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School Boards and Student Achievement: The Relationship between Previously Identified School Board Characteristics and Improved Student Learning

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by
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Acknowledgments

The process of attaining a doctoral degree is a journey. Throughout any valuable journey there are going to be peaks and valleys and to reach your destination you must have perseverance. The idea of perseverance takes both internal and external support, grit, and determination and ideally, at the end of the journey, you are better for having struggled, learned, and succeeded.

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Stewart, R.M., Martella, R.C., Marchand-Martella, N.E., & Benner, G.J. (2005). Three-Tier models of reading and behavior. *Journal of Early and Intensive Behavior Intervention.* 2(3), 115-124.

Stewart, R.M., Benner, G.J., Martella, R.C., & Marchand-Martella, N.E. (2007). Three-Tier Models of Reading and Behavior: A Research Review. *Journal of Positive Behavior Interventions*, 9(4), 239-253.

In addition to being a gifted academic, she is also an amazing wife, mother, sister, daughter and friend. Thank you for everything along the way.

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Seattle Pacific University

Abstract

School Boards and Student Achievement: The Relationship between Previously Identified School Board Characteristics and Improved Student Learning
By Jonathon P. Holmen

Chairperson of the Dissertation Committee: Thomas Alsbury
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Our country has a moral and ethical responsibility to educate all students. The right to an education is fundamental to the American values. Locally elected school boards have received significant scrutiny as questions have been asked about their ability to provide adequate and effective governance such that student achievement increases. This mixed-methods research study provides empirical support for the efficacy of publicly elected school boards being linked to improved student achievement results. This research study draws from school boards located in Washington State. A purposeful population sample of 23 school districts were selected based on specific criteria for inclusion in the research study. The sample was evaluated for appropriate distribution across demographic, geographic, and academic factors. Academic data was used to categorize each school district as (1) low performing or (2) high performing. The sample consisted of 13 low performing districts and 10 high performing districts.

Direct observation was conducted using previously recorded audio and video school board meetings. The Grounded Theory Approach was used to collect, code, and analyze the observations. The individual school board characteristics from the Balanced Governance Approach® were used as the observational categories and were used for

coding the observational data. These data were transformed into categorical data indicating two categories: (1) not effective and (2) effective.

The district performance and school board effectiveness categorical data were used to run inferential statistics using Pearson's chi-square test for independence and Structural Equation Modeling (SEM). *P* values from chi-square and Fisher's Exact Test indicate a statistically significant relationship between six of the 10 individual school board characteristics® and significance was also reached when evaluating the characteristics as a single variable. SEM provided insights into the interactions and effects the 10 individual board member characteristics® had on the dependent variable of improved student achievement.

The findings of this research study confirm and extend the empirical evidence that has been presented over the last 20 years linking school board characteristics and improved student achievement results.

Keywords: School board, Governance, Student Achievement Index, Decision-Output Theory, Balanced Governance Approach®, Individual Board Member Characteristics, Grounded Theory Approach, chi-square, Fisher's Exact Test, Structural Equation Modeling

Chapter 1

Introduction to the Study

The current model of school board governance where board members are publicly elected (Wirt & Kirst, 2009) has been under significant scrutiny over the last 30 years (Alsbury, 2008a). This scrutiny is focused on the perceived lack of accountability and limited educational reform at the policy level which has resulted in few, if any, substantive student outcomes (Land, 2002). This led some organizations and educational reformists to call for an end to publicly elected boards (Alsbury, 2008a; Wong, Shen, Anagnostopoulos, & Rutledge, 2007). Citizens value the role of the local school board despite their possible lack of understanding regarding the school boards roles and responsibilities (Danzberger, 1994). Danzberger concured noting a substantive effort to keep the governance of schools out of the standard political arena and keeping it in the hands of community members. Kirst (Alsbury, 2008a) discussed some of the benefits of a locally elected school board:

> Local school board elections provide a means to influence local education policy that is much more direct than an election for a state legislator, who represents many local school districts on a much wider variety of topics….. the link between political efficacy and public support of schools: Citizens participate in politics more if they believe they can have an impact on policy. The local level offers the best opportunity for efficacy; therefore, a reduction in local efficacy lead to less overall citizen participation in education policy. (Alsbury, 2008a, p. 38-39)

Central to the debate regarding the efficacy of elected schools board in the United States is the perception of whether elected boards function democratically and whether their quality is

controlled through the citizenry. Some theories of board governance support the elimination of boards while others support publicly elected boards (Alsbury, 2008a).

With the heightened focus on student achievement results, it is critical to analyze the relationships between school board actions and student achievement outcomes. Wirt and Kirst, (1992; 2009) pointed to the Decision-Output Theory as a key factor in evaluating the effectiveness of school boards. This theory is grounded in the work of Easton (1965a, 1965b) who developed a framework for understanding the political process. This process identifies a cycle of voter/community involvement in the political process based on their demands and supports. The politician cannot reasonably meet all demands and supports and thus, must prioritize demands and supports, ultimately leading to a decision. The degree of alignment with community values eventually determines the continued level of direct involvement of the voters/community. Wirt and Kirst (2009) contended that understanding the inputs (board behaviors and actions) and outputs (student achievement) of a given school board process can help us to better understand the efficacy of publicly elected school boards and whether they are meeting their intended target of leading and governing effective and pro-student learning organizations.

Problem Statement

Publicly elected school boards are responsible for the success of school districts and the students served within. Research has demonstrated that publicly elected school boards are an extension of the community's values (Alsbury, 2003; Delagardelle, 2006; Shelton, 2010) and a relationship exists between school board member attitudes, beliefs, and actions and student achievement outcomes (Delagardelle, 2006; Shelton, 2010). Communities require their publicly elected school board members to provide leadership that impacts student achievement. The

Decision-Output theory (Wirt & Kirst, 1992, 2009) based on the Systems Analysis Framework (Easton, 1965b) provides a framework to analyze the impact of a school board's inputs (actions and decisions) and outputs (student achievement results) as a means to evaluate effectiveness.

School boards are a critical part of the leadership team in a school district (Walser, 2009). Effective school boards focus on issues related to student achievement (Alsbury, 2003, 2008a; Alsbury & Gore, 2015; Delagardelle, 2008). Currently, school boards do not have clear guidelines, based upon theoretical and empirical studies, to better understand specific actions and behaviors required for school boards to be effective.

> Even when reformers and scholars do turn an eye to school boards, the result tends toward exhortation about what boards should do rather than an attempt to understand what they currently do. To improve board practice or recommend changes in structure or routine, it is useful to better understand what boards actually do, how they go about their work, and what such examinations might teach us about how to help boards govern more effectively. (Hess & Meeks, 2010, p. 25)

Purpose Statement

The purpose of this study is to examine whether school board characteristics, identified in previous empirical studies, are linked to improved student achievement results. Analysis of the relationship is conducted through the lens of the Decision-Output theory (Wirt & Kirst, 1992, 2009). This study takes a methodological deviation from previous studies by using direct observation data of school board meetings to evaluate specific school board characteristics. Each characteristic is previously linked to increased student achievement. Observational data and student achievement results will be analyzed using Pearson's chi-square test for independence to

determine whether a statistically significant relationship exists between observed school board characteristics and student achievement results.

The 10 individual school board member characteristics® used in this study as independent variables come from the Balanced Governance® (Alsbury & Gore, 2015) model. Each of the 10 board member characteristics® are linked, through research, to effective school boards and improved student achievement results. Student achievement results, the dependent variable in the study, is based on a student achievement index accounting for multiple years of growth/decline of three specific student achievement areas.

Research Question

The results of this mixed-method study could provide evidence to better understand the relationship between publicly elected school board characteristics and student achievement trends. The research question is: Does a significant relationship exist between a school board's practice of the 10 Balanced Governance school board characteristics® and student achievement change?

Theoretical Constructs

The foundational theoretical construct framing this study is the Decision-Output theory, developed by Wirt and Kirst (1992, 2009). The Decision -Output theory is grounded in the Systems Analysis Framework (Easton, 1965a, 1965b) that looks at any political process as a continuous cycle. As shown in Figure 1, the Systems Analysis Framework views the political process through the lens of a social-economic model "through which values are authoritatively allocated" (Easton, 1965a, p. 57). The expression of values can be seen in the distribution of resources (time resources, human resources, and financial resources). In Easton's theory, stakeholders must decide whether to support or reject the allocation of resources, which provides

input into the political cycle. The cycle is completed when the governing body responds. This ongoing cycle continues along with the ebb and flow of voter participation.

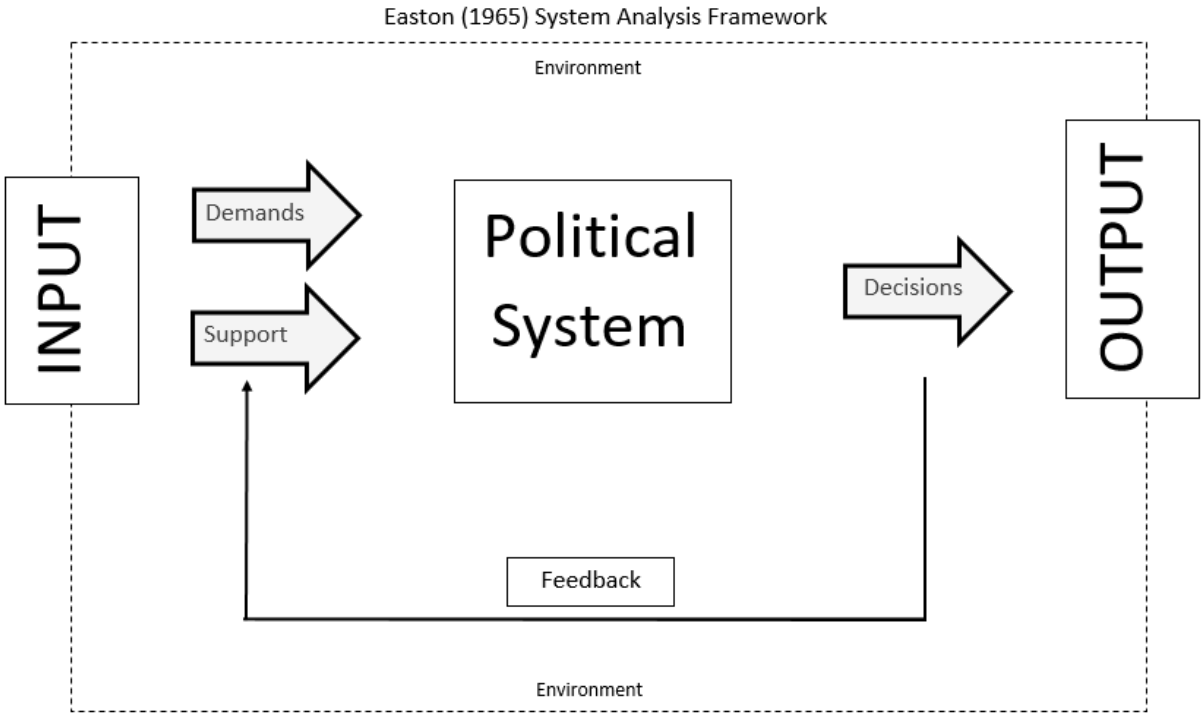

Figure 1. Visual description of the Systems Analysis Frameworks.

In school board governance studies there have been competing theories. The primary difference has been the theory's characterization of the democratic or undemocratic nature of locally elected school boards. These theories are the Dissatisfaction Theory of American Democracy (Iannaccone & Lutz, 1994) and the Decision-Output theory (Wirt & Kirst, 1992). Iannaccone and Lutz (1994) originally expressed their concern that the Decision-Output Theory characterized elected board governance as undemocratic. However, they later expressed their belief that the Decision-Output Theory supported the notion that school boards enacted a democratic governance process (personal communication, Alsbury, 2016). The Dissatisfaction Theory of American Democracy describes election turnover as a measure of voter satisfaction with those currently serving on the school board (Iannaccone & Lutz, 1994). Conversely, the

Decision-Output theory measures the effectiveness of a political structure and how a school board acknowledges and responds to the demands of stakeholders. The Decision-Output theory recognizes that a school board receives demands from a variety of sources (parents, teachers, community, government), of which only a few can actually be met (Alsbury, 2008a; Wirt & Kirst, 2009). School boards must weigh the demands and determine which to consider, deny, or honor. The community's demands can be considered one form of input yet even this input must be fed through the values and beliefs of the collective school board. This process translates into observable board behaviors and actions (characteristics, decisions, non-action), which the community sees as the response to their demands. Thus, an input, as framed by the Decision-Output theory, could be defined as the action the school board takes as opposed to the demands of the public.

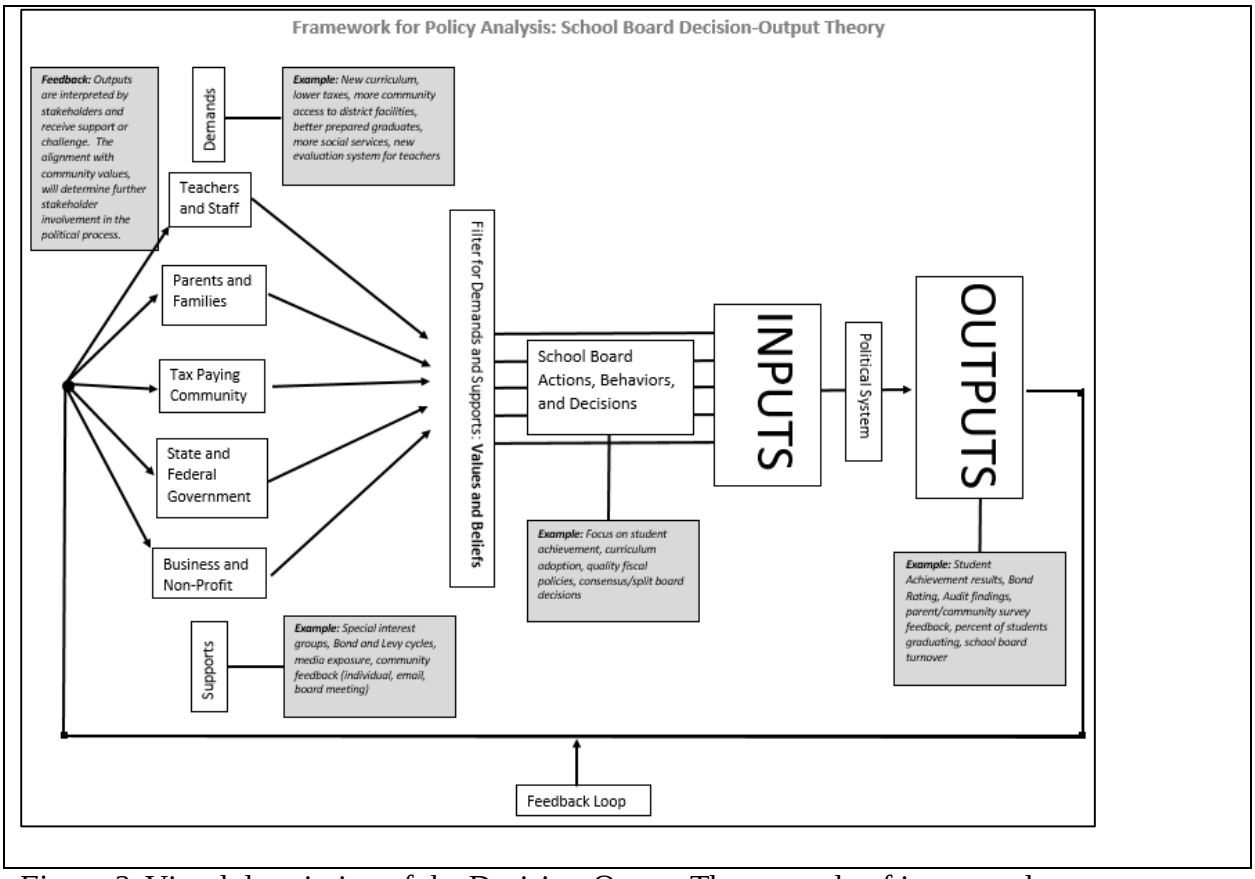

Figure 2. Visual description of the Decision-Output Theory cycle of inputs and outputs.

Specifically, this study measures specific inputs and outputs as framed by the Decision-Output Theory. The *inputs* to be observed and measured in this study are school board characteristics shown, in previous empirical studies, to have a significant relationship to student achievement. The output to be measured is the academic achievement of students. The cycle of stakeholder inputs (board characteristics) and the subsequent output (student achievement) measured in this study can be seen in Figure 2.

The school board characteristics identified in this study are grounded in research conducted over the last 15 years. This research has looked at the attitudes, beliefs, and actions of school board members and the relationship with improved student achievement (Alsbury, 2003, 2008a, 2008b; Delagardelle, 2008; Goodman, Fulbright, & Zimmerman,1997; IASB, 2000; Lorentzen, 2013; Shelton, 2010).

Methods

A mixed-method design will be used to respond to the research question. Data will be collected through the observation of school board meetings. Two types of data will be collected to allow the researcher to assign an overall rating for each school board characteristic measured. The first type of data is the documenting of school board member comments and actions. This information will be collected through observing school board meetings via video recording and scripting statements on an Excel spreadsheet. After completing and transcribing board member statements and actions seen in the observation of board meetings, the researcher will associate each statement with one or more of the school board characteristics.

The second type of data to be collected is incident data. The researcher will document how many times a specific school board characteristic is demonstrated during the observation period. The researcher will place a tick mark in the positive or negative row depending on how

the characteristic was demonstrated. After the observation, each characteristic will be rated as effective or not effective. These ratings will be transformed into categorical data. The categories are as follows: a score of "1" will be entered for school boards that demonstrate an ineffective use of the characteristic and a score of "2" will be entered for school boards that demonstrate an effective use of the characteristic. These data will be entered into an excel spreadsheet and a mean score will be derived from the three observations. Data will be collected from 23 school boards in Washington State. A purposeful population sample will be used to determine which school boards will be included in the study. A random sample of school board meetings will be used to determine which meetings will be observed for inclusion in the study. Observations will be conducted using the Balanced Governance individual board member characteristics® as the independent variable. Pearson's chi-square test for independence will be used to determine whether a statistically significant relationship exists between individual board characteristics and student achievement. Structural equation modeling (SEM) will be used to demonstrate relationships between variables using a graphical representation of the overall model.

Sample. A purposeful population sample will be used to select the school boards to participate in this study. A number of key criteria must be met in order for inclusion in the study:

1. The school district must be in the state of Washington.
2. The school district must have school board meetings recorded by audio or video.

In addition, representation from the different sizes, locations, and community make-up is preferred in the sample. A preliminary review of all school boards statewide was conducted and the sample includes 23 school boards that meet the criteria for inclusion as part of the study. After school boards are selected; the researcher will conduct a review of school board agendas for the 2013-14 and 2014-15 school year and determine which agendas match a typical meeting.

This will ensure consistency in content and opportunity to observe all 10 characteristics. A random sample of school board meetings will be selected from those agendas that meet the criteria. The meetings selected at random will be used for the observational data collection.

Observations. After the selection of the participating school boards, the researcher will select three school board meeting to observe. Observations were conducted by watching video recordings or listening to audio recordings of school board meetings from 2012-2016. Observation data will be collected on previously identified school board characteristics linked to improved student achievement (Alsbury & Gore, 2015). These include:

- Role boundaries
- Role orientation
- Advocacy focus
- Student concern focus
- Solution focus
- Exercise of influence
- Use of voice
- Use of power
- Decision making style
- Motivation for service

The observations from each board meeting will be applied to a rubric with the following criteria:

- Board requires growth or is developing in this area (not effective)
- Board has demonstrated an accomplished or exemplary level (effective)

If the behavior was not present during the meeting it will be listed as Not Applicable (NA) and will not count against the board behavior mean score. Each school board will receive an overall average score for each board behavior.

Reliability. This study represents a replication of a similar study using the same observational and data collection methodology, of which I participated as a research assistant (Alsbury & Miller-Jones, 2015). By participating in the study, the analysis protocols, definitions, and identification of enacted board behaviors were verified as reliable through inter-rater reliability analysis of the previous study. These same protocols and procedures will be employed in this study.

Analysis. Data collected during the observations will be analyzed using Pearson's chi-square test for independence to determine whether statistically significant relationships exist between the categorical variables. A change in student achievement results will be measured using an index score for each school district. The index score will be calculated based on the increase/decrease in the percentage of students at or above standard on:

1. 8^{th} grade math Measurement of Student Progress (MSP) from spring 2010 through spring 2014;
2. 10^{th} grade reading on the High School Proficiency Exam (HSPE) from spring 2010 through spring 2014; and,
3. Graduation rates from 2011 through 2014.

Structural Equation Modeling (SEM) will be used to demonstrate differences in the strength of the relationships between characteristics and student achievement index scores as well as to compare district overall composite characteristic scores with student achievement index score.

Limitations and assumptions. Many factors influence a change in student achievement results. This study analyzes only one influencing factor to determine if a relationship can be established between school board behaviors, identified by previous studies as critical to effective governance, and improved student achievement results. This study, substantively adds to other research being conducted on school boards to help further the understanding of the relationship (and strength of the relationship) between school board behaviors (actions) and improved student achievement.

There are a few key limitations to this study. First and foremost, it is recognized that many factors influence a change in student achievement results. However, in this study, only the 10 Balanced Governance school board characteristics® are used as the independent variable in the observational analysis. Therefore, this study represents a grounded theory rather than an emergent thematic approach to observational data analysis. A second limitation is the subjectivity of researcher observation and rating of school board meeting actions. While controlling for bias using inter-rater reliability protocols, the researcher cannot eliminate the presence of bias. Third, qualitative data in the observational analysis of this study will be converted into quantifiable data, in order to allow statistical analyses to determine whether significance is present between selected school board characteristics and improved student achievement. While this is a valid methodology, it can introduce a limitation because the rating of school board member behaviors is inherently subjective, being based on observer judgment. Fourth, by using a purposeful population sample, only some school boards in the Washington State will be analyzed. Fifth, the observation data will be collected from a sub-set of school board meetings and can be considered only a snapshot in time. Finally, some policy decisions can take some time to impact classroom results while others can have immediate effect. The

study does not control for the types of policy decisions made during the evaluation period of the assessment results (2010-2014) or the observational data collection (2012-2016).

Significance of the study. The future of our children is of utmost importance. Public schools provide a forum for communities to shape positive outcomes for their children. Mann noted "As long as people think schools are important, school boards will be the focus of controversies and pressure" (Cistone, 1975, p. 161). This captures the reason why research on school board effectiveness is so important; the common interest of child growth, development, and success.

Kirst (Alsbury, 2008a) provided insight into the unique political environment surrounding school boards from the onset of public education in America. Kirst stated, "The dominant credo was that a group of locally elected laymen, chosen in a manner in keeping with local interest and state mandate, should control schools" (Alsbury, 2008a, p. 38). This current study aims to provide further evidence that locally-elected school boards are effective, community centered systems of school governance. By using a mixed-method design based on observational data, this study should provide further insight into the claims made by other research findings that board beliefs and actions are significantly related to student performance (Alsbury, 2003; Delagardelle, 2006; Shelton, 2010). Additionally, in this time of heightened accountability, it is essential that the leadership and governance systems in public education be focused in the right direction. This study aims to better identify school board actions related to improved student achievement.

The research on school board effectiveness has led to the identification of effective school board characteristics identified in the Balanced Governance® model (Alsbury, 2015). Indeed, a statistically significant relationship has been established between the principles and

characteristics of Balanced Governance® and student achievement results (Alsbury, 2015). Walser (2009) identified the role of the board as evolving as a co-leader of the school district with the superintendent. Fullan (2003) identified the work as a moral imperative. This imperative requires school boards and superintendents partner in leadership to ensure success for all students as they prepare to be productive members in a democratic society.

On a practical level, this study may provide further insight into school board behaviors previously shown to have a significant relationship to improved student achievement. With the federal and state emphasis on student achievement it is essential for researchers to develop a wide body of research looking at the key indicators for school board success.

Definition of Terms

Role Boundaries: Understands the difference between the role of oversight and micromanagement.

Role Orientation: *An open dialogue orientation* focuses on general interests and welcomes various viewpoints, but expects unanimous support of final board decisions. *An open debate orientation* focuses on activism and special interests, values individual viewpoints over collective consensus, and doesn't expect support of final board decisions.

Advocacy Focus: A position is often polarizing and identifies "friends" versus "enemies". An interest is discovered through conversation to get to shared solutions that can be applied to many students and achieved through various means.

Student Concern Focus: Supports a broad focus on student concerns. A stated responsibility to insure all students are afforded opportunities to succeed. Avoids a targeted focus on providing opportunities for single groups of students.

Solution Focus: The understanding that the local school district, and each school has unique and shifting needs; often requiring innovative solutions.

Exercise of Influence: The board member understands they possess no individual authority. Power rests in the board as a group only.

Use of Voice: Does the board member use their voice to tell and sell their position or do they seek to hear and understand interests, and come to resolution and reconciliation.

Use of Power: *Power Over* is using your position to get your own way through threat or reward. *Power With* is using your position to ensure all voices are heard and collaborative solutions are guaranteed.

Decision-making Style: Decision-making can be done individually or can be done collaboratively with and through others.

Motivation for Service: Board members can serve for personal or for altruistic reasons.

Chapter Two

Review of the Literature

Introduction

School boards are an important and relevant part of the American political framework and a reflection of community values and input (Alsbury, 2003, 2008a, 2008b; Cistone, 1975; Danzberger, Kirst, & Usdan, 1992; Iannaccone & Lutz, 1994; Wirt & Kirst, 2009). Through a variety of studies, researchers found school boards an extension of the community (Alsbury, 2003, 2008b; Iannaccone & Lutz, 1994) and findings point to school boards having an impact on student achievement results (Alsbury, 2003; Delagardelle, 2008; Goodman et al., 1997; IASB, 2000; Lorentzen, 2013; Shelton, 2010). Furthermore, the expectations of the community are that school board members and superintendents partner in the education of their children (Walser, 2009) and highly value a school system responsive to community input (Land, 2002).

This review of literature, relevant to this study, assesses the theoretical constructs related to the efficacy of publicly elected school boards and the research focused on effective school boards as related to their impact on student achievement. Current research is consistent in finding that highly effective school boards ensure a commitment and focus on issues related to improving student achievement results (Alsbury, 2003; Delagardelle, 2008; Goodman et al., 1997; IASB, 2000; Lorentzen, 2013; Shelton, 2010). Research has also provided evidence that a Balanced Governance® approach allows for school boards to be effectively address the wide array of duties and responsibilities while maintaining the appropriate role of oversight and governance of the district (Alsbury & Gore, 2015).

Theories Related to the Efficacy of Publicly Elected School Boards

The concept of publicly elected school boards is foundational to the American democracy (Danzenberger, 1992). Furthermore, Lutz & Iannaccone argued (Alsbury, 2008a) American school boards were developed, primarily, to promote the values of the community based constituency which it represents. Elected school boards provide the public an opportunity to have a direct and democratic voice in the management and leadership of common schools (Danzenberger, 1992). Furthermore, Iannaccone and Lutz (1970, 1994) and Alsbury (2003, 2008a, 2008b) argue that elections of school board members and subsequent work of school boards provides the closest example of democracy for the American people.

Cistone (Alsbury, 2008a) noted that while incremental changes in the field of educational governance research occurred over the last 30 years, there remains an absence of focus on the theoretical and methodological issues surrounding school governance. Cistone captured the quote of sociologist Merton that seems appropriate to his concern regarding the direction and impact of school governance research, "We have many concepts but fewer confirmed theories; many points of view, but few theorems; many 'approaches' but few arrivals" (Merton, 1957, p. 52). Cistone also noted that, of the theories, the Dissatisfaction Theory of American Democracy has been empirically studied more often and has added more to the theoretical understanding of educational governance.

Four predominant school board governance theories are analyzed to provide a thorough overview of how these theories support or compete with one another. Each of these theories has evolved over the last three decades as the call for improved student achievement has reached the school board level. The ability for school boards to reflect the values of the citizens they represent while focusing on issues related to student achievement is critical to ensuring

continued support for this American political structure. The following school board governance theories are analyzed:

- Dissatisfaction Theory of American Democracy (Alsbury, 2008; Iannaccone & Lutz, 1994)
- Decision-Output-Theory (Wirt & Kirst, 2009)
- Continuous-Participation Theory: (Zeigler, Jennings, & Peak, 1974)
- Mayoral Control of Public Schools (Wong et.al, 2007)

Dissatisfaction Theory of American Democracy. The Dissatisfaction Theory of American Democracy contends that when the policies and decisions of the school board are incongruent with the desires of the community, incumbent boards members are defeated, superintendent change occurs, and policies become congruent with the desired outcomes of the community (Alsbury, 2003, 2008a, 2008b; Iannaccone & Lutz, 1994). Iannaccone and Lutz (Alsbury, 2008a) viewed the political process in the nonparty system of school board politics as the truest measure of democracy. This is in direct opposition to the competing theories; particularly the Continuous Participation Theory to be discussed further below.

The heart of the Dissatisfaction Theory is the community's ability to influence the education and school experience of the children in the local community. Iannaccone and Lutz (Alsbury, 2008a) stated the hallmark of the Dissatisfaction Theory (Figure 3) is (a) incumbent defeat of school board members and (b) superintendent turnover; as a result of the community reaching a critical level of dissatisfaction with the school or school leadership. Iannaccone and Lutz (1994) stated that school boards are a crucible of democracy because local citizens have a direct say in the governance of their local schools.

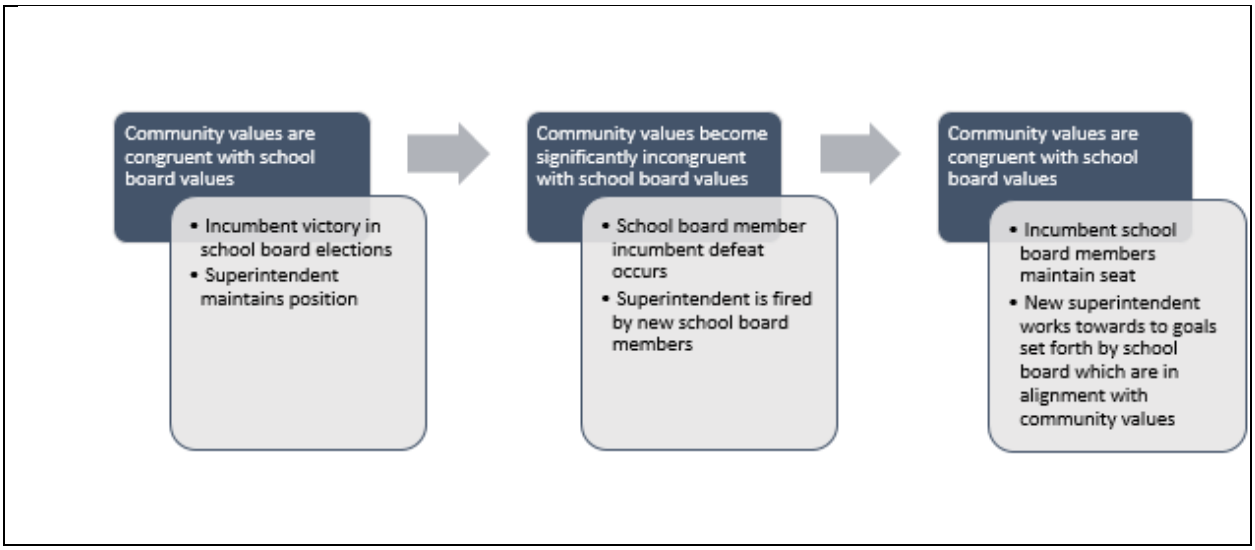

Figure 3. The process of incumbent board member defeat and turnover described by the Dissatisfaction Theory.

This model demonstrates how community values are the underpinnings of the Dissatisfaction Theory and that when the values of the community and school board become incongruent, incumbent school board member defeat or pressured resignation is likely (Alsbury, 2003). The theory also predicts that superintendents are removed by the new school board and replaced with a leader who is pressured to enact the school boards goals alignment to the new board majority and ostensibly, the new community values. Alsbury (2008b) pointed out that such forced turnover is directly linked to decreased student performance given the adequate level of board destabilization (Alsbury & Gore, 2015). The school board and superintendent instability results in school district turmoil and a faculty focus on issues other than improving student achievement (IASB, 2000; Rice et al., 2000) leading to lower performance (Alsbury, 2008b).

One issue governance theorists have with the Dissatisfaction Theory's contention that communities control schools through school board elections is the lack of public participation in those elections (Wirt & Kirst, 2009; Wong et al., 2007; Zeigler et al., 1974). The Dissatisfaction Theory argues that low voter turnout and lack of competition for school board seats is simply an

indication of the community's general support of the current leadership (Alsbury, 2008a). Additional empirical support for the Dissatisfaction Theory was found in a longitudinal study conducted in Santa Barbara from 1930-1980 (Wirt & Kirst, 2009) that concluded, more often than not, school board turnover and subsequent superintendent turnover occurred as the Dissatisfaction Theory describes.

Decision-Output-Theory. The Decision-Output Theory (Wirt & Kirst, 1992; 2009) was developed to help describe the continuous cycle of school board actions. The Decision-Output Theory is grounded in Easton's (1965b) Systems Analysis Framework. This framework was developed to help describe the political process and does so through the lens of an economic model. Easton viewed politics (and the social system involved) as the authoritative allocations of resources (1965a) which express the values of the governing body. The Decision-Output theory analyzes the inputs (demands and supports, policy decisions) and the outputs (student achievement results, school board turnover, change in curriculum) to determine the legitimacy of the democratic process of school boards. Wirt and Kirst (1992) found that policy and program decisions rarely matched citizen demands. While this finding may be true, both Easton in his 1965 Systems Analysis Framework (1965b) and Wirt and Kirst in their 1992 Decision-Output theory agreed that any given political entity cannot meet all the demands from the community; it is simply not possible. The public simply offer more demands than a political entity can honor. In addition, often demands are contradictory to school values, do not abide by state and federal requirements, are illegal, or are incongruent. The continuous cycle of inputs, outputs, and feedback describes the flow of community interest and involvement. Wirt and Kirst originally stated that because a school board was not able to meet any or all public demands that the school board process was non-democratic in nature (Alsbury, 2008a). The inability to give in to every

community demand creates an incongruence between community values and school board actions. This can be caused by disengaged board members or the inability to meet frequently competing or incongruent public demands. The Decision-Output Theory process contends that for each school board output, the stakeholder group takes notice and then determines the next course of action. If the school board output is generally acceptable there may be little or no stakeholder feedback. If the output is largely unacceptable to the stakeholder group, there will be significant and multi-faceted community/feedback and new inputs. For example: A parent group might request a new history curriculum due to a conflict with part of the community's religious values. The school board would evaluate the demand and may determine to maintain the current curriculum due to budgetary reasons. While the parent group may understand the budgetary rationale, it does not meet their demand and, due to their religious beliefs, would likely raise continuous issues/concerns to the school board and make even stronger demands for a change in curriculum. Should the incongruence between community and school board grow it is more likely that board members will be challenged during elections and ultimately lose their seat.

Critics of school boards, if looking at a singular point in time, can easily make the argument that the governance process is largely non-democratic and not responsive to community values. However, if evaluating a school board through the lens of the Decision-Output theory, one cannot merely take a single action as evidence but must follow the thread all the way through the political process to fully understand the response. Rarely does the community receive an immediate or prompt policy response from the school board. While the argument against school boards being an extension of community values is easy to make for the passive observer, taking a longitudinal look at community values and school board responses provides a better picture of school board processes. It is in this broader longitudinal analysis that

the Dissatisfaction Theory, can provide evidence and explanation about how ongoing incongruence between community and school board values ultimately leads to incumbent school board member defeat; superintendent turnover, and policy change (Alsbury, 2003, 2008a, 2008b).

Continuous-Participation Theory. Zeigler et al. (1974) viewed the school board process as undemocratic and largely, "circumscribed and insulated" (p. 36) from the typical pressures of public political elections and processes. The Continuous-Participation Theory views competition and participation in elections as the sole measure of a successful democratic process (Iannaccone & Lutz, 1994). Zeigler et al (1974) viewed the typical 15% voter turnout for school board elections to be a clear indication of the apolitical and non-democratic nature of school boards. Rogowski (2014) demonstrated low voter turnout across issues, demographic indicators, and ideologies. Rogowski found a statistically significant difference between voter turnout when group or community dissatisfaction increases with a candidate or issue. Zeigler et al (1974) did note that the smaller the district, the more democratic the process and the more responsive the school board is to community expectations and demands.

Mayoral control of public schools. In the early 1990s, the concept of mayoral takeover of public school systems in large urban districts became a significant topic of conversation as a number of large city mayors moved forward to remove elected school boards and take control of their school systems (Wirt & Kirst, 2009). City's such as Boston, Chicago, Cleveland, and New York are all examples of school systems that were handed over to mayoral control. The basic rationale that Wirt and Kirst (2009) identified for mayoral control of schools is the assumption that directive leadership would lead to improved schools and economic efficiencies. Secondarily, Wirt and Kirst purported that a mayor is better equipped with resources, staff, and political

authority to deal with low performing schools and make the changes necessary to turn these schools around.

Wong et al. (2007) studied the effects of mayoral control and developed a theory they term *integrated governance*; offered as the most accurate descriptive model of urban school district governance. Wong et al. (2007) defined integrated governances as the employment of a mayoral appointed panel, predicting significantly more focused educational goals, and improved student achievement outcomes for schools and students. Wong and Shen argued that through integrated governance the citizenry could enjoy the political benefit of a more holistic and efficient system of governance rather than a fragmented and disjointed managing of city services separate from school services (Alsbury, 2008a).

When looking at the democratic nature of school board elections, Wong et al. (2007) claimed the election of a mayor to be more democratic given the higher voter turnout for mayoral versus school board elections. Additionally, Wong et al. referenced the heightened interest of the public because civic issues on a general ballot would encourage community participation and thus be more democratic than typical school board elections. Finally, Wong et al. claimed the large divergence in community values across a large urban school district could not be captured in a typical school board structure; lending credence to control of schools by a single elected official. They concluded that the city mayor was the right person to take responsibility for school district management, leadership, and governance.

While Wong and Shen (Alsbury, 2008a) made the argument for mayoral control of schools, they also stated that this model is recommended only for large urban school districts. Their focus was on large urban districts because a school board cannot accurately represent the constituency of the urban environment and therefore, the democratic nature of the school board

is lost. They found that urban school boards operate as isolates rather than a comprehensive and representative board for the constituency they represent (Wong et al, 2007).

Summary of theoretical constructs of school governance. The theories of school board governance discussed all contributed to the knowledge and understanding of the operation and legitimacy of school boards. Each of the theories describe different aspects of the school board process and approach the discussion of democracy from diverse and varied viewpoints. For example, the Decision-Output Theory defines democracy by the extent public demands are met while the Dissatisfaction Theory defines it by the extent the public have the liberty to change the board through elections. By and far, the preponderance of research has been conducted on the Dissatisfaction Theory; demonstrated to be the more reliable theory for explaining the political realities between the community and the school board (Wirt & Kirst, 2009). Over the last 30 years, the theorists for each the Dissatisfaction and Decision-Output theories have come to realize that theories which were thought to be in competition (Dissatisfaction, Decision-Output, and Continuous Participation) are actually complimentary; each explaining a different part of the school boards' political process (Alsbury, 2008a). Iannaccone and Lutz described the theories as complimentary but contended the Dissatisfaction Theory provides the more accurate explanation of school board and community political interaction in times of dissatisfaction (Wirt & Kirst, 2009).

Assuming the three theories (Dissatisfaction, Decision-Output, and Continuous Participation) are complimentary, it would appear that Wong et al.'s (2007) mayoral control theory of Integrated Governance to be the outlier and directly competing theory. In actuality, both sets of theorists defined their theories to a sub-set of school boards rather than the totality of school boards and school governance situations. Iannaccone and Lutz (1994) defined the role of

the Dissatisfaction Theory to describe the school governance activities of small, medium, and large non-urban districts as, “reasonably representative school boards that produce policy consistent with the active voter wishes most of the time” (p. 50). The research by McCarty and Ramsey (1971), supporting the dissatisfaction theory, concluded that voters change boards that do not reflect their wishes. Iannaccone and Lutz (1994) recognized the unrepresentative nature of large urban districts and because of this, did not claim to ascribe the findings of the Dissatisfaction Theory to large urban districts. Notably, those that provided empirical research to support mayoral control did not recommend their theory of civic control of public schools to any school system outside of the large city, urban environment (Alsbury, 2008a; Hess, 2008; Wong et al., 2007).

Relevancy of school boards is at the crux of the matter. Without providing the theoretical constructs for the democratic nature of school boards, the argument that school boards can have an impact on student achievement is irrelevant. The evidence cited provides the rationale that, based on the Dissatisfaction Theory, school boards are a relevant and meaningful part of our democracy and play a role in reflecting the values and demands of the community they represent. When the public demands improved student achievement, the school board actually has the potential to influence/impact increased student achievement results.

The rationale for continued inquiry into the topic of school board impact on student achievement are as follows:

- School boards are relevant, meaningful, and reflect the values and demands of the community (Alsbury, 2008a, 2008b; Iannaccone & Lutz, 1994).

- When incongruence with community values and demands becomes significant, incumbent defeat is forthcoming (Alsbury, 2008a, 2008b; Iannaccone & Lutz, 1994; Wirt & Kirst, 2009)
- Student achievement is identified as the number one issue needing professional development in by school board members (Hess, 2002).
- Student achievement is identified as the second highest issue of concern behind budget by school board members (Hess, 2002).
- Student achievement is identified as the state and federal government's most urgent issue (DOE, 2009; NCLB, 2002).

Balanced Governance®: Definition and Research

Balanced Governance®: Definition. Balanced Governance® is not a political theory but an approach, based on research that focuses on the essential functions of school boards: policy making, oversight of management, and a conduit for community concerns and emergent issues (The Municipal League Foundation, 2015). Balanced Governance® research is founded in the idea that a successful school board is one focused on the improvement of student achievement results.

Goodman et al. (1997) and the Lighthouse study (IASB, 2000) are foundational to the development of current school board standards, effectiveness frameworks, and school board training programs. Balanced Governance® also has roots in these research studies creating a connection between current school board reform efforts. The body of research specifically referenced by the Balanced Governance® approach looks at four distinct areas:

- School board impact on student achievement (Lorentzen, 2013).

- School board and superintendent teams impact on student achievement (Delagardelle, 2008).
- School board impact on superintendents which leads to improved student achievement (Shelton, 2010).
- School board internal and external relationships (Saatcioglu & Sargut, 2014).

From this research, four principles (Figure 4) of Balanced Governance® have emerged. These principles point to the roles and responsibilities of school board members that collectively can impact improved student achievement.

Principles of Balanced Governance®

Principle 1: Effective School Board Structure

Principle 2: School Board Role and Function

Principle 3: Policy Writing

Principle 4: Community Relations

Figure 4. The four principles of Balanced Governance®.

Alsbury and Gore (2015) pointed out that a school board cannot pick parts of Balanced Governance® and expect results. Balanced Governance® is a set of beliefs about how the collective work of a school board is achieved, and it is through implementation of these beliefs that results and outcomes can be anticipated. Balanced Governance® offers a research-supported set of 10 individual board member characteristics, actions and behaviors of school boards (Figure 5) linked to board effectiveness and improved student achievement.

Board Member Characteristics

1. Role boundaries
2. Role orientation
3. Advocacy focus
4. Student concern focus
5. Solution focus
6. Exercise of influence
7. Use of voice
8. Use of power
9. Decision making style
10. Motivation for service

Figure 5. The 10 Balanced Governance® individual board characteristics.

It is important to note that Balanced Governance® is built on a foundation of research (Delagardelle, 2008; Lorentzen, 2013; Shelton, 2010; Saatcioglu & Sargut, 2014) and the principles and individual board member characteristics were born out of this research. These intentional connections (Figure 6) allow for continuity of understanding for those in the role of board member, easy access to the founding research for those developing school board training, and for research to be conducted on one or more of the aspects of Balanced Governance®. As can be found in Figure 5, the three observable Balanced Governance® principles are aligned with one of the 10 individual board characteristics®. Principle 1, Effective School Board Structure, is aligned with the characteristics of (a) role boundaries, (b) role orientation, (c) advocacy focus. The supporting research for principle 1 comes from Delagardelle (2008), Lorentzen (2013)

Saatcioglu and Sargut (2014), and Shelton (2010). Principle 2, School Board Role and Function, is aligned with the characteristics (a) student concern focus, (b) solution focus, (c) exercise of influence, (d) use of voice, (e) use of power, (f) decision making style. The supporting research for principle 2 comes from different parts of the research conducted by Delagardelle (2008), Saatcioglu and Sargut (2014), and Shelton (2010), with the Lorentzen (2013) research providing research base for each of the six characteristics embedded within principle 2. Principle 3, Policy Writing, is not supported by individual board characteristics but can be found as parts of each of the other Balanced Governance® principles depending on the topic and content of the policy. Principle 4, Community relations is aligned with the individual board characteristic of community relations. This principle and characteristic are supported by the research of Lorentzen (2013), and Saatcioglu and Sargut (2014).

		Research Supporting Balanced Governance			
Balanced Governance Principles	Balanced Governance Individual Board Member Characteristics	Dellegardelle (2008)	Shelton (2010)	Saatcioglu & Sargut (2014)	Lorentzen (2013)
Principle 1: Effective School Board Structure	1. Role boundaries	X		X	X
	2. Role orientation	X	X	X	X
	3. Advocacy focus	X	X		X
Principle 2: School Board Role and Function	4. Student concern focus	X	X		X
	5. Solution focus	X		X	X
	6. Exercise of influence	X		X	X
	7. Use of voice			X	X
	8. Use of power			X	X
	9. Decision making style			X	X
Principle 4: Community Relations	10. Motivation for service			X	X

**Note: Principle 3: Policy Writing would be evaluated in concert with Principles 1, 2 & 4 depending on the content of the policy.*

Figure 6. Demonstrates the alignment of the Balanced Governance® principles with the 10 individual board characteristics. The supporting research for each of the principles and characteristics is shown to the right and is organized by researcher and year.

Balanced Governance®: Foundational, direct, and indirect research. Nationally, school board members identified student achievement and adequate funding as the two biggest concerns (Hess, 2002). Additionally, Federal and State mandates (DOE, 2009; NCLB, 2002) require school districts to focus on overall student achievement as well as underperforming sub-groups. These mandates impact funding, performance evaluation, contract renewal, and curriculum adoption (ESEA, 2010; NCLB, 2002) all in hopes of forcing classroom instructional change. School boards have a large task of maintaining focus on the areas most essential to be effective, responsive to the community, and adequately sensitive to outside mandates (Petersen & Fusarelli, 2005). The research supporting Balanced Governance® points to the attitudes, behaviors, and actions essential for school boards to positively impact student achievement results.

Foundational research studies. Two studies have been cited as foundational to supporting the link between school boards and improved student achievement. Goodman et al. (1997) and the Iowa Association of School Board's Lighthouse inquiry (2000) set the stage for the next era of research into school board effectiveness (Land, 2002). Subsequent findings (Alsbury, 2008a, 2008b; Alsbury & Gore, 2015; Delagardelle, 2008; Lorentzen, 2013; Shelton, 2010; Walser, 2009; WSSDA, 2009b) have shown that effective school boards consistently focus on issues related to student achievement and academic progress. The linkages between research and the vast array of board member standards are grounded in these two research studies. In preparation for this study, a search was conducted of each state school board association website and among the 50 state associations. It was found that 35 have adopted board standards or effectiveness frameworks. Of these 35 states with standards or effectiveness frameworks, 13 adopted previously developed standards or frameworks (Key Works, The Center for Public

Education Eight Characteristics and the State of Oregon Standards). Additionally, of the 35 state associations that adopted standards or effectiveness frameworks, 32 were either explicitly or implicitly linked to one or both of these research studies. As further research was conducted, the initial study findings were strengthened and more narrowly focused on the specific attitudes, skills, and behaviors required of effective school boards and school board members. A strong linkage is present between this research study and these foundational research studies. The development of the Balanced Governance® principles and individual characteristics have historical research ties to the findings of the Lighthouse Inquiry (2000) and Goodman et al. (1997).

School board/superintendent collaboration and student achievement. Goodman, Fulbright, and Zimmerman (1997) conducted a study to measure the relationship between school board-superintendent collaboration and improved student achievement. Goodman et al. collected respondent feedback through direct interviews with 132 educators, parents, and community members. The study was conducted in five states and analyzed 10 specific school boards. Goodman et al. did not describe the measurement protocols used to analyze their independent variables. This presents a challenge in assessing the methodology of this study but it is apparent that interviews were used and descriptive statistics are reported on their interview findings. The information generated from these interviews was collated for the research team to report 41 recommendations in six categories: (a) build a foundation for teamwork, (c) get the best and most capable team players, (d) ensure that the team players know their roles and responsibilities, (e) get into team training, (f) adopt good team strategies, (g) convince others to support the team. High performing districts were determined by measuring components of student achievement such as test scores, drop-out rates, graduates, and percentage of students attending college.

The focus on improved student achievement is critical to further understanding the most essential characteristics of an effective school board. The findings of Goodman et al. (1997) report a positive influence of school boards on student achievement. Goodman et al. stated, "Collaborative governance by itself cannot improve student achievement. But this research confirms that it can have a very positive impact on the factors that influence achievement" (Goodman et al., 1997 p. 22).

School board beliefs and student achievement. The start of the Iowa Association of School Boards inquiry into school board effectiveness in the early 2000s paved the way for further and more technical research focused on the relationship between school board's actions and behaviors and student achievement. Lighthouse I (IASB, 2000) showed distinct differences between high-achieving (moving) and low-achieving (stuck) districts. Of note were the differences between *elevating* versus *accepting* belief systems and the understanding and focus on school renewal. Moving districts maintained the belief that all students had the potential to learn. Decisions made with the belief that all students had the potential to learn were linked to improved student achievement. Stuck districts did not universally hold the belief that all students had the potential to learn. Subsequently, school board members in moving districts demonstrated an understanding and focus on the seven areas for school renewal. Those areas are (a) shared leadership, (b) continuous improvement and shared decision making, (c) ability to create and sustain initiatives, (d) supportive workplace for staff (e) staff development, (f) support for school sites through data and information, and (g) community involvement (IASB, 2000). With this in mind, the Lighthouse Inquiry posed Phase II (2002-2007) questions focused on developing an understanding of the actions of school board members that positively impact school culture and student outcomes (Delagardelle, 2008). Five functions of the school board were identified in

Lighthouse II. These functions were an outcome of analyzing school board and superintendent pairs that were identified as effective (indicated by high student achievement results). These teams worked together focused on what matters most; the mission of the school district and direction for district improvement. Based on these findings, five main functions or roles were identified for school board members: (a) set clear expectations, (b) hold themselves and the district staff accountable for meeting the expectations, (c) ensure the conditions for success were present within the system, (d) build the collective "will" of the staff and the community to improve student learning, and (e) create time to learn together as a board (Delagardelle, 2008). Additionally, seven key areas of performance emerged from the research as the five functions were studied. These areas of performance were outcomes (behaviors) that occurred when effective school boards ensured the five main functions or roles were part of their efforts as a school board. The seven areas of performance are described as board actions. Boards that ensure the five main functions were enacted engage in the following:

- Take responsibility for increasing public awareness of the current status of student learning.
- Increase the use of data to set expectations, determine and monitor indicators of progress, and apply pressure for accountability.
- Demonstrate unwavering commitment to the improvement efforts and ensure board actions and decisions reflect that commitment.
- Support quality professional development for staff focused on the improvement of instruction.
- Ensure a strong continuum of leadership is distributed across the school district.

- Implement policies for guiding the decisions and actions of district staff that most directly impact student learning.
- Connect with the community to increase the community's involvement in and commitment to the school district's focus for improvement.

Lighthouse II provided further evidence of the impact of school boards on the overall achievement of students. While a school boards impact is "from a distance" (IASB, 2008 p. 7), there emerged key functions and required performance of school board members. These key functions and required performance areas provide insight into the behaviors and actions required of highly effective school boards. While the impact of school boards is not direct, Lighthouse II identified key linkages that connect the efforts of school boards to student learning outcomes. These linkages can be seen in Figure 7 (IASB, 2008).

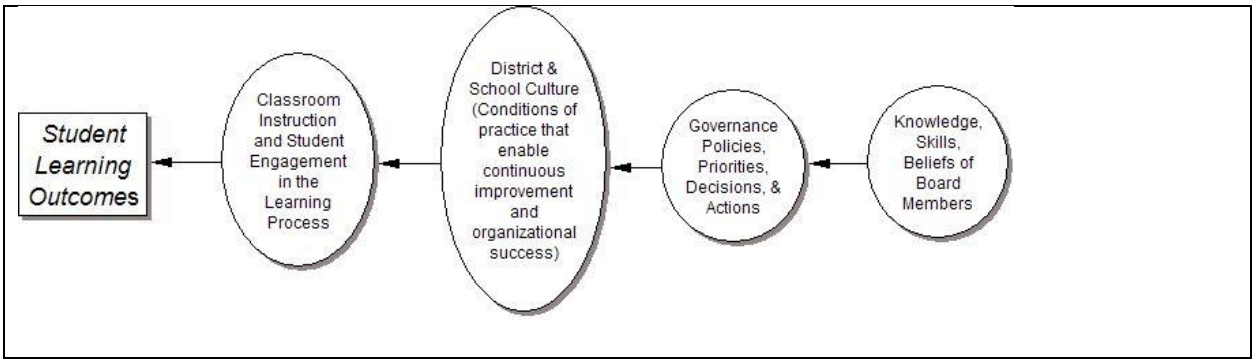

Figure 7. Linkages between school board knowledge, skills, and beliefs and student achievement. This figure was used to describe this linkage in Lighthouse II (IASB, 2008).

The Lighthouse projects (IASB 2000, Delagardelle, 2008) provided compelling evidence that *what* school boards do matters. Furthermore, it was shown that *how* school board members do the work of governing a school district has strong influence over the conditions for employees, students, and community members. This influence was also seen in the academic

achievement of students. This research study examines the same linkages of school board characteristics and improved student achievement.

School board politics and student achievement. In his 2003 study, Alsbury demonstrated a statistically significant relationship between politically motivated incumbent board member defeat and superintendent turnover. Additionally, Alsbury showed that consistent turnover destabilized the school board and district and was able to link lower student achievement results based on turnover alone. Alsbury's 2008b study took the next step to see if a significant relationship could be established between politically motivated incumbent board member defeat and student achievement results. In an eight-year longitudinal study, Alsbury was able to establish that a statistically significant ($p = <.05$) relationship did not exist between the 162 reporting districts and student achievement results. When controlling for districts that had politically motivated incumbent board member defeat Alsbury was able to demonstrate a significant relationship ($p = .041$) with student achievement. Alsbury notes that caution must be used in interpreting these results given the many contextual factors influencing changes in student achievement results. Regardless, Alsbury (2008b) stated that even when using caution, it should be noted, "school board and/or superintendent turnover does appear to be an important variable to include when measuring the causes of student achievement change" (p. 263). In Alsbury's studies (2003, 2008b), the empirical evidence supported the Dissatisfaction Theory of American Democracy, statistically linked board turnover to student achievement, and provided further insight into the significant role school boards play in high achieving school districts. Through this research study, the link between effective school boards and improved student achievement will be examined.

National School Board Association: Key work of school boards. The National School Board Association (NSBA) published a guide for school boards in 2000 that was intended to help frame the key areas of focus for all school board members. The NSBA entered into this work based on the guiding principles of raising student achievement and engaging the community. "The board is responsible for putting in place the proper keystones for students to learn and achieve at the highest level possible. Board members' primary agenda is raising student achievement and engaging the community to attain that goal" (NSBA, 2000, p. iii). The NSBA (2000) identified the strategy of "improving student achievement through community engagement" (p. 1) as the methodology for accomplishing the overall mission of a school board. In the original Key Work guidebook, the NSBA identified eight work focuses for all school boards: (a) vision, (b) standards, (c) assessment, (d) accountability, (e) alignment, (f) climate, (g) collaboration, and (h) continuous improvement. These focus areas were identified based on leadership and organizational research (Barker, 1992; Bolman & Deal, 1991; Chrislip & Larson, 1994; DePree, 1992, Follett, 1951; Johnson, 1998; Senge, 1990, 1994, 1999; Wheatly, 1992) as opposed to empirical studies looking for a statistically significant relationship between school boards (actions, beliefs, behaviors) and improved student achievement results. In the absence of empirical evidence, NSBA identified the problem and used anecdotal literature to take steps toward increasing the likelihood that school boards were having the opportunity to effectively execute their changing primary role of governing a school district toward higher academic achievement (NSBA, 2000). Now in the third edition, the Key Work of School Boards is identified as a Framework for Improving Student Achievement. The eight focus areas have been narrowed down to five primary focus areas: (a) vision, (b) accountability, (c) policy, (d) community leadership, and (e) relationships (NSBA, 2015). In the updated guide, NSBA cites

research such as the Lighthouse Inquiry (Delagardelle, 2008) as evidence for these efforts given the relationship between school board behaviors and beliefs and improved student achievement. This transformation is consistent with research findings seen over the last 15 years (Alsbury, 2008a, 2008b; Alsbury & Gore, 2015; Delagardelle, 2008; Goodman et al., 1997; Lorentzen, 2013; Shelton, 2010; Walser, 2009; WSSDA, 2009) and is linked to the research which is foundational to the Balanced Governance® principles and individual board characteristics.

Eight Characteristics of effective school boards: Center for Public Education. In 2011, the Center for Public Education (CPE) took on the task of reviewing the literature to establish a basis to support the claim that effective school boards impact student achievement. Additionally, CPE aimed to identify the key characteristics of effective school boards based on the review of literature. Consequently, much of the same research used in the development of the CPE Eight Characteristics was used by NSBA (2015) in the development of the Key Work of School Boards and WSSDA in the development of the School Board Standards and the Board Self-Assessment. CPE's review of the literature identified similar key characteristics of effective school boards that impact student achievement. The eight characteristics reported by CPE are as follows:

- Effective school boards commit to a vision of high expectations for student achievement and quality instruction and define clear goals toward that vision.
- Effective school boards have strong shared beliefs and values about what is possible for students and their ability to learn, and of the system and its ability to teach all children at high levels.
- Effective school boards are accountability driven, spending less time on operational issues and more time focused on policies to improve student achievement.

- Effective school boards have a collaborative relationship with staff and the community and establish a strong communications structure to inform and engage both internal and external stakeholders in setting and achieving district goals.
- Effective boards are data savvy; they embrace and monitor data, even when the information is negative, and use it to drive continuous improvement.
- Effective school boards align and sustain resources, such as professional development, to meet district goals.
- Effective school boards lead as a united team with the superintendent, each from their respective roles, with strong collaboration and mutual trust.
- Effective school boards take part in team development and training, sometimes with their superintendents, to build shared knowledge, values and commitments for their improvement efforts.

CPE takes the relevant research on school board effectiveness and collates it into a single report and ultimately, develops findings. Similar themes can be linked between the findings and the Balanced Governance® principles. The research cited by CPE is also the foundational research referenced earlier in this chapter.

Essential school board elements of effectiveness. Walser (2009) noted that she hoped not to write a prescriptive manual but rather a reference guide to help boards move toward becoming highly effective. A key piece of the book is the identification of commonalities between the boards. Sixteen school boards were selected and identified as highly effective. Each school board was analyzed for commonalities. Even though the school districts were demographically different and the challenges they faced were unique; Walser found many common elements

within the school district governance. The commonalities confirmed prior research and provided insight into the characteristics of highly effective school boards.

Walser stated that the role of the school board is changing from overseer to coleader with the superintendent, with the school board focusing on the "what" and the superintendent focusing on the "how". Specific principles of effective school boards were culled from the research and identified in word bands:

- Collaborating, conversing, committing
- Meeting, setting goals, using data
- Learning, monitoring, communicating
- Shared leadership, recruiting, sustaining

The research Walser used to shape her conclusions is the same body of research that has formed many of the prominent school board standards or effectiveness frameworks including Alsbury (2003, 2008a; 2015), Goodman et al. (1997), Iowa Association of School Boards: Lighthouse (2000), Land (2002), and NSBA's Key Works (2009). Additionally, Walser (2009) identified the theoretical construct of the Dissatisfaction Theory as key for school board members to understand how best to govern, given their political context. Walser's findings and conclusions are consistent with the Balanced Governance® principles and individual board member characteristics.

Sociology of school boards. Saatcioglu and Sargut (2014) took a sociological perspective on school board effectiveness. Their research looked at the two types of relationships that school board members must foster; the internal working relationship of school board members (*closure)*, and the external ties with the community called (*brokerage)*. "Closure refers to the quality of member relationship within the group. It involves trust, cooperation, and mutual

respect. Limited closure leads to individuals acting for their own interests rather than the good of the entire organization" (Alsbury & Gore, 2015, p. 44).

Saatcioglu (Alsbury & Gore, 2015) went on to point out that the breakdown of closure (the internal working relationship of school board members) leads to dysfunction. As previously addressed in the Dissatisfaction Theory and Alsbury's (2003, 2008b) research, dysfunction leads to turnover of school board members and superintendents, which has a negative impact on student achievement.

Brokerage is an essential component of a school board's existence. Its (brokerage) main features are the relationships established with the community. Saatcioglu stated, "brokerage is necessary and is accomplished when members reach outside to others who have new ideas and resources that the group does not have already" (Alsbury & Gore, 2015, p. 45). As referenced in much of the research (Alsbury, 2008a, 2008b; Alsbury & Gore, 2015; Delagardelle, 2008; Goodman et al., 1997; Lorentzen, 2013; Shelton, 2010; Walser, 2009; WSSDA, 2009), community connections is an essential feature of a school board member's responsibility. Saatcioglu (Alsbury & Gore, 2015) cautioned a school board to maintain unique brokerage relationships to ensure broad input from the community.

The research conducted on school boards through the lens of social capital help to support the Balanced Governance Individual Board Characteristics®. Specially, Saatcioglu and Sargut's (2014) research provided greater insight into the effects of the characteristics of Use of Voice and Use of Power (Alsbury & Gore, 2015). Their research also helped to inform the Board Governance view on Role Boundaries and Role Orientation (Alsbury & Gore, 2015).

Transforming beliefs into action. Shelton (2010) proposed that school board and superintendent teams would have an impact on student achievement results. Shelton used the

survey items from the Lighthouse study given the validity testing previously done on those items. Additionally, Shelton used four additional questions to look at the relationship between school board and superintendents. Shelton used advanced statistical methods analyze these relationships and found a statistically significant relationship between superintendent behaviors and beliefs and student achievement. Shelton argued that even though a statistically significant difference was not found between school board members and student achievement in his study, it did not discount the school board's role in impacting student achievement. Shelton (Alsbury & Gore, 2015) stated:

> It is clear that a superintendent who focuses on student achievement can have a significant impact. However, it is critical that the board support the focus and actions strengthening the board-superintendent team and creating the expectation of student success. (p. 41)

School boards have a responsibility in setting and maintaining the environment of the school district; one that is focused on the overall vision of the district, supporting student achievement, and engaging the community in the process. Shelton (Alsbury & Gore, 2015) stated that his findings support the conclusion that a school board cannot just hire a superintendent and sit back and watch (a rubber-stamp board) but that through the collaboration and relationship developed, student achievement will be impacted.

School board governance and student achievement. Plough (2011) studied the seven key areas identified in the Lighthouse II (Delagardelle, 2008). In a deviation from IASB (2000), Delagardelle (2008), and Shelton (2010), Plough developed a survey tool based off of the Lighthouse II key areas as opposed to using the same survey questions for her study. Given the low response rate Plough was not able to run inferential statistics on her data. This study is

important to the field of board effectiveness research for a number of reasons. Of primary importance is the fact that very few studies look at the effectiveness of school boards and research in this field is greatly needed (Land, 2002). Secondarily, this study provided insight into the challenges of studying entities such as school boards. Much of the research on school board effectiveness rely on the willingness of school board members to participate in such studies. Other examples of participation rates can be found in Shelton (2010) and Lorentzen (2013). Both of these studies had greater participation than Plough. It should be noted that to more effectively understand the relationships between identified research variables, increased participation by school board members will be required.

Lorentzen and McCaw (Alsbury & Gore, 2015) took a look at the governance practices of school board members that have an effect on student achievement. Lorentzen (2013) used the Washington State School Director Association's (WSSDA) Board Self-Assessment (BSAS) to survey school board members and superintendents in the state of Montana. Lorentzen used the survey items as his independent variables to measure effectiveness against student achievement results. Pearson's *r* was used to find statistically significant relationships between individual survey items as well as broader categories of the test items. From this research Lorentzen and McCaw concluded that their research demonstrated a statistically significant relationship between school board behaviors and beliefs and higher student achievement (Alsbury & Gore, 2015). Additionally, Lorentzen and McCaw recommended the following:

- Ensure superintendent evaluation is focused on student achievement outcomes.
- Communicate expectations to the community.
- Use student achievement outcomes as a basis for continued superintendent contract renewal.

- Collaboration regarding the vision of the district with multiple stakeholders.
- Continual monitoring of goals is essential to maintain high growth and achievement.

Lorentzen and McCaw (Alsbury & Gore, 2015) stated that the findings from Lorentzen's 2013 study is such that school board members "can no longer hold teachers and administrators solely responsible for poor performance" (p. 64). The findings from Lorentzen's study are a part of the research base for Balanced Governance® and has helped to inform both the principles and individual board member characteristics.

School Board Standards

The Washington School Directors Association (WSSDA) Board of Directors established the WSSDA Board Standards Task Force in August, 2008 (WSSDA, 2009b). The charge of the task force was to develop a set of standards aligned with effective governance practices which lead to improved student achievement (WSSDA, 2009a). The task force spent nine months working with internal and external stakeholders as well as reviewing recent research to establish the Washington School Board Standards. The five Washington School Board Standards are as follows:

- School Board Standard 1: Responsible school district governance.
- School Board Standard 2: Communication of and commitment to high expectations for student learning.
- School Board Standard 3: Creating conditions district-wide for student and staff success.
- School Board Standard 4: Holding the district accountable for student learning.
- School Board Standard 5: Engagement of the community in education.

Additionally, the Task Force indicated Individual School Director Standards that "describes healthy conduct of directors relevant to their relationships with one another, the community, staff, and students" (WSSDA, 2009b. p. 2). The Task Force defined for each Individual School Director Standard what it would look like in practice in order to accomplish the goal of being an effective school director. The five Individual School Director Standards are as follows:

- Standard 1: Values and Ethical Behavior
- Standard 2: Leadership
- Standard 3: Communication
- Standard 4: Professional Development
- Standard 5: Accountability

These standards support the tenants and school board characteristics framed in Balanced Governance® (Alsbury & Gore, 2015). The foundational research cited in the WSSDA Guiding Principles (WSSDA, 2007) is linked to the Lighthouse Inquiry; also foundational in Balanced Governance®. The WSSDA School Board Standards and Individual School Director Standards were used to analyze the relationship between school board behaviors and beliefs, and student achievement outcomes (Lorentzen, 2013). Additionally, the WSSDA School Board Standards and the BSAS support the findings of Alsbury and Gore (2015), Goodman et al. (1997), IASB (2000), Delagardelle (2006), the Lighthouse Inquiry (Delagardelle, 2008), Key Work School Board Roles (NSBA, 2015), Panasonic's Guide to Effective School Boards (Mitchell, Gelber, Thompson, Thompson, 2009), and Walser (2009).

Conclusion

Based on the research on the Dissatisfaction Theory (Alsbury, 2003, 2008b; Iannaccone & Lutz, 1994) strong evidence suggests that school boards are an extension of the community's values and interests. When school board and community values become incongruent an increase in participation occurs and, if alignment is not reached, board and superintendent turnover are eminent (Alsbury, 2003). Wirt and Kirst (2009) demonstrate the micro-economics of school board and community relations in their work on the Decision-Output Theory. This theory provides a cyclical description of the ongoing feedback loop (inputs and outputs) always in motion. When school boards are not responsive to inputs in a manner that is satisfactory to the stakeholder there is a rise in participation. If school board and community values remain incongruent the stakeholder participation can lead to school board and superintendent turnover. Alsbury (2003, 2008b) discussed the direct link board and superintendent turnover has on student achievement and was able to show the decline in student achievement results as a related outcome of dysfunction and turnover.

A small body of empirical research focuses on the effect of school board members on improved student achievement results. The principles and individual characteristics of Balanced Governance® are founded in research (Alsbury, 2008a, 2008b; Alsbury & Gore, 2015; Delagardelle 2008; Lorentzen, 2013) and connections to theoretical constructs remain strong. It has been demonstrated through research that school boards and school board/superintendent teams have an impact on improved student achievement results. Evidence suggests that nearly all school board effectiveness research, school board standards, or school board effectiveness frameworks can be linked back to the foundational research of Goodman et al. (1997) and Lighthouse (IASB, 2000). These two studies have laid the groundwork for each of the studies

reviewed in Chapter 2. Subsequently, this study is founded on the research which followed these two studies and should be considered a continuation of the research focused on effective school boards.

Chapter Three

Methodology

This study focus is the measure of a potential significant relationship between board member characteristics and student achievement change. The study uses data from observed board meetings and student test scores. This study identified school board characteristics as the independent variable and student achievement as the dependent variable. The analysis of these data include a Pearson's chi-square test for independence. The chapter includes discussion regarding the population and sample; instrumentation; procedures and analysis; and a summary of the methods.

Research Question

The purpose of this study is to gather evidence to help analyze the stated research question: Does a significant relationship exist between certain school board characteristics and student achievement?

Null and Alternative Hypotheses

It is important to understand the statistical analyses used in this study informs the null hypothesis. Pearson's chi-square test for independence are used to analyze the data. The chi-square test for independence assumes variables are independent factors. The null hypothesis is rejected when a statistically significant relationship is discovered; meaning the variables are not independent of one another. The categorical variables of (a) effective school boards, (b) ineffective school boards, (c) high performing districts, and (e) low performing districts are independent variables. The null and alternative hypotheses for this study predict the relationship between the independent and dependent variables.

Null: H_o - Certain school board characteristics and student achievement are independent.

Alternative: H_a – Certain school board characteristics and student achievement are not independent.

Theoretical Constructs

The findings from this research study are analyzed in the context of the Decision-Output Theory as the foundational theory. Connections are also made with the Dissatisfaction Theory of American Democracy, given the interconnected nature of these two theories (described in chapter 2). Additional analysis are related to the Balanced Governance® approach and its supportive body of research (Alsbury & Gore, 2015).

Study Design

This study was conducted using a mixed methods design. The qualitative part of the study focuses on the collection of observation data. Qualitative data include anecdotal note taking during observation and tracking of incidents. Incident tracking focus on the Balanced Governance® school board characteristics and do not allow for additional areas to be tracked or analyzed. Each school board characteristic will be evaluated as effective or not effective after each observation. The ratings of effective and not effective will be transformed into categorical data to support the quantitative analyses. Inferential statistics will be run using Pearson's chi-square test for independence to determine if the variables are independent.

Population and Sample

The population represented in this study were the school boards in Washington State. As of 2013 (NCES, 2016) there were 322 school districts in Washington State. A number of school districts combine services, programs, and governance; making 295 distinct school governance bodies in Washington State.

From this population of school districts, a sample of districts were selected. The sample for this research study is a purposeful population sample and is to be selected based on specific criteria inclusion. Merriam (2009) referred to this process for selecting a sample as criterion-based selection. After the initial criterion-based selection of school districts, additional evaluation of the sample is to be conducted to ensure the sample generally represents the population. The criterion for initial selection and the development of the research sample:

1. School board meetings were either televised, internet broadcast, or audio recorded.
2. A historical copy of the televised, internet broadcast, or audio recorded meetings are publicly accessible.
3. A minimum of 20 school districts were required to meet criteria.

To determine which school boards had this information available, this researcher reviewed each of the websites for the 295 school districts in Washington State. The school board section of the websites was reviewed to find meeting agendas, meeting minutes, and information about historical digital files (audio/video). Of the school districts that had historical digital files, 11 school districts were found to have audio recordings of their school board meetings and 13 school districts had video recordings. One school district had two school board meetings recorded and was eliminated from the sample due to lack of sufficient opportunity for observation and collection of data. Twenty-three school boards met criteria of having historical copies of televised, internet broadcast, or audio recorded school board meetings that were publicly available. Based on 23 school boards meeting initial criteria, additional evaluation of the sample was conducted to determine goodness of fit. Additionally, more than 20 school boards met criteria, meeting the overall sample criteria for the research study.

To determine if the initial sample of 23 school boards was appropriate for the research study the following criteria were used to evaluate the sample:

1. Four of the five geographical settings (ERDC, 2010) must be represented and representative of statewide school district distribution.
2. Rach/Ethnicity groups are generally representative of the population and takes into account the variability across the Washington State.
3. Demographics (poverty, special education, and ELL) represent the population and takes into account the variability across the Washington State.
4. The student performance index scores represent a range of scores above and below the state's student performance index score allowing for categorization into low and high performing groups.

School Board Sample

Geographic setting of schools. To determine that a range of geographic settings was present in the sample, this researcher used the Education Research and Data Center (2010) classification of schools in Washington State. Education Research and Data Center (ERDC) used an urban-centric methodology meaning the classification of schools are in relation to their surroundings and given distance/relation to the urban environments found in Washington. ERDC identified five categories to identify geographic settings of schools in Washington State. Traditionally, these geographic areas have been identified as city (urban), suburban, town, and rural. ERDC took these and, through an urban-centric methodology, identified the geographic regions as: Large Metro, Metro Suburb, Mid-Size, Urban Fringe, and Distant (Appendix A). The 23 sample school districts were placed in one of the five categories. If multiple high schools were present in the school district, the geographical category which was represented by the most

students was selected as the geographical indicator for the overall district. The purpose of analyzing these data is to determine whether representation by all categories is present. It is also of interest to understand the make-up of the sample in relation to the population.

Table 1

Urban-Centric placement of the Population and Sample

	Population	Sample	Difference: *Sample to Population*
Large Metro	4%	17%	13%
Metro Suburb	16%	39%	23%
Mid-Size	13%	17%	4%
Urban Fringe	16%	9%	-7%
Distant	51%	17%	-34%

Table 1 reports the percent represented in the population, percent represented in the sample, and difference of the sample to the overall population. The sample was found to have a range of geographical locations throughout Washington State (Figure 8). Each geographic location is represented in the sample but the sample is not representative of Washington State in four of the five categories.

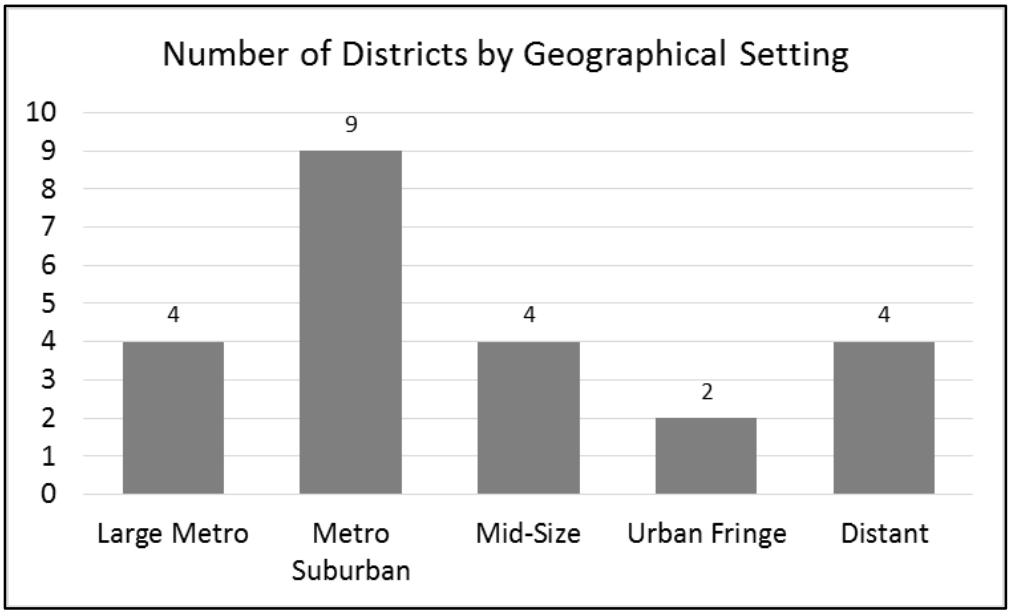

Figure 8. Represents the location of sample school districts by urban-centric designation.

Location within Washington State. Washington State is considered to have two unique parts; Eastern and Western Washington. Washington is divided by the Cascade Mountain range creating the east and west sides of the state. This researcher looked at where the 23 sample school districts were located. 20 of the districts were located on the western part of the state and three of the districts were located in the eastern part of the state (Figure 9). The purpose of analyzing these data is to determine whether representation in each category is present.

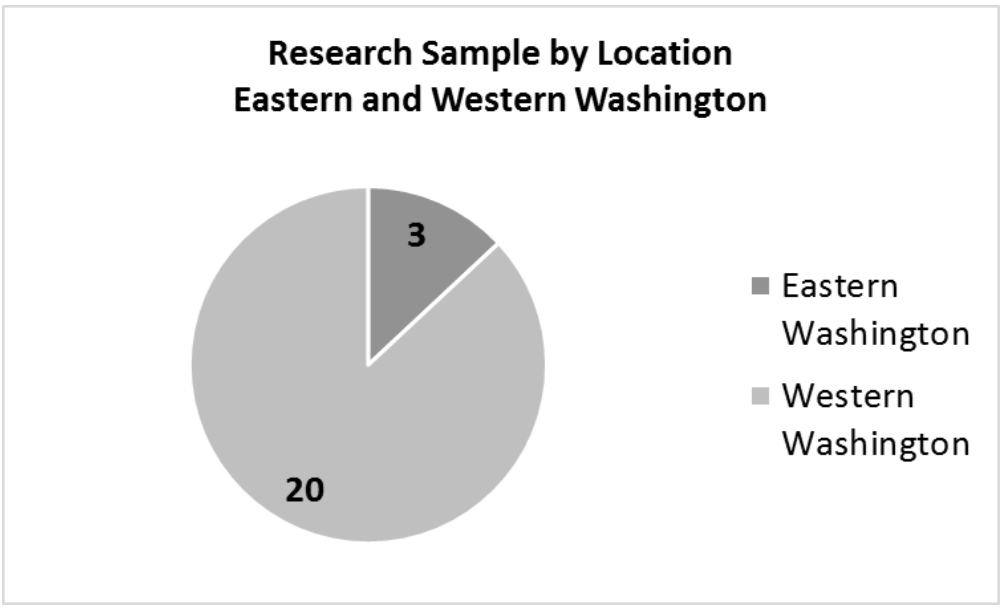

Figure 9. Represents the location of sample school districts by location in Washington State.

Conclusions on location of sample districts. The sample is heavily weighted to metro-suburban districts in Western Washington. The sample has 23% more (Table 1) metro-suburban districts than the state average. Additionally, the sample is over represented by large-metro (13% more than state average) districts. Mid-size and urban-fringe districts are generally representative of Washington State while distant school districts are under represented by 34% less than the state average. When conducting a random sample of 23 school districts in Washington State, this researcher found it did not generate a sample that represented the population. Given the large number of distant school districts in Washington State, a random sample becomes highly overrepresented by one group (distant). This researcher concludes that the purposeful population sample provides a group of school district which categorically represents overall population in that each of the five urban-centric groups are represented. The group over represented in the sample are metro-suburban districts. In the overall findings of this research study, the issue of overrepresentation by metro-suburban will be noted.

Racial and ethnic composition of school districts. The five ethnic demographic groups most often represented in school districts in Washington State were selected to analyze the level of homogeneity among the sample. This research does not look at effects of ethnicity on the dependent variable so district "likeness" was not required for the sample. In developing the purposeful population sample, the study sought a sample generally representative of the population rather than a heterogeneous group of school districts (e.g. school districts with high Caucasian and Asian groups and low Hispanic/Latino and Black populations). A sample representative of the population helps to inform the claims that school board effectiveness is universally applicable as opposed to situational. The ethnic composition of the sample school districts provided a large range of race/ethnic composition. While it cannot be said that the sample represents the population, it can be said that the sample characterizes the population and is not a homogeneous group of school districts (Figure 10 – Figure 13). Data were displayed in rank order from smallest to largest "percent of" the specific ethnic group represented among the 23 school districts used in this study. Districts are not labeled given the presentation of the data is to provide information about the overall sample. Washington State is identified in Figures 10-13 in red.

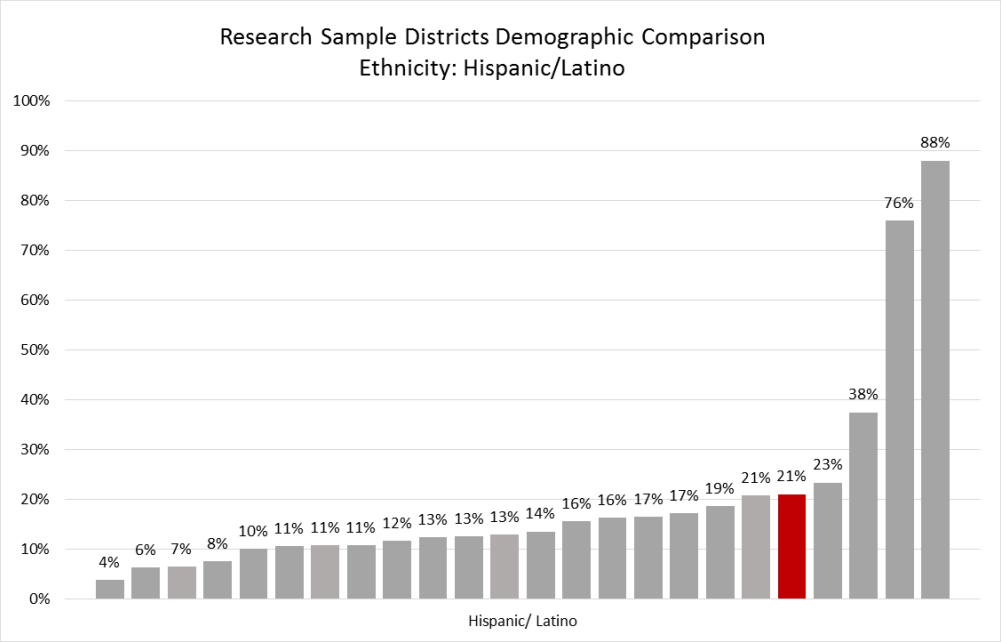

Figure 10. Represents the percent of Hispanic/Latino students in the sample districts. The average Hispanic/Latino percentage for Washington State is identified in red.

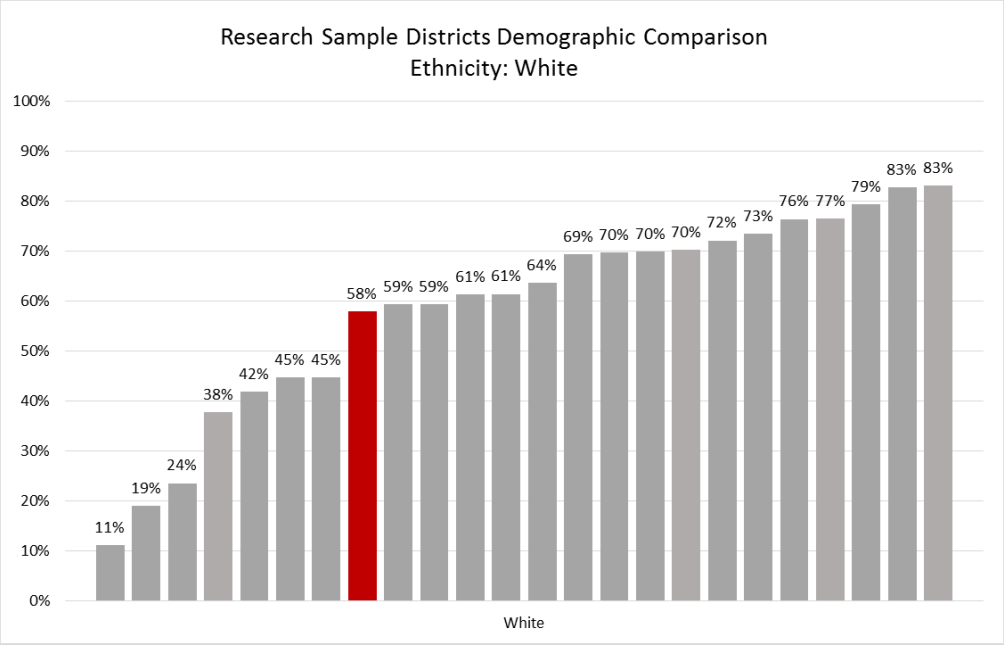

Figure 11. Represents the percent of White students in the sample districts. The average White percentage for Washington State is identified in red.

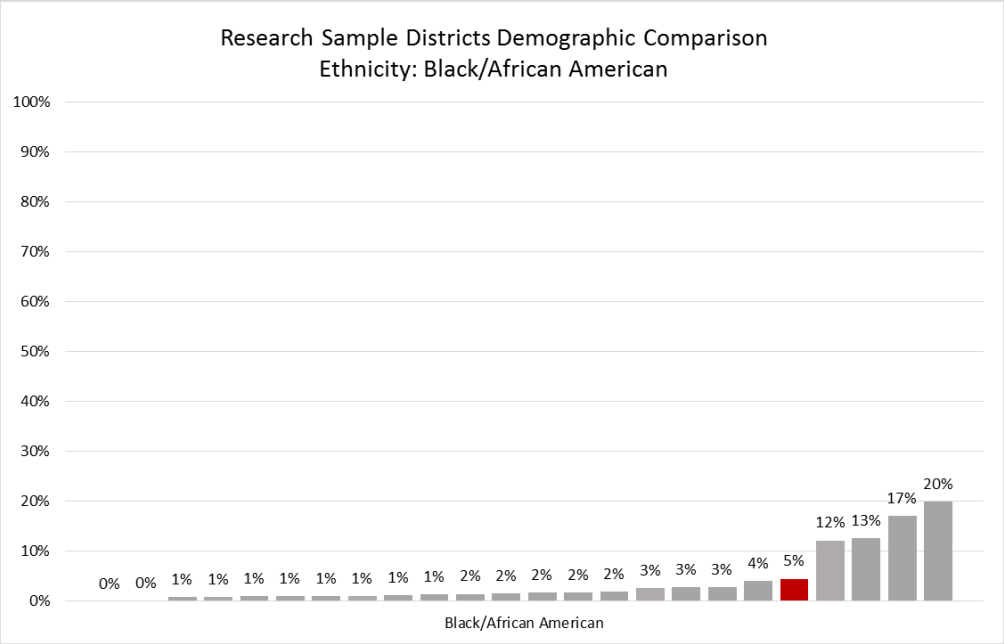

Figure 12. Represents the percent of Black/African American students in the sample districts. The average Black/African American percentage for Washington State is identified in red.

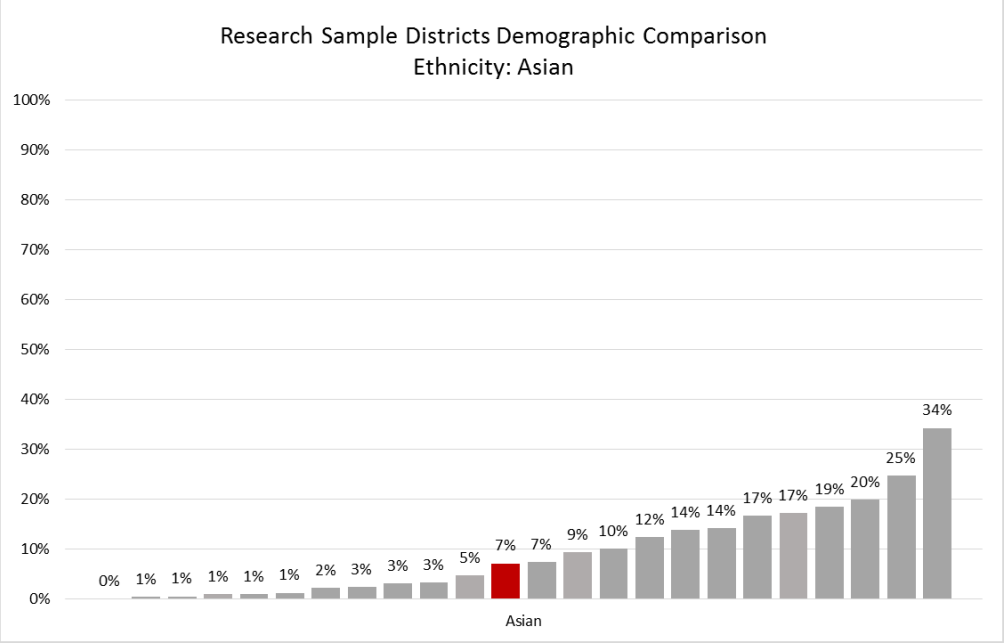

Figure 13. Represents the percent of Asian students in the sample districts. The average Asian percentage for Washington State is identified in red.

Conclusions on race/ethnicity composition of sample districts. The sample districts in this study are representative of the race/ethnic composition of Washington State for Hispanic/Latino, White, and Black/African American groups. The sample is overrepresented by the race/ethnic group of Asian. Three data points were analyzed to determine the representation of the sample to the population. The population range, top 25% and bottom 25% for each race/ethnic group was compared to the sample to determine if the purposeful population sample was representative of the overall population. Table 2 shows each of these data points. Most districts in the sample fall within the second and third quartiles with very few in either the top or bottom quartiles. As referenced above, the only group which is overrepresented in the sample is the race/ethnic group of Asian with 74% of the sample is in the top quartile (Table 2).

Table 2

Ethnicity/Race composition of the Sample

	Population Range	Sample Range	Population Top 25%	Number of Sample in Top 25%	Population Bottom 25%	Number of Sample in Bottom 25%
Hispanic/Latino	0-97%	4-88%	22-97%	4 Districts	0-6%	2 Districts
White	0-100%	11-83%	84-100%	0 Districts	0-54%	7 Districts
Black/African American	0-22%	0-20%	1.3-22%	0 Districts	0-.08%	2 Districts
Asian	0-34%	0-34%	2.3-34%	17 Districts	0-.12%	1 District

Eighty-two percent of the sample's race/ethnic groups are represented in the second and third quartiles of the population sample. In the overall findings of this research study, the issue of overrepresentation by the race/ethnic group of Asian will be noted.

Other demographic factors. It has been shown that demographic factors such as poverty account for a large portion of known variance when looking at student academic failure (Hopson, Lee, & Tang, 2014). The sample is represented by districts with extremely high poverty as well as districts with extremely low poverty (Figure 14). Additionally, the sample is represented by districts with a high number of students accessing English Language Learner (ELL) services and districts with a low number of students accessing ELL services (Figure 16). The percent of students accessing special education is relatively similar and is represented by a range of 10.9%-16%. While there is definitely a difference between the high and low districts in the range, there are no extreme outliers as can be found in both Free and Reduced Lunch and ELL (Figure 14 – Figure 16). Data is displayed in rank order from smallest to largest "percent of" the specific demographic group represented in the school district. Districts are not labeled given the presentation of the data is to provide information about the overall sample. Washington State is identified in Figures 14-16 in red.

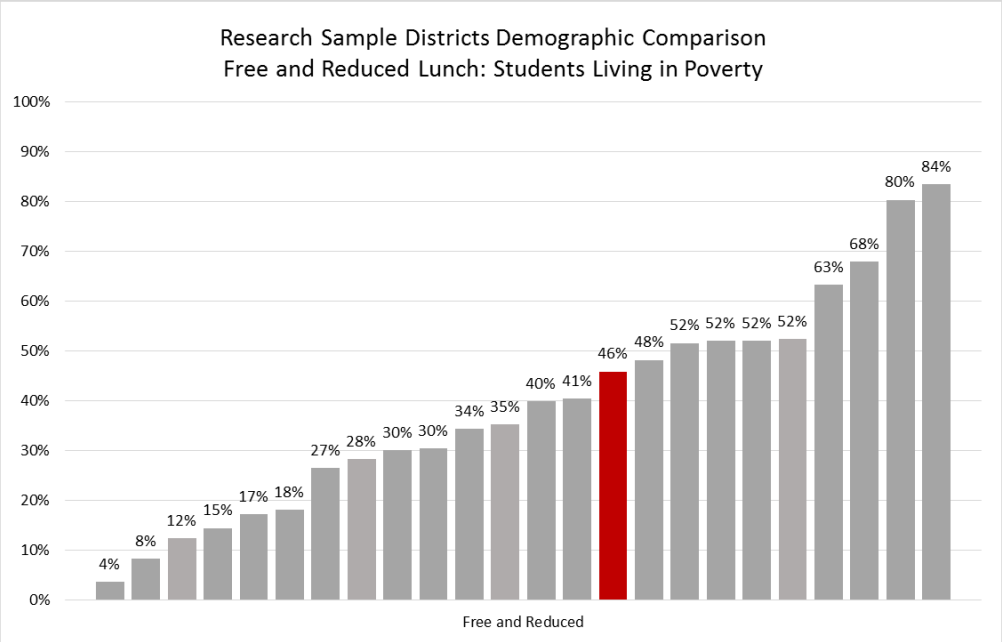

Figure 14. Represents the percent of Free/Reduced Lunch students in the sample districts. The average free and reduced lunch percentage for Washington State is identified in red.

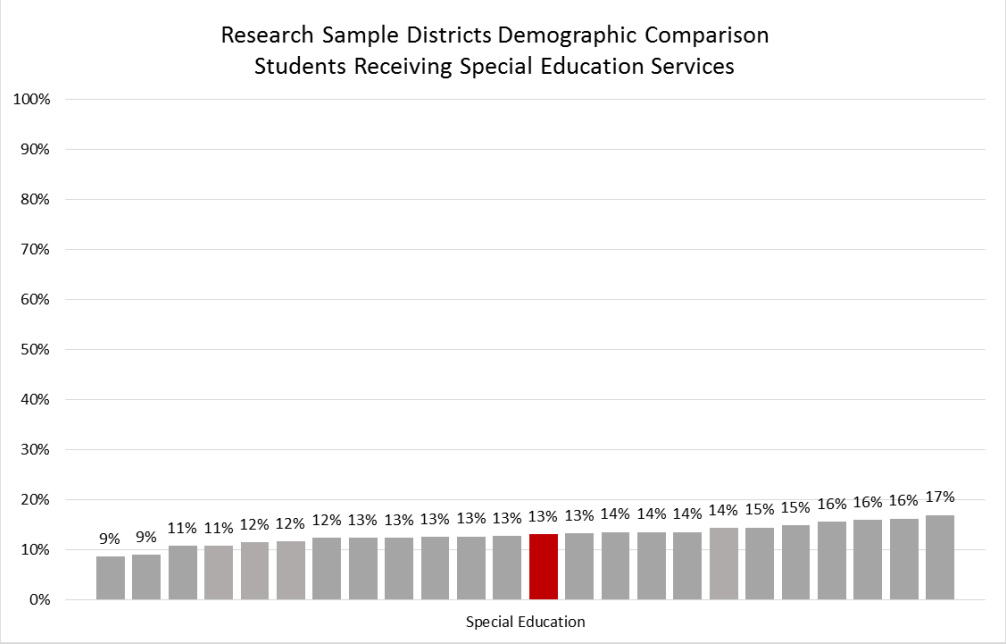

Figure 15. Represents the percent of Special Education qualified students in the sample districts. The average Special Education percentage for Washington State is identified in red.

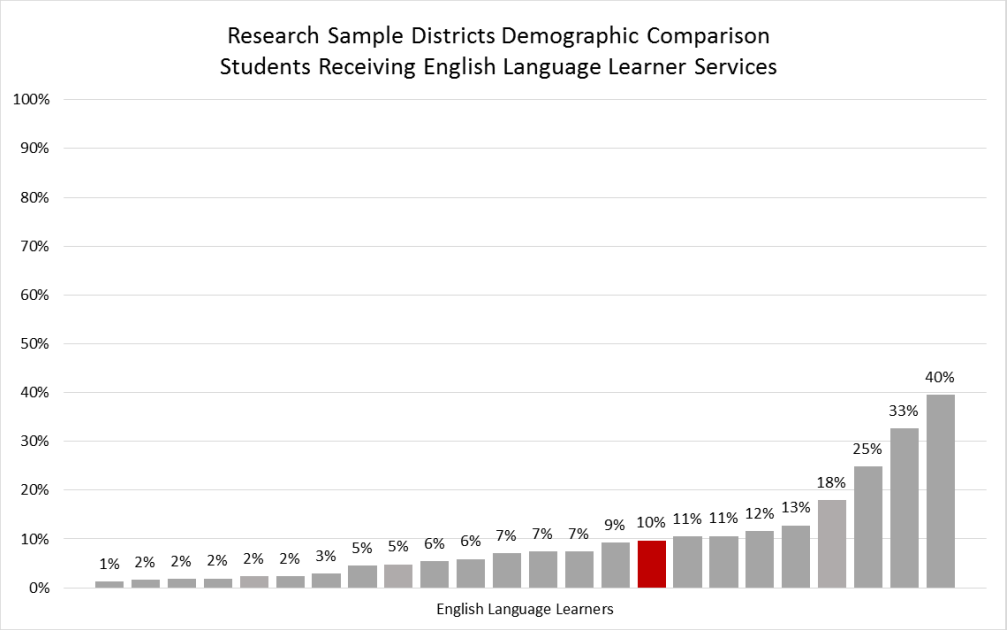

Figure 16. Represents the percent of English Language Learner (ELL) qualified students in the sample districts. The average ELL percentage for Washington State is identified in red.

Conclusions on other demographic factors composition of sample districts. When looking at the other demographic factors of the sample districts there is greater variation when compared to the racial/ethnic composition of the sample. Overall the sample is highly representative of the population over 55% of the sample in the second and third quartiles of the population in percent of free and reduced, special education, and ELL. Two outliers in the sample are in free and reduced and ELL. Twelve of the sample districts are represented in the bottom 25% of the population (0-35% free and reduced). This represents almost half of the sample. The other outlier, ELL, eight of the 23 districts in the sample are in the top 25% of the population (9.8-88%). Special education is represented evenly across the quadrants with four districts in the top 25% of the population and 25% in the bottom 25% of the population. In the overall findings of this research study, the issue of overrepresentation by the free and reduced bottom 25% and the ELL top 25% will be noted.

Summary of location and composition factors. As described above, the sample provides an adequate representation of school districts in Washington State. A purposeful population sample aims to provide the researcher with a sample that can be thoroughly studied with few distractions (Merriam, 2009). The purposeful sample should represent the key aspects of the population being studied and should allow the researcher to address the research questions (Patton, 2002). This purposeful population sample meets the criteria set forth for selecting a group of school boards to study and generally represents the composition of Washington State.

Student Performance Index. Later in this chapter the methodology for calculating the student performance index is discussed. This final review of the sample was critical for the usability of this sample group. This research study aims to find if there are statistically significant differences between the identified categorical variables. To conduct inferential statistics, it is critical to have a quality range of scores that can be categorized into low and high performing school districts. Given that Pearson's chi-square Test for Independence is the analysis approach used, there is not a requirement to have parametric data. Regardless, the rationale for determining low and high performing groups must be presented and discussed.

This researcher used the population student performance index score as a benchmark from which to compare the other individual school districts' student performance index scores. 10 districts ranked above the state based on their student performance index score and 13 districts ranked lower. This researcher used the state student performance index score as the cut score between low and high performing school districts (Figure 17).

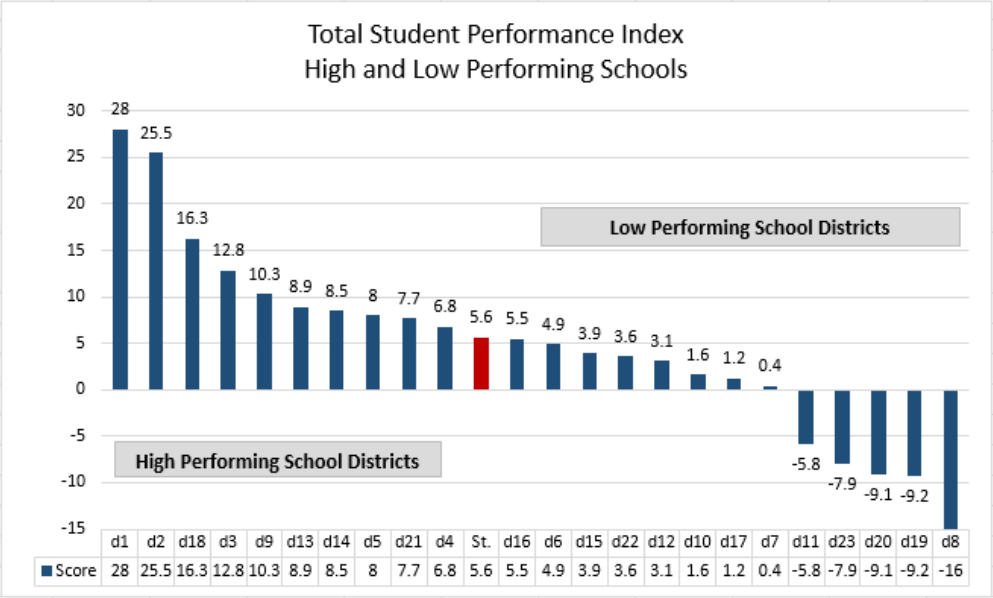

Figure 17. The composition of sample student performance index scores. Washington State is identified in red. d = District and St. = State

The student performance index takes into account three growth measures to determine a district's overall performance. The index scores listed in Figure 16 are total growth scores. Total growth is the sum of the three separate growth scores. The areas where growth was measured was (a) four years of 8th grade math scores; (b) four years of 10th grade reading scores, and (c) four years of graduation rates. There are two distinct aspects of the student performance index score that should be noted. First, the concept of growth is a critical feather in Balanced Governance®. Alsbury and Gore (2015) referenced the idea that school boards should focus on growth trends rather than individual points in time. Based on the emphasis of growth in the Balanced Governance® approach, it was used to develop the independent variable in this study. Second is the performance measures selected. Each of the three measures have been used in prior school board effectiveness research. Shelton (2010) used 8th grade math as the independent variable in his dissertation. Lorentzen (2013) used 10th grade reading as the independent variable

in his dissertation. Goodman et al. (1997) used graduation rates as one of the variables in their study. Prior to running the student performance index for each district, it was determined that ideally, a high performing district would rank higher than the state index score and a low performing district would rank lower than the state index score. The state, also being the population from which the sample was drawn, can be considered the 50th percentile. This means half of the districts would be above and half would be below. After running the student performance index scores for each district there was a distinct differentiation of districts above and below the state index score.

The total range of student performance index scores for the sample was -15.6 to 28. This is a 43 point difference between the highest and lowest index scores. The range for high performing districts was 6.8 to 28; a 21.2 point difference. The range for the low performing group was -15.6 to 5.5; a 21.1 point difference. While there are more districts in the low performing group, the range of scores above and below the state index score are almost the same. With the ranges above and below almost equal, it is determined to be a valid representation of the upper 50th percentile and lower 50th percentile. This is important considering the use of Pearson's chi-square test for Independence which requires two categorical variables. By identifying school districts as high and low performing two groups have been created; making a categorical variable.

Conclusions of the sample research groups. The analysis of the sample group suggests a purposeful population sample that is representative of districts in Washington State. Confirming analyses include representativeness in geographical settings, racial/ethnic composition, other demographic factors, and in student performance. There is not an even breakout of school districts located in eastern and western Washington. This researcher believes

that this factor does not invalidate the sample or the findings of this research study. It should be noted that this difference is present when interpreting the findings.

School Board Meeting Sample

To select the school board meetings to be observed, a process will be used to identify meetings which meeting criteria for observations from 2012-2016. This range of school years was selected given the accessibility of recorded school board meetings. After agendas have been identified as meeting criteria for observation three meetings from each school board will be selected randomly.

Meeting criteria. School boards hold many types of meetings. Most notably, the three types of meetings that can expect to be found would be (a) standard board meetings, (b) study sessions of the board, and (c) special topic board meetings. Standard board meetings usually have a range of topics, consent and non-consent agenda items, and last in duration between 90-180 minutes. Study sessions of the board are an open public meeting but focused on a single topic without any other agenda items. Special topic board meetings have a similar format to standard board meetings but the content and purpose are singularly focused. The criteria for a school board meeting to be considered is two-fold: (a) it is a standard board meeting, and (b) duration of meeting is no less than 60 minutes.

Random selection of meetings. After meetings for each school board have been identified as meeting criteria they meetings will be listed by date. The total number of meetings that meet criteria will be entered into a random sequence generator from random.org. The list of randomized numbers will be placed next to the list of meetings. The meetings which are randomly assigned the numbers 1, 2, and 3 will be selected for observation.

Instruments.

This study consists of two sources of data. The first source of data comes from the observations conducted of 23 school boards in Washington State. Data will be collected on the 10 individual board characteristics® identified in the Balanced Governance® approach (Alsbury & Gore, 2015). Data from the observations is transformed into quantitative categorical data. The second source of data is the student performance index. The student performance index includes three growth factors and will be used as the dependent variable for this research study.

As discussed in Chapter 2, the individual board member characteristics were developed based on research conducted over the past 15 years (Alsbury, 2003; Alsbury, 2008a; 2008b; Delagardelle, 2008; Goodman et. al, 1997; IASB, 2000; Lorentzen, 2013; Saatcioglu and Sargut, 2014; Shelton, 2010). Additionally, the tenants of Balanced Governance® are supported by multiple authors (Walser, 2009; Gemberling, Smith, & Villani, 2009; Dervarics, & O'Brien, 2011, WSSDA, 2009b) as the foundational research for most state school board standards or effectiveness frameworks point back to Goodman et al. (1997) and the Lighthouse study (IASB, 2000).

Grounded Theory Approach

The 10 individual board characteristics® will be used as the basis for school board meeting observation. This is a form of the Grounded Theory Approach (Glaser & Strauss, 1967) with some deviations due to size and scope of the research project. The purpose of the Grounded Theory is intended to develop theory about an area of interest. True Grounded Theorists would start with a blank slate and develop indicators from observation. This study starts with a pre-developed, albeit research based, set of characteristics from which to observe. The similarity is the effort to develop theory as a result of the observations. The coding process of Grounded

Theory has been previously conducted with the outcome of that work evidenced by the 10 individual board characteristics® found in the Balanced Governance® approach. The memoing process during this research study will be documented through the anecdotal notes taken during school board meeting observations. The process to develop integrative designs will be conducted after the data has been collected and inferential statics run. Structured Equation Modeling (SEM) will be used to visually demonstrate the strength of relationships between the independent variables and the dependent variable.

Observation Data Collection

Rater-reliability. Observational protocols used in a previous similar study (Alsbury, 2014) established the reliability of the observational processes and ratings of the 10 Balanced Governance characteristics® and will be used in this study. The 10 individual board member characteristics® were measured during observations of previously recorded school board meetings in this previous study. That study determined that observational and rating protocols and procedures resulted in inter-rater agreement by assuring common definitions and look-fors identified for each of the characteristics. The same protocols and procedures will be used for this study. The previous study used an excel spreadsheet to take anecdotal notes on school board member statements as observed in the audio or video recordings. A plus sign was put next to each board characteristic whenever it was observed in a stabilizing way and a minus was put next to the board characteristic whenever it was observed in a destabilizing way.

The research on Balanced Governance® (Alsbury & Gore, 2015) points to the outcome each individual characteristic has on a school board. The outcomes are explained as either stabilizing or destabilizing. Stabilizing behaviors lead to a healthy school board and comes from the practices and behaviors outlined in the Balanced Governance® individual characteristics.

Destabilizing refers to a school board which is likely to become unhealthy due to unrest and behaviors which deteriorate trust within and outside of the school board. Moving from a destabilized board to a stable school board occurs with consistent and long-term implementation of the Balanced Governance individual school board characteristics®.

After the observation of two selected board meetings, the researchers met to compare findings. For each of the board characteristics the researchers had agreement on whether it was used in a stabilizing or destabilizing way and what level of proficiency was being demonstrated (growth required, developing, accomplished, exemplary). Based on this prior research study observational and ratings protocols, and the ability to show inter-rater agreement, this study, using the same protocols and processes is assuming the observation and data collection methodology is both valid and reliable.

The use of a second observer and rater in this study was considered but abandoned due to the significant time, effort, and cost. To ensure inter-rater reliability it was determined that a single, previously trained observer would provide accurate data collection.

Data collection tool. The data collection tools for this research project are modifications of evaluation forms developed by Alsbury (Alsbury & Gore, 2015) as part of his Balanced Governance® model. Permission was granted by Dr. Alsbury to use/modify these documents for the purpose of this dissertation (Appendix B).

The data collection tool (Appendix C) provides significant information that also helped to attain inter-rater agreement. For each characteristic the following information is provided:

- *Brief description*: information defining the characteristic
- *Stabilizing characteristic:* what specifically should the observer look for in relation to the characteristic being used to stabilize or destabilize the board

- *Practical description:* this provides a real-life example of the characteristic in action
- *Characteristic usage:* tick-marks are used here to identify how the board uses the individual characteristic.

Data collection. One form will be filled out for each meeting observed. The researcher will determine for each characteristic whether it was used to stabilize or destabilize the board. This information will be transferred to an excel data file and transformed into a "2" to indicate effective or a "1" to indicate ineffective. Each school board will receive three ratings of effective or ineffective for each board characteristic.

The researcher will use an iPad to watch the recorded school board meetings. This is a device separate from the researcher's computer. This allows for streaming content on a single device so as not to interfere with the data collection device. The researcher's desktop computer will be used to take anecdotal notes on an Excel spreadsheet (Appendix D). When an anecdotal note is taken, the associated tick-mark (stabilizing or destabilizing) will be circled. The researcher will also have a hard copy of the data collection form on the desk during observation. This will allow for handwritten tick-marks to be documented. The researcher found this technique successful as it allowed for multiple forms of data collection at the same time and less stoppage time of the video/observation.

Scoring of data. Each of the individual board characteristics will receive an overall score for each observation. The data will be collated and determined to indicate stabilizing or destabilizing. If the characteristic indicates stabilizing a "2" will be entered for that school board for that observation. A score of "2" indicates effective. If a characteristic indicates destabilizing, a "1" will be entered for that school board for that observation. A score of "1" indicates ineffective. Each school board will have three scores for each characteristic. These scores will be

averaged together to come up with a mean score for each school board for each of the 10 individual board characteristics. All individual characteristic scores will be combined to get an overall board mean score. Figure 17 demonstrates an example of how the data will be represented in the excel data file for the ratings of an individual school board characteristics. Figure 18 demonstrates an example of how the data will be represented in the excel data file for the overall rating. All characteristics will have their mean score transformed into a categorical 1 (not effective) or 2 (effective). A mean of the transformed scores of 1.60 or a minimum of six characteristics rated as effective, would indicate the school board was overall all effective.

Mean scores will possibly generate a decimal. To take this into account for the mean scores for the individual board characteristics the following methodology will be followed for rounding: 1-1.33 = 1 and 1.66-2 = 2. A school board that has two observations that were indicated as effective will be considered effective overall for that particular characteristic. A school board that has two observations that were indicated as ineffective will be considered ineffective overall for that particular characteristic. Table 3 demonstrates the different ways the individual scores will translate into mean scores and then how the mean scores will transform into a score of “1” ineffective or “2” effective.

Table 3

Example of Scoring and Mean of the Individual Board Characteristics and Score Conversion

	Observation 1	**Observation 2**	**Observation 3**	**Mean**	**Transformed Score**
Example 1	1	1	1	1	1
Example 2	1	1	2	1.33	1
Example 3	1	2	2	1.66	2
Example 4	2	2	2	2	2

District 1						
	Obs 1	Obs 2	Obs 3	Mean	Conversion	Level of Effectiveness
Char 1	1	1	1	1.00	1	Not Effective
Char 2	1	1	2	1.33	1	Not Effective
Char 3	1	2	2	1.67	2	Effective
Char 4	2	2	2	2.00	2	Effective
Char 5	2	1	2	1.67	2	Effective
Char 6	1	1	2	1.33	1	Not Effective
Char 7	2	2	2	2.00	2	Effective
Char 8	1	1	1	1.00	1	Not Effective
Char 9	1	2	1	1.33	1	Not Effective
Char 10	1	2	1	1.33	1	Not Effective

Figure 18. Example of the data from three observations, mean score, transformed score (conversion), and effectiveness category.

1	Obs 1	Obs 2	Obs 3	Mean	Conversion	Level of Effectiveness	Total Model
Char 1	2	1	2	1.67	2	Effective	
Char 2	2	1	1	1.33	1	Not Effective	
Char 3	2	2	1	1.67	2	Effective	
Char 4	2	2	2	2.00	2	Effective	
Char 5	1	1	2	1.33	1	Not Effective	
Char 6	2	2	1	1.67	2	Effective	
Char 7	2	1	2	1.67	2	Effective	
Char 8	2	1	1	1.33	1	Not Effective	
Char 9	2	2	1	1.67	2	Effective	
Char 10	2	1	1	1.33	1	Not Effective	
				Total Model	1.60	Effective	2

Figure 19. Example of the determination of the overall rating.

Student Performance Index Formula

An important aspect of Balanced Governance® is the emphasis on student performance. Effective school boards place a value on student growth over a period of time versus static, single-year indicators of achievement (Alsbury & Gore, 2015). In consideration of the focus on growth, the student performance index takes into account three specific areas of performance to develop a single index score for each school district. The indicators of achievement were taken from prior studies within the body of research that informed the Balanced Governance® approach. The population mean scores are used as a reference point for above and below the typical performance.

Student performance index: 8th grade math. One indicator of achievement previously used in research studies looking at school board effectiveness is 8th grade math. Shelton (2010) used the change in 8th grade math scores over a 10-year period as the dependent variable in his study. Shelton indicated that math is highly correlated to high school and beyond success and that the 8th grade math test is a good indicator of high school readiness in the state of Kentucky.

The Measurement of Student Progress (MSP) was implemented in Washington State in the 2009-2010 school year. The purpose of state testing is to provide information to families about college and career readiness and to comply with state law (OSPI, 2016a). The date range selected for the student performance index was 2011-2014. The MSP was used as the standardized Math assessment for students in Washington State from 2010-2014 (OSPI, 2016d).

Student performance index: 10th grade literacy. The indicator used in Lorentzen's 2013 study was 10th grade Language Arts assessment. Lorentzen argued that 10th grade assessment results are a better measure of system performance than almost any other measure. Students have benefited from the system for a longer period of time and because of this the scores would be a better reflection on the district's effect. In his study, Lorentzen used a static point in time rather than looking at a longitudinal range of scores. This means the dependent variable in his study was one year of 10th grade Language Arts assessment results.

For this study, one factor in the student performance index is 10th grade Reading scores. Washington State implemented the High School Proficiency Exam (HSPE) in the 2009-10 school year. The purpose of state testing is to provide information to families about college and career readiness and to comply with state law (OSPI, 2016a). The date range selected for the student performance index was 2011-2014 (OSPI, 2016c). The HSPE was used as the standardized Literacy assessment for students in Washington State from 2010-2014.

Student performance index: On-time graduation. Goodman et al. (1997) used a variety of student achievement indicators as their measure of high achieving school districts. One of the factors Goodman et al. considered was graduation rates. The research team indicated that graduation was the key achievement factor that should be used to analyze school district performance as it is the fundamental purpose of public schooling.

For this study, on-time graduation rates are taken into account. Washington State changed its methodology for calculating on-time graduation (OSPI, 2012) starting with the class of 2011. For this study, graduation rates will be used from the 2011-2014 (OSPI, 2016b) graduating classes.

Calculation Methodology

Student performance index calculation: content area. To determine each individual school district's student performance index, data was collected from the Office of the Superintendent of Public Instruction, State Report Card, website. Each achievement area was initially calculated to create a student performance index for 8th grade math, 10th grade reading, and graduation rates. As this is a growth model, the calculation compares each year's increase or decrease from the prior year to determine growth or decline. Each growth or decline is added together to create an overall rate of change (growth) during the data period. For the purposes of calculating, numbers were rounded based on standard rounding rules. To calculate the performance index score for each area the following formulas were applied:

8th Grade Math:

[(2012 results – 2011 results)+(2013 results – 2012 results)+(2014 results – 2013 results)]*100 = student performance 8th grade math index

10th Grade Reading:

[(2012 results – 2011 results)+(2013 results – 2012 results)+(2014 results – 2013 results)]*100 = student performance 10th grade reading index

Graduation Rates:

[(2012 results – 2011 results)+(2013 results – 2012 results)+(2014 results – 2013 results)]*100 = student performance 10th grade reading index

District student performance index calculation. After the individual areas were calculated, a formula was used to combine each individual achievement area student performance index score. The aggregate total of the individual areas were added together to create the district's student performance index result. This index provides information about three key performance indicators and the growth or decline a school district demonstrated over the period of time. To calculate the district student performance index score the following formula was applied:

8^{th} Grade Math Index + 10^{th} Grade Reading Index + Graduation Index = District Student Performance Index.

Analysis of student performance index outcomes. After running the formulas with the school district and population data, the outcomes were analyzed to determine whether the data had flaws that should be reconsidered. Based on this researcher's review of the data, it was determined that the student performance index provides an accurate mechanism to identify districts as high performing (above state index score) or low performing (below state index score). Table 4 represents the observations from the student performance index.

Table 4

Observations from the Student Performance Index Calculations

Group	Finding	Score
Population	The population Index score is .8 points higher than the sample mean.	5.60
Sample	The sample had a range of student performance index scores	-16 to 28
Sample	10 districts have a higher Index score than the population and 13 districts have a lower Index score than the population.	
High Performing Districts	The range of scores for high performing districts is 21.2.	6.8 to 28
High Performing Districts	Four districts had a single area of negative growth	Literacy: -1, -1.2 Graduation: -3, -4
High Performing Districts	Most growth was achieved in 8th grade math.	Math: 89 total
High Performing Districts	High growth was demonstrated in graduation rates	Graduation: 36.7
Low Performing Districts	The range of scores for low performing districts is 18.	-15.6 to 5.5
Low Performing Districts	9 of 13 districts had zero or negative growth in graduation rates	-.4, -1, -3, -3, -4, -5, -9, -10, -10
Low Performing Districts	3 of 13 showed zero or negative growth in 8th grade math	-3, -4, -11
Low Performing Districts	Most negative growth was demonstrated in graduation rates	Graduation: -34.1

Procedures and Analysis

The purpose of this study is to use data which can help this researcher respond to the research question. The research question asks: Does a significant relationship exist between certain school board characteristics and student achievement? This study uses a predeveloped set of school board characteristics to define the direct observation of school board meetings. The predeveloped characteristics will be used as one set of categorical variables. The data from the observations will be analyzed and the researcher will make the determination about whether the school board is effective or ineffective. These data will be one set of the categorical variables.

The other set of categorical variables will come from the Student Performance Index scores that were calculated for each school district. 10 school districts were categorized as high performing and 13 school districts were categorized as low performing. The outcome of this designation is the transformation from the student performance index scores to categorical variables. By transforming these data into categorical variables it will allow for the researcher to run inferential statistics.

Inferential Statistics: Pearson's Chi-Square

When using categorical variables there are a number of statistics that can be used. When using two sets of categorical variables, Pearson's chi-square test for independence can be used to determine if the variables are independent (Field, 2009). Chi-square determines whether there is a relationship between two categorical variables. While chi-square does not consider the variables to be dependent or independent. This study identifies the school board characteristics as the independent variables and the student performance index score as the dependent variables.

Assumptions that must be met in order to use chi-square:

1. Two variables which are both categorical; and
2. Each variable must contain two or more categorical and independent groups.

If these assumptions are not met then chi-square test for independence should not be used.

When using the chi-square test for independence, the researcher must use caution with small sample sizes. Field (2009) states, "it is acceptable…to have up to 20% of expected frequencies below 5, the result is a loss of statistical power" (p. 692). As recommended by Field, this researcher will also use Fisher's Exact Test if expected results are below 5. Fisher's Exact Test does not approximate the *p* value but provides an exact *p* value. It is more difficult to find significant relationships using Fisher's exact test but it also does not provide false-positive

results. If the *p* value is found to be statistically significant, we can reject the null hypothesis meaning the variables are not independent and there is a relationship.

Chi-square can only indicate whether a relationship exists or not; it cannot determine the strength of the relationship. Cramer's V will be used to measure the strength of the associations run in each of the chi-square tests. Cramer's V is used to measure the strength of an association between two categorical variables.

Pearson's chi-square test for independence measures the presence of a statistically significant relationship between highly effective school boards and high performing school districts.

Chi-square boxes. To fully analyze the null hypothesis, 11 tests will be run using Pearson's chi-square test for independence. Initially, each of the individual board member characteristics will be run against the performance level of the school district. This will determine if any of the individual board characteristics has a statistically significant relationship on its own with student performance. As described above, a mean score will also be generated for the overall model. Pearson's chi-square test for independence will be run to see if there is a statistically significant relationship between the combined characteristics and student performance. Table 5 shows the 11 different 2x2 contingency tables that will be used.

Table 5

Chi-square boxes for individual board characteristics

Board Member Characteristic		High Performing School District	Low Performing School District
Role Boundaries	Effective School Board		
	Ineffective School Board		

Board Member Characteristic		High Performing School District	Low Performing School District
Role Orientation	Effective School Board		
	Ineffective School Board		

Board Member Characteristic		High Performing School District	Low Performing School District
Advocacy Focus	Effective School Board		
	Ineffective School Board		

Board Member Characteristic		High Performing School District	Low Performing School District
Student Concern Focus	Effective School Board		
	Ineffective School Board		

Board Member Characteristic		High Performing School District	Low Performing School District
Solution Focus	Effective School Board		
	Ineffective School Board		

Board Member Characteristic		High Performing School District	Low Performing School District
Exercise of Influence	Effective School Board		
	Ineffective School Board		

Board Member Characteristic		High Performing School District	Low Performing School District
Use of Voice	Effective School Board		
	Ineffective School Board		

Board Member Characteristic		High Performing School District	Low Performing School District
Use of Power	Effective School Board		
	Ineffective School Board		

Board Member Characteristic		High Performing School District	Low Performing School District
Decision-making Style	Effective School Board		
	Ineffective School Board		

Board Member Characteristic		High Performing School District	Low Performing School District
Motivation for Service	Effective School Board		
	Ineffective School Board		

Board Member Characteristic		High Performing School District	Low Performing School District
Board Characteristics: Combined Model	Effective School Board		
	Ineffective School Board		

Inferential Statistics: Structural Equation Modeling.

After running the Pearson's chi-square test for independence, Structural Equation Modeling (SEM) will be used to show the relationships between the multiple variables. SEM allows researchers to "address questions about complex systems" (Grace et al., 2012. p. 2). Historically, SEM has been used to support observational studies (Grace et al., 2012) given the number of variables all associated and related to the group dynamics and complex system of the observation arena albeit a classroom, 1:1 instruction, and in this study, school board meetings.

There has been much discussion about the appropriate *N* for using SEM. It has been shown that too large a sample will provide false negatives given the confluence of relationships

(Tanaka, 1987). No definitive statement has been made regarding sample size for use with SEM but parameters have generally been agreed to and will be applied in this study as well. Generally, the *p* value, the chi-square statistic, should be in a range between two and five (Tanaka, 1987). This allows the model to provide insight into the relationships presented.

SEM also provides the benefit of using graphical representations of the model. This will be beneficial in continuing to understand the relationship between school board members and student achievement.

Summary

Chapter Three provided information about the hypotheses, research questions, population/sample, instruments, observational theory, procedures and analyses. The following chapters will provide information about the findings, conclusions, and recommendations based on the observations and analyses conducted as discussed in this chapter.

Chapter Four

Results

The purpose of this chapter is to provide an analysis of the transformed observation data which addresses the research question; does a significant relationship exist between a school board's practice of the 10 Balanced Governance school board characteristics® and student achievement change?

The previous chapter provided a description of the methodologies used to collect, transform, and analyze the research data. Observations of twenty-three school boards were conducted using the Grounded Theory Approach (Glaser & Strauss, 1967). Memoing was used to collect the verbal utterances of school board members. These data were subsequently transformed into quantitative data in two categories: (1) ineffective school boards or (2) effective school boards. School districts were also placed into two categories based on student achievement data: (1) low performing school district or (2) high performing school district. These sets of categorical data provided the necessary information to run inferential statistics to determine whether a significant relationship existed between school board characteristics and student achievement. Subsequent to inferential statistics being run, Structural Equation Modeling (SEM) was used to demonstrate the strength of relationships between the independent variables and the dependent variables.

The results of the inferential statistics and the SEM were considered and applied to the underlying theoretical construct to help respond to the research question.

Observational Data (Qualitative Data)

This researcher conducted observations of 23 school boards in Washington State. School boards were selected based on specific criteria and board meetings were randomly selected based

on specific criteria. Each of these processes were defined in Chapter 3. It should be noted that district 18, a high performing school district, was only observed twice due to technical difficulties with the audio recordings. Additionally, one of the two available audio recordings was such that limited information was available. Regardless, the information that was available provided evidence of low performing school board characteristics during that specific observation.

The data collected from this study consists of 68 observations totaling 149.5 hours of school board meeting observations. The mean length of the board meetings was 2.2 hours. The range of mean meeting length was 1.0-4.9 hours. When clustering the meeting duration there were 12 districts with mean length of meetings ranging from 1.0-1.9 hours, eight districts with mean length of meetings ranging from 2.0-2.9 hours, two districts with mean meeting length ranging from 3.2-3.4 hours, and one district with a mean length of meetings of 4.9 hours.

Pearson's chi-square test for independence (chi-square) was run to determine if there was statistical significance between length of meeting and district performance. Given the sample size of the study, Fisher's Exact Test (Fisher's) was run to confirm results. Short school board meetings were determined to be less than 116 minutes (116 minutes was the median length of board meetings among the twenty-three sample districts) and long meetings were determined to be greater than 116 minutes. Chi-square $_X{}^2$ (1) = 1.05, p =.305. was not statistically significant. SPSS indicated that one cell did not have the expected count so Fisher's Exact Test p = .214 was used to confirm the findings. The null hypothesis was accepted indicating the variables of district performance and length of meeting are independent. Additionally, a chi-square was run to determine whether a relationship existed between school board effectiveness and length of meeting. The variable Total Model was used as the measure of school board effectiveness. Chi-

square x^2 (1) = .034, p =.855. was not statistically significant. SPSS indicated that one cell did not have the expected count so Fisher's Exact Test p = 1.0 was used to confirm the findings. The null hypothesis was accepted indicating the variables of school board effectiveness and length of meeting are independent.

Qualitative statements. The findings of this research study are based on twenty-three observations of school boards in Washington State. Actual documented school board member statements that aligned with specific characteristics are provided in Appendix E for clarity of content. These statements informed the designation of effective and ineffective ratings of school boards.

Inferential Statistics

As previously described, there are 11 independent variables and one dependent variable in this research study. The independent variables include the 10 individual board member characteristics found in the Balanced Governance Approach®. The eleventh variable, named "Total Model" is the combination of the 10 individual board member characteristics®. The Total Model variable had two categories, not effective and effective. These categories were determined by finding the mean of converted scores for each of the 10 individual board member characteristics®. A school board that had a mean score of 1.6 (minimum 6 of 10 effective characteristics) was determined to be overall effective.

Individual board characteristic inferential statistics. Pearson's chi-square test for independence (chi-square) was run in order to determine if there was a statistically significant relationship between school board characteristics and student achievement. Given the sample size (23) Fisher's Exact Test (Fisher's) was run to ensure consistent results. Appendix F provides

an overview of relevant inferential statistics for the 10 individual board characteristics and the Total Model.

Characteristic 1: Role boundaries. Role boundaries are described as a board member who understands the difference between the role of oversight and micromanagement. The stabilizing (positive) characteristic of role boundaries is oversight with knowledgeable critique and advocacy. An example of role boundaries could be the following:

> *If confronted by a parent in the store, the board member can explain school needs, applied interventions, and current success data. Avoids generalities or playing the role of cheerleader or critic.*

After conducting observations of all 23 school boards, Table 6 shows the 2x2 contingency table for Characteristic 1: Role Boundaries.

Table 6

Chi-square boxes for Role Boundaries

Board Member Characteristic		Not Effective School Board	Effective School Board
Role Boundaries	Low Performing School District	10	3
	High Performing School District	2	8

Inferential statistics were run in SPSS to determine whether the variables were independent or if a statistically significant association existed between the role boundaries (Table 7) of school boards and the performance outcomes for students. The chi-square test for independence analysis indicates that a statistically significant association exists for role boundaries x^2 (1) = 7.34, p = .007. SPSS indicated that one or more cells had less than the expected count so Fisher's was used to confirm the significance (p = .012). Based on these

findings, the null hypothesis is rejected for role boundaries indicating the variables are not independent. Cramer's V (Cramer's) was run to determine the strength of association or effect size. Role boundaries was found to have a large effect size (V = .57). An odds ratio was run based on these data and indicates that the odds of having a high performing school district is 13.3 times higher in a school district with a school board that has effective role boundaries than in a district where the school board has ineffective role boundaries.

Table 7

Inferential Statistics for Role Boundaries

	x^2	*df*	*p*	Fisher's	Cramer's V
Role Boundaries	7.340[a]	1	.007**	.012*	.565

Note. a. 1 or more cells have expected count less than 5.
*p= significant at the .05 level
**p= significant at the .01 level

***Characteristic 2: Role orientation*.** Role orientation is described as a board member who understands that an open dialogue orientation focuses on general interests and welcomes various viewpoints, but expects unanimous support of final board decisions. An open debate orientation focuses on activism and special interests, values individual viewpoints over collective consensus, and doesn't expect support of final board decisions. The stabilizing (positive) characteristic of role orientation is the ability to shift to more open debate in times of community change and dissatisfaction. An example of role boundaries could be the following:

> *The board member seeks out input from multiple and varied stakeholders and seeks open dialogue. However, when conflict arises, the board member has the wisdom to maintain order by discouraging contentious communication tactics.*

After conducting observations of all 23 school boards, Table 8 shows the 2x2 contingency table for Characteristic 2: Role Orientation.

Table 8

Chi-square boxes for Role Orientation

Board Member Characteristic		Not Effective School Board	Effective School Board
Role Orientation	Low Performing School District	10	3
	High Performing School District	3	7

Inferential statistics were run in SPSS to determine whether the variables were independent or if a statistically significant association existed between the role orientation (Table 9) of school boards and the performance outcomes for students. The chi-square test for independence analysis indicates that a statistically significant association exists for role orientation $_X{}^2$ (1) = 5.06, p = .024. SPSS indicated that one or more cells had less than the expected count so Fisher's was used to confirm the significance (p = .040). Based on these findings, the null hypothesis is rejected for role orientation indicating the variables are not independent. Cramer's V (Cramer's) was run to determine the strength of association or effect size. Role boundaries was found to have a medium effect size (V = .47). An odds ratio was run based on these data and indicates that the odds of having a high performing school district is 7.8 times higher in a school district with a school board that has effective role orientation than in a district where the school board has ineffective role orientation.

Table 9

Inferential Statistics for Role Orientation

	x^2	*df*	*p*	Fisher's	Cramer's V
Role Orientation	5.064[a]	1	.024*	.04*	.469

Note. a. 1 or more cells have expected count less than 5.
*p = significant at the .05 level
**p = significant at the .01 level

Characteristic 3: Advocacy focus. Advocacy focus is described as a board member who understands a position is often polarizing and identifies "friends" versus "enemies". An interest is discovered through conversation to get to shared solutions that can be applied to many students and achieved through various means. The stabilizing (positive) characteristic of advocacy focus is a focus on interests. An example of advocacy focus could be the following:

> *The board member seeks to understand the multiple and varied positions of district constituents but seeks a solution that can address the common interest. For example, a board member can support a position of improving achievement for underperforming students without focusing exclusively on only one cause of low achievement (i.e. cultural insensitivity).*

After conducting observations of all 23 school boards, Table 10 shows the 2x2 contingency table for Characteristic 3: Advocacy Focus.

Table 10

Chi-square boxes for Advocacy Focus

Board Member Characteristic		Not Effective School Board	Effective School Board
Advocacy Focus	Low Performing School District	10	3
	High Performing School District	2	8

Inferential statistics were run in SPSS to determine whether the variables were independent or if a statistically significant association existed between the advocacy focus (Table 11) of school boards and the performance outcomes for students. The chi-square test for independence analysis indicates that a statistically significant association exists for advocacy focus x^2 (1) = 7.34, p = .007. SPSS indicated that one or more cells had less than the expected count so Fisher's was used to confirm the significance (p =.012). Based on these findings, the null hypothesis is rejected for advocacy focus indicating the variables are not independent. Cramer's V (Cramer's) was run to determine the strength of association or effect size. Role boundaries was found to have a large effect size (V = .57). An odds ratio was run based on these data and indicates that the odds of having a high performing school district is 13.3 times higher in a school district with a school board that has effective advocacy focus than in a district where the school board has ineffective advocacy focus.

Table 11

Inferential Statistics for Advocacy Focus

	x^2	*df*	*p*	Fisher's	Cramer's V
Advocacy Focus	7.340[a]	1	.007**	.012*	.565

Note. a. 1 or more cells have expected count less than 5.
*p = significant at the .05 level
**p = significant at the .01 level

Characteristic 4: Student concern focus. Student concern focus is described as a board member who supports a broad focus on student concerns. A stated responsibility to insure all students are afforded opportunities to succeed. Avoids a targeted focus on providing opportunities for single groups of students. The stabilizing (positive) characteristic of student

concern focus is the Broad focus of opportunity for all students. An example of student concern focus could be the following:

The board member avoids focusing only on a narrow agenda of student issues and needs. Board member avoids focusing only on particular student demographic groups and issues.

After conducting observations of all 23 school boards, Table 12 shows the 2x2 contingency table for Characteristic 4: Student concern focus.

Table 12

Chi-square boxes for Student Concern Focus

Board Member Characteristic		Not Effective School Board	Effective School Board
Student Concern Focus	Low Performing School District	7	6
	High Performing School District	3	7

Inferential statistics were run in SPSS to determine whether the variables were independent or if a statistically significant association existed between the student concern focus (Table 13) of school boards and the performance outcomes for students. The chi-square test for independence analysis indicates that a statistically significant association does not exist for student concern focus $_X{}^2$ (1) = 1.31, p = .253. SPSS indicated that one or more cells had less than the expected count so Fisher's was used to confirm the finding (p = .402). Based on these findings, the null hypothesis is accepted for student concern focus indicating the variables are independent. Cramer's V (Cramer's) was run to determine the strength of association or effect size. Role boundaries was found to have a large effect size (V = .24). An odds ratio was run based on these data and indicates that the odds of having a high performing school district is 3.9

times higher in a school district with a school board that has effective student concern focus than in a district where the school board has ineffective student concern focus.

Table 13

Inferential Statistics for Student Concern Focus

	x^2	*df*	*p*	Fisher's	Cramer's V
Student Concern Focus	1.308[a]	1	.253	.402	.238

Note. a. 1 or more cells have expected count less than 5.
*p = significant at the .05 level
**p = significant at the .01 level

Characteristic 5: Solution focus. Solution focus is described as a board member who has an understanding that the local school district, and each school has unique and shifting needs; often requiring innovative solutions. The stabilizing (positive) characteristic of solution focus is recognizing individual needs and supports creative, innovative solutions. An example of solution focus could be the following:

> *The board member avoids adopting standardized, one-size-fits-all programs and focuses on identifying unique district needs. The board member avoids promoting standardized solutions and prefers to design a solution to fit the unique need of each district as supported by data evidence.*

After conducting observations of all 23 school boards, Table 14 shows the 2x2 contingency table for Characteristic 5: Solution focus.

Table 14

Chi-square boxes for Solution Focus

Board Member Characteristic		Not Effective School Board	Effective School Board
Solution Focus	Low Performing School District	11	2
	High Performing School District	4	6

Inferential statistics were run in SPSS to determine whether the variables were independent or if a statistically significant association existed between the solution focus (Table 15) of school boards and the performance outcomes for students. The chi-square test for independence analysis indicates that a statistically significant association exists for solution focus $_{X}{}^{2}$ (1) = 4.96, p = .026. SPSS indicated that 1 or more cells had less than the expected count so Fisher's was used to confirm the significance (p = .039). Based on these findings, the null hypothesis is rejected for solution focus indicating the variables are not independent. Cramer's V (Cramer's) was run to determine the strength of association or effect size. Solution focus was found to have a medium effect size (V = .46). An odds ratio was run based on these data and indicates that the odds of having a high performing school district is 7.5 times higher in a school district with a school board that has effective solution focus than in a district where the school board has ineffective solution focus.

Table 15

Inferential Statistics for Solution Focus

	$_{X}{}^{2}$	*df*	*p*	Fisher's	Cramer's V
Solution Focus	4.96[a]	1	.026*	.039*	.464

Note. a. 1 or more cells have expected count less than 5.

*p = significant at the .05 level

**p = significant at the .01 level

Characteristic 6: Exercise of influence. Exercise of influence is described as a board member who understands they possess no individual authority. Power rests in the board as a group only. The stabilizing (positive) characteristic of exercise of influence is when a school board utilizes entity influence. An example of exercise of influence could be the following:

> *The board member avoids communicating directives or interests to individual school district employees. Visits to schools are unobtrusive, informational, and as part of established activities (sports, open house, school events).*

After conducting observations of all 23 school boards, Table 16 shows the 2x2 contingency table for Characteristic 6: Exercise of Influence.

Table 16

Chi-square boxes for Exercise of Influence

Board Member Characteristic		Not Effective School Board	Effective School Board
Exercise of Influence	Low Performing School District	10	3
	High Performing School District	3	7

Inferential statistics were run in SPSS to determine whether the variables were independent or if a statistically significant association existed between the exercise of influence (Table 17) of school boards and the performance outcomes for students. The chi-square test for independence analysis indicates that a statistically significant association exists for role boundaries $x^2(1) = 5.06$, $p = .024$. SPSS indicated that one or more cells had less than the expected count so Fisher's was used to confirm the significance ($p = .04$). Based on these findings, the null hypothesis is rejected exercise of influence indicating the variables are not independent. Cramer's V (Cramer's) was run to determine the strength of association or effect

size. Exercise of influence was found to have a medium effect size (V = .47). An odds ratio was run based on these data and indicates that the odds of having a high performing school district is 7.8 times higher in a school district with a school board that has effective exercise if influence than in a district where the school board has ineffective exercise of influence.

Table 17

Inferential Statistics for Exercise of Influence

	x^2	*df*	*p*	Fisher's	Cramer's V
Exercise of Influence	5.064[a]	1	.024*	.04*	.469

Note. a. 1 or more cells have expected count less than 5.
**p* = significant at the .05 level
***p* = significant at the .01 level

Characteristic 7: Use of voice. Use of voice is described as a board member who seeks to hear and understand interests, and come to resolution and reconciliation understands and does not use their voice to tell and sell their position. The stabilizing (positive) characteristic of use of voice is a board member uses their voice to hear and understand. An example of use of voice could be the following:

> *The board member avoids over-talking to promote their own interest. They do not see communication as a competition. They promote civil dialogue with a goal to listen and discover a resolution that serves all interests.*

After conducting observations of all 23 school boards, Table 18 shows the 2x2 contingency table for Characteristic 7: Use of Voice.

Table 18

Chi-square boxes for Use of Voice

Board Member Characteristic		Not Effective School Board	Effective School Board
Use of Voice	Low Performing School District	10	3
	High Performing School District	6	4

Inferential statistics were run in SPSS to determine whether the variables were independent or if a statistically significant association existed between the use of voice (Table 19) of school boards and the performance outcomes for students. The chi-square test for independence analysis indicates that a statistically significant association does not exists for use of voice $_{X}{}^{2}$ (1) = .765, p = .382. SPSS indicated that 1 or more cells had less than the expected count so Fisher's was used to confirm the finding (p = .650). Based on these findings, the null hypothesis is accepted for use of voice indicating the variables are independent. Cramer's V (Cramer's) was run to determine the strength of association or effect size. Use of voice was found to have a small effect size (V = .18). An odds ratio was run based on these data and indicates that the odds of having a high performing school district is 2.2 times higher in a school district with a school board that has effective use of voice than in a district where the school board has ineffective use of voice.

Table 19

Inferential Statistics for Use of Voice

	x^2	*df*	*p*	Fisher's	Cramer's V
Use of Voice	.765[a]	1	.0382	.650	.182

Note. a. 1 or more cells have expected count less than 5.
*p = significant at the .05 level
**p = significant at the .01 level

Characteristic 8: Use of power. Use of power is described as a board member who understands the difference between the concept of power with and power over. Power With is using your position to ensure all voices are heard and collaborative solutions are guaranteed. Power Over is using your position to get your own way through threat or reward. The stabilizing (positive) characteristic of use of power is ensuring the concept of power with is used in all aspects of governance. An example of use of power could be the following:

> *The board member uses their power to ensure that all needs are heard and that solutions meet multiple interests. They would not attempt to push only their own solutions or highlight only their own needs and interests.*

After conducting observations of all 23 school boards, Table 20 shows the 2x2 contingency table for Characteristic 8: Use of Power.

Table 20

Chi-square boxes for Use of Power

Board Member Characteristic		Not Effective School Board	Effective School Board
Use of Power	Low Performing School District	11	2
	High Performing School District	7	3

Inferential statistics were run in SPSS to determine whether the variables were independent or if a statistically significant association existed between the use of power (Table 21) of school boards and the performance outcomes for students. The chi-square test for independence analysis indicates that a statistically significant association does not exists for use of power $_{X}{}^{2}$ (1) = .710, p = .40. SPSS indicated that one or more cells had less than the expected count so Fisher's was used to confirm the finding (p = .618). Based on these findings, the null hypothesis is accepted for use of power indicating the variables are independent. Cramer's V (Cramer's) was run to determine the strength of association or effect size. Use of power was found to have a small effect size (V = .18). An odds ratio was run based on these data and indicates that the odds of having a high performing school district is 2.1 times higher in a school district with a school board that has effective use of power than in a district where the school board has ineffective use of power.

Table 21

Inferential Statistics for Use of Power

	$_{X}{}^{2}$	*df*	*p*	Fisher's	Cramer's V
Use of Power	.710[a]	1	.40	.618	.176

Note. a. 1 or more cells have expected count less than 5.
*p = significant at the .05 level
**p = significant at the .01 level

Characteristic 9: Decision-making style. Decision-making style is described as a board member who understands that decision-making can be done individually or can be done collaboratively with and through others. The stabilizing (positive) characteristic of decision-making style is a commitment to collaborative decision making. An example of role boundaries could be the following:

The board member seeks to evaluate data to confirm issues and needs, then ensure that proposed solutions and measures fit the stated needs and goals.

After conducting observations of all 23 school boards, Table 22 shows the 2x2 contingency table for Characteristic 9: Decision-making Style.

Table 22

Chi-square boxes for Decision-making Style

Board Member Characteristic		Not Effective School Board	Effective School Board
Decision-making style	Low Performing School District	10	3
	High Performing School District	3	7

Inferential statistics were run in SPSS to determine whether the variables were independent or if a statistically significant association existed between the decision-making style (Table 23) of school boards and the performance outcomes for students. The chi-square test for independence analysis indicates that a statistically significant association exists for decision-making style x^2 (1) = 5.06, p = .024. SPSS indicated that one or more cells had less than the expected count so Fisher's was used to confirm the significance (p =.04). Based on these findings, the null hypothesis is rejected decision-making style indicating the variables are not independent. Cramer's V (Cramer's) was run to determine the strength of association or effect size. Decision-making style was found to have a medium effect size (V = .47). An odds ratio was run based on these data and indicates that the odds of having a high performing school district is 7.8 times higher in a school district with a school board that has effective decision-making style than in a district where the school board has ineffective decision-making style.

Table 23

Inferential Statistics for Decision-making Style

	x^2	*df*	*p*	Fisher's	Cramer's V
Decision-making Style	5.064[a]	1	.024*	.04*	.469

Note. a. 1 or more cells have expected count less than 5.
*p = significant at the .05 level
**p = significant at the .01 level

Characteristic 10: Motivation for service. Motivation for service is described as a board member who serves for personal or for altruistic reasons. The stabilizing (positive) characteristic of motivation for service is board membership for altruistic reasons. An example of motivation for service could be the following:

> *Board members do not run for reasons of personal ego or prestige, a need for involvement, to correct a personal concern, to replace particular school employees, or as a step to future office. Board members run to serve the community, to fulfill a democratic responsibility, and to serve all students and all needs.*

After conducting observations of all 23 school boards, Table 24 shows the 2x2 contingency table for Characteristic 10: Motivation for Service.

Table 24

Chi-square boxes for Motivation for Service

Board Member Characteristic		Not Effective School Board	Effective School Board
Motivation for Service	Low Performing School District	7	6
	High Performing School District	7	3

Inferential statistics were run in SPSS to determine whether the variables were independent or if a statistically significant association existed between the motivation for service (Table 25) of school boards and the performance outcomes for students. The chi-square test for independence analysis indicates that a statistically significant association does not exist for motivation for service x^2 (1) = .619, p = .431. SPSS indicated that one or more cells had less than the expected count so Fisher's was used to confirm the finding (p = .67). Based on these findings, the null hypothesis is accepted for motivation for service indicating the variables are independent. Cramer's V (Cramer's) was run to determine the strength of association or effect size. Motivation for service was found to have a small effect size (V = .16). An odds ratio was run based on these data and indicates that the odds of having a high performing school district is .7 times lower in a school district with a school board that has effective motivation for service than in a district where the school board has ineffective motivation for service.

Table 25

Inferential Statistics for Motivation for Service

	x^2	*df*	*p*	Fisher's	Cramer's V
Motivation for Service	.619[a]	1	.431	.669	.164

Note. a. 1 or more cells have expected count less than 5.
*p = significant at the .05 level
**p = significant at the .01 level

Individual board member characteristics: Total Model. The 10 individual board member characteristics are part of the Balanced Governance Approach®. While not any one characteristic fulfills the obligations of a school board, all of them put together make-up the necessary elements of an effective school board (Alsbury & Gore, 2015). Given this, the total model was run to determine if the compilation of the 10 characteristics in a single variable could

provide evidence of the overall model having a statistically significant association with improved student achievement results.

After conducting observations of all 23 school boards, Table 26 shows the 2x2 contingency table for the Total Model.

Table 26

Chi-square boxes for Total Model

Board Member Characteristic		Not Effective School Board	Effective School Board
Total Model	Low Performing School District	10	3
	High Performing School District	3	7

Inferential statistics were run in SPSS to determine whether the variables were independent or if a statistically significant association existed between the total model (Table 27) and the performance outcomes for students. The chi-square test for independence analysis indicates that a statistically significant association does exist for the total model $_X{}^2$ (1) = 5.06, p = .024. SPSS indicated that one or more cells had less than the expected count so Fisher's was used to confirm the significance (p = .04). Based on these findings, the null hypothesis is rejected for the total model indicating the variables are not independent. Cramer's V (Cramer's) was run to determine the strength of association or effect size. The total model was found to have a medium effect size (V = .47). An odds ratio was run based on these data and indicates that the odds of having a high performing school district is 7.8 times higher in a school district with a school board that demonstrates overall effectiveness within the Balanced Governance individual board member characteristics® than in a district where the school board demonstrates overall ineffectiveness within the Balanced Governance individual board member characteristics®.

Table 27

Inferential Statistics for the Total Model

	x^2	*df*	*p*	Fisher's	Cramer's V
Total Model	5.064[a]	1	.024*	.04*	.469

Note. a. 1 or more cells have expected count less than 5.
*p = significant at the .05 level
**p = significant at the .01 level

Summary for inferential statistics. Pearson's chi-square test for independence was used to respond to the research question. Based on the findings of the chi-square the null hypothesis was accepted or rejected. For each of the 2x2 contingency tables, SPSS reported that one or more boxes was reporting less than five. This required this researcher to confirm findings using Fisher's Exact Test. Fisher's confirmed each of the chi-square findings of significance or non-significance. Cramer's V and an odds ratio were run to demonstrate effect size for each statistic.

Based on the observations of 23 school boards, it was determined that six of the 10 individual board member characteristics from the Balanced Governance Approach® had a statistically significant association with their district's measure of student achievement (described in Chapter Three). Additionally, when considering all variables together (Total Model), this was also shown to be statistically significant with the district's measure of student achievement.

Chapter Five will provide further insights and recommendations based on the findings of the inferential statistics.

Structural Equation Modeling

AMOS 23 was used to run a regression analysis in a Structural Equation Modeling (SEM) environment. This allows for the model to show the relationships (effect) between the

multiple independent variables (individual board characteristics) and the dependent variable of student achievement. This researcher did not modify the model by making overt connections between variables with significant covariance. SEM was used to describe the model (individual board characteristics) as opposed to refine the model. Chapter 5 will provide insights into further research that could be informed based on the outcomes found with the SEM statistics.

Variable summary. In SEM variables are referenced as endogenous (independent from within the model) and exogenous (dependent from outside the model and independent of other exogenous variables). Additionally, there is an error variable called the unobserved, exogenous variables. In this research study, the model endogenous variable is District Performance (Dist_Perf). The exogenous variables in this study are Motivation for Services (Motivation_Serv), Role Boundaries (Role_Bound), Role Orientation (Role_Orient), Advocacy Focus (Advocacy_Focus), Student Concern (Student_Concern), Solution Focus (Solution_Focus), Exercise of Influence (Exer_Influence), Use of Voice (Voice), Use of Power (Power), and Decision-making Style (Decision_Making). The model has 12 total variables with 11 observed variables and one unobserved variable.

Notes for the model. Part of the calculation in SEM is determining the degrees of freedom. This model has 45 degrees of freedom and 21 parameters that were required to be estimated. The result for the model determined that the local minimum was achieved. Give the *N* size the, function of log likelihood statistic or, the minimum of discrepancy function, CMIN = -131.795 was reported as opposed to the chi-square statistic. If this researcher was looking to develop better fitting SEM addressing covariance issues in the Modification Indices would change the Function of log likelihood statistic.

Model fit. AMOS reports a variety of statistics that help to inform the fit of the overall model. Each of the statistics allows a researcher to better understand how adjustments (i.e., modification indices below) can make the overall model more effective. Given the purpose of using SEM in this research study no adjustments were made and the Model Fit statistics are reported as descriptive statistics rather than inferential statistics.

CMIN (Minimum of discrepancy function) = -131.795 where a small number is better

RMR (Root Mean Square Residual) = 3.224 where 0 is a perfect fit

GFI (Goodness of Fit) = .277 where 1 is an exact fit

AIC is not reported for this study since only one model is being reported

Modification indices. AMOS provides a table showing a statistic called the modification indices (M.I.). This statistic helps the researcher to understand the covariance which is most impacting the overall model. The largest M.I. would be addressed first to start correcting the model. For the purposes of this reseach study, the M.I. helps the researcher to understand the most significant impacts on the overall model. Appendix G shows a list of the Modification Indices from this model. The range of M.I. scores are 4.215-22.00. The most impactful covariance within the model are Exer_Influence and Decision_Making at 22.00 and Role_Bound and Decision_Making at 18.462. By addressing the outlying M.I. issues the statistic, function of log likelihood, will start to correct. As previously stated, this researcher did not conduct any modification to the SEM as the use of modeling was to provide information about the current model not to correct the model.

Estimates for the model: Variance, covariance, and effects. While SEM was not used to increase the efficacy of the model, there are underlying statistical analyses that provide insight into how the model works and interacts. AMOS reports regression, standardized regression,

variance, residual covariance, standardized residual covariance, and the direct and indirect effects between the exogenous and endogenous variables.

Variance. Table 28 provides information on the variance for each variable (observed and not observed) to more fully understand how the variables apply to the model. AMOS has determined that the predictor variables (independent variables) make up 99.6% of the variance. This means the error variable accounts for .4% of the variance within the model. As can be seen, there is more variance accounted for in total than is possible and is why the standardized residual covariance is important to review in the next session. Variance estimates for the model have a range of .170 to .250. The outliers in this model are Power (.170) and Voice (.212).

Table 28

Variance Estimates and Standard Error (S.E.) for the Board Characteristics (SEM Model)

	Estimates	S.E.
Motivation_Serv	.238	.072
Role_Bound	.250	.075
Role_Orient	.246	.074
Advocacy_Focus	.250	.075
Student_Concern	.246	.074
Solution_Focus	.227	.068
Exer_Influence	.246	.074
Voice	.212	.064
Power	.170	.051
Decision_Making	.246	.074
E1	.095	.029

Standardized residual covariance. Table 29 provides information on the standardized residual covariance for the model. Standardized residual covariance is determined by finding the difference between the sample covariance and the model-implied covariance. For a correct model all standardized residual covariance should be reported as less than two. Determining covariance of variables is not the purpose of this research study, yet looking at unique covariance can help more fully explain and understand the model. It should be noted that a number of variables have a interactions which are affecting the overall model. Of note, the variables Decision_Making and Exer_Influence have a large residual covariance at 4.69. Other covariance interactions which are affecting the model are Voice and Decision_Making at 3.54, Power and Voice at 3.74, Voice and Exer_Influence at 3.54, Role_Bound and Decision_Making at 3.47, Role_Orient and Advocacy_Focus at 4.30, and Advocacy_Focus and Exer_Influence at 3.47. As previously stated, to make the model fit better, these covariance issues would need to be resolved prior to moving forward. These data would suggest there is confluence within the variables that would be best addressed to correct the model. Given this researcher's intent is to demonstrate the current model this information will be used in Chapter 5 to help inform recommendations for continued research.

Table 29

Standardized Residual Covariance for the Individual Board Characteristics in the SEM Model

	Decision Making	Power	Voice	Exer Influence	Solution Focus	Student Concern	Advocacy Focus	Role Orient	Role Bound	Motivation Serv	Dist Perf
Decision Making	.00										
Power	2.82	.00									
Voice	3.54	3.74	.00								
Exer Influence	4.69	2.82	3.54	.00							
Solution Focus	3.04	2.35	2.39	3.04	.00						
Student Concern	2.78	1.17	1.83	2.78	2.14	.00					
Advocacy Focus	3.47	1.59	2.35	3.47	2.72	2.29	.00				
Role Orient	3.03	1.82	1.75	3.03	3.04	1.95	4.30	.00			
Role Bound	3.47	2.58	2.35	3.47	1.86	1.47	3.06	2.65	.00		
Motivation Serv	1.77	2.07	2.05	1.76	.76	1.61	1.42	1.76	1.42	.00	
Dist Perf	-2.51	-.08	.38	2.84	.03	.14	-.30	.63	.13	.02	-3.27

Standardized total and direct effects (standardized regression weights). Since there is only one model being run in this SEM, the Total and Direct Effects are synonymous. Additionally, the direct effects are equal to the standardized regression weights. This researcher

will use the term direct effects for the purposes of reporting these findings. The direct effects are the statistic represented in the graphical model (Figure 20). These effects are reported as the proportional change in the dependent variable when the independent variable changes by one standard deviation. For example, AMOS reports the following statement regarding Decision_Making (independent variable) impact on Dist_Perf (dependent variable):

> *The standardized direct (unmediated) effect of Decision_Making on Dist_Perf is .700. That is, due to the direct (unmediated) effect of Decision_Making on Dist_Perf, when Decision_Making goes up by 1 standard deviation, Dist_Perf goes up by 0.7 standard deviations. This is in addition to any indirect (mediated) effect that Decision_Making may have on Dist_Perf.*

Table 30 shows the effect statistic for each of the independent variables. A negative number indicates that the dependent variable would decrease proportionally when that specific independent variable increased by one standard deviation. The two greatest influencers within the model are the variables Decision_Making (.70) and Exer_Influence (-.691). Advocacy_Focus (.119) represents the third most influential variable within the model.

Table 30

Standardized Direct Effects for the Individual Board Characteristics within the SEM Model

	Direct Effects
Decision_Making	.70
Power	.033
Voice	-.064
Exer_Influence	-.691
Solution_Focus	.039
Student_Concern	-.006
Advocacy_Focus	.119
Role_Orient	-.089
Role_Bound	.027
Motivation_Serv	-.021

Figure 20 visually represents the overall model and the influence of each variable on the dependent variable. It is important to note that the model was not improved based on covariance or issues identified in the Modification Indices. This model is to describe the model as reported, not to improve the model at this point.

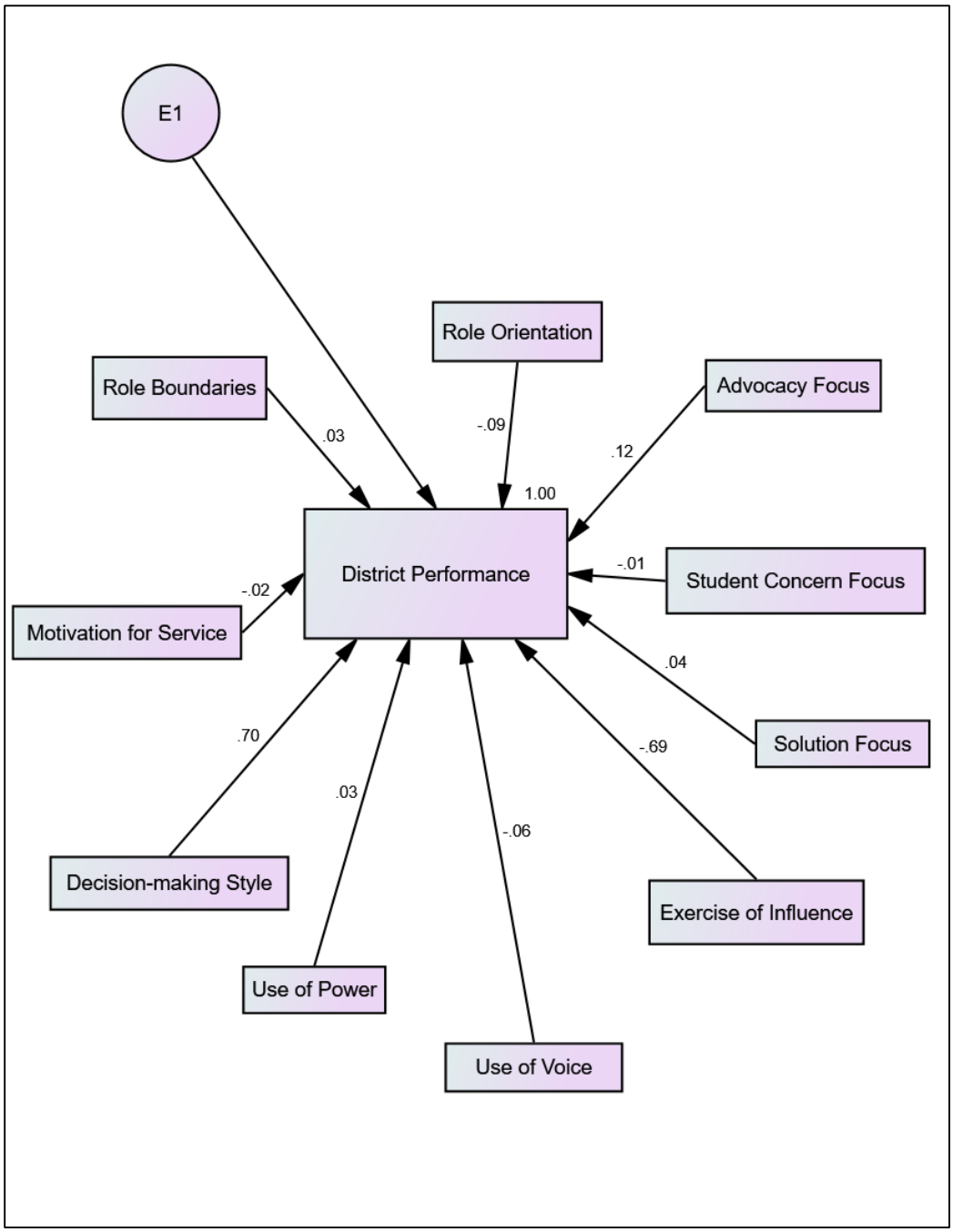

Figure 20. Graphical SEM for the Individual Board Characteristics and District Performance.

Structural equation modeling: Total Model. To better understand the influence of the total model variable within the context of SEM, a regression SEM was run with the independent variable Total_Model with the dependent variable of Dist_Perf. While this is not a standard application of SEM, it helps to provide information about the influence of the Total_Model which is the combination of the 10 individual board member characteristics in a single variable. Output data for the strength of the model is not relevant given only one variable was included making it a perfect model (GFI = 1.0).

The standardized direct effect statistic was reported at .47 for the Total_Model (Figure 21) indicating that when the total model increased by one standard deviation, Dist_Perfom would increase by .47 of a standard deviation. As a comparison, two variables had a higher direct affects in the overall model were Decision_Making (.70) and Exer_Influence (-.69).

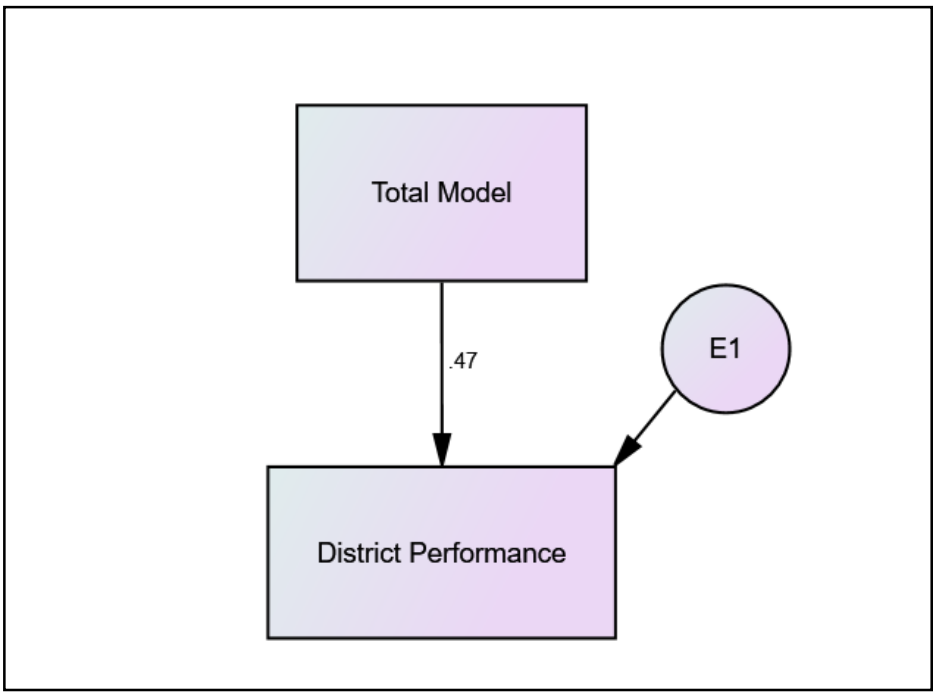

Figure 21. Graphical SEM for the Total Model and District Performance.

Summary of Structural Equation Modeling

In examining the statistics generated from the SEM, some unique observations can be made of the overall model. First, it must be concluded that each of the independent variables plays a role in effecting the dependent variable. Specifically, it helps to describe the impact of school board behaviors and beliefs on student achievement. Additionally, it became evident that, within this model, decision-making style and exercise of influence provide the largest influence on the dependent variable. It should also be noted that the variables Decision_Making and Exer_Influence have the largest covariance in the model. To further correct the SEM model, these two variables would be linked to reduce the residual effects of covariance impacting the overall model. On a practical level, decision-making and exercise of influence are conceptually linked as it can (and should) be assumed that the decisions being made are intended to have a specific influence on the organization, community, or student learning outcomes. These data would lead to a recommendation for school boards to focus on their decision-making processes and advocacy focus as these two variables have the highest degree of influence on the dependent variable of improved student achievement. Additional attention should be paid to the exercise of influence as, if not in check, this variable can have significantly impactful outcomes for student achievement.

By running the variable Total_Model independently of any other variables it became clear that at the higher level of the Total Model, effective school boards do have an influence on student achievement results. When modeling all 10 characteristics there are covariance issues that would need to be addressed and by demonstrating the single variable effect (Total_Model) on the dependent variable provides a strong insight into the efficacy of the overall model.

Chapter Four Summary

Chapter Four has provided detailed analyses of the quantitative data collected from the observations of 23 school boards in Washington State. Chapter 5 will take the findings and analyses to provide insights into the relationship between school board behaviors and beliefs (characteristics) and improved student achievement. Prior research and literature will be used to further refine recommendations for future research.

Chapter Five

Summary, Conclusions, and Recommendations

The purpose of this research study was to examine the specific school board characteristics that were previously identified to have a statistically significant relationship with improved student achievement. The format and methodologies within this study were informed by prior research on this topic. A deviation from prior research was the direct observation of school boards to determine the level of effectiveness demonstrated during the regular business meetings of the board.

Chapter One provided information about the link between school board actions, behaviors, and beliefs and improved student achievement. The overarching problem outlined in this study identifies the critical role school boards are required to play in affecting improved student achievement results. The challenge remains many school boards do not fundamentally understand, nor have clear guidelines to better understand, the specific actions and behaviors required to be more effective. Specifically, the 10 Balanced Governance school board characteristics® were proposed as a set of observable school board characteristics (actions) that were supported by an empirical research base to be the framework from which to view effectiveness. These characteristics were the basis for the mixed-method study and analyses were made between the effectiveness of school boards, as defined by the 10 Balanced Governance characteristics®, and improved student achievement results. The focus for the study was the research question presented in Chapter One:

1. Does a significant relationship exist between a school board's practice of the 10 Balanced Governance school board characteristics® and student achievement change?

A review of the literature was conducted in Chapter Two. The review of literature looked at the relevant findings from prior studies focused on the theoretical underpinnings supporting school boards and the effectiveness research that linked school board characteristics to improved student achievement results. The theoretical framework used for this study was the Decision-Output Theory (Wirt & Kirst, 2009) which views the efforts and work of a school board as a continuous cycle of inputs into the system which produce outputs. The Decision-Output Theory recognizes that there are more inputs from stakeholders than can reasonably be responded to which causes dissatisfaction. This dissatisfaction can lead to increased participation by the community. An overarching theory, The Dissatisfaction Theory of American Democracy, views this dissatisfaction as a critical point for any elected governing body. Should the values of the community and the school board remain incongruent, the dissatisfaction could lead to turn-over on the school board for political purposes leading to superintendent change and decreased student performance (Alsbury, 2003). This research study defines one of the inputs into the system as the outcomes of school board actions and behaviors as defined by the 10 Balanced Governance characteristics®.

Chapter Three provided an overview of the mixed-methods study. The population for this study was identified as all school boards in Washington State. A purposeful population sample was selected based on specific criteria and ultimately concluded that twenty-three school boards met all necessary criteria for inclusion in the study. A thorough analysis of the purposeful population sample was conducted to ensure consistency with the overall population. Analyses confirmed representativeness in geography, racial/ethnic composition, other demographic factors, and in student performance. Random selection of school board meetings was used to choose which meetings would be used for observation and data collection. Three meetings for

each of the school board were selected for observation. The Grounded Theory Approach (Glaser & Strauss, 1967) was used as the framework for the observations of school boards. This approach has been used in a previous similar study where this researcher participated as a research assistant.

A description of the scoring methodology and how the qualitative data was transformed into quantitative data was provided in Chapter Three. It was determined that if school boards demonstrated effectiveness in two of three observations they would be rated as overall effective. Additionally, it was determined that if a school board was rated overall effective in six of the 10 characteristics, they would be considered overall effective for the purposes of analyzing the overall model. Additionally, a description of the method used to determine whether school districts were rated as high performing or low performing was provided and was modeled after prior research studies focused on examining the link between school board effectiveness and improved student achievement results.

The purpose of this chapter is to provide insights into the findings of this research study and to further the discussion regarding the influence of effective school boards and improved student achievement results. School boards are a critical part of a school district's leadership team (Walser, 2009). As such, it is critical to understand the actions, behaviors, and beliefs required of school boards to effectively govern, leading to improved student achievement results. This study aims to provide further empirical evidence of the link between effective school boards and improved student achievement results.

Research Findings

The previously identified research question aims to determine whether a significant relationship exists between the practices of a school board and student achievement. This was

done by using Pearson's chi-square test for independence to determine if a statistically significant relationship existed between four independent variables: 1a) Effective school boards, 1b) Not Effective school boards, 2a) High performing districts, and 2b) Low performing school districts. A 2x2 contingency table was created for 1a/1b and 2a/2b. The following findings are based on the analyses of the results.

It should be noted that being effective in one characteristic will help to support effective practice in another characteristic. For example, a school board that is effective in advocacy focus will already have some of the traits of effective decision-making style due to the commitment to focusing on stakeholder interests. Additionally, a school board that is effective in role boundaries will already have some of the effective traits of role orientation, advocacy focus, student concern focus, solution focus, exercise of influence, and motivation for service.

Inferential Statistics: Individual Board Member Characteristics

The inferential statistics used for this study indicate that six of the 10 individual board member characteristics had a statistically significant relationship with student achievement results. It should be noted that this study does not establish a causal link between school boards and student achievement but rather frames all findings in the concept, previously supported through empirical research, which school districts with effective school boards tend to have increased change in student achievement results. Additionally, there are many variables that affect student achievement levels (poverty, language abilities, mobility) which are not controlled for in this this study. It has also been well established that the most direct effect on an increased change in student achievement results is the variable of the classroom teacher. Other variables also contribute to the effect on increased student achievement results; school board effective characteristics are one of those variables.

School board characteristics: Statistical significance confirmed. Two of the individual board member characteristics were determined to be statistically significant at the .01 level based on chi-square and at the .05 level based on Fisher's Exact Test. Four other individual board member characteristics were significant at the .05 level on both chi-square and Fisher's Exact Test. Both *p* values will be reported below and will be represented as chi-square/Fisher's.

Role boundaries. The school board characteristic of role boundaries was determined to be statistically significant $p = .007/.012$ with a large effect size V=.57. This confirms prior research (Alsbury, 2003, 2008a, 2008b; Delagardelle, 2008; Goodman et al., 1997; IASB, 2000; Lorentzen, 2013; Saatcioglu & Sargut, 2014) focused on role boundaries. The concept of role boundaries is founded in the benefits of school boards knowing their role is to govern the district, not to micromanage or administer the district. Governance of the district means to focus on issues related to the whole district, setting policy, evaluating the superintendent and recognizing their role as elected officials not direct educators. Of the 13 districts identified as low performing three of these districts demonstrated effective role boundaries while of the 10 high performing districts two of these districts demonstrated ineffective role boundaries.

Conclusions for role boundaries. This research study confirms there is a relationship between school boards that practice effective role boundaries and improved student achievement results. It is critical for school boards to understand the influence of micromanagement on an organization. It leads to conditions that are unhealthy for staff and strips away the authority of the superintendent to function as lead administrator of the school district. Micromanagement erodes trust over time which ultimately has a significant impact on the climate, culture, and ability to make/establish positive change all the way to the classroom level. An effective school board focuses on organizational issues related to student achievement, setting strategic direction,

aligning policy with a focus on positive student outcomes, and ensuring they have hired an effective superintendent.

Advocacy focus. The school board characteristic of advocacy focus was determined to be statistically significant p = .007/.012 with a large effect size V=.57. This confirms prior research (Alsbury, 2003, 2008a, 2008b; Delagardelle, 2008; Goodman et al., 1997; IASB, 2000; Lorentzen, 2013; Shelton, 2010) focused on advocacy focus. Each school board has the opportunity to focus on issues and make decisions based on a position (personal focus) or based on interests (constituency focus). By advocating based on a clear set of interests allows for the board members to represent the multiple stakeholders that need to have a voice in the governance and direction of the school district. A board that advocates based on a position will have a difficult time making progress given the five different positions that may or may not have commonality nor represent their constituents. Of the 13 districts identified as low performing three of these districts demonstrated effective role boundaries while of the 10 high performing districts two of these districts demonstrated ineffective role boundaries. One of the two high performing districts that demonstrated ineffective role boundaries also demonstrated ineffective advocacy focus.

Conclusions for advocacy focus. This research study confirms there is a relationship between school boards that practice effective advocacy focus and improved student achievement results. It is important for school boards to advocate based on a clear set of interests which are developed from communication and interaction with the constituents and stakeholders they represent. Advocating from a position often leads to the polarization of individuals and does not lead to positive and productive outcomes focused on improving student achievement results.

Role orientation. The school board characteristic of role orientation was determined to be statistically significant p = .024/.04 with a medium effect size V = .47. This confirms prior research (Alsbury, 2003, 2008a, 2008b; Delagardelle, 2008; Goodman et al., 1997; IASB, 2000; Lorentzen, 2013; Shelton, 2010) focused on role orientation. The concept of role orientation is linked (theoretically) to an advocacy focus in that discussions about issues are focused on interests. A school board that practices effective role boundaries has open dialog and discussion, even encouraging multiple view points, but ultimately leads to unanimous support for issues and decisions. Of the 13 districts identified as low performing three of these districts demonstrated effective role boundaries while of the 10 high performing districts three of these districts demonstrated ineffective role boundaries.

Conclusions for role orientation. This research study confirms there is a relationship between school boards that practice effective role orientation and improved student achievement results. By engaging in open dialog a school board allows their constituents to hear and see the interests and options available to the board for consideration. Ultimately though, the school board must come to resolution and move forward with a decision. Ideally this decision has unanimous support based on the open discussion and dialog focused on interests and multiple viewpoints.

Solution focus. The school board characteristic of solution focus was determined to be statistically significant p = .026/.04 with a medium effect size V = .46. This confirms prior research (Alsbury, 2003, 2008a, 2008b; Delagardelle, 2008; Goodman et al., 1997; IASB, 2000; Lorentzen, 2013; Saatcioglu & Sargut, 2014) focused on the characteristic of solution focus. A school board that is effective in the characteristic of solution focus has a deep understanding of the district and its needs. Solutions considered focus on large scale support for students,

considers the needs of unique learners, and takes into account solutions that should be generated at the governance level as opposed to the administrative level. Of the 13 districts identified as low performing two of these districts demonstrated effective solution focus while of the 10 high performing districts four of these districts demonstrated ineffective solution focus.

Conclusions for solution focus. This research study confirms there is a relationship between school boards that practice effective solution focus and improved student achievement results. It is essential that school boards hold high standards for the system they govern. Developing a comprehensive understanding of the school district, educational trends, and specific education needs will help board members to develop and support solutions that are innovative, creative, and successful for the students and communities they serve.

Exercise of influence. The school board characteristic of exercise of influence was determined to be statistically significant p = .024/.04 with a medium effect size V = .47. This confirms prior research (Alsbury, 2003, 2008a, 2008b; Delagardelle, 2008; Goodman et al., 1997; IASB, 2000; Lorentzen, 2013; Saatcioglu & Sargut, 2014) focused on the characteristic exercise of influence. A school board understands that each individual board member is a contributing member to the make-up of the board and that no one person has any individual authority. Boards that understand this concept actually use the weight of the collective authority to move solutions, decisions, or enhanced policy forward. Of the 13 districts identified as low performing three of these districts demonstrated effective exercise of influence while of the 10 high performing districts three of these districts demonstrated ineffective exercise of influence.

Conclusions for exercise of influence. This research study confirms there is a relationship between school boards that practice effective exercise of influence and improved student achievement results. The characteristic, exercise of influence, carries with it significant

responsibility. As the internal governing body, the words, actions, and behaviors of the school board individually and collectively will set the tone for how staff interact and perceive the support of the district. Additionally, parents and the community rely on the insights of the school board on issues relating to student learning and the effective governance, administration, and management of the schools. Understanding this power is critical during school visits, communication with the community, and during school board meetings.

Decision-making style. The school board characteristic of decision-making style was determined to be statistically significant p = .024/.04 with a medium effect size V = .47. This confirms prior research (Alsbury, 2003, 2008a, 2008b; Goodman et al., 1997; IASB, 2000; Lorentzen, 2013; Saatcioglu & Sargut, 2014) focused on the characteristic decision-making style. School boards make decisions that have both large and small impacts. The methodology used to make any of these decisions can lead to higher degrees of stabilization or lower degrees of stabilization depending on the level of collaboration that is part of the process. Collaborative decisions provide a model for how the school board expects staff to make decisions affecting multiple stakeholders. It also creates an environment of respect among and between board members. Of the 13 districts identified as low performing three of these districts demonstrated effective decision-making style while of the 10 high performing districts three of these districts demonstrated ineffective decision-making style.

Conclusions for decision-making style. This research study confirms there is a relationship between school boards that practice effective decision-making style and improved student achievement results. These results indicate that school boards will achieve greater results if they commit to implementing collaborative decision-making. Agreeing to a collaborative

decision-making approach prior to implementing such practices are critical to success during challenging decision-making situations.

School board characteristics: Statistical significance not reached. Four of the individual board member characteristics did not meet the threshold of statistically significant in this research study. Both chi-square and Fisher's Exact Test were used to evaluate significance. Both *p* values will be reported below and will be represented as chi-square/Fisher's.

Student concern focus. The characteristic of student concern focus has been previously linked to improved student achievement results and effective school board practices. This research study confirms that effective school boards have a student concern focus as indicated by seven of the 10 high performing district demonstrating effective practice in this area. Statistical significance was not achieved due to six of 13 low performing districts demonstrating effective student concern focus.

Many board in this research study demonstrated a commitment to students by their actions and behaviors during observed school board meetings. Research has indicated that school boards that maintain a student concern focus are linked to improved student achievement results (Alsbury, 2003, 2008a, 2008b; Delagardelle, 2008; Goodman et al., 1997; IASB, 2000; Lorentzen, 2013; Shelton, 2010). Ways that school boards can ensure a student concern focus is by purposeful agenda development, staff presentations on student learning, or school visits focused on an area of student learning supports.

Use of voice. The characteristic of use of voice has been previously linked to improved student achievement results and effective school board practices (Lorentzen, 2013; Saatcioglu & Sargut, 2014). This characteristic presents unique challenges for school board members. To be effective in the use of voice is about choosing not to expound on personal ideas and interests but

instead to hear and understand the interests of others. Oftentimes, school board members provide elongated monologues which are often interpreted as telling and selling a position. Key indicators of effective use of voice could be: asking high-quality questions based on a presentation or another board member's comments; justifying a decision with anecdotes and information received from staff reports or board member comments; or, explaining a decision to a community member and referencing the comments and remarks of the collective school board rather than one's own position. This research study found varying levels of practice across both high and low performing school districts. Of the 23 observed school boards there were seven boards that demonstrated effective use of voice practices.

Use of power. The characteristic of use of power has been previously linked to improved student achievement results and effective school board practices (Lorentzen, 2013; Saatcioglu & Sargut, 2014). Many well intentioned school board members were observed in this research study to use their power over each other and staff rather than using power with each other and staff. Five of the 23 observed school boards demonstrated effective use of power practices. Of the five school boards that demonstrated effective use of power, three were from high performing districts and two were from low performing districts. The five school boards that demonstrated effective use of power had almost identical score profiles for all characteristics additionally of the five school boards that demonstrative effective use of power all of them were rated as effective in the Total Model.

Motivation for service. The characteristic of use of power has been previously linked to improved student achievement results and effective school board practices (Lorentzen, 2013; Saatcioglu & Sargut, 2014). This research study found an inverse relationship between effective school board practices and student achievement outcomes. Of the 10 high performing school

districts three were rated as having effective motivation for service. Conversely of the 13 low performing school districts, six school boards were rated as demonstrating effective motivation for service. This researcher was very conservative in the measurement of this characteristic during the observation and data collection. To meet criteria for effectiveness school board members had to make statements that specifically referenced their rationale or provide insight to their consideration for service. Motivation for service is the underlying premise for a school board member's actions and behaviors. For example: If a school board member is serving for personal reasons, the manner in which he/she interacts with board member colleagues will be based on a position. This board member could not demonstrate effective practices in many of the characteristics based on his/her motivation for service being personal although a board member that serves for altruistic reasons will not automatically be effective in the other characteristics.

Inferential statistics: Total model. An eleventh dependent variable was identified in this research study and was labeled, Total Model. Total Model is a school boards overall rating. This takes into consideration all 10 of the individual school board characteristics to determine if a school board demonstrates overall effectiveness in their governance.

Total Model. The Total Model was determined to be statistically significant $p = .024/.04$ with a medium effect size V = .47. This confirms prior research (Alsbury, 2003, 2008a, 2008b; Delagardelle, 2008; Goodman et al., 1997; IASB, 2000; Lorentzen, 2013; Saatcioglu & Sargut, 2014). This research base provided the empirical evidence that led to the development of the Balanced Governance Approach® and the 10 individual board member characteristics®. Of the 13 low performing districts three were rated as overall effective. Of the 10 high performing districts seven were rated as overall effective.

Conclusions for Total Model. Effective school board governance is made up of different yet interconnected parts. School boards should focus on the essential aspects of governance which have been informed by empirical research. Understanding these characteristics will allow a school board to govern more effectively and will set the conditions for a school system to experience improved student achievement results.

Inferential statistics: Structural Equation Modeling. Structural Equation Modeling (SEM) was used to demonstrate the effect that each individual board member characteristic has on the independent variable (Dist_Perf) and represents all variables which are included in the variable of the Total Model. It should be noted that pure use of SEM would require the researcher to refine the model to ensure goodness of fit. As previously stated, this researcher did not adjust or modify the model so that results of the model would represent the full model; including interactions/covariance.

Conclusions for the Structural Equation Modeling. The current model, as is, has a significant amount of interaction between the different variables. SEM provides a view into the variables that are most impacting the fit of the overall model. With some refinement of the model and adjusting for covariance interactions, greater specificity could be gained about the specific effect of individual or groups of variables.

It should be noted that high covariance was present between a number of variables. While covariance in a typical model is not ideal, in this analyses, the covariance helps to provide insight into the relationships present within the model. For a number of variables there are statistical linkages but also common sense and practical linkages.

- Decision_Making and Exer_Influence: Statistically, these two variables have a high covariance at 4.69. Practically, these two actions would be linked. Decision making is

a form of influence and to be influencial, often times, a decision must be made. The presence of covariance between these variables makes statistical and practical sense.

- Advocacy_Focus and Role-Orient: Statistically, these two variables have high covariance at 4.30. Practically, these two variables are linked given role orientation is about the manner in which a board member interacts and advocacy is how a board member interacts regarding a specific area of focus.

Another observation within the covariance data set is the number of variables that have a high covariance with Decision_Making and Exer_Influence. Six of the nine variables have a covariance for both between 3.03 and 4.69. This would indicate that these two variables play a significant role in the model as it is presented.

When evaluating the effect model, Decision_Making (.70) and Exer_Influence (-.69) have the largest effect on the dependent variable. Advocacy_Focus has the next largest effect size at .12. Additionally, when evaluating the effect model when only applying the variable Total_Model an effect size of .46 is achieved. By applying only the total model the covariance issues are resolved and provides insight into the relationship between effective governance practices and improved student achievement results.

Given the focus within the SEM model on the three variables of decision-making style, exercise of influence, and advocacy focus; school board members should consider providing greater attention to these characteristics and the implicit impacts on an organization. Given the covariance that is present between these variables and all other variables, it can be surmised that these are highly influential characteristics that affect all aspects of a board member's responsibility. Additionally, there is evidence that suggest the overall application of the 10

individual board member characteristics (as reported in the total model variable) does have an effect on improved student achievement results.

Findings and Conclusions Based on Theoretical Framework

The Decision-Output Theory is based on the concept of the political nature of school board governance as an ongoing process where stakeholders providing input into the system. For each input there is an output; curriculum change, policy change, firing of the superintendent, or non-action (to name a few). Each of these outputs is then evaluated by stakeholders and causes a secondary reaction causing additional input. This research study views the actions and behaviors, as measured by the 10 individual board member characteristics®, as inputs into the process. An example of an action or behavior representing an input could be when a school board is constantly micromanaging the superintendent and not affording him the autonomy to lead the administration of the school district. This input into the process erodes trust between the superintendent and school board. Over time the superintendent will feel as though he is not able to successfully fulfil his job responsibilities in a manner he sees appropriate. He decides to change jobs. The input of micromanagement has an output of superintendent turnover in this example. Research has shown that turnover causes a decline in student achievement results (Alsbury, 2008b) subsequently negatively affecting student achievement efforts. Very few school board actions and behaviors will have immediate effect on student achievement results but the compilation of their work and efforts does have an effect on the entire system; eventually leading to an effect at the classroom level.

Limitations of the Study

There are a number of limitations that should be noted when reviewing the results of this study. The sample used for this study was not randomly selected but rather a purposeful

population sample was used. This sample was taken only from Washington State and measures of student achievement were all measures developed by Washington State and exclusively used within the state.

Observations of school board meetings were from recorded audio or video files, this researcher was limited to the availability by district and the date range of recorded meetings. The student achievement measures selected to develop the student performance index scores were from the years 2011-2014. This researcher aimed to observe school boards during these years. Given the availability of recorded meetings this was not always possible. While this is a limitation of the study, this research does not believe it invalidates the findings for the following reasons:

1. The observations of school boards were conducted to evaluate governance process, procedures, and behaviors and not the specific issues/outcomes.
2. 55% of school board observations were conducted from recorded meetings dated 2012-2014 which is inclusive of the student performance data time period.
3. 41% of school board observations were conducted from recorded meetings dated 2015.
4. 4% of school board observations were conducted from recorded meetings dated 2016.
5. All school boards had a quorum tenure starting with the student performance data time period (2011-2014) and ending with the most recent observed school board meeting.
6. Twelve school boards had observations of recorded meeting from 2015 and 2016.
7. Of the school boards that were observed during the 2015 and 2016 years, seven school boards had all meetings observed during this time period. Of these school

boards 3/7 had tenure of five board members, 2/7 had tenure of four board members, and 2/7 had tenure of 3 board members from the beginning of the student performance data time period.

8. Of the school boards that were observed during the 2015 and 2016 years, five districts had observations conducted from meetings recorded in 2014.

This researcher believes that due to the consistency in school board tenure during the student performance data time period that observations of governance process, procedures, and behaviors from meetings which occurred shortly thereafter still accurately reflect the governance practices of school board members.

Observations of school board practices was conducted by a single researcher. Ideally, an observationally based study would have multiple observers. This researcher participated in a similar observation study where specific inter-rater reliability measures were taken to ensure consistent observational findings.

Observations were coded into a pre-selected set of school board characteristics. The truest form of the Grounded Theory Approach allows for the development of themes and ideas during observations. The purpose of this study did not allow for additional themes or characteristics to emerge from the researcher's observations.

Practical Implications

The body of research on effective school board practices and their impact on student achievement results has grown substantially over the last 15 years (Alsbury, 2003, 2008a, 2008b; Delagardelle, 2008; Goodman et al., 1997; IASB, 2000; Lorentzen, 2013; Shelton, 2010; Saatcioglu & Sargut, 2014). This study adds to the theoretical framework that is emerging from this research. School boards can no longer operate under the status quo, the expectation is that all

members of the leadership team are focused on issues related to student achievement (Walser, 2009). This research study provides evidence that suggests that school boards that focus on and implement effective practices outlined in the Balanced Governance Approach® will have a greater chance of also seeing an increase in student achievement results. The evidence also suggests that specific focus on the characteristics with the largest degree of influence (decision-making style, exercise of influence, and advocacy focus) will support effective practices in many of the other characteristics.

Effective school boards focus on student achievement results (Delagardelle, 2008; IASB, 2000; Lorentzen, 2013; Walser, 2009). In this research study, the variable of student concern focus was not found to be statistically significant with improved student achievement results. Additionally, student concern focus had a -.01 effect on the dependent variable in the SEM model. This effect is negligible and seems to suggest it is not important. This researcher would suggest an alternative theory on why this occurred. Student concern focus had the most number of districts identified as effective (13 districts). Even school districts that are not indicated as high performing realize and understand the importance of focusing on issues related to student achievement. Due to the broad focus across districts, this characteristic was not able to provide statistical support through inferential statistics nor in the SEM model.

This research study does not suggest a causal link between observed school board characteristics and improved student achievement. Alternatively, this research study confirms prior research findings (Alsbury, 2003, 2008a, 2008b; Delagardelle, 2008; Goodman et al., 1997; IASB, 2000; Lorentzen, 2013; Shelton, 2010; Saatcioglu & Sargut, 2014) that have suggested that there is a relationship between effective school boards and improved student achievement. Regardless of the distal nature of school boards to classrooms (Delagardelle, 2008), their

influence on the conditions, policy, and strategic direction of the school district does indeed effect student achievement results. The application of effective governance practices has also been linked to improved student achievement results through the research and findings presented in this research study.

Recommendations for Research

The success of students is of critical importance to families, schools, the community, and greater society. This research study continues the expansion of the empirical research focused on the link between school board effectiveness and improved student achievement results. There is value in continued research on each variable that plays a role in supporting the success of students; including school boards.

Replication. Given the limitations of this research study, it is recommended that a replication study be conducted to further understand the relationship between school board practices and improved student achievement results. It is also recommended that a perception survey element be added to any replication so direct connections can be made between other research studies focused on this topic.

Expansion. The scope of this research study was limited to school boards in Washington State. Expanding this study to include school boards from multiple states will allow for a greater level of generalizability. Researchers will need to determine the best methodology for measuring student achievement given the differing nature of state assessments. With the implementation of the Common Core State Standards and the two assessment systems which most states have aligned with, this could provide an opportunity for expanded research in this and other fields of study.

Additional analysis. The results of this research study did not aim to refine the model within the Structural Equation Modeling framework. Efforts could be made to resolve the covariance issues to refine the SEM model which could allow for more targeted research and evaluation of the 10 individual board member characteristics®. This study presented findings that high levels of covariance are present among the 10 individual board member characteristics®. Through further analysis and work with the model (i.e., running a factor analysis) it could lead to additional research opportunities using similar methodologies to this research study.

Research Study Conclusions

The body of empirical research supporting the relationship between effective school boards and improved student achievement has significantly increased over the last 15 years. This study provides confirmatory findings to add to the body of research and supports the collection of research supporting the Balanced Governance Approach®. Additionally, this study helps to further define the theoretical underpinnings of school board effectiveness by identifying three characteristics (Advocacy Focus, Exercise of Influence, and Decision-making Style) that most influence the change in student performance.

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Appendix A

Geographical setting categories as reported by ERDC

TABLE 1: GEOGRAPHIC SETTING CATEGORIES WITH CORRESPONDING NCES LOCALE DEFINITIONS

Geographic Setting if Inside MSA*	NCES Locale	Geographic Setting if Outside MSA*
Large Metro	**City, Large Territory** (urban-centric locale code 11) Inside an urbanized area and inside a principal city with population of 250,000 or more.	Large Metro
	City, Mid-size Territory (urban-centric locale code 12) Inside an urbanized area and inside a principal city with a population less than 250,000 and greater than or equal to 100,000.	
Metro Suburb	**Suburb, Large Territory** (urban-centric locale code 21) Outside a principal city and inside an urbanized area with population of 250,000 or more.	Metro Suburb
Mid-Size	**City, Small Territory** (urban-centric locale code 13) Inside an urbanized area and inside a principal city with a population less than 100,000.	Mid-Size
	Suburb, Mid-size Territory (urban-centric locale code 22) Outside a principal city and inside an urbanized area with a population less than 250,000 and greater than or equal to 100,000.	
	Suburb, Small Territory (urban-centric locale code 23) Outside a principal city and inside an urbanized area with population less than 100,000.	
Urban Fringe	**Town, Fringe Territory** (urban-centric locale code 31) Inside an urban cluster that is less than or equal to 10 miles from an urbanized area.	Urban Fringe
	Rural, Fringe (urban-centric locale code 41) Census-defined rural territory that is less than or equal to 5 miles from an urbanized area, as well as rural territory that is less than or equal to 2.5 miles from an urban cluster.	Distant
Distant	**Town, Distant Territory** (urban-centric locale code 32) Inside an urban cluster that is more than 10 miles and less than or equal to 35 miles from an urbanized area.	
	Town, Remote Territory (urban-centric locale code 33) Inside an urban cluster that is more than 35 miles from an urbanized area.	
	Rural, Distant (urban-centric locale code 42) Census-defined rural territory that is more than 5 miles but less than or equal to 25 miles from an urbanized area, as well as rural territory that is more than 2.5 miles but less than or equal to 10 miles from an urban cluster.	
	Rural, Remote (urban-centric locale code 43) Census-defined rural territory that is more than 25 miles from an urbanized area and is also more than 10 miles from an urban cluster.	

*MSA = Metropolitan Statistical Area

Appendix B

Rights to use Balanced Governance® Documents and Tools

Jon Holmen

From: Alsbury, Thomas <alsburyt@spu.edu>
Sent: Monday, January 11, 2016 6:55 AM
To: Jon Holmen
Subject: Re: Permission to use

Jon-

You have my permission to use the documents.

You should remove the logo and contact information but leave on the copyright symbol and my name. Thank you!

Tom

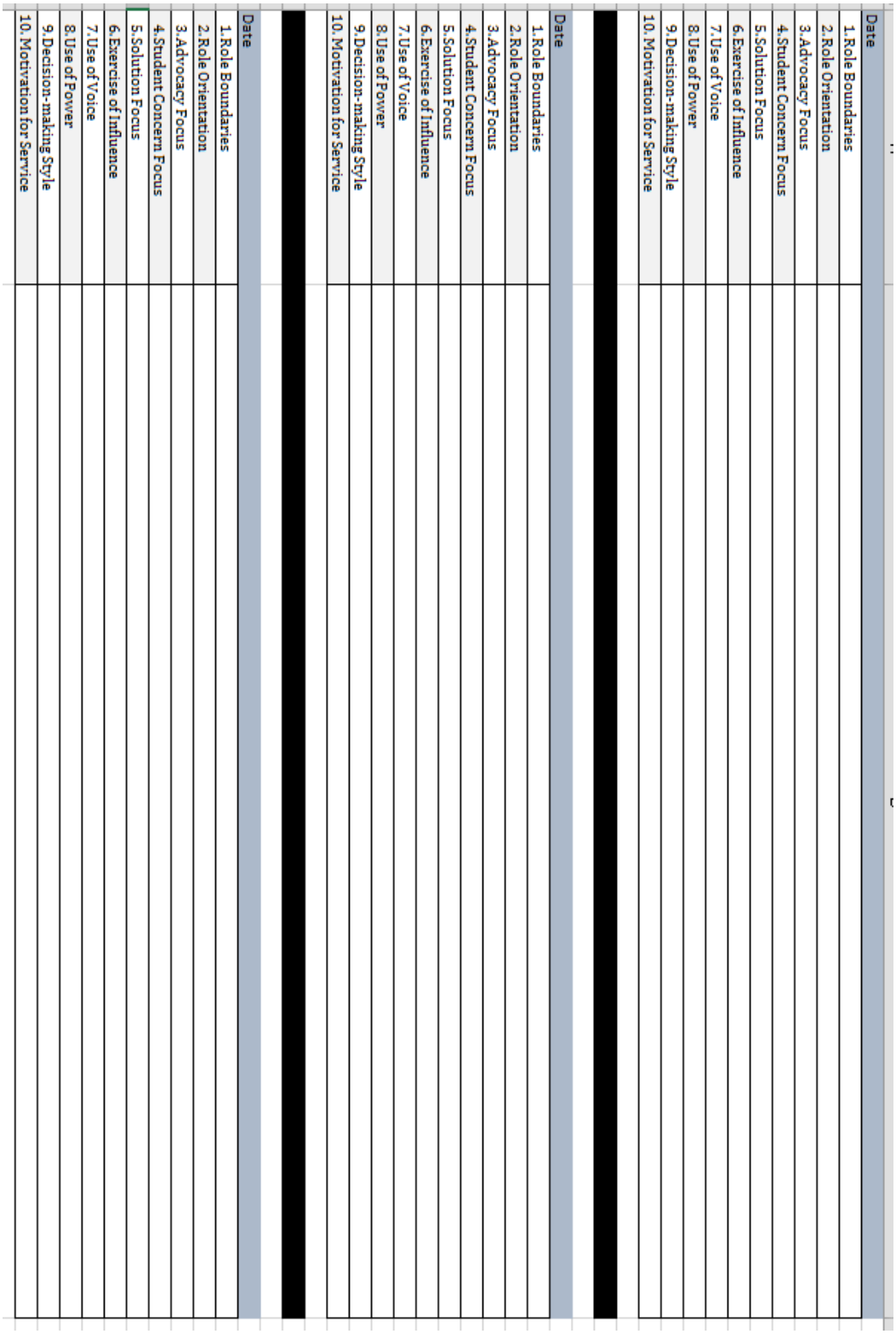
Sent from my iPad

On Jan 10, 2016, at 3:45 PM, Jon Holmen <jholmen@outlook.com> wrote:

> Dr. Alsbury,
>
> I am writing to formally request your permission to use the Balanced Governance documents and tools that you have sent to me as part of my dissertation.
>
> Also, should you grant permission, can you review the attached documents and let me know if I have permission to use the Balanced governance characteristics on these data collection documents? Do you want the Balanced Governance logo and your contact information to remain on these documents or would you like them removed?
>
> Thank you,
> Jon Holmen
> [redacted]
>
> <Anecdotal Data Collection Tool_Board Member Characteristics.xlsx>
> <Board Member Characteristics Data Collection Tool.docx>

Appendix C

Verbal utterance note taking form



Date
1.Role Boundaries
2.Role Orientation
3.Advocacy Focus
4.Student Concern Focus
5.Solution Focus
6.Exercise of Influence
7.Use of Voice
8.Use of Power
9.Decision-making Style
10. Motivation for Service

[redacted]

Date
1.Role Boundaries
2.Role Orientation
3.Advocacy Focus
4.Student Concern Focus
5.Solution Focus
6.Exercise of Influence
7.Use of Voice
8.Use of Power
9.Decision-making Style
10. Motivation for Service

[redacted]

Date
1.Role Boundaries
2.Role Orientation
3.Advocacy Focus
4.Student Concern Focus
5.Solution Focus
6.Exercise of Influence
7.Use of Voice
8.Use of Power
9.Decision-making Style
10. Motivation for Service

Appendix D

Individual Board Member Characteristic® Data Collection Tool

Individual Board Member Characteristic Data Collection Tool

Board Member Characteristic	Brief Description	Stabilizing Characteristic	Practical Description	Characteristic Usage
1. Role Boundaries	Understands the difference between the role of ***oversight*** and ***micromanagement***.	***Oversight*** with knowledgeable critique and advocacy.	If confronted by a parent in the store, the board member can explain school needs, applied interventions, and current success data. Avoids generalities or playing the role of cheerleader or critic.	+ oversight: - micromanagement:
2. Role Orientation	An ***open dialogue*** orientation focuses on general interests and welcomes various viewpoints, but expects unanimous support of final board decisions. An ***open debate*** orientation focuses on activism and special interests, values individual viewpoints over collective consensus, and doesn't expect support of final board decisions.	***Open Dialogue*** With the ability to shift to more open debate in times of community change and dissatisfaction	The board member seeks out input from multiple and varied stakeholders and seeks open dialogue. However, when conflict arises, the board member has the wisdom to maintain order by discouraging contentious communication tactics.	+ open dialogue: - open debate:
3. Advocacy Focus	A ***position*** is often polarizing and identifies "friends" versus "enemies". An ***interest*** is discovered through conversation to get to shared solutions that can be applied to many students and achieved through various means.	***Interest Focus***	The board member seeks to understand the multiple and varied positions of district constituents but seeks a solution that can address the common interest. For example, a board member can support a position of improving achievement for underperforming students without focusing exclusively on only one cause of low achievement (i.e. cultural insensitivity).	+ advocate based on common interests: - advocate based on an individual position:
4. Student Concern Focus	Supports a ***broad*** focus on student concerns. A stated responsibility to insure all students are afforded opportunities to succeed. Avoids a ***targeted*** focus on providing opportunities for single groups of students.	***Broad focus of opportunity for all students***	The board member avoids focusing only on a narrow agenda of student issues and needs. Board member avoids focusing only on particular student demographic groups and issues.	+ broad focus on student needs and opportunities: - targeted focus on small groups of students:
5. Solution Focus	The understanding that the local school district, and each school has ***unique and shifting needs***; often requiring ***innovative solutions***.	Recognizes ***Individual Needs*** Supports ***Creative, Innovative Solutions***	The board member avoids adopting standardized, one-size-fits-all programs and focuses on identifying unique district needs. The board member avoids promoting standardized solutions and prefers to design a solution to fit the unique need of each district as supported by data evidence.	+ recognizes individual needs/creative & innovative solutions: - looks for one-size-fits-all solutions & does not recognize innovation:
6. Exercise of Influence	The board member understands they possess ***no individual authority.*** Power rests in the board as a group only.	***School board entity influence***	The board member avoids communicating directives or interests to individual school district employees. Visits to schools are unobtrusive, informational, and as part of established activities (sports, open house, school events).	+ influence from the board: - individual tries to influence based on position:
7. Use of Voice	Does the board member use their voice to ***tell and sell*** their position or do they seek to ***hear and understand*** interests, and come to resolution and reconciliation.	Uses voice to ***Hear & Understand***	The board member avoids over-talking to promote their own interest. They do not see communication as a competition. They promote civil dialogue with a goal to listen and discover a resolution that serves all interests.	+ hear and understand: -tell and sell:
8. Use of Power	***Power Over*** is using your position to get your own way through threat or reward. ***Power With*** is using your position to ensure all voices are heard and collaborative solutions are guaranteed.	***Power With***	The board member uses their power to ensure that all needs are heard and that solutions meet multiple interests. They would not attempt to push only their own solutions or highlight only their own needs and interests.	+ power with: - power over:
9. Decision-making Style	Decision-making can be done ***individually*** or can be done ***collaboratively*** with and through others.	***Collaborative***	The board member seeks to evaluate data to confirm issues and needs, then ensure that proposed solutions and measures fit the stated needs and goals.	+ decision making is collaborative: - decision making is individual & left to the vote vs. discussion:
10. Motivation for Service	Board members can serve for ***personal*** or for ***altruistic*** reasons.	***Altruistic Service***	Board members do not run for reasons of personal ego or prestige, a need for involvement, to correct a personal concern, to replace particular school employees, or as a step to future office. Board members run to serve the community, to fulfill a democratic responsibility, and to serve all students and all needs.	+ altruistic motivation for service: - personal motivation for service:

Appendix E

Qualitative Statements for the 10 Individual Board Member Characteristics

Role Boundaries	
Effective Statements	Ineffective Statements
• The school improvement plans allow me to understand the overall picture better • I would have liked to see longitudinal data • How will we know the scope of the impact of the budget changes from the legislature • What was your (superintendent) impression of the data? • Your presentation has helped me to better understand the system issues with changing from MSP to SBAC • If we add a school will we need to redo the boundary lines • Is there a way that we can see cohorts of students vs. grade level data which represents different students?	• A lot of times schools just take the new initiative and package it into what they were previously doing and not change any practice • What if we hold teachers more accountable for students being absent, that may get them more interested in getting their students to school? • I think the asst. director of student services should focus more on special education issues • I think we should embed instructional strategies that we expect into the policy • Parking at the middle school is hard to walk to the graduation
Role Orientation	
Effective Statements	Ineffective Statements
• I do not feel I am able to make an educated decision. I would like to add this to a future agenda and have you come back. • Are there strategies that other districts are doing prior to bonds end up on the ballot that are helping them pass bonds • We are not the managers of the system, we are the supervisors of the system - we have to make choices with our resources	• You want to drop the ALE because you want to be the easier school? • Is there anyone paying attention to our cash reserves? • I hope you can set aside fiction so that we can move forward with our work. • I heard there was a fire drill at X elementary school on the 2nd day of school, how did that go?
Advocacy Focus	
Effective Statements	Ineffective Statements
• We are doing DRA for all students and 3rd grade is one of our goals, could we receive 3rd Grade DRA district wide data as part of our high priority goals? • We are using local levy dollars to maintain the trails at X park which is not in aligned with our mission or with what we said to our voters regarding the levy funds.	• I want to see a full time counselor in every elementary school. • Two counselors at our middle school is not enough - I was a middle school teacher, I know. • So we are just redoing the field? Does that make any sense?
Student Concern Focus	
Effective Statements	Ineffective Statements
• Do you see improved outcomes due to the iPad usage in the classroom?	• This budget falls short and does not cut issues that are far from the classroom and we

• I hope to see more connections to the measures of academic success. • Does the capital investment include 1:1 for all students? • This type of leadership training is important for life and to be a productive citizen	need to fund counselors. I am disturbed by the lack of transparency that this administration has presented in this budget. It is my opinion that we need to reallocate dollars to fund student supports such as drug and alcohol, mental health counselors. • I heard it is not reasonable to expect all students to succeed in Algebra II
Solution Focus	
Effective Statements	Ineffective Statements
• Are we looking at the root causes of behavior outcomes? • It is very exciting to see all of the opportunities that are options for our students and how this can expand to other schools. • We don't want to adopt policy that all of a sudden makes changes to a seniors requirements. That would be unfair and possibly a breach of policy.	• I think there should be less columns on the plan • Can the robotics club use surplus laptops? • Can we get an attorney to write a statement to put out to the community? • How do we monitor recess minutes? • While it may have been underway for a year but it has not been presented to the board. This means some of the board has been aware but not the whole board.
Exercise of Influence	
Effective Statements	Ineffective Statements
• I believe the budget has been developed based on a set of priorities • Can you tell me what you mean by accelerating reading of struggling readers? • I am not trying to get into the weeds but I am just trying to understand if we are trying to prepare our students or if we are doing the same old thing? • We are very pleased to have hired Dr. X as our new superintendent. I believe we have hired an extremely gifted leaders.	• I think we need to provide some instruction to students about the use of cell phones • We need more psychologists because they do more IEP stuff • It is like we are saying to schools you can have windows or a roof - it is like asking kids you can have underwear or shoes - it is like we are offering schools limited resources and have high expectations • I think big districts have foundations that support highly capable
Use of Voice	
Effective Statements	Ineffective Statements
• Our community expects us to take action based on the feedback and information we have received over the last year • If you track the data at each grade level you can see that there is a upward trend • As we are poised to adopted math materials for middle school we have had the luxury of waiting for common core and we didn't have the same opportunity with reading. Do you think there are areas that we need to modify our literacy curriculum?	• What I was aghast about when the board president blind copied the superintendent when the board was emailing each other • I would like to apologize for the attitude of some of the board members at the first reading. • Since I have been to the district I have heard STEM STEM STEM STEM. I am glad someone is paying attention the to the arts.

Use of Power	
Effective Statements	Ineffective Statements
• Our agenda allows for us to focus on the facilities and bond planning but if we need additional time we can decide to add it to our agenda or add it to our next meeting agenda. • I would like to congratulate the finance department with the great audit • Our job is to represent the community. A no vote does not necessarily mean the board member is being belligerent but may be a representation of the individual members view of the community input.	• There isn't a motion on the table so what is your problem? • I am tired of asking for this and our kids deserve better than what this budget offers. • You are going to let me finish; I can call you out of order; You are not the boss • I don't think you should have shared that information with our employee and I am shocked you don't agree • I withdraw my amendment and hope the next board will do a better job with this.
Decision-Making Style	
Effective Statements	Ineffective Statements
• Would it be possible for the district to receive board questions and then present responses at the next board meeting? • We would need to understand our financial obligations to empty buildings, 10, 20, years etc… • We have heard the monitoring report for this month, do we have consensus that the monitoring reports from the superintendent are approved. • What does the board want to do with these policies, table or is there a motion?	• I am not sure how they can have an established timeline if there is not approval for the project. • We all care for kids but we need to care for our responsibility • So if you are not comfortable with the direction speak up now • This is a pet peeve for me - I know you might be doing a good job but I won't accept a long timeline on this. • I will not be supporting this proposal based on my prior comments.
Motivation for Service	
Effective Statements	Ineffective Statements
• While we approve the consent agenda we like to read off the donations at our meetings to honor our community's efforts and connections with our schools. • I like community participation in the culminating experience as it helps our stakeholders understand what is occurring in our schools. • We are proud to serve our community as the advocates for students at the governance level • The families in our community appreciate the high quality opportunity for students • We want a bond measure which the community feels meets their interests and desires	• I'm not going to let some liberal put common core in our schools without a fight. • You have been at the unruly meetings with the community.

Appendix F

Inferential Statistics for Individual Board Member Characteristics® and Total Model

Inferential Statistics for individual board member characteristics and total model.

	x^2	*df*	*p*	Fisher's	Cramer's V
Role Boundaries	7.340[a]	1	.007**	.012*	.565
Role Orientation	5.064[a]	1	.024*	.04*	.469
Advocacy Focus	7.340[a]	1	.007**	.012*	.565
Student Concern Focus	1.308[a]	1	.253	.402	.238
Solution Focus	4.96[a]	1	.026*	.039*	.464
Exercise of Influence	5.064[a]	1	.024*	.04*	.469
Use of Voice	.765[a]	1	.382	.650	.182
Use of Power	.710[a]	1	.40	.618	.176
Decision-making Style	5.064[a]	1	.024*	.04*	.469
Motivation for Service	.619[a]	1	.431	.669	.164
Total Model	5.064[a]	1	.024*	.04*	.469

a. 1 or more cells have expected count less than 5.

*p = significant at the .05 level

**p = significant at the .01 level

Appendix G

Covariance Modification Indices

Covariance Modification Indices

			M.I.	Par Change
Power	To	Decision_Making	7.944	.123
Voice	To	Decision_Making	12.512	.172
Voice	To	Power	13.968	.151
Exer_Influence	To	Decision_Making	22.000	.246
Exer_Influence	To	Power	7.944	.123
Exer_Influence	To	Voice	12.513	.172
Solution_Focus	To	Decision_Making	9.253	.153
Solution_Focus	To	Power	5.508	.098
Solution_Focus	To	Voice	5.698	.112
Solution_Focus	To	Exer_Influence	9.253	.153
Student_Concern	To	Decision_Making	7.718	.146
Student_Concern	To	Exer_Influence	7.718	.146
Student_Concern	To	Solution_Focus	4.582	.108
Advocacy_Focus	To	Decision_Making	12.063	.183
Advocacy_Focus	To	Voice	5.537	.115
Advocacy_Focus	To	Exer_Influence	12.063	.183
Advocacy_Focus	To	Solution_Focus	7.401	.138
Advocacy_Focus	To	Student_Concern	5.251	.121
Role_Orient	To	Decision_Making	9.185	.159
Role_Orient	To	Exer_Influence	9.185	.159
Role_Orient	To	Solution_Focus	9.253	.153
Role_Orient	To	Advocacy_Focus	18.462	.227
Role_Bound	To	Decision_Making	12.063	.183
Role_Bound	To	Power	6.667	.113
Role_Bound	To	Voice	5.537	.115
Role_Bound	To	Exer_Influence	12.063	.183
Role_Bound	To	Advocacy_Focus	9.338	.163
Role_Bound	To	Role_Orient	7.021	.140
Motivation_Serv	To	Power	4.286	.089
Motivation_Serv	To	Voice	4.215	.098

Appendix H:

Institutional Review Board Approval for Research

IRB Communication 151601012

From: **Wall-Scheffler, Cara** (cwallsch@spu.edu)
Sent: Thu 3/31/16 10:22 AM
To: Jonathon Holmen (jholmen@outlook.com)

Dear Jon,

Your study has been labeled exempt. Your IRB number is 151601012. Please notify me if you make any changes.

Best wishes as you complete your work,

Cara

C.M. Wall-Scheffler, PhD

Associate Professor and IRB Chair

Department of Biology

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Affiliate Assistant Professor

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University of Washington

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