington State, school size by itself explains 70.4%.

Table 9

Summary of Multivariate Regression with Stepwise Elimination for Variables Predicting Students per SAE in Washington High Schools (N = 207)

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>B</th>
<th>SE</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>(Constant)</td>
<td>179.478</td>
<td>7.553</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Student Enrollment</td>
<td>.124</td>
<td>.006</td>
<td>.839</td>
</tr>
<tr>
<td>Step 2</td>
<td>(Constant)</td>
<td>198.941</td>
<td>9.915</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Student Enrollment</td>
<td>.120</td>
<td>.006</td>
<td>.817</td>
</tr>
<tr>
<td></td>
<td>Percent F&amp;R Price Meals</td>
<td>-.426</td>
<td>.144</td>
<td>-.112</td>
</tr>
<tr>
<td>Step 3</td>
<td>(Constant)</td>
<td>197.818</td>
<td>9.820</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Student Enrollment</td>
<td>.126</td>
<td>.006</td>
<td>.856</td>
</tr>
<tr>
<td></td>
<td>Percent F&amp;R Price Meals</td>
<td>-.388</td>
<td>.144</td>
<td>-.102</td>
</tr>
<tr>
<td></td>
<td>District Student Enrollment</td>
<td>-5.838E-04</td>
<td>.000</td>
<td>-.094</td>
</tr>
</tbody>
</table>

Note.  $R^2 = .704$ for Step 1: $\Delta R^2 = .012$ for Step 2 ($p < .05$), $\Delta R^2 = .008$ for Step 3 ($p < .05$).

A comparison of the regression results to the RSD weighting for contextual factors reveals some potentially significant similarities. The RSD model accounts for the supervision of sports and activities which is weighted at 24% and not represented in any of the variables used in the regression. This leaves 76% of the weighting of the RSD model attributed to student numbers, student poverty, district size, and number of staff. During the development of the RSD model, it was discussed that numbers of staff could be broken down into primarily the number of students, proportion of special education students, and the poverty of students as funding for staff is currently provided according to these categories. Additionally, for smaller districts the state of Washington also includes small school funding protection in its formula.
Comparing actual SAE to levels predicted by the regression equations from the state data showed an interesting anomaly for the largest two high schools in the state. The largest school was generously staffed administratively, with a student to SAE ratio of approximately 160 students below the predicted level of 506 students per SAE using the following Step 3 regression formula:

\[
\text{Students per SAE} = 0.126 \times N - 0.388 \times P - 0.0005838 \times S + 197.818
\]

\(N\) = Number of Students in the School

\(P\) = F&R Percentage within the Student Population (0-100)

\(S\) = District Size According to Student Enrollment

To validate that actual staffing levels for these schools did not match the predicted levels, district administrators were contacted by phone. They explained that additional administrative staffing was added to address student supervision issues after rapid enrollment increases necessitated the addition of multiple temporary facilities (i.e., portables) that are not specifically designed and installed to support student transition and supervision. These schools remained as outliers in the state data set and are indicative of the likely impacts of other contextual forces on the workload within extremely large high schools. However, this phenomenon was addressed in the original RSD model as student enrollment was given contributing factors of both the average number of students per administrator and a total student enrollment. For schools larger than 1,000 students, the RSD high school focus group felt that a cumulative effect created conditions for additional student discipline incidences and subsequent administrative workload.

Using the linear regression equation and inserting the school size, poverty, and district size variables produces a predictive table of SAE staffing along with actual staffing for the sample schools (Table 10). Numbers for Gamma and Delta are provided for both the 2009-10
and 2010-11 school years, due to the phased opening of the new Delta High School with no senior class in its first year of 2009-2010.

Table 10

Predictive Regression SAE Staffing Levels for Sample Schools

<table>
<thead>
<tr>
<th>School</th>
<th>Enrollment</th>
<th>1-D Regression</th>
<th>2-D Regression</th>
<th>3-D Regression</th>
<th>Actual SAE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha High</td>
<td>1,894</td>
<td>4.57</td>
<td>4.82</td>
<td>4.38</td>
<td>4.8</td>
</tr>
<tr>
<td>Beta High</td>
<td>1,976</td>
<td>4.65</td>
<td>4.83</td>
<td>4.42</td>
<td>4.8</td>
</tr>
<tr>
<td>Gamma High 9-10</td>
<td>2,041</td>
<td>4.72</td>
<td>4.93</td>
<td>4.50</td>
<td>5.0</td>
</tr>
<tr>
<td>Gamma High 10-11</td>
<td>1,781</td>
<td>4.45</td>
<td>4.65</td>
<td>4.24</td>
<td>5.0</td>
</tr>
<tr>
<td>Delta High 9-10</td>
<td>1,634</td>
<td>4.28</td>
<td>4.45</td>
<td>4.04</td>
<td>5.0</td>
</tr>
<tr>
<td>Delta High 10-11</td>
<td>1,956</td>
<td>4.63</td>
<td>4.80</td>
<td>4.39</td>
<td>5.0</td>
</tr>
</tbody>
</table>

It is noteworthy that in the regression analysis, the performance variables only correlated significantly to themselves and contextual variables. Thus the student performance variables did not load in the regression analysis as explanatory of administrative staffing levels.

Qualitative analysis of interviews

During the transcription of the principal interviews and in alignment with the overall purpose of the study, two major categories emerged as the foundation for the open coding, work demands and resources. Following the initial splitting of interview into these two categories, additional sub categories within each of the two became evident. Within work demands the themes of students, adults, administration, and mandates appeared to be predominant. Resource composition appeared to be formally provided resources, existing resources that were modified by the principal, and new resources created by the principal.

Following the initial open coding of the interviews, segments were copied and moved into documents aligned with each open category. Initial axial codes applied to the work demand data were safety and discipline, poverty, unions, extracurricular, and instruction. Safety and
discipline were combined into negative behavior. Instruction was split into remediation and improvement. These axial categories appeared appropriate for the student-related work demands. However, in the adult-related work demands, a new axial category of relationships became evident. When the relationships category was applied as an axial category, some of the statements lost clarity as to which open work demand category they belonged. This resulted in change to the original open categories for work demand. The final three open coding categories for work demand were student-related, individual adult-related, and organizational-related. This organizational-related category indicates administration interaction with one or more people representing more than themselves or their personal interest. As an example, an exception to this would be a parent representing their own child which would be coded as an individual adult. In contrast, if the parent brings an attorney, this then becomes an organization.

During axial coding of the new open categories, in the Adult demands and especially in the organizational demands, several quotes did not fall into any of the existing categories. These related to principal activities such as meetings with central office, e-mail, and catching up in the office. To address these outliers, an additional axial category of organization compliance was created and coded.

On the surface, organizational compliance and remediation appeared to be similar and combining these subcategories was considered. However, a decision was made to keep them separate as organizational compliance is externally driven to meet quotas independent of specific students while remediation is related to more education that a student needs and what the student brings with them to the current setting, denoting a gap rather than a threshold.

The final open and axial coding categories are presented in Table 11.
## Table 11

Open and Axial Coding Category Descriptions

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Open Coding</strong></td>
<td></td>
</tr>
<tr>
<td>Student Demand</td>
<td>Demands on the administrative team based upon student behavior, support, or interaction.</td>
</tr>
<tr>
<td>Adult Demand</td>
<td>Demands on the administrative team dealing with individual adults on specific issues of a personal interest to that adult.</td>
</tr>
<tr>
<td>Organizational Demand</td>
<td>Demands on the administrative team made by formal organizations such central office, legal requirements, unions and advocacy groups.</td>
</tr>
<tr>
<td>Formal Resources</td>
<td>Human resources provided and funded for a specific purpose or intent.</td>
</tr>
<tr>
<td>Modified Resources</td>
<td>Assignment of duties and responsibilities outside of the defined purpose of formal human resources by the principal to address the desired intent of the principal.</td>
</tr>
<tr>
<td>Created Resources</td>
<td>Utilization of personnel outside of their formal defined role for administrative functions in amounts exceeding monetary compensation.</td>
</tr>
<tr>
<td><strong>Axial Coding</strong></td>
<td></td>
</tr>
<tr>
<td>Negative Behavior</td>
<td>Interactions or activities resulting from inappropriate actions of staff or students or attempts to prevent or mitigate any such actions.</td>
</tr>
<tr>
<td>Poverty</td>
<td>Interactions or activities connected to addressing the symptoms or conditions of families of poverty as they relate to student behavior and performance.</td>
</tr>
<tr>
<td>Unions</td>
<td>Interactions with union leadership or members relative to contract issues or labor relations.</td>
</tr>
<tr>
<td>Extracurricular</td>
<td>Activities associated with student sports, activities, and clubs.</td>
</tr>
<tr>
<td>Relationships</td>
<td>Interactions intended to create or develop either personal or professional relationships with individuals. This includes the building of culture within an organization.</td>
</tr>
<tr>
<td>Instructional</td>
<td>Activities directed at curriculum work, teacher professional development, or teaching practices.</td>
</tr>
<tr>
<td>Improvement</td>
<td></td>
</tr>
<tr>
<td>Compliance</td>
<td>Activities driven by the need to meet legal requirements at the building, district, state or federal level.</td>
</tr>
<tr>
<td>Remediation</td>
<td>Activities directed at addressing the needs of students with identified learning deficits.</td>
</tr>
</tbody>
</table>
Chapter Five: Findings

Quantitative Analysis

During the scatter plot and linear regression analysis of pairs of variables, several basic relationships were identified with most being associated with both the student to administrator and student to SAE ratios. The following trends correlate to a corresponding increase in the number of students per administrator and SAE at a high school:

- Increase in school size,
- Increase in district size,
- Increase ratio of students per secretary FTE,
- Increase ratio of students per counselor,
- Increase ratio of students per teacher, and
- Decrease in percentage of students qualifying for F&R lunch.

Additional correlations noted an increase in students per teacher corresponded to an increase in both students per counselor and school size. The strongest correlation in this group was the SAE to school size, indicating that in larger schools, individual administrators have responsibility for more students than in smaller schools. However, two staffing ratios which appeared unrelated to school size were student to counselor and students to secretary FTE.

The regression analysis demonstrated current methods of staffing administration in high schools are highly dependent upon school size. This single factor explains 70.4% of the variation in staffing. Two other contributing factors to the current allocation decisions are the poverty level of the students as measured by F&R% and the size of the district as measured by number of students. These two contribute to 1.1% and 0.6% of variability in administrative staffing respectively.
Using the results of the regression analysis as predictive equations reveals how the sample schools compare to other schools in the state of Washington. While the three-dimensional regression provides the most accurate prediction, the two and one-dimensional regression results are also provided for comparison. Figures 3, 4, 5, and 6 show the historical SAE levels compared to the one, two, and three-dimensional regression predictions for the schools.

While all four sample schools are currently staffed near the projected SAE ratios, this has not always been the case. In District A, both high schools were staffed at or below the lowest of the three predictor equations at one point in the last decade. With both schools, changes in enrollment and/or demographics prompted the district to invest additional administrative staffing raising their SAE levels to above the predicted levels. Since that time, enrollment and demographics have continued to change bringing the predicted SAE level up to the current actual staffing.

Figure 3. Alpha High School SAE Ratios, According to Regression Equations
Figure 4. Beta High School SAE Ratios, According to Regression Equations

Figure 5. Gamma High School SAE Ratios, According to Regression Equations

Figure 6. Delta High School SAE Ratios, According to Regression Equations
In District B, the historical SAE levels for Gamma High were much higher than predicted by the regression equations from the state data. However, as was noted during data collection the current largest high school in the state of Washington, Marysville High School, which had 2,655 students in the 2009-2010 school year, is staffed with a student to SAE ratio of approximately 150 students above the predicted level. This excess staffing for Gamma High was commented upon during the interviews with central office. The HR director noted that additional administrative staff were added specifically to address student supervision issues which rose exponentially after enrollment growth necessitated the addition of multiple temporary facilities specifically designed and installed to support student transition and supervision.

Table 12 compares the relation of actual administrative staffing as measured by SAE to the predictive values based on both the mean values for similar size schools in the state of Washington.

**Table 12**

School administrative support breakdown: Actual staffing compared to predictions according to mean values and linear regression of percentile means

<table>
<thead>
<tr>
<th>School – Enrollment</th>
<th>Administrators</th>
<th>Counselors</th>
<th>Secretarial FTE</th>
<th>SAE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha High – 1894</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual</td>
<td>5</td>
<td>4</td>
<td>6.625</td>
<td>4.8</td>
</tr>
<tr>
<td>Mean</td>
<td>3.8</td>
<td>5.2</td>
<td>8.0</td>
<td>4.6</td>
</tr>
<tr>
<td>2-D Regression</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>4.82</td>
</tr>
<tr>
<td>Beta High - 1967</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual</td>
<td>5</td>
<td>4</td>
<td>7.448</td>
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Washington and the two-dimensional regression analysis equation from earlier data presented in the quantitative results. The two-dimensional equation was used as these are large high schools in large districts where the effect of small district should not be considered.

This comparison shows that all four sample schools are staffed at equal or slightly above the mean of similar size schools. This is to be expected as the predictive regression equations are based upon the same data as the mean staffing values. Additionally, the two-dimensional regression produced the highest predictive value for all schools with the one and three-dimensional values being on the average 0.2 and 0.4 SAE less per school than the two-dimensional predictive values.

**Interview Analysis**

The analysis of the interviews is broken down by the open coding categories with the axial categories described within each section. These sections consist of workload demands related to students, adults, and organizations along with formal, modified, and created resources.

**Student demands.** Within the interview transcripts related to student demands on the principal’s time, a predominant amount of time references dealing with student poverty, negative student behavior, relationship building, and remediation. When speaking of direct interaction with students, the principals seldom made statements that could be categorized as instructional improvement or extracurricular activities and never mentioned students during comments in the areas of compliance or union activities.

Students from families of poverty and the impacts of cultural differences were regularly discussed by the principals. While the principals worked to avoid profiling and stereotyping in their responses, they clearly indicated the existence of extra time devoted by administration to treat the symptoms of poverty. The Alpha High principal stated this as “I think we are 78% free
and reduced here, we are in the heart of everything that is wrong kind of with [our city] but we see everything that is right with these kids.” While acknowledging the potential within the students of poverty, he also recognized that “there is certainly a difference between a kid who is living with poverty without parent support and a kid who is not living in poverty without parent support.” Within the same district at Beta High, it was summarized as “those kids typically don’t come to us with the educational experiences they need to be successful at the high school level.” While the Gamma High principal tried harder than all others to sidestep the poverty question, even he stated the following: “So it’s like [people say], ‘you work on Saturdays’, [and I reply] I work on Saturdays every Saturday, [to which they reply] ‘what are you talking about’? and [I add] every Sunday. When you have poverty you have to have more time.”

Another aspect that correlated to poverty during the quantitative analysis was students from non-English speaking homes. At Delta High, it was noted that “when you have a high population of people who don’t speak English in their homes, that causes a bigger workload than otherwise.”

As all four principals spoke of delegating a majority of the discipline to their assistant principals, the primary impact of student behavior related work was interruptions to the principal’s schedule. At Alpha High, the principal stated, “it’s not a major interruption but it’s time that takes away, you know having to start all over with whatever project you’re having.” This drain on time was echoed by the Gamma High principal in that, “we lose an hour and a half every day in the middle of the day because we still have 2,000 kids and you still have to have the management part.”

From the perspective of the principal, it was difficult to segregate discipline from relationships. At Beta High, the principal described a similar commitment to student supervision
during lunch and passing times as more related to relationships in stating, “we like to be visible in the halls because that’s during passing periods and stuff because you get a chance to talk to kids and staff.” Even direct interaction with discipline revealed this overlap between discipline and relationships. At Alpha High when asked what they would like to be more involved with, the principal stated “you get to know a lot more about kids and things where you are dealing with just regular discipline.” Building upon relationships, the two most experienced principals both put systems in place to ensure they met with students on a regular basis. The Beta High principal acts as the advisor, counselor, and disciplinarian for all seniors at the school. At Gamma High, the principal has an assigned student group for counseling, discipline referrals, and advising. Both of these situations are by choice, the goal being building relationships and maintaining connections to the students. By contrast, the newest principal at Delta High stated that “I wish I could be more involved in stuff that has me directly working with kids.”

At Beta High, an open door policy for building student relationships recently resulted in a student initiated anti-gang program presentation. “Three ex-gang bangers, who came in and wanted to know, they’ve changed, they are out of the gang now and they want to know how they can help other people.” The principal personally worked with these students to develop and present personal accounts of their past gang experiences to the student body. This exemplifies how a proactive investment in relationships by the principal created a safe enough environment for students that they felt comfortable proposing such a suggestion. The possible result is a decrease in gang activity within the school and a reduction in reactive time to the impact of gang activity.
Similarly at Alpha High, the principal stated “I’ve attended almost all of the athletics, at least one game of every sport since I’ve been here. I go to practices so I know a lot of kids really well.” Again this is proactively investing in student relationships.

In the area of remediation, most principals spoke of the challenge of meeting NCLB requirements with all students and the time commitment that effort requires. At Delta High, the principal compared, “I’m working with kids that start at a much [lower level]. I’ve got to get them from here to WAY UP HERE, in the same amount of time that a Mercer Island has to get kids from here to here.”

**Adult demands.** The predominant quantity of comments about the impact of adults on the workload demand of the principal was in the area of relationships. Negative behavior focused on parents’ responses to student discipline and was a more significant component than all the other sub categories. However negative behavior constituted a much smaller portion than adult work demands categorized as relationships. Only three other subcategories appeared relative to adults and these were poverty, union issues, and instructional improvement.

When providing examples of individuals who have consumed considerable time in the past year, principals consistently conveyed stories of situations where they were forced to react to unexpected incidences. These ranged from parent complaints about extracurricular programs such as cheerleading and football to a staff member admitting to the Delta High principal, “oops, I accidentally hit a child.” As the Alpha High principal stated, “Cheerleading …took up one whole summer almost … with the parents being angry.” Similarly, this principal recollected how football issues had taken a considerable amount of his time for his first two years as a principal. However, he went on to relate how after investing time and energy into revitalizing the program,
he now feels football has contributed to reduced student discipline issues and improved public relations, both of which have reduced the amount of time spent reacting to adult demands.

While union issues have been categorized as organizational demands, some of the time demands of union leadership were discussed on a more personal basis. At Alpha High, the principal stated:

We have a person in the union that takes up a lot of my time sometimes. Some of it is just chit-chat; some of it is just why are we doing this? I appreciate some of that. Some of that is good stuff but sometimes it’s just too much and I don’t have time to be dealing with it.

Here he recognized that maintaining a good working relationship with union leadership to enable him to proactively problem solve potential disagreements.

The investment into relationships with adults extends far beyond parents and union members with each principal making multiple references to investing time in staff interaction. At Delta High, the principal stated “a lot of my day is spent meeting with different teachers or staff members that have all sorts of issues.” At Beta High the principal stated, “relationships are big here, so you always want to take time to talk to people.” The Alpha High principal stated he spends considerable time “trying to just keep in touch with people and trying to make sure that they are not feeling disconnected from the principal.” He then summed it up as, “you try to make 20 minute meetings that may last for an hour. It’s just an investment of time for the most part.”

With an emphasis on instructional improvement, principals indicated spending time with individual teachers in the role of a mentor or coach, a part of the principal’s job that has evolved over the years and placed increasing demands on the principal’s time due to the emergence of
NCLB legislation. The Delta High principal shared, “it’s a lot of work and you’ve got to convince teachers what needs to be done differently.” At Gamma High this was described as:

People don’t do what they don’t do because they want to, they don’t do what they don’t do because they don’t know how. With that philosophy, it’s like; you’re not doing that job because you don’t know how, not because you don’t want to. So we have to teach you how.

Another area of adult interaction related to student performance described by the principals was to proactively connect with parents of poverty. At Delta High when reflecting on parents of the highest needs kid in her building, the principal stated, “It also creates a lot of work for us to get out and call parents and doorbell and run buses and everything that we can absolutely think of to try and get parents in our building.” In describing the importance of this connection with parents of poverty, the Beta High principal stated:

When you talk about poverty, if the kids come from poverty, their parents are in poverty. And when you are trying to educate their parents as to how to educate their kids that’s another layer that we have a heck of a time trying to cut through because of the old adage ‘the apple doesn’t fall far from the tree.’ So you are dealing with parents that never received a high school diploma that don’t understand what we are trying to do with their kids. So you end up educating 65% of our parents in addition to the kids. Then we hope the other 35% have it figured out.

Organizational demands. Organizational demands are comprised primarily of the even distribution of negative behavior, relationships, compliance, and instructional improvement. Aside from these four components, only union issues and poverty appeared, though to a much lesser degree, as subcategories.
Within organizational demands, principals commented on reacting to decisions made at the central administration level that impacted their time and resources. Several of these comments did not fall into any particular subcategory but rather were statements of frustration over being placed in a reactionary position to either increased demands on their time or decreased resources.

Organizational demands based upon negative behavior occurred following either an initial interaction between the principal and an individual or sometimes when an individual bypassed the principal and took a concern directly to central office staff. An example of this which surfaced at three schools was a group of attorneys called, Team Child. This organization supports underprivileged students and advocates for their fair treatment in disciplinary actions by the schools. Whereas the new principal at Delta High expressed spending considerable time reacting to demands of Team Child in her first year, she indicated that in her second year, after developing a relationship with her assigned attorney, she was able to resolve issues at her level without involvement from central office or legal counsel. The shift in work demand generated by Team Child in this case brought this principal’s perspective in line with the other two schools who described interactions with Team Child as being collaborative and fairly simple.

Similarly, the newly opened Delta High illustrated the value of investment in developing culture within the school and its subsequent impact on student behavior. The Delta High principal described how their vision of opening school disintegrated into what she described as breaking up constant fights between students for the first two months of school. She went on to indicate how after the end of the first year when the expectations and standards were in place, the school has grown by over 250 students with no increase in administrative staffing, but the workload seems to have decreased.
Supporting this impact of culture, the principal at Alpha High related how resurgence in the football program from being a perennial doormat (the school did not win a football game for four consecutive years) of the conference has changed student demeanor in the school. He shared:

It’s made a HUGE difference in how kids present themselves and you know now that there’s hope and that whole thing. I mean we could be five and five the rest of our lives but guess what, it makes a big difference when you’re competitive and it’s not about the football per se, it’s about kids going out and having fun, you know the band is playing, It’s nationalism at its lowest level.

In his statements, this principal attributed the refocus of student energy into more positive behaviors related to the football program to both a reduction in negative behaviors and improvement of public relations with parents and the business community. He went on to support improved public relations with specific anecdotal accounts of his interactions with the community.

Within organizational demands, principals indicated the greatest change over time has been to student achievement accountability driven by the federal NCLB act. For example, at Gamma High the principal stated that the greatest change in principal work is, “I think the accountability piece. The accountability that it’s no longer [that] you can’t [just] be an expert in management. You have to be an expert in instruction and learning. You have to be an expert in curriculum.”

Principals attribute this increase in work demand to a change in approach toward education. The principal at Alpha High recalled previous students wanting to drop out of school “if a kid was 16 you would just say goodbye to them. If they wanted to leave you just said
goodbye but we can’t do that anymore.” This creates a situation which the Gamma High principal described, “to expect us as educators to educate every student that ever walks through the door is not reality. There are only two [absolute] things, death and taxes, so you know, that’s a frustration.”

This new accountability expectation translates to the classroom level as the Delta High principal described:

Before it was more of an “OK, I taught it, I’m sorry they didn’t get it” whereas [now], what I just spent three days on was talking to staff about, “we’re not even going to talk about if kids don’t meet standard and what we are going to re-teach, we are going to finish teaching.”

Connecting the change in classroom expectation to the principal workload, the Gamma High principal stated, “What we know now, and as we go through time, it’s not curriculum, it’s the instructional process that teachers use to deliver the message.” He went on to indicate how it falls upon him and his administrative staff to provide the guidance and resources for these teachers to improve their instructional processes.

One of the organizations referenced by three principals during the interviews was unions. In two cases, unions were discussed as consuming considerable time in reaction to grievances, both formal and informal. In one of these cases, the Alpha High principal indicated he invested time into the union leadership in his building in order to develop relationships and head-off potential union issues.

A third principal described how a possible union issue was diffused by her own staff.

The Beta High principal shared:
The first thing we had was other security in different buildings calling the union president saying “They can’t do what they are doing at Beta. They can’t do that. She can’t do that.” and what happened was one of our security walked out when she stepped on the front step out there, the sidewalk and said “Get back in your car. We’re fine here. We know what we’re doing.” So she got back in her car and went away.

Here is a case of internal relationships allowing flexibility of resource investment while at the same time eliminating a possible demand on the principal’s time. By confronting their union representative, the security staff demonstrated that their alliance to the principal was greater than their association with the union. This alliance was due to the past actions of the principal in recognizing the value of these staff members, shifting more responsibilities to them, providing them training, and defending their value to the teaching staff.

**Formal resources.** Formal resources are those provided by the district central office and utilized by principals to address work demands. These were noted in the interviews relative to all subcategories across the work demands categories with the exception of union issues. Principals spoke of how administrative resources were invested to deal with discipline, instructional improvement, compliance, remediation, extracurricular, and to a lesser degree poverty issues. Relative to relationships, principals discussed in length how they promote both formal and informal structures. Principals also discussed working with individuals on a personal level to persuade them to accept evolving roles of others within the organization.

In all four buildings, Assistant principals’ primary functions were student discipline, oversight of extracurricular programs, and to some degree instructional improvement and professional development. When discussing the adequacy of the number of assistant principals, a trend emerged in which principals noted that in the past they felt understaffed but due to
improved relationships with those who create work demands, the principals now felt their support was adequate. However, they did not want this information shared with their central office. This was clearly stated at Alpha High as:

This school probably needed all of the administrators four years ago, right now, I think that we’re in a position where I’m not sure that we need four administrators but because we are in downtown, I’m glad we have four administrators. But the way you are staffed can be changed a little, I mean now one of my assistant principals is more of ILT (Instructional Leadership Team), Assessment, and that type of thing and so his job has kind of changed over the years because I think we are in a different place.

In addition to the assistant principals dealing with student discipline in the schools, principals noted the existence of district employed security guards and contracted police officers on campus. The utilization of security guards ranged from being extra eyes on campus to handling all student discipline excepting suspensions and/or expulsions. The Beta High principal, who assigned the greatest degree of student discipline to their security guards, also indicated a resultant high degree of principal and assistant principal involvement in both instructional improvement and student activities other than discipline.

Beyond support from assistant principals for instructional improvement, principals noted a variety of teacher release time in the form of department heads, program coordinators, and instructional coaches/facilitators. These resources were often supported with paraeducators or clerical time to maximize their impact while minimizing the cost.

When talking about compliance and poverty, principals made reference to secretaries, counselors, and a variety of instructional and intervention specialists. Both additional specialists and secretary positions are created by the funding sources available to assist these schools in
supporting their students of poverty. However, no additional administrative staff was noted related to either administration of these programs or supervision of the additional staff.

**Modified resources.** All principals spoke of how they changed organizational structures and job assignments to better align to the needs of the school and the students. These changes addressed student negative behavior, instructional improvement, compliance, and remediation. However, most of the discussion surrounding modification of resources centered on either the principal developing relationships to promote willingness of individuals to change their roles or working with individuals to assist them in accepting the change in the roles of others.

The most significant modification of resources was noted at Beta High where the principal described combining the security guards with two classified intervention specialists into a newly defined role. This role expanded beyond the sum of the two positions. The intent of the change was “what we wanted was a security advocate program because they had their finger on the entire pulse of the school. Those guys know more of what was going on with kids outside and how it [is] impacted inside.”

It should be noted that this modification of duties was the issue described previously in which the union representative met at the school door by their union members was asked to leave by these members. Resistance to this change was expressed by several teachers who felt “teachers were better than classified people.” To overcome this teacher bias, the principal first invested in training the classified staff, then had the classified staff present the program to the teachers to demonstrate their expertise, and finally mandated that all student referrals go to the security staff or be handled within the classroom. This process took over two years before nearly all of the teaching staff accepted the authority of the classified security staff to handle discipline. A similar bias by teachers toward classified staff noted at Gamma High was “As we remove the
culture of titles and move to more of how we do business, it allows us to move from classified and certified to classified with certified. That mixture of the culture is not us and them.”

Reflecting on the result of the change in security roles at Beta High the principal stated:

It reduced all of the discipline for the assistant principals by at least half which freed them up to actually do administrative work. Half their day has been given back to them to do other things, to be in classrooms, to be around kids, to do whatever specific tasks that they are assigned to during the year.

In a similar way, but to a smaller degree, classified intervention specialists are being utilized at Gamma High. The Gamma High principal stated, “They are teaming with counselors and administrators so we have a role of administrator, counselor, and student achievement specialist as a team to focus on specific kids.” This is another example of the principal leveraging low cost classified resources by blending roles to assist administration and free up administrator time to focus more time on instructional improvement.

To free up teacher time for administrative work, principals noted a variety of strategies. At Delta High the principal shared, “department chairs will often pick up some of the master schedule building stuff” and “a teacher, just because second semester we could compress some classes, does some set case management two hours a day for sheltered English transition kids.” At Alpha High, the principal “did pull out [his] math department chair for an extra planning period. He does a lot of work with assessment and stuff and getting materials together.” The Beta High principal described how she ensured teacher support for student led conferences. “The one PD day we had this year, we gave [teachers] that time off with the agreement that they would show up.” As this was not a direct hour-for-hour trade; the principal had to leverage relationship capital with her staff. This agreement was noted with “You know I still believe in
the old handshake. If you tell me you’re going to do it then I believe you are going to do it unless I have reason to believe otherwise.” She went on to state that her school has 100% participation from staff.

The end result of resource modification was best stated by the Alpha High principal, “My role has changed because the school has changed around me. I am able to do a lot more work outside of the office than I had been able to the first couple of years.”

When speaking of modified resources, most principals indicated changes were made at the building level without approval from central office or union leadership. The Beta High principal summarized this as:

You just have to do it. I ask forgiveness not permission. It’s bitten me in the ass a few times but hey, if it works, it works. People ask “How did you do that? Who did you ask if you could do that”? and I just look at them and say, “Ask? You kidding me”? (and then she laughed).

**Created resources.** While a few statements relative to created resources addressed instructional improvement, remediation, and compliance, the vast majority referenced principals’ utilization of relationships to garner assistance. These relationships were split between the establishment of referent power by the principal and the exercise of positional power.

On the surface, principals attribute a change in culture to their increased ability over time to call upon staff for unreimbursed support. The Beta High principal spoke of “building capacity in people” to “empower them to do work.” This was accomplished “over the years” where “we have trained them to make decisions. They know, and I trust them to know, what not to do, what TO do and where the line stops and they need to ask.” Beyond this she spoke of equality in that “for us, I really believe that we are all equal here and we just have different jobs that we do.”
At a deeper level, the principals refer to *relationship capital*. The Delta High principal clearly identified this when she stated:

One of the things that I think I am pretty good at is developing relationships with people to the point where they volunteer to step up and so the leadership team and teachers around are volunteering to say “I want to help, I want to do more, I want to learn more.”

Similarly, at Beta High the principal stated, “all you have to do is ask people and they’ll come in and help.” Additionally, the Beta High principal understood that relationship capital is not endless, stating, “You know I try to bank more so that if I need to go to the well I can get it.”

While more transactional than building personal relationships, principals acknowledged the value of their positional power and control over employees’ career paths. When discussing staff volunteering support at Alpha High, the principal noted:

Now that wasn’t always true though. Like I said, having hired [over half of the staff] on my own, I mean, people feel an obligation and you know, [I’ve learned] how to hire people and what you look for and that type of thing so … It’s been a lot of luck but a lot of hard work too.

In addition to controlling hiring, the principal position also wields authority over the progression of teachers into administration. All principals talked about administrative internship programs’ provisions that provide free administrative labor through mandatory internship hours. Interns are assigned to oversee daily student discipline, administrative projects, and event supervision which frees up administrators for other functions.

Beyond these mandatory hours, interns and principals enter into a symbiotic relationship where interns gather additional experience in exchange for free labor. The Beta High principal explains how she pulls former interns from the classroom at the cost of a teacher substitute to
perform a variety of functions. “We will ask if they want to come in and play vice principal for the day and get some experience and they say ‘yea’ and I just do it and pay for [the substitute] out of the building budget.” At Delta, they “have one teacher that just loves the staff development stuff and she is pretty much our staff development lead but really does not get paid to do it.”
Chapter Six: Summary of Findings, Discussion and Conclusions

Summary of Findings

This section presents interpretation of the study findings according to the theory framework developed by the research, answers study questions, and draws conclusions from the study. The conclusions highlight possible implications of this research for educating high school principals on the importance of developing relationships relative to work demands and administrative resource availability, providing insight to district level decision makers relative to staffing of high schools, and informing modifications to Washington State funding of high school administration.

Grounded Theory

The Grounded Theory, referred to as Proactive – Reactive Relationship Resource Theory (P-RRRT), emerges from the analysis of the coded interviews. The P-RRRT acknowledges each work demand and resource investment decision facing a principal can either be dealt with in a reactive or proactive manner. Proactive management requires interactions with individuals who have a vested interest in the situation. Through these interactions, principals not only gain information on how best to approach the situation but at the same time develop relationships. These relationships have the potential to reduce future resistance to solutions, distribute leadership through the organization, and encourage individuals to volunteer their services.

While the work demands of the principal can be broken down into the components of student driven demands, adult driven demands, and organizational driven demands, more important is the principals response to all of these demands in either a proactive or reactive manner. This is proactive or reactive action exists independent of the subcategory within each of the three primary categories. In some cases, principals discussed two similar situations, one
early in their tenure and one more recent. An event early in their career evoked a reactive response resulting in considerable time consumption. After growing into the job, principals recounted how the relationships proactively developed resulted in a resolution that took much less time. This indicates how a proactive investment into relationships can reduce future work demands.

Similarly, in all cases where the principals referred to utilizing modified or created resources, the availability of these resources based upon relationships were either cultivated in an intentional, proactive manner or were inherent through the organizational structure of the school. This combination of referent and/or positional power base creates an unspoken obligation for people to work without compensation at the request of the principal.

Viewing the principal interviews through the lens of the P-RRRT framework highlights the evolution of the principal’s job during their tenure. Each individual reflected on being overwhelmed by the work demands in their early years of their careers when formally provided resources were inadequate to meet these demands. Only when principals had time to cultivate relationship capital with certain staff members could the workload be kept manageable by drawing upon this capital in times of high work demand.

**Response of Research Questions**

**Primary research question.** The primary research question sought to identify factors that influenced principals’ decisions relative to administrative resource investment in large comprehensive high schools. While this study determined that the factors are dependent upon both the needs of the students within the school and the resources available to the principal, the study also revealed that these resources extend beyond what is formally provided in human
resources and include human resources modified and created by the principal through building relationship capital with staff members.

**Supporting research question 1.** What factors/variables influence principals’ prioritization of the administrative work in the school? Principals indicated that student safety was the utmost priority within the school. Once the need to support safety is satisfied, principals then indicated the desire to interact with staff with this interaction driven by the necessity to develop relationships. While not always articulated by the principals, these relationships are consistent with the P-RRRT in that the relationships result in mitigating possible future work demands as well as the ability to modify and create additional human resources through accumulated relationship capital.

An emerging demand of the principal and an increasing priority is that of compliance to the accountability laws concerning student achievement. Principals indicated they are spending more time in this area and consistently seeking ways to liberate other staff members from traditional administrative work to assist in efforts toward instructional improvement, remediation, and compliance.

**Supporting research question 2.** From the principal perspective, what factors/variables drive the workload of building principals? Beyond the traditional expectations of managing the school and supervising employees, principals discussed the increased work due to the complexities of educating students of poverty and the increased expectations of NCLB. Poverty was connected by the principals to administrative demands associated with varying types and severity of student discipline, motivation of students through teaching the value of education, and increased effort required to connect parents of poverty to the school and their child’s education. Principals indicate that while students of poverty have always existed while during
their careers, the increasing percentage of students of poverty, combined with the accountability for educating all children, has greatly increased the demands on the principal. Some principals also noted that for a large high school, the number of students in the school can have a cumulative effect on negative requirements associated with supervision and behavior.

These findings are consistent with the quantitative analysis of the Washington State staffing information. The regression analysis indicated that currently high schools staff administration is relative to numbers of students, school size, ratio of student poverty, and district size. Not included in the quantitative analysis, but supported by the principal interviews, is the impact of extracurricular programs on the administrative team workload, both from a supervisory perspective, as well as dealing with parent concerns as adult work demands.

**Supporting research question 3.** What employee resources (including teachers) are used by building principals to distribute administrative work and how are they used? Principals describe using the human resources provided by the district central office generally for their intended purpose. However, principals also indicate changing the duties and responsibilities of certain individuals to better meet the needs of the school. In most cases, these modifications occur outside of the knowledge of the central office and can even be contrary to locally bargained labor contracts. Principals expressed the use of personal relationships and transactional agreements in order to gain acceptance of these modifications.

Principals also describe consistently relying upon people volunteering their time and efforts as a favor to the principal. This uncompensated human resource is identified in the P-RRRT as relationship capital and is viewed by the principal as critical to the success of both the principal and the school. While principals did not overtly connect their time invested into relationships with relationship capital, principals constantly spoke of the importance of
relationships with staff members and expressed how important it was that “if I need to go to the well I can get it.”

Built into the structure of public education is a resource provided through the requirements of administration certification. Administrative interns are first obligated to perform a specific number of hours of administrative work at no cost to the district. After the internship is completed, teachers will continue to volunteer support in order to gain additional experience in preparation for becoming an administrator. While the volunteering of time in this manner often violates collective bargaining agreements, it is a practice openly accepted in both participating districts.

**Supporting research question 4.** How do resource limitations influence the principal’s prioritization of administrative work? Principals describe using their administrative human resources to address student safety above all other needs. With this need satisfied, they next express the need for the administrative team to be visible in the school with an underlying emphasis on the building and maintenance of relationships with staff and students.

In times of scarce administrative support, principals reflect on taking more work upon themselves at the expense of their personal lives. Due to the increased emphasis on instructional improvement due to NCLB, principals have indicated relying on modified and created resources to both assist in instructional improvement work and freeing up other administrative personnel for instructional improvement work.

**Supporting research question 5.** What factors/variables are considered by central office administrators when making administrative staffing allocations to high schools? During the initial interviews to frame the principal questions, central office administrators referred primarily to budget constraints and the number of students in determining the quantity of administrative
resources provided to a school. In the case of Gamma High, the central office recognized that due to extreme overcrowding, additional assistant principals were needed beyond the historical student to administrator ratios. While central office administrators indicated they have had multiple requests and justifications from building principals for additional resources, this information has had little if any impact on resource allocation.

Supporting research question 6. What insight can be provided to central office administrators to assist in making high school administrative staffing allocation decisions? As discussed in research question 2 and consistently supported by the quantitative analysis and interview responses, the degree of poverty of the students, the size of school, and the size of the district are contributive factors to the school administrative team workload. This indicates a simple student per administrator ratio is not an adequate representation of workload. Principals’ modification of human resources indicates that the formal resources as supplied by central office do not always meet the needs of the school. Therefore, central office administration should increase communication with building principals to ensure they allocate resources in a manner that better fits the specific contextual needs of the school.

Discussion

In framing the principal interview questions, a quantitative analysis performed on school data from Washington State high schools indicated the amount of administrative human resources currently allocated to schools is dependent upon the number of students per administrator, the total number of students in the school, the percentage of students of poverty in the school, and the size of the district. Principal interviews indicated that the work demands fall into the categories of student demands, adult demands, and organizational demands. While many of the described work demands are not sensitive to contextual factors, across each of these
primary categories, principals indicated that poverty is a family condition that varies in degree between schools. At high levels, poverty results in an increase in the type and degree of administrative work to support the needs of these students.

When asked to relate individuals who have consumed much of the principal’s time in the past, nearly every response concerned an emergent issue in which the principal did not have an existing relationship with the associated individuals. In many of these situations, resolution was sought by the individual through another organization before the principal became directly involved, exemplified by the attorney advocacy group of Team Child as discussed by multiple principals. Stressing the importance of relationships in mitigating reactionary work, two principals noted that issues involving Team Child have decreased in severity after developing a working relationship with the local attorneys.

Principals attribute their success in modifying or creating administrative human resources with a combination of direct transactional relationships, perceived transactional relationships, and personal relationships. Due to an overall shortage of resources to meet the total demands of the school, principals articulated the importance of building relationships to ensure that staff members would provide assistance in times of need. This relationship capital allows principals to leverage small amounts of compensation into a large amount of work in return. These relationships also were credited with allowing the principal to implement change outside of established contractual boundaries without being challenged.

**Conclusions**

In determining the factors that influence principals’ decisions relative to administrative resource investment in large comprehensive high schools, interviews with principals revealed that principals invested in relationships to both mitigate emergent work and create resources
through relationship capital to support school administrative work. The theory grounds this research to explain this phenomenon as the Proactive-Reactive Relationship Resource Theory.

Through a mixed methods approach, this study first identified contextual factors of poverty, school size, and district size as having an impact on the amount and type of administrative work present in a school. Principal interview findings relative to poverty and school size support these contextual factors.

Principals then shared how the resources allocated from the central office did not match the work demands of their school and described how they modified these resources to better match student needs. Principal success at achieving necessary changes in resource investment were again attributed to the relationships developed by the principal with the applicable staff members. In some cases, these relationships overshadowed negotiated union agreements and the desire for compensation.

Whether relationships with staff members were based on a personal level, on expectation of future perceived favors, on obligation for past perceived favors, on respect for the principal position, or on joint commitment to helping students, the end result was the same. Consistently, principals were able to get individuals to “step up to the plate” and provide assistance for the school when needed.

Implications

At the school level, the study provides insight to the principal as to the importance of developing relationships with staff, parents, students, and the community. In alignment with the P-RRRT, the relationship capital created can both mitigate emerging and reactionary work demands and create additional uncompensated administrative resources.
At the local level, the results of this study validate that beyond simple student-to-administrator ratios, the size of the school, the poverty level of the students, and the size of the district should all be considered when making administrative resource allocations. Additionally, due to the highly contextual nature of the workload within each school, clear and open communication between the principal and the central office is needed to ensure that the type of resources provided meets the specific needs of the school.

At the state level, both the analysis of state staffing levels and results of the principal interviews support that beyond funding administration according to student enrollment and district size other factors should be considered. Specifically, the proportion of students from families of poverty and the size of the school should be taken into account when allocating administrative resources to high schools.

**Recommendations**

The principals that participated in this study discussed the connection between their past actions that had created relationship capital with their subordinate staff members and the existence of this relationship capital as an unintended side effect. Principals readily recounted the situations where they had developed relationships and how these relationships had changed the amount of work demands generated by specific people. However, these same principals did not articulate intentionally investing in these relationships with this end result in mind. Insights from the P-RRRT should be shared with principals during certification and training programs to make them more aware of the value of relationships relative to work demands and relationship capital as well and methods for developing these relationships.

This study utilized the concepts developed by the RSD through their administrative resource allocation decision-making model. Using the SAE calculation with Washington State
data on high school staffing, the results of this study show a strong correlation and relationship between administrative staffing in high schools and the contextual variables of number of students per administrator, total number of students in the school, poverty level of the students in the school (as determined by F&R%), and the size of the district. This data is readily available for all high schools in the state and should be incorporated in any future revisions to the state funding formulas. Once accomplished, the resulting formulas would also serve district administration as a guide for setting administrative staffing levels for high schools.

**Calls for Future Research**

During the interviews performed for this study, high school principals openly disclosed practices they use to modify and create informal administrative human resources to support their school in times of need. In many cases, these methods used were contrary to district central office direction, union contracts, or both. This study revealed that principals use relationship capital supported by a combination of referent power and positional power to persuade people to provide this assistance. While this study identified the existence of this phenomenon, it did not attempt to determine whether the actions of the principals that created this relationship capital were intentional, unintentional, inherent in their nature, or learned methods. Further analysis of the motives and methods that result in this phenomenon may lead to improved principal certification programs.
REFERENCES


Serrano V Priest, 5 Cal.3d.584 (1971). 96 California Reporter 601.


WA Const. (1889). art. IX, sec. 1.

WA Gen. Laws ch. 28A § 150.

WA Gen. Laws ch. 28A § 165.


Appendix A

RSD Decision-Making Model Documentation

RSD Decision Model High School Administrator Survey
The questions below will be used to identify the factors that impact the needed level of administrative support for secondary schools. Our hope is to clearly define trigger points and levels for action as the district grows and changes over time to ensure that each school is adequately supported. Answer the questions as accurately and thoroughly as possible. Please understand that due to possible demographic impacts on your workload, it is important to know which school each response represents which would basically identify who submitted which questionnaire. For that reason, I won’t even pretend this is anonymous. This is in no way related to evaluation or questioning anyone’s work ethic.

Name:_______________________

On the average how many hours a week do you spend:

_____ Meeting with Students (most common reasons____________________)
_____ Meeting with Parents (most common reasons____________________)
_____ Supervising Certificated staff
_____ Supervising Classified staff (primarily consider Paraeducators)
_____ Attending/Supervising activities/sports outside of the school day
_____ In meetings with staff (planning, training, curriculum or instructional work)
_____ Other (list by name with hours)_________________________________
_____ Other _____________________________________________________

List the top 5 things that most often prevent you from doing what you have scheduled on any given day and what causes these to occur (ie. Student discipline – fights, Phone calls – student schedules)
1.
2.
3.
4.
5.

How much time each day do you spend ______ and with/from whom?
On the phone ______ hrs.      Answering e-mail ______ hrs.
1.                              1.
2.                              2.
3.                              3.
4.                              4.

What three things make your workload different from other schools at the same level and how?
1.
2.
3.
Appendix A
RSD Decision-Making Model Documentation

Table A1: RSD Decision Model Development Survey Summary

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<th>Categories</th>
<th>P</th>
<th>VP</th>
<th>VP</th>
<th>C-Int</th>
<th>VP</th>
<th>P</th>
<th>VP</th>
<th>P</th>
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<td>10</td>
<td>10</td>
<td>30</td>
<td>25</td>
<td>15</td>
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| Total Hrs/Week   | 58   | 50   | 51   | 53    | 64   | 54   | 63   | 68   | 38   | 60   | 61   | 56   | 88   | 69   |

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<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
<td>H</td>
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</table>

Note. Categorized hours per week spent by high school administrative staff on identified task categories. (P = Principal, VP = Vice Principal, C-Int = Counselor/Administrative Intern)

Table A2: RSD Survey Primary Variable Hours per Week and Proportions Based On Survey Results

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<tr>
<th>Categories</th>
<th>Principals</th>
<th>Assistant Principals</th>
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<tr>
<td>Totals</td>
<td>57.6</td>
<td>73.7</td>
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<tr>
<td></td>
<td>100.0%</td>
<td>97.4%</td>
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<tr>
<td>Admin</td>
<td>2.9</td>
<td>2.5</td>
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<tr>
<td></td>
<td>5.0%</td>
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<td>Student Driven</td>
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<tr>
<td></td>
<td>28.6%</td>
<td>41.8%</td>
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<tr>
<td>Poverty Related</td>
<td>8.0</td>
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<tr>
<td></td>
<td>13.8%</td>
<td>8.9%</td>
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<tr>
<td>Sports/Activities</td>
<td>11.5</td>
<td>13.5</td>
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<tr>
<td></td>
<td>20.0%</td>
<td>23.2%</td>
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<tr>
<td>Staffing (Teacher &amp; Classified)</td>
<td>18.7</td>
<td>11.2</td>
</tr>
</tbody>
</table>
Appendix A

RSD Decision-Making Model Documentation

"Average" School Stress Contributions

- Head Count, 40.1%
- Cert Staff, 30.8%
- Class. Staff, 1.5%
- F&R %, 4.1%
- Sports, 22.8%
- Dist & Sch Size, 0.7%

Figure A1. Calculated Average Stress Contribution from Survey Data

Student/Administrator Ratio Stress

Figure A2. Variable Value Function Plot for School Stress Relative to the Number of Students per Administrator in the School.
Appendix A

RSD Decision-Making Model Documentation

Figure A3. Variable Value Function Plot for School Stress Relative to Total School Size.

Figure A4. Variable Value Function Plot for School Stress Relative to Number of Certificated Staff Members.
Appendix A

RSD Decision-Making Model Documentation

**Figure A5.** Variable Value Function Plot for School Stress Relative to Number of Classified Staff Members.

**Figure A6.** Variable Value Function Plot for School Stress Relative to Student Poverty.
Appendix A

RSD Decision-Making Model Documentation

Figure A7. Variable Value Function Plot for School Stress Relative to District Size.

Figure A8. Variable Value Function Plot for School Stress Relative to Number of Student Sports Teams and Activities in the School.
**Appendix A**

RSD Decision-Making Model Documentation

Table A3: School Stress Characteristics and Scoring Summary

<table>
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<tr>
<th>School</th>
<th>Head Count</th>
<th>Cert Staff</th>
<th>Class Staff</th>
<th>F&amp;R %</th>
<th>Dist. # of Sch.</th>
<th>Sports &amp; Act.</th>
<th>Total Stress</th>
<th># of VP</th>
<th># of DOS</th>
<th># of Cnsl</th>
<th>hrs/d Admin Asst</th>
<th>Total Assist</th>
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<td>4</td>
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<td>-</td>
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<td>285.0</td>
<td>121.2</td>
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<table>
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<th>Weight %</th>
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<th>12</th>
<th>4</th>
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<th>75</th>
<th>50</th>
<th>20</th>
<th>5</th>
<th>SAE Value</th>
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</thead>
</table>

| SAE Norm | 400 | 25 | 5 | 0.4 | 7 | 24 | 100.0 |

*Note.* Total Stress calculated from student head count, number of certificated teaching staff, number of classified staff supervised, free and reduced lunch percentage of students, number of schools in the district, and total number of student sports and activities. Total Assistance calculated from number of vice principals (75% of SAE), number of dean of students (50% of SAE), number of counselors (20% of SAE), and hours per day of administrative assistant support (5% of SAE per hour). Stress per SAE calculated as ratio or total stress divided by total assistance plus 100 SAE (for principal).
Appendix B

Interview Protocol

Foundation Questionnaire: Central Office

Study Title: High School Administrative Staffing in Washington State: Principal Perspectives on Resource Needs and Utilization
Researchers: John Steach & Dr. Michele Acker-Hocevar

Date: ________________ Starting Time: ________________ Ending Time: __________________

Hi, my name is John Steach and I am a doctoral student in the education department at WSU Tri-Cities. I want to start out by thanking you for participating in this interview. The purpose of this interview is to gather insight into how administrative staff are allocated and invested in large comprehensive high schools. I want to assure you that the information you share with me today will remain confidential. While this interview is part of a dissertation study that will be published, all names and personal identifiable information will be changed. Do I have your permission to record this interview? This interview will take about 45 minutes to complete.

- Tell me about yourself and your background in education.
- Please explain the process you follow in setting staffing levels at your high schools for each year. (Prompt: Ensure they address teachers, paraeducators, secretaries, and administrators.)
- What types of teacher time do you allocate that is not direct instruction and how is the amount of time determined? (Prompt: Likely will include activity director, program coordinator, dean of students, etc.)
- Do you have an administrative internship program for teachers and how does this process function? (Prompt: Address release time, mandatory administrative hours, projects)
- When you consider whether to adjust administrative staff at a high school, what factors do you take into consideration?
- Have you ever had a request from a high school principal for additional administrative support and if so, what justification did they provide?
  - Was this adequate? (why or why not?)
  - How did you respond?
- Have you had discussions with anyone else on adjusting administrative support for your high schools? What was discussed?
- (Add a question here relative to explaining a historical trend or change in staffing)
- Do you have anything else to add about your insights into how the administrative staffing levels for your high schools should be determined?

Thank you for your time and cooperation. As a reminder, this interview will remain confidential.
Appendix B

Interview Protocol

Foundation Questionnaire: Principal

Study Title: High School Administrative Staffing in Washington State: Principal Perspectives on Resource Needs and Utilization
Researchers: John Steach & Dr. Michele Acker-Hocevar
Name and Title of Interviewee: __________________________________________
Date: ________________ Starting Time: ________________ Ending Time: _________________

Hi, my name is John Steach and I am a doctoral student in the education department at WSU Tri-Cities. I want to start out by thanking you for participating in this interview. The purpose of this interview is to gather insight into how administrative staff are allocated and invested in large comprehensive high schools. I want to assure you that the information you share with me today will remain confidential. While this interview is part of a dissertation study that will be published, all names and personal identifiable information will be changed. Do I have your permission to record this interview? This interview will take about 45 minutes to complete.

1. Tell me about yourself and your background in education.
2. Describe for me a “typical” day for you at school (Ensure they touch on Staff, Students, Parents, and Central office needs).
   a. When it is “quiet” what do you focus on?
   b. What Causes you to deviate from your schedule during the day?
3. Please explain the process you follow in setting staffing levels at your high school for each year. (Prompt: Ensure they address teachers, paraeducators, secretaries, and administrators.)
4. What types of teacher time do you have that is not direct instruction and how is the amount of time determined? (Prompt: activity director, program coordinator, dean of students, for interns: Address release time, mandatory administrative hours, projects)
   a. If this support went away, how would that impact you and the school?
5. With a large administrative team at your school, what do you do both formally and informally to coordinate efforts and keep people informed?
6. When you are short handed for administrative staff or need additional support, what type of things do you do and who do you go to for more help?
7. What are some of the tasks occurring at the school that you are not involved with or wish you had more involvement in?
   a. What is preventing you from being more involved?
8. What about your high school makes the amount of work for your office and administrative staff different from the other high school in your district? What additional or unique type of work does this generate?
   a. How about other high schools in your sports league?
9. Since you started in administration, what has changed that creates either more or less work for administrators? (Prompt: Ensure they address students, parents, mandated requirements)
   a. (Add a follow up question about their specific background)
10. Have you had discussions with anyone on adjusting administrative support for your high schools? What was discussed?
11. (Add a question here relative to explaining a historical trend or change in staffing)
12. Do you have anything else to add about your insights into how the administrative staffing levels for your high schools should be determined?

Thank you for your time and cooperation. As a reminder, this interview will remain confidential.