# Servant Leadership and its Impact on Classroom Climate and Student Achievement

Submitted by

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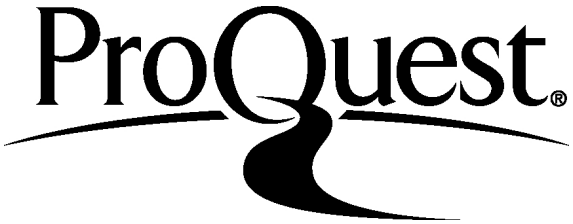

GRAND CANYON UNIVERSITY

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## Abstract

The purpose of this quantitative research was to see to what degree a relationship existed between servant leadership, classroom climate, and student achievement in a collegiate environment. This was a quantitative, correlational study. The foundational theories for this research included servant leadership and organizational climate that pertain to transformational follower development and unifying values within an organization to align behavior. The research questions for this study included: (R1) What was the relationship between teachers' servant leadership behaviors and classroom climate as reported by students? (R2) What was the relationship between servant leadership behavior and student achievement? (R3) To what extent was the relationship between servant leadership behavior and student achievement mediated by classroom climate? The data collection instruments for this study included *The Servant Leadership Profile–Revised* and the *College and University Classroom Environment Inventory*. The sample size was 18, composed of faculty at a private university in Northwest Pennsylvania. The resultant correlations between teacher servant leadership and both classroom climate and student achievement were not statistically significant ($r$ = .407, $r_s$ = -.16, $p$ = .25). Therefore, there was no definitive mediating effect of classroom climate. These results were not consistent with similar prior research at the primary and secondary levels of education, and thus raised questions regarding choice of instrumentation at the college level. This study sheds light on important variables and dynamics of researching these correlations in a collegiate environment.



*Keywords*: Servant leadership, classroom climate, student achievement, Servant Leadership Profile–Revised, questionnaire measures or organizational culture.

## Dedication

This dissertation is dedicated to my family and friends who supported me throughout this journey. Your patience and encouragement made this possible.

## Acknowledgments

No project of this magnitude is the result of one individual effort. Personal and professional advice, guidance, and encouragement made the completion of this dissertation a reality. I cannot adequately convey the contributions of my committee chair, Dr. Patricia Chess. Her scholarship, mentorship, advice, guidance, patience, mentorship, encouragement, and friendship throughout coursework, research, and even health issues made this possible. The committee members, Dr. Jeanette Shutay and Dr. Gary Piercy, have been excellent resources who continually challenged me to both learn and become a better researcher. The participating teachers and students who completed the surveys making this research possible are greatly appreciated. Lastly, a special thanks to my wife, Amy, who supported me academically, emotionally, and physically (in sickness and in health) throughout this journey.

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# Chapter 1: Introduction to the Study

## Introduction

Many people remember the special teachers in their lives; those who make learning easy and really connect students with new material. Unfortunately, there are also teachers who go through the motions of teaching and are apathetic. Because teachers plan, organize, and control student behavior and activities, they are organizational leaders in the classroom (Drobot & Roşu, 2012). Consequently, teaching and leadership intersect. According to Shuaib and Olalere (2013), the purpose of teaching is to impart knowledge; and one key aspect of effective teaching is learner-focused education. Therefore, it was relevant to research how teacher leadership practices focused on and influenced student achievement.

Several researchers have grappled with the issue of whether there is a leadership style best suited to teaching. According to Hays (2008), the application of servant leadership values and principles can significantly affect the learning experience for both teachers and students. Servant leadership is an extension of the principles of transformational leadership described by Burns (2010) whereby the leader "engages the full person of the follower [in] a relationship of mutual stimulation in elevation that converts followers into leaders" (p.4). This is significant in higher education as a leadership focus towards learner-centered development is necessary to both attract and retain students (Tinto, 2009).

Despite the scriptural origins of servant leadership, its practice is secular in nature (van Dierendonck, 2011). In fact, religious proscriptions do not determine servant leadership. Rather, according to Greenleaf and Spears (2002), the true measure of servant

leadership is the personal growth of followers. The growth aspect of this servant leadership "Best Test" is particularly germane to the field of education (Goe, Bell, & Little, 2008). In fact, it should be the primary goal of teachers (Goe et al., 2008).

Burns (2010) identified the causal effects of values on behavior. This is significant because several researchers reported a direct relationship between leadership and the creation of organizational culture and climate (Fernando & Chowdhury, 2010; Groves, 2006; Karakas, 2011; Leithwood & Mascall, 2008). In a discussion of the evolution of constructs about organizational culture and climate, Reichers and Schneider (1990) defined organizational climate as formal and informal organizational practices and procedures behavior can be manifested by the embedded values of the culture that affect the organizational climate. Furthermore, because performance is a measure of behavior, the leadership that creates the organizational climate is a strong determinate of performance. Within the field of leadership, research from Hiller, DeChurch, Murase, and Doty (2011); Robinson, Lloyd, and Rowe (2008); and Hays (2008) found strong positive correlations between Servant Leadership and improved achievement.

This chapter contains the background and implications concerning how servant leadership behaviors by teachers correlate with classroom climate and student achievement. It includes an overview of the problem and purpose of the study, the guiding research questions and hypotheses, the framework and rationale of the study, assumptions and limitations, and the definitions of key terms. It also includes a brief discussion of how this study can advance scientific knowledge in this area.

**Background of the Study**

The roles of leadership and accountability in education have become increasingly important in recent years. President George W. Bush made accountability the centerpiece of his education agenda which reinforced a central theme of state educational policies (Linn, Baker, & Betebenner, 2002). However, legislation alone cannot yield significant improvements.

For more than a decade, as established in the No Child Left Behind (NCLB) legislation, school districts have been required to demonstrate Adequate Yearly Progress (AYP) by showing a minimum, prescribed level of growth in student achievement (Gamble-Risley, 2006). However, according to Gamble-Risley (2006), AYP is a misnomer, or at least an understatement. Satisfying AYP mandates demands a far greater than adequate effort. Subsequently, in 2009, the National Governors Association and the Council of Chief State School Officers sponsored the Common Core State Standards (CCSS) initiative to align educational standards and better prepare students for college and adult careers (Forty-Nine States and Territories, 2009).

However, when the 2010 World Education rankings rated the United States average, as quoted by Zeitvogel (2010, para 5), U.S. Education Secretary Duncan declared, “this is an absolute wake-up call for America…the results are extraordinarily challenging to us and we have to deal with the brutal truth. We have to get much more serious about investing in education." Subsequently, the federal School Improvement Grant program awarded more than $534 million to states to assist schools with poor standardized test scores (Zeitvogel, 2010. Fortunately, the Nation’s Report Card for 2012 started to indicate slight improvements in academic achievement and preparation for

post-secondary schooling (The Nation's Report Card, 2013). Moreover, the Lumina Foundation funded a three year Core to College initiative, and the William and Flora Hewlett Foundation, the Bill and Melinda Gates Foundation, and the Carnegie Corporation of New York created programs to further improvements by facilitating greater implementation and coordination of the CCSS and post-secondary student preparation (Finkelstein et al., 2013). Yet, U.S. academic achievement remains close to that of the early 1970s, and still behind many of the industrialized nations (The Nation's Report Card, 2013).

According to Routman (2012), the best way to improve achievement levels is to improve teaching and focus on strong, effective leadership. The recent emergence of several organizations to address these issues attests to the importance of this dynamic. For example, in 1996 Teachers College, Columbia University, founded the National School Climate Center (NSCC) to improve educational leadership in the area of school climate to enhance student achievement (NSCC, 1996). In 2007, the National Comprehensive Center for Teacher Quality issued a report titled *Enhancing Teacher Leadership* (2007) claiming that teacher leadership is essential for successful students and effective schools. In 2008, a group of national organizations, state education agencies, major universities, and local school systems formed the Teacher Leadership Exploratory Consortium. The National Board for Professional Teaching Standards has worked on developing a new certification for Teacher Leaders ("Teacher Leadership," 2013). Today, more than ever, teacher leadership is essential for student success (Ludlow, 2011). In fact, Drobot and Roşu (2012) asserted that teacher relations with students (i.e., leadership) are the most important ingredient for student learning.

Education begins with teachers. While legislation prescribes standards, teachers are responsible for helping students attain them. Logically, better teachers should facilitate greater learning and subsequent test scores of students. Clearly, some teachers are better than others are. Perhaps they are more knowledgeable of the subject matter. Alternatively, perhaps they are better leaders and motivators (Adiele & Abraham, 2013).

The innocent victims of the present situation are the students who participate in the educational system. According to statistics in the NCLB (2002) legislation, almost 70% of elementary students in inner cities cannot read at a basic level and approximately one third of college freshman now have to take remedial classes. NCLB mandates improving both fourth and eighth grade math results on standardized tests (Dee & Jacob, 2011). However, because one third of college freshman require remedial classes, the attention provided to primary levels of education by NCLB could extend to higher education. Despite improvements at lower levels of education, the United States continues to lag behind other nations in education (Hanushek, Peterson, & Woessmann, 2012; The Nation's Report Card, 2013).

All these factors contribute to the pervasive need to improve education in a number of ways. Determining how leadership could best facilitate these improvements is more difficult. Current credentialing procedures at the primary and secondary levels of education require professional education and experience in a variety of teaching areas such as lesson design and planning, teaching techniques, and classroom management (Norton, 2013). The education departments that are creating primary and secondary education teachers do not require similar training at the collegiate level of education (Norton, 2013).

Consequently, the importance of leadership in the classroom cannot be overstated. Understanding and communicating values, ideas, and tasks in a manner conducive to motivation and compliance is essential for effective teaching (Adiele & Abraham, 2013; Drobot & Roşu, 2012; Routman, 2012; Shuaib & Olalere, 2013). Spillane (2005) provided a useful definition of leadership in an educational environment:

> Leadership refers to activities tied to the core work of the organization that are designed by organizational members to influence the motivation, knowledge, affect, and practices of other organizational members or that are understood by organizational members as intended to influence their motivation, knowledge, affect, and practices. (Spillane, 2005, p. 384)

Classroom leadership motivates and encourages students to learn (Adiele & Abraham, 2013). It increases the likelihood of increased student effort, focus, and retention (Adiele & Abraham, 2013). The skills required to affect this influence originate from many fields of discipline: leadership; organizational behavior, development, dynamics, and culture; and psychology (Adiele & Abraham, 2013). In essence, teachers should be content area specialists, curriculum experts, community builders, heads of safety and discipline, parent liaisons, and head cheerleaders (Landeau Jr, VanDorn, & Ellen, 2009). Understanding organizational structure, job redesign, group dynamics and organizational culture all help to provide a foundational framework for a teacher. However, the teacher is ultimately responsible for combining this knowledge into action that--as the definition states--influences student behavior.

Is there a leadership style for teachers that is most conducive to facilitate student learning? According to van Dierendonck and Nuitjen (2011), the focus of people-centered, ethical management inspired by servant leadership is what organizations need now. This is especially applicable in education where the primary goal of teachers should be the growth of their students (Goe et al., 2008).

Several researchers have shown a direct relationship between leadership and the creation of organizational culture and climate (Duke, 2006; Fernando & Chowdhury, 2010; Groves, 2006; Karakas, 2011; Kutash, Nico, Gorin, Rahmatullah, & Tallant, 2010; Leithwood & Mascall, 2008; Villavicencio & Grayman, 2012) . Saphier and King (1985) identified the importance of organizational culture in education. Waters, Marzano, and McNulty (2003) synthesized 30 years of leadership in education and recommended careful attention to school culture. Saphier (2011) recommended changing teacher-student paradigms to increase learning effectiveness. This culture, in turn, is observable in the daily behaviors that shape the organizational climate. As stated previously, using the definition of organizational climate as "shared perceptions of organizational policies, practices, and procedures, both informal and formal" (Reichers & Schneider, 1990, p. 22), it becomes obvious that the leadership behavior of the teacher is directly responsible for creating the classroom climate. Furthermore, the educational climate influences student achievement (Cohen & Brown, 2013; Cunningham, 2008; Herndon, 2007).

**Problem Statement**

It was not known to what degree there was a relationship between teachers' servant leadership behaviors, classroom climate, and student achievement at the collegiate level. The research focus of this study was the correlation between servant

leadership, classroom climate, and student achievement. Kelley, Thornton, and Daugherty (2005) conducted a quantitative, correlational study of 31 elementary principals and 155 teachers and found principal servant leadership characteristics had a significant effect on school climate. Herndon (2007) found a statistically significant positive relationship between principals' servant leadership and both school climate and student achievement across 62 elementary schools. Black's (2010) mixed method, correlational study of 231 teachers and 15 principals in Catholic elementary schools found a significant correlation between principal servant leadership and school climate. A meta-analysis of 27 studies by Robinson et al. (2008) identified a significant positive relationship between servant leadership characteristics and student outcomes. Moreover, Boyer's (2012) quantitative, correlational analysis of 9 principals, 54 teachers, and 537 students in secondary schools found a statistically significant relationship between principal servant leadership and school climate.

The current United States' World Education Ranking of average suggests traditional educational structures and practices are no longer acceptable. U.S. Education Secretary Duncan said this ranking served as a wake-up call for America and mandated more serious proscriptions for improving education (Zeitvogel, 2010). One possible course of action for educational leaders is to focus on the learning environment teachers create. Specifically, is a servant leadership environment, as measured by the Servant Leadership Profile-Revised (SLP-R) (Wong & Page, 2003), more conducive to improved student achievement? Discovering ways to create better learning environments should improve student achievement (Adiele & Abraham, 2013).

Since teacher leadership is an important aspect of teaching effectiveness, it is important to add to existing literature by examining these correlations in higher education. (Adiele & Abraham, 2013; Drobot & Roşu, 2012; Routman, 2012; Shuaib & Olalere, 2013). In a higher education environment, federal laws do not mandate student attendance meaning the students are voluntarily seeking education. Additionally, because college students are adults, they are likely to be more responsible. These contextual differences may create differences in student motivation and subsequent achievement.

This researcher attempted to identify these correlations at the classroom level in higher education. Understanding this dynamic is critical to identify, confirm, or refute a popular leadership paradigm in an educational context (Marzano & Marzano, 2003). Additionally, these results contribute to understanding and potentially amending current teaching practices to improve student achievement. Although the link among administrative servant leadership, school climate, and student achievement has been established in the K-12 learning environment, the link between teacher servant leadership to classroom climate and student achievement has not been established in higher education.

**Purpose of the Study**

The purpose of this quantitative, correlational study was to investigate to what degree a relationship existed between servant leadership, classroom climate, and student achievement for students and faculty at a small university in Northwest Pennsylvania. In this study, servant leadership and classroom climate were predictor variables and student achievement was the criterion variable. Logically, while there are numerous leadership styles that create a variety of organizational climates, identifying the appropriate

combination of leadership and classroom climate to improve student motivation and achievement is beneficial (Mitchell & Bradshaw, 2013). The use of accurate measures of teacher servant leadership, classroom climate, and student achievement provided the necessary assessment data to identify possible correlations. This study was designed to identify the correlations between teacher leadership attributes and their effect on both classroom climate and student achievement.

This was a quantitative, correlational study. Research studies have yielded evidence that within the primary education levels, teachers' leadership has affected the classroom climate and influenced student achievement (Rivers, Brackett, Reyes, Elbertson, & Salovey, 2013; Robinson et al., 2008). Similarly, studies have shown that climate has had an impact on student achievement (Evans, Harvey, Buckley, & Yan, 2009). Figure 1 diagrams these relationships. These relationships have not been shown in higher education; this study therefore investigated them in the context of higher education.

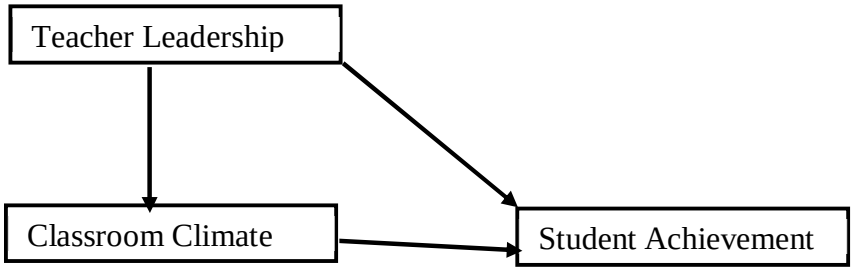


*Figure 1.* Research variables diagram.

The study was designed to address some potential pedagogical shortfalls in education. Current practices are not yielding appropriate student achievement (Zeitvogel, 2010). One possible course of action is a focus on the learning environment created by teachers. Because teachers are the organizational leaders in the classroom, they are

responsible for creating a classroom climate conducive to learning. While prior researchers confirmed the positive impact of servant leadership on student achievement at the K-12 level, they neither confirmed nor refuted this relationship at the collegiate level (Black, 2010; Boyer, 2012; Herndon, 2007; Hiller et al., 2011; Kelley et al., 2005; Spillane, 2005).

Despite significant attention on professional development for teaching at the primary and secondary levels of education (Goldhaber, Liddle, & Theobald, 2013), collegiate professors are normally appointed based upon subject expertise with little emphasis on curriculum design, lesson planning, and presentation (Norton, 2013). Therefore, the results of this research may support the current practices of teacher pedagogy at the collegiate level. Conversely, they may encourage other researchers to conduct studies that more closely examine the development of collegiate teachers in the areas of leadership and pedagogy (in addition to subject matter expertise).

**Research Questions and Hypotheses**

The research questions for this study pertain to the identification and measurement of teachers' servant leadership, the classroom climate created by these teachers, and subsequent student achievement. Values determine behaviors (McClelland, 1985). This concept is not new. It is foundational for understanding human psychology and behavior and the premise underlying behavioral models such as Maslow's (1943) original paper on hierarchy of needs. Collectively, "common values are the glue which binds an organization together; they motivate and create a sense of community. If properly implemented, the employees can be trusted in the absence of direct rules and regulations" (Brytting & Trollestad, 2000, p. 55). These common values create the

culture of the organization and directly influence the climate (Schein, 2010), and climate, in turn, influences achievement (Cunningham, 2008; Herndon, 2007).

Values-based leadership presumes moral and ethical leadership (McCoy & McCoy, 2007). Likewise, servant leadership ensures rational and emotional commitment to organizational objectives (McCoy & McCoy, 2007). O'Toole (1996) identified integrity, vision, trust, listening, respect for followers, clear thinking, and inclusion as the primary characteristics of values-based leadership.

> If we use our beliefs to make decisions, our decisions will reflect our past history in dealing with similar situations…If we use our values to make decisions; our decisions will align with the future we want to experience. Values transcend both contexts and experiences. (Barrett, 2007, p.1)

The inherent values that manifest leadership behavior work to create the underlying values and beliefs (culture) of an organization. This culture, in turn, is observable in the daily behaviors that regulate the organizational climate. The basic research questions and hypotheses of this study pertain to whether teachers' servant leadership behaviors, as perceived by students, create a positive classroom climate and the extent to which the resultant classroom climate affects student achievement.

The following research questions and hypotheses guided this study:

R1: What is the relationship between teachers' servant leadership behaviors and classroom climate as reported by students?

$H_1$: There is a positive correlation between teachers' servant leadership behaviors, measured by "The Servant Leadership Profile" and classroom climate reported by students (SLP-R) (Wong & Page, 2003).

$H_0$: There is not a positive correlation between teachers' servant leadership behaviors, measured by "The Servant Leadership Profile" and classroom climate reported by students (Wong & Page, 2003).

R2: What is the relationship between servant leadership behavior and student achievement?

$H_2$: There is a positive correlation between servant leadership behaviors, measured by the SLP-R and student achievement, measured by final course grades (Wong & Page, 2003).

$H_0$: There is not a positive correlation between servant leadership behaviors, measured by the SLP-R and student achievement, measured by final course grades (Wong & Page, 2003).

R3: To what extent is the relationship between servant leadership behavior and student achievement mediated by classroom climate?

$H_3$: There is a positive correlation between servant leadership behavior and student achievement mediated by classroom climate, measured by the CUCEI (Fraser et al., 1986).

$H_0$: There is not a positive correlation between servant leadership behavior and student achievement mediated by classroom climate, measured by the CUCEI (Fraser et al., 1986).

One goal of education is to impart knowledge to prepare students for a successful future. Some classrooms are friendly while others are antagonistic. The research questions of this study are relevant to teachers' leadership behaviors and their effect on classroom climate. Likewise, this study helped to correlate the comparisons between

classroom climate and student achievement. Finally, this research included the comparisons between a classroom climate created by teachers' servant leadership and students' achievement.

**Advancing Scientific Knowledge**

This study advanced scientific knowledge in the areas of servant leadership, classroom climate, and student achievement. Previous research from Kelley et al. (2005), Herndon (2007), Robinson et al. (2008), and Black (2010), found statistically significant relationships between servant leadership by school administrators and overall school climate and student achievement. Boyer (2012) extended this research and confirmed statistically significant positive effects of servant leadership from the teacher's perspective on school culture and student achievement. This study advances the known self-perception analysis of teacher servant leadership on classroom (instead of school-wide) climate and student achievement at the collegiate (instead of primary or secondary) level of education.

This study extends prior research in the field. Although there are multiple studies correlating the effects of administrative servant leadership on school culture and climate, there are very few that correlate these effects based on teachers' servant leadership behaviors (Black, 2010; Boyer, 2012; Herndon, 2007; Kelley et al., 2005; Robinson et al., 2008). Similarly, most prior research studied these relationships at the lower levels of education (Black, 2010; Boyer, 2012; Herndon, 2007; Kelley et al., 2005; Robinson et al., 2008). This study adds to the existing body of literature by increasing the small number of studies that examined these effects at the level of the teacher in the classroom

(Colakoglu & Littlefield, 2010; Jacobs, 2011). Additionally, the researcher revealed these effects in a completely different environment—collegiate education.

**Significance of the Study**

The results of this study should be of interest to educational accrediting agencies, school administrators, principals, college and university deans, and teachers and students at all levels of education. A positive correlation between classroom climate and achievement provides strong implications about the importance of professional development in leadership for all teachers. Since servant leadership focuses on the development of followers, the hypotheses of this research pertain to correlations between teachers' servant leadership behaviors and student achievement mediated by classroom climate. Potentially, this researcher highlighted a need for future similar research testing other leadership models.

School accountability is a critical issue (Jennings & Rentner, 2006). Re-examining and focusing leadership in education is essential (Fullan, 2009). The No Child Left Behind (NCLB) Act mandated testing to measure the effectiveness of teaching styles and environments on student achievement (Bush, 2001). This legislation changed the focus of teaching methods to garner more resources for low performing schools (Jennings & Rentner, 2006). Tenets of NCLB make increasing student achievement imperative. While numerous factors contribute to student success, school leaders are primarily responsible for student success (McCoach et al., 2010). This research was designed to help identify and compare the effects of a specific teacher leadership paradigm and classroom climate and student achievement.

With the exception of collegiate education departments that must focus on pedagogy to ensure their graduates' accreditation to teach at the primary and secondary levels of education, there is not a similar pedagogical requirement in collegiate education (Norton, 2013). If these research results show significant positive correlations between teachers' servant leadership behaviors and student achievement, they may support a potential paradigm shift in collegiate education to incorporate leadership into collegiate pedagogical training. Subsequently, it is possible that such changes will help to raise the current collegiate graduation rate of 58% (U.S. Census Bureau. (2011).

**Rationale for Methodology**

The purpose of this quantitative, correlational research was to examine to what degree a relationship exists between servant leadership, classroom climate, and student achievement. According to recent research, "the driving force of evidence-based practice and research in the traditional sense is the ability to measure and quantify a phenomenon, as well as the relationships between phenomenon numerically" (Vance, Talley, Azuero, Pearce, & Christian, 2013, p. 67). This research was designed to help correlate the variables of servant leadership and organizational climate to describe student achievement. The study correlated teachers' servant leadership behaviors with classroom climate and student achievement. The aggregation of student climate surveys and grades provided mean values for each variable. Thus, it is consistent with a quantitative, correlational design methodology using servant leadership and classroom climate instruments and end of course student grades.

The body of research concerning school climate and servant leadership in education and its influence on student achievement is growing. Quantitative studies by a

number of researchers (Black, 2010; Boyer, 2012; Cunningham, 2008; Herndon, 2007; Kelley et al., 2005; MacNeil et al., 2009; Pritchard, Morrow, & Marshall, 2005; Robinson et al., 2008) determined a statistically significant positive relationship between servant leadership, school culture and student achievement at the primary and secondary levels of education. Therefore, for this type of research, a quantitative, correlational methodology was both established and accepted.

This study was consistent with the methodology of aforementioned studies. However, it was unique by examining these variables and dynamics at the classroom (rather than whole school) level, and with teachers (rather than administrators). Specifically, the study location was a small, private, Catholic, liberal arts institution in Northwest Pennsylvania. Furthermore, the context for this research was a higher education environment. Unlike previous studies, there is no legal mandate for the students in this study to receive instruction. They voluntarily—in fact, pay—to attend college. Therefore, student motivation to excel may be more influential than in a federally mandated attendance environment at lower educational levels. Because of their age, it is reasonable to assume greater maturity than that of elementary or secondary students. Finally, although standardized tests are readily available in primary and secondary education as a measure of student achievement, at the collegiate level they only apply to complete programs of study (e.g., bar exams, medical boards, CPA exams) instead of individual courses. However, despite these environmental differences, the similar, basic construct of the methodology justified its use.

According to the U.S. Department of Education National Center for Education Statistics (2012), the United States is below the international average with a collegiate

graduation rate of only 58% of students who graduate within six years. According to Carnevale, Smith, and Strohl (2010), the United States will fall at least three million degrees short of 22 million new college degrees necessary by 2018. Poor student achievement is an issue at all levels of education. Any research that can add to the body of knowledge to help curb these current trends in education is worthwhile.

**Nature of the Research Design for the Study**

The nature of the study outlines the overall components of the study. It explains the rationale for a quantitative, correlational study with teachers' servant leadership behaviors, classroom climate, and student achievement as the key variables. The purpose of the study was to investigate the research questions and hypotheses comparing these variables. Finally, it includes a brief discussion of the sample population, sampling procedures, and data collection plan.

The epistemological roots of this research spring primarily from a post positivist worldview whereby causes determine effects. "Post-positivist inquiry does not claim universal generalizability; however, it aims to gain an in-depth understanding of the phenomenon under study" (Tekin & Kotaman, 2013, p. 84). This study sought to measure and correlate real world classroom dynamics. It is, however, somewhat reductionist to use teachers' servant leadership behaviors as the primary determinant for both classroom climate and student achievement.

In this study, the paired classroom climate and student achievement data were not independent of each other. "It is important to account for this pairing in the analysis…[and]…concentrate on the differences between the pairs of measurements

rather than on the measurements themselves" (Whitley & Ball, 2002, p. 3). Thus, the selection of a quantitative, correlational research design for this study.

The foundational theory for this research included research on servant leadership developed by Greenleaf (2007). Additionally, research on organizational climate by Litwin and Stringer (1968), and Schein (1984), were used to study transformational follower development and unifying values within organizations to align behavior. This research examined these dynamics in an educational environment.

It is known that there is a direct relationship between leadership and the creation of organizational culture and climate (Fernando & Chowdhury, 2010; Groves, 2006;Karakas, 2011; Leithwood & Mascall, 2008). Likewise, within the field of leadership, research from Robinson et al. (2008), Hays (2008), and Hiller et al. (2011), identified strong positive correlations between servant leadership and improved achievement. What was not known is the strength of the correlation between a climate created by servant leadership in education at the level of the teacher and consequent student achievement. This was a quantitative, correlational study. It examined the dynamics of teacher leadership on classroom climate and this relationship to student achievement. The purpose of this study was to measure these correlations. The rationale for this study was based upon similar studies that correlated these dynamics in education from an administrative level to student achievement (Black, 2010; Boyer, 2012; Herndon, 2007; Kelley et al., 2005; MacNeil et al., 2009; Pritchard, Morrow, & Marshall, 2005; Robinson et al., 2008). While significant, these studies may be omitting the mediating influence of leadership by the classroom teacher. Thus, the essential research questions sought to begin identifying and measuring servant leadership influence in the classroom

and student achievement. The main hypothesis was that students would perform better when they are in a classroom environment of servant leadership.

The population for this research included all teachers and students. The targeted population consisted of collegiate professors and students. The sample consisted of students and faculty at a small university in Northwest Pennsylvania. The sample characteristics reflect a small, private, Catholic university.

The necessary data for this research included instruments that helped to quantify teachers' servant leadership behaviors, classroom climate, and student achievement. Fortunately, there are established survey instruments for both servant leadership and classroom climate—SLP-R (Wong & Page, 2003) and the CUCEI (Fraser et al., 1986). Finally, end of course student grades were collected. To alleviate bias and encourage participation, the identities of all participants' data was unknown to the researcher. Each participant received a complete set of guidelines and a confidentiality statement. A Survey Coordinator distributed and collected the survey instruments to participating teachers. The SLP-R teachers' servant leadership instruments were coded to protect teacher identity. Likewise, the CUCEI student instruments were coded to correspond with the appropriate SLP-R. Finally, end of course student grades were anonymously aggregated on a corresponding coded form. The administration of survey instruments occurred in the latter half of the semester to allow sufficient time for the classroom climate to be established.

To prepare the data for analysis, each survey instrument was tabulated according to its corresponding evaluation criteria. This resulted in scale scores (continuous and

interval level scores) for the SLP-R and CUCEI. Final course grades were converted into ordinal numbers.

Empirically, the two instruments for this study, SLP-R and CUCEI, generated scale scores. Therefore, a Pearson correlation was appropriate to address the first research question and hypothesis. The data for the second research question and hypothesis consisted of an interval level variable from the SLP-R and an ordinal value (student grades).

Consequently, a Spearman correlation was appropriate for this analysis. Finally, the data for the third research question and hypothesis consisted of two predictor variables (servant leadership behavior and classroom climate) and one criterion variable (student achievement). However, because the study was not seeking a fit with a causal model, path analysis was not appropriate (Wuensch, 2012). Thus, multiple linear regression analysis of the predictor variables (servant leadership and classroom climate) and the criterion variable (student achievement) was appropriate.

**Definition of Terms**

The primary constructs of this study include servant leadership and classroom climate as the predictor variables, and student achievement as the criterion variable. The following terms were frequently used throughout this study:

***Classroom climate.*** The aggregate environment created by interpersonal relations across seven dimensions: personalization, involvement, student cohesiveness, task orientation, satisfaction, innovation, and individualization (Fraser, Treagust, & Dennis, 1986)**.**

***Direction***. Communicating achievement and behavioral expectations to employees. Both employees and the organization benefit with clear direction (Laub 1999).

***Humility***. The ability to refrain from self-aggrandizement and keep one's accomplishments and talents in perspective (Patterson 2003).

***Interpersonal acceptance***. The ability to empathize with the feelings of others (George, 2005)and to ignore perceived personal injustices without bearing a grudge (McCullough, Hoyt, & Rachal, 2000) .

***Organizational climate***. The "shared perceptions of organizational policies, practices, and procedures, both informal and formal" (Reichers & Schneider, 1990, p. 22).

***School climate***. The values, beliefs, and attitudes that influence interactions between teachers and students (Dennis & Bocarnea, 2005).

***Servant leadership***. "Servant leaders empower and develop people; they show humility, are authentic, accept people for who they are, provide direction, and are stewards who work for the good of the whole" (van Dierendonck, 2011, p. 1232).

**Assumptions, Limitations, Delimitations**

The constructs of servant leadership, classroom climate, and student achievement clarifies the assumptions, limitations, and delimitations of this study. The following were the assumptions of this study:

1. The survey participants in this study answered questions honestly, to the best of their ability, and were not deceptive with their answers. The nature of the

survey instruments and the survey instructions specified a quantitative, correlational study. Therefore, there were no "approved solution" answers.

2. The SLP-R and CUCEI are valid and reliable for this sample population. These instruments are well established and have been used in studies with similar sample populations.

3. This study was limited by population constraints. That is, the instruments require non-science-related lecture classes without laboratory periods.

4. End of course grades are indicative of student achievement. Individual teaching philosophies with respect to grading may vary. However, while one instructor's overall grades may be higher than the other, it is not likely that all students will receive identical grades. Therefore, any grade distribution was likely to reflect variances and student achievement.

The following were limitations of this study

1. This study was limited by a small sample. While there were more than 300 student participants, there were only 18 teachers.

2. This study was limited to the validity and reliability of the survey instruments.

3. This study was limited by variances due to the difficulty of course content. For example, overall student achievement may be lower in a course with difficult content. The reasons for this lower achievement may be more attributable to the difficulty of content than the classroom climate created by teachers' leadership behaviors.

4. The survey of collegiate students was delimited to a private, Catholic University in Northwest Pennsylvania, limiting the demographic sample. The study habits and characteristics of students at a private Catholic University may not be generalizable to the entire population of collegiate students.

**Summary and Organization of the Remainder of the Study**

The purpose of this quantitative, correlational research was to see to what degree a relationship exists between servant leadership, classroom climate, and student achievement for students and faculty at a small university in Northwest Pennsylvania. Taylor's (1911) Scientific Management movement professionalized management and leadership by demonstrating the need to attend to individual differences among employees. Subsequent leadership paradigms focused on improving achievement to further organizational goals (Greenleaf, 2002). Concurrently, research correlated leadership behavior with organizational culture and climate (Schein, 2010) and organizational climate with organizational achievement (Kaplan & Norton, 1992). Additionally, within the field of leadership, research from Robinson et al. (2008), Hays (2008), and Hiller et al. (2011) found strong positive correlations between servant leadership and improved achievement.

NCLB legislation identified degradations of student achievement and mandated investigation, professional development and instructional changes, and accountability measures designed to improve education and improved student achievement (NCLB, 2002). Saphier and King (1985) identified the importance of organizational culture in education. Waters et al. (2003) synthesized 30 years of leadership in education and recommended careful attention to school culture. Saphier (2011) recommended changing

teacher-student paradigms to increase learning effectiveness. Research by Kelley et al. (2005), Herndon (2007), Black (2010), Robinson et al. (2008), and Boyer (2012), determined a statistically significant positive relationship between servant leadership, school culture, and student achievement at the elementary and secondary levels of education. The results of this study helped to identify these correlations at the collegiate level of education and may be used to develop professional education modules for educators in higher education. The literature review presented in Chapter 2 contains the theoretical foundational framework for this study. Chapter 3 contained the methodology of the study. Chapter 4 contained the results of the study. Finally, Chapter 5 contained the conclusions of the study.

# Chapter 2: Literature Review

## Introduction to the Chapter and Background to the Problem

The impact of servant leadership on classroom climate and student achievement has its roots in studies that have focused more broadly on organizational culture and climate in a range of organizations, including schools (Glick, 1985; Ismat, Bashir, & mahmood 2011; Melchar & Bosco, 2010; Reichers & Schneider, 1990; Scheerens, Witziers, & Steen, 2013; Thapa, Cohen, Guffey, & Higgins-D'Alessandro, 2013). Now, more than ever, society values education and high educational attainment (Hazelkorn, 2013). Unfortunately, there is a marked decline in the efficacy of education around the world and within the United States (Hazelkorn, 2013; Zeitvogel, 2010). The prevalent use of educational rankings articulates the ramifications of this decline. These rankings demonstrate national progress, justify professional academic reputations, guide university goals, and facilitate student selections for higher education (Hazelkorn, 2013). The purpose of this study was to examine the relationship between servant leadership and its influence on both classroom climate and student achievement in a collegiate environment.

Despite more than 100 years of development of organizational and leadership theories, many schools are still organized according to the older structures and traditions established by early organizational theorists (Chance & Chance, 2002). Weber's (1991) bureaucracy focused on organizational structure, while Taylor's (1911) Scientific Management focused on management and efficiency. Collectively, these perspectives helped to create the "factory model" of education that is still "highly ingrained in schools' organizational structure and is evident in the language often associated with

schooling" (Chance & Chance, 2002, p. 5). This research helped to identify one potential differentiated path-servant leadership-to improve student outcomes at a college.

The review begins with overviews of servant leadership and organizational climate and culture. Subsequently, it discusses the variables included in the research study and their relationship to contemporary research. Finally, it encompasses the methodological research and considerations relevant to this study.

Internet search engines and online databases identified pertinent articles and publications. Search terms included various descriptors pertaining to the themes of: leadership, servant leadership, organizational climate, and achievement. For example, within the theme of servant leadership, descriptive variants such as servant leader qualities, servant teacher, and servant leadership in education helped to locate relevant research.

Scholarly, peer reviewed articles and primary source data provided the foundations for this review. The ProQuest dissertation abstracts database identified topical dissertations and the literature reviews and bibliographies within those dissertations aided in identifying additional material. Relevant articles and publications were categorized as seminal, descriptive, or empirical with preference to recently—within five years—published research.

**Theoretical Foundations**

The foundational theories for this research include servant leadership and organizational climate. These were developed by Greenleaf (2007), Litwin and Stringer (1968), and Schein (1984), and were used to study transformational follower development and unifying values within an organization to align behavior. Servant

leadership reflects one philosophical approach to leadership (Barbuto & Wheeler, 2006). Therefore, it must be understood within a contextual framework of leadership itself (van Dierendonck, 2011).

Harding, Lee, Ford, and Learmonth (2011) conducted a mixed method study of 44 organizations and explained why the definition of leadership is so ambiguous. The perception and promotion of leadership morphed. Historically, leadership in industry was hierarchical and transactional. Contemporary leadership emphasizes participative, empowering relationships (Haber, 2012).

There are four key aspects of leadership. First, leadership is a process. This emphasizes both the interactive nature and complexity of activities involved in leadership. Second, this process results in influencing others. The obvious implication is that without influence leadership is not present. Third, this leadership influencing process involves groups of people, whereby the groups provide context for leadership to occur. Finally, the leadership process influences groups of people to achieve a common goal. The goal provides a unifying objective for collective behavior (Loughead & Hardy, 2005).

Therefore, how and why power is exercised are important aspects of leadership. According to Doscher and Normore (2013), leadership creates the environment to facilitate decisions and action. More specifically, leaders prepare and manage organizational change (Kotter, 2009; Stringer, 2012). Almost a century of psychological leadership research generated a voluminous library of the topic (Kaiser, Hogan, & Craig, 2008). Servant leadership represents a recent addition to this leadership library (van Dierendonck, 2011).

**Servant leadership**. Greenleaf (1970) reintroduced and articulated the concept of Servant Leadership. The determining characteristic of a servant leader is a desire to serve. Then there is a conscious choice to aspire to lead (Greenleaf, 1970). This principle reiterates the messages of numerous historic and religious leaders like Confucius, Mahatma Gandhi , Lao-tzu, Martin Luther King, Jr., Harriet Tubman, Mother Teresa, and Moses (Keith, 2008). Hayden (2011) articulated the philosophical consistency of Islam with servant leadership. The word itself—Islam—means, "Self-surrender to the will of God" (Hayden, 2011, p. 15). More specifically, The Quran (3:111) proclaims, "you are the best people ever raised for the good of mankind because you have been raised to serve others; you enjoin what is good and forbid evil and believe in Allah" (Hayden, 2011, p. 15). The behaviors and teachings of Jesus Christ are often described as the perfect role model of servant leadership (Ebener & O'Connell, 2010; Lanctot & Irving, 2010). Specifically, servant leaders value power not for themselves, but for its potential value to benefit their followers, organizations, and communities (Ebener & O'Connell, 2010).

Multiple examples from the Gospels of John and Mark illustrate servant leadership. Specifically, Jesus' willingness to wash his disciples' feet and admonition that "whoever wants to become great among you must be your servant" (Mark 10:43 NIV Bible) demonstrate servant leadership in action (Sendjaya & Sarros, 2002). Jesus redefined the purpose and role of leadership power as an enabling factor to benefit others (Sendjaya & Sarros, 2002).

While the goal of transformational leadership is to improve organizational achievement, the focus of servant leadership is on the needs of individual organizational

members (Stoten, 2013). This higher-order, ethical leadership model unapologetically prioritizes the welfare and development of followers over organizational goals (Greenleaf, 1970). Consequently, an explicit goal of this leadership model is an overall improvement in society and humanity.

Although Greenleaf (1970) received credit for reintroducing servant leadership, his descriptions of servant leadership, like leadership itself, did not include an empirically validated definition (van Dierendonck, 2011). Greenleaf (1970) did not propose servant leadership as a scholarly edict or a specific how-to manual. Consequently, this dynamic has hindered the acceptance of servant leadership theory in academia because it is difficult to empirically test a philosophical way of life (Parris & Peachey, 2013). However, according to De Maeyer, Rymenans, Van Petegem, van den Bergh, and Rijlaarsdam (2007), the choice of a conceptual leadership model – including servant leadership – significantly influences student achievement. According to Block (2006), the definitional ambiguity of servant leadership fosters continual reflection. Justice Potter Stewart famously articulated this undefinable dynamic in Jacobellis v. Ohio regarding pornography when he stated that he could never succeed in intelligently defining it; but he knew it when he saw it.

Unlike traditional leadership theories whereby a leader's actions are evaluated to determine the quality of the leader, servant leadership evaluates the leader’s character and commitment to serve others (Parris & Peachey, 2013). Spears (2004) worked closely with Greenleaf (2002) and identified 10 characteristics of a servant leader: listening, empathy, healing, awareness, persuasion, conceptualization, foresight, stewardship, commitment to

the growth of people, and building community. Subsequently, researchers validated and consolidated these characteristics and introduced others to help clarify the concept.

For example, Laub (1999) is generally credited with creating the first organizational servant leadership assessment. The Delphi method helped define servant leadership characteristics and created an instrument to measure those characteristics within an organization. This instrument generates organizational perceptions from various groups within the organization (Laub, 1999). Page and Wong (2000) extended this research from the organizational level to the individual level by developing one of the first servant leadership instruments that measured servant leadership of an individual. Their original assessment (Servant Leadership Profile) measured 12 characteristics with a 100-item instrument. After further research, they created SLP-R; a 62-item opponent process instrument measuring 10 servant leadership characteristics (Wong & Page, 2003). Concurrently, Patterson (2003) developed a servant leadership instrument that incorporated the characteristic of agapao love. Like the SLP-R, this instrument included an aspect of humility as a required characteristic of servant leadership. The Review of the Literature section discusses these characteristics in detail.

**Organizational climate.** Since leadership is partially defined by organizational context, organizational development and dynamics become important aspects of the leadership equation. Weber's (Weber et al., 1991) bureaucratic organizational structure and Taylor's (1911) scientific management shaped early organizational theory. The classical organizational development perspective viewed organizations as rational systems valuing operational efficiency above all (Morgan, 1997). Consequently, many saw bureaucracies as

dehumanizing organizations that stifled creativity, inhibited personal growth, and caused people to fear management (Hohn, 1999). Addressing the human aspect of organizations, Lewin's (1951) participatory management, and Maslow's (1943) original article on hierarchy of needs, McGregor (1960) identified positive and negative managerial perspectives and labeled them Theory Y and Theory X. Akindele and Afolabi (2013) related the importance of this managerial leadership choice with its influence on organizational climate. Specifically, Theory Y is practically implemented in organizations through participatory management, decentralized responsibilities, delegation of authority, and job enlargement (Akindele & Afolabi, 2013).

Decades ago, Glick (1985) reported the inglorious prominence of climate research in organizational science. Beginning with Lewin, Lippitt, and White (1939) and their studies of created climates, subsequent researchers continued to identify organizational groups and systems as part of organizational climate (Barker, 2007; Denison, 1996; Hall, 1972; Lewin, 1951, and Likert, 1961). However, researchers still do not agree on a single definition of organizational climate. For example, according to Hellriegel & Slocum (1974), organizational climate is induced from the attributes of organizational systems that affect its members. More recently, Peña-Suárez, Muñiz, Campillo-Álvarez, Fonseca-Pedrero, and García-Cueto (2013) defined organizational climate as the set of shared perceptions of co-workers in the same organization. Regardless of definitional differences, Litwin and Stringer (1968) deserve credit for pioneering organizational climate research by identifying and articulating nine dimensions of organizational

climate: structure, responsibility, reward, risk, warmth, support, standards, conflict, and identity.

A brief review of organizational culture research illustrates the large overlap between the identification and integration of organizational climate and organizational culture. Schein (1999) attempted to explicate the definitional differences, “climate is embedded in the physical look of the place, the emotionality exhibited by employees, in the experiences of the visitor or new employee upon entry, and in a myriad of other artifacts that are seen, heard, and felt” (p. 4). Organizational climate originates with the underlying values and beliefs of the organization. In other words, organizational climate is an artifact of the organizational culture (Schein, 1999). There are three levels of organizational culture: artifacts, values, and basic underlying assumptions (Schein, 2010).

**Summary**. As noted, the difficulties in distinguishing and measuring characteristics of organizational climate and culture results in the potential semantic misapplication of terms in current research (Black, 2010; Boyer, 2012; Cohen et al., 2009; Colakoglu & Littlefield, 2010; Duke, 2006; Herndon, 2007; Hiller et al., 2011; Ismat et al., 2011; Kelley et al., 2005; Kutash et al., 2010; Lumby & Foskett, 2011; Luqman, Farhan, Shahzad, & Shaheen, 2012; Villavicencio & Grayman, 2012). Additionally, according to Ashkanasy, Broadfoot, and Falkus (2000), many climate instruments fail to include reliability information. Therefore, despite numerous attempts, even those intimately involved with the dynamics of organizational culture and climate experienced difficulty distinguishing between the two and a careful analysis of literature in both areas reveals overwhelming similarities (Denison, 1996).

Accordingly, “these two research traditions should be viewed as differences in interpretation rather than differences in the phenomenon” (Denison, 1996, p. 645). Evaluating and categorizing these dimensions in current literature is beyond the scope of this research. Therefore, the terms culture and climate, as used in the research contained in this literature review, both address common dimensions and are often used synonymously.

**Review of the Literature**

There are significant differences between a leader and leadership (Reynolds & Warfield, 2010; Sadeghi, Yadollahi, Baygi, & Ghayoomi, 2013). A leader is often a person with a designated title or organizational role while leadership relates to the skills and abilities to influence others (Sadeghi et al., 2013). Moreover, different leaders subscribe to different leadership paradigms to exert their influence over others. Because leadership involves influence and interaction between people, good leadership is individually phenomenological and influenced by organizational context (Akindele & Afolabi, 2013). Consequently, organizational context becomes an important factor in practicing leadership. One important aspect of servant leadership is focusing on the development of followers. This aspect is particularly germane in an educational environment wherein organizational goals explicitly focus on the development of followers. Because the definitive principal of servant leadership espouses the development of followers, its relationships to classroom climate and student achievement are relevant.

In the 21st century educational environment, there is a greater need for educational leaders than professional teachers (Luqman et al., 2012). More specifically,

contemporary research recommends servant leadership to enhance and improve academic environments and achievement (Black, 2010; Boyer, 2012; Herndon, 2007; Hiller et al., 2011; Kelley et al., 2005; Luqman et al., 2012; Spillane, 2005). Therefore, it is necessary to understand and define educational leadership (Shuaib & Olalere, 2013). Spillane (2005) provides a useful definition of leadership in an educational environment: Leadership refers to the methods of motivation and practices specifically designed to influence the motivation and knowledge of organizational members. Simply put, classroom leadership motivates and encourages students to learn. It increases the likelihood of increased student effort, focus, and retention.

**Servant leadership**. A servant leadership paradigm emphasizes the development of the follower and the organizational climate helps to facilitate follower receptivity to leadership direction. Operationalizing these theories in an educational environment improves student achievement (Black, 2010; Boyer, 2012; Cunningham, 2008; Hays, 2008; Herndon, 2007; Hiller et al., 2011; Kelley et al., 2005; Spillane, 2005). The SLP-R developed by Wong and Page (2003) measures the following servant leader characteristics: leading, servanthood, visioning, developing others, team building, empowering others, shared decision-making, and integrity.

***Leading***. Leading focuses on the skills necessary for achieving productivity and success (Wong & Page, 2003). Leading is about giving direction (van Dierendonck & Nuijten, 2011). While authoritative leadership remains a common practice, servant leadership's application and use of positional power is more effective (Zhang, Lin, & Foo, 2012).

According to Barbuto and Wheeler (2006), healing is one aspect of leading in servant leadership. However, it is often overlooked. Everyone experiences physical and emotional suffering; however, servant leaders recognize this as an opportunity to help their followers (Spears, 2004). Greenleaf (1970) wrote servant leaders practice healing by helping employees create personal and professional pathways to happiness. Most significantly, healing is an under-appreciated variable that distinguishes servant leadership from traditional leadership theories (Barbuto & Wheeler, 2006).

This variable is widely accepted in contemporary servant leadership research (Barbuto, 2002; Barbuto & Wheeler, 2006;; Laub, 1999; and Reed, Vidaver-Cohen, & Colwell, 2011; van Dierendonck, 2011). Yet, it is not always specifically labeled as leading. Barbuto (2002) describes this variable under the characteristic awareness. Patterson (2003) described its characteristics in service. Barbuto and Wheeler (2006) and Reed et al. (2011) encompassed this variable under the term altruism. In addition, Van Dierendonck and Nuijten (2011) included this variable when describing the attribute of courage.

***Servanthood***. Servanthood is directly related to the leader's character (Wong & Page, 2003). It is a reflection of a servant attitude. The focus is on helping others (Wong & Page, 2003). Aspects of servanthood are visible in Greenleaf's (1970) building community. This is where leaders show the way by demonstrating service to others and the community (Greenleaf, 1970). Through servanthood, leaders instill a sense of community spirit in their organizations (Barbuto & Wheeler, 2006).

As expected, the variable of servanthood is prevalent in contemporary servant leadership research (Barbuto, 2002; Barbuto & Wheeler, 2006; Dennis & Bocarnea,

2005; Dennis & Winston, 2003; Van Dierendonck & Nuitjen, 2011; Ehrhart, 2004; Laub, 1999; Liden, Wayne, Zhao, & Henderson, 2008; Patterson, 2003; Reed et al., 2011; Russell & Stone, 2002; Sendjaya & Cooper, 2011; Sendjaya, Sarros, & Santora, 2008). Yet, it is not always called servanthood. Laub (1999) and Barbuto (2002) described this variable in terms of a calling. Russell and Stone (2002) and Dennis and Winston (2003) used the term service. Ehrhart (2004) and Liden et al. (2008) labeled this putting others first. Finally, Patterson (2003) and Barbuto and Wheeler (2006) used the term altruism. Moreover, Patterson (2003) also used the term agapao love as a manifestation of aspects of servanthood.

In a quantitative correlational analysis of 291 high school students, Kurnianingsih, Yuniarti, and Kim (2012) confirmed the importance of this variable in education. A recent quantitative study of 524 teachers and administrators from primary and secondary schools in Singapore by Zhang et al. (2012) correlated the extent to which educational practitioners embraced the concept of servant leadership. Zhang (2012) confirmed the importance of this variable in education. Their results confirmed a statistically significant correlation between servanthood and its preference in an educational environment.

***Visioning***. Visioning is another variable focused on specific actions and tasks of a servant leader (Wong & Page, 2003). It encompasses three of Greenleaf's (1970) 10 characteristics: foresight, awareness, and conceptualization. Visioning allows a leader to be a guidepost for followers (Wong & Page, 2003).

Foresight is the ability to anticipate future events and outcomes (Barbuto & Wheeler, 2006). It is the central ethic of leadership (Greenleaf, 1970). Foresight allows the leader to understand the past and apply lessons learned to the present and future

(Spears, 2004). It allows the servant leader to be a bellwether for future organizational success (Boyer, 2012).

Within the context of servant leadership, awareness refers to a leader's astuteness at reading environmental cues (Barbuto & Wheeler, 2006). Situational awareness provides necessary information allowing leaders to evaluate issues from multiple perspectives (Greenleaf, 1970). Likewise, awareness makes servant leaders stronger (Spears, 2004).

The characteristic of conceptualization allows servant leaders to be great dreamers (Spears, 2004). It is the primary leadership talent (Greenleaf, 1970). Conceptualization is the ability to exercise lateral thinking beyond present realities (Barbuto & Wheeler, 2006). Servant leaders implement conceptualization by conveying the future vision, values, and mission of the organization (Bell, Bolding, & Delgadillo, 2013).

Russell and Stone (2002), Dennis and Winston (2003), Patterson (2003), and Dennis and Bocarnea (2005), all used the term vision. Barbuto (2002), Ehrhart (2004), and Liden et al. (2008), described visioning activities as aspects of conceptualization. Research by Kelley et al. (2005), Herndon (2007), Black (2010), Robinson et al. (2008), and Boyer (2012), all confirmed the importance of this variable in education.

***Developing others***. Developing others is a manifestation of the people orientation of a servant leader (Wong & Page, 2003). It focuses on how the leader relates to others and his or her commitment to their growth (Wong & Page, 2003). This characteristic most closely embodies the tenets of transformational leadership (Spears, 2004). Moreover, a strong leadership commitment to individual growth yields positive organizational outcomes (Barbuto & Wheeler, 2006).

Significantly, this characteristic provides an excellent example of the semantic problems with subsequent interpretations and consolidations of servant leadership characteristics and measurement instruments. For example, Laub (1999) and Barbuto (2002) described this variable as commitment to growth. Ehrhart (2004) and Liden et al. (2008) labeled this helping subordinates grow. Then Reed et al. (2011) called this activity interpersonal support.

Russell and Stone (2002), Patterson (2003), Dennis and Winston (2003), and Dennis and Bocarnea (2005), all used the term vision as a characteristic of servant leadership. With the exception of Patterson (2003), each of these authors related vision with Greenleaf's (1970) characteristics of conceptualization and foresight. However, according to Patterson (2003), vision referred to the leader assisting in the development of followers.

Developing others is a cornerstone of education (Waters et al., 2003). In a quantitative correlational analysis of 291 high school students, Kurnianingsih et al. (2012) confirmed the importance of this variable in education. In addition, according to Taylor, Martin, Hutchinson, and Jinks (2007), servant leadership should be cultivated in every classroom.

***Team building***. Team building focuses on making the organization more efficient (Wong & Page, 2003). It is part of the process of servant leadership (Wong & Page, 2003). Team building encompasses Greenleaf's (1970) aspects of listening and a commitment to people. It requires dialogue – both speaking and listening, and reflects the leader's respect for employees (Greenleaf, 1970).

Barbuto and Wheeler (2006) clarified this characteristic as hearing and valuing the ideas of others. Reed's et al. (2011) servant leadership instrument labeled this characteristic Egalitarianism. Regardless of the semantic label, most studies confirm the importance of this variable as a characteristic of servant leadership (Dennis & Bocarnea, 2005; Dennis & Winston, 2003; Ehrhart, 2004; Laub, 1999; Liden et al., 2008; Patterson, 2003; Russell & Stone, 2002; van Dierendonck & Nuijten, 2011; Wong & Page, 2005).

***Empowering others***. Empowering others is another people orientation characteristic of servant leadership (Wong & Page, 2003). It requires a commitment to followers and a willingness to empathize with and allow followers to direct their behaviors (Wong & Page, 2003). Empowering others facilitates followers becoming freer and more autonomous, which are two conditions of Greenleaf's (1970) "Best Test" for servant leadership.

Laub (1999) determined servant leaders' actions in developing people included providing learning, encouragement and affirmation. Servant leaders do not unconditionally accept all follower behaviors, but they do assume the intentions of all follower behaviors are honorable (Spears, 2004). With this mindset, even when servant leaders reject follower behaviors, they are not personally rejecting the follower (Spears, 2004). Van Dierendonck and Nuitjen (2011) further articulated this concept as part of interpersonal acceptance. Being able to forgive when confronted with mistakes is a logical servant leadership consequence of empowering others.

Dennis and Winston (2003), Patterson (2003), Dennis and Bocarnea (2005), and Van Dierendonck and Nuijten, (2011), all considered empowerment an important variable in servant leadership. Ehrhart (2004) and Liden et al. (2008) described this

variable as helping subordinates grow. Similarly, Sendjaya and Cooper (2011) used the term covenantal relationship to describe this characteristic.

***Shared decision making***. Shared decision-making refers to the organizational process of collaborating for efficiency (Wong & Page, 2003). Sharing leadership is one of the Laub's (1999) six key variables of servant leadership. Greenleaf's (1970) characteristics of listening, empathy, and persuasion are all aspects of shared decision-making.

The ability to influence others is a key, definitional component of leadership (Loughead & Hardy, 2005). However, unlike leadership in traditional, autocratic, hierarchical organizations whereby positional powers allow leaders to dictate specific actions, servant leaders replace coercive methods with persuasion (Spears, 2004). Thus, persuasion is the ability to influence others without a reliance on formal authority (Barbuto & Wheeler, 2006). The leadership byproduct of shared decision-making is credibility (Russell & Stone, 2002).

Paradoxically, most servant leadership instruments do not specifically measure shared decision-making as a variable of servant leadership (Dennis & Bocarnea, 2005; Dennis & Winston, 2003; ; Ehrhart, 2004; Liden et al., 2008; Patterson, 2003; Russell & Stone, 2002; Van Dierendonck & Nuijten, 2010). The variables of servanthood, developing others, team building, and empowering others often carry an assumption of sharing in decisions (Dennis & Bocarnea, 2005; Dennis & Winston, 2003; ; Ehrhart, 2004; Liden et al., 2008; Patterson, 2003; Russell & Stone, 2002; Van Dierendonck & Nuijten, 2011). However, it is a key variable in Laub's (1999) Organizational Leadership Assessment (OLA).

***Integrity***. Integrity is a variable at the heart of servant leadership (Wong & Page, 2003). All servant leadership tasks are impossible if the leader's character lacks integrity (Wong & Page, 2003). By demonstrating moral courage and integrity, leaders improve organizational behavior and inspire followers to emulate them (Parris & Peachey, 2013). Greenleaf (1970) posited the benefits of integrity include trust, empathy, persuasion, stewardship, and a commitment to the growth of people. It is critical to creating a servant leadership organization (Greenleaf, 1970).

The Reed et al. (2011) servant leadership instrument included moral integrity as a key variable. Although many other servant leadership instruments do not use the term integrity, they recognize its importance (Dennis & Bocarnea, 2005; Ehrhart, 2004; Laub, 1999; Liden et al., 2008; Patterson, 2003; Russell & Stone, 2002; Sendjaya and Cooper, 2011; Van Dierendonck & Nuijten, 2011). Laub (1999), and Russell and Stone (2002) used the term *honesty*. Sendjaya and Cooper, (2011), and Van Dierendonck and Nuitjen (2011) all described this variable as an aspect of *authenticity*. Ehrhart (2004) and Liden et al. (2008) incorporated integrity within *ethics*. Finally, Patterson (2003) and Dennis and Bocarnea (2005) included Greenleaf's (1970) outcome of integrity – trust – as a key variable in their servant leadership instruments.

***Abuse of power and egotistic pride***. Wong and Page (2003) identified two opposing forces to servant leadership: authoritarian hierarchy and egotistical pride. They lead to abuses of power. Moreover, they are antithetical to servant leadership and two major causes of organizational failure (Wong & Page, 2003).

Authoritarian hierarchy refers to a vertical organizational structure that is conducive to creating defined powers and responsibilities that encourage rigid command

and control practices (Wong & Page, 2003). Within these organizational structures, leaders need to develop two sets of skills. First, they focus primarily on demonstrating loyalty and submission to their supervisors. Second, they are willing to intimidate, deceive, and manipulate their subordinates to demand a similar level of loyalty and subjugation. This abusive power inevitably leads to scandals and corruption (Wong & Page, 2003).

Unfortunately, a business culture of competitiveness and individualism fosters egotistic pride (Wong & Page, 2003). Especially in hierarchical organizations, self-serving leaders demand the center of attention and portray themselves as the linchpin of the organization. They demand the center of attention and will use any means available to achieve material success—including accepting credit for the work of others (Wong & Page, 2003).

The lure of power and its accompanying privileges can corrupt and compel people to betray, or even kill, others (Wong & Page, 2003). Similarly, pride can manifest itself through greed for wealth or fame. It is impossible to exercise servant leadership if a leader is enamored with power or egotistical pride because servant leadership requires the voluntary surrender of one's ego and intentional vulnerability. Therefore, it is important to include these opponent process variables in the identification of servant leadership (Wong & Page, 2003).

Despite the prevalence and high reliability (0.937) of the SLP-R developed by Wong and Page (2003), it remains the only instrument that considers negative aspects of servant leadership. Just as pseudotransformational leadership presents the misuse and abuse of leadership skills, the abuse of power and egotistical pride prevents the

implementation of true servant leadership. The SLP-R identifies these tendencies by measuring intentional vulnerability and voluntary humility (Wong & Page, 2003).

***Summary of servant leadership variables***. Greenleaf (1970) readily admitted his list of 10 characteristics was not meant to be exhaustive (Bugenhagen, 2006). Chronologically, Laub (1999) reduced the list to six: values people, develops people, builds community, displays authenticity, provides leadership, and shares leadership. Russell and Stone (2002) identified nine functional characteristics: vision, honesty, integrity, trust, service, modeling, pioneering, appreciation of others, and empowerment. They also identified 11 accompanying attributes: communication, credibility, competence, stewardship, visibility, influence, persuasion, listening, encouragement, teaching, and delegation.

Wong and Page (2003) initially began with 12 characteristics: leading, servanthood, visioning, developing others, team building, empowering others, shared decision-making, integrity, humility, caring for others, goal setting, and modeling. Subsequently, they refined their list by eliminating the last four – humility, caring for others, goal setting, and modeling. Patterson (2003) consolidated the list to seven virtues: love, humility, altruism, vision, trust, empowerment, and service. Likewise, Ehrhart (2004) developed seven subscales of servant leadership: forming relationships with subordinates, empowering subordinates, helping subordinates grow and succeed, behaving ethically, having conceptual skills, putting subordinates first, and creating value for those outside the organization.

Dennis and Winston (2003) identified three domains of servant leadership: empowerment, service, and vision. Dennis and Bocarnea (2005) reduced Patterson's

(2003) seven virtues to five: vision, empowerment, trust, humility, and love. Barbuto and Wheeler (2006) developed an instrument to measure 11 dimensions of servant leadership: calling, listening, empathy, healing, awareness, persuasion, conceptualization, foresight, stewardship, growth, and community building. Then Sendjaya and Cooper, (2011) categorized six dimensions of servant leadership behavior: voluntary subordination, authentic self, covenantal relationship, responsible morality, transcendental spirituality, and transforming influence.

Liden et al. (2008) developed an instrument using Ehrhart's (2004) seven servant leadership behaviors: emotional healing, ethical behavior, putting subordinates first, helping subordinates grow and succeed, empowering, creating value for the community, and conceptual skills. Van Dierendonck and Nuijten (2010) created an instrument with eight dimensions: standing back, forgiveness, courage, empowerment, accountability, authenticity, humility, and stewardship. Subsequently, Van Dierendonck (2011) further distilled this list to six: humility, authenticity, empowering and developing, accepting, providing direction, and being good stewards. And Reed et al. (2011) created an instrument based on five servant leadership characteristics: interpersonal support, building community, altruism, moral integrity, and egalitarianism.

Honesty and integrity are essential variables in servant leadership (Dennis & Bocarnea, 2005; Laub, 1999; Patterson, 2003; Reed et al., 2011; Russell & Stone, 2002; Sendjaya and Cooper 2011; Wong & Page, 2003). Their definitions convey the essence of servant leadership. Honesty means telling the truth and integrity means good morals (Russell & Stone, 2002).

Altruism conveys the leader's desire to place the needs of others first and making a positive difference in others' lives (Barbuto & Wheeler, 2006). Simply put, altruism involves helping others just for the sake of helping (Patterson, 2003). Authenticity is closely related to altruism because it emphasizes the individual over any professional role (Van Dierendonck & Nuijten, 2010). It is a natural construct of the term servant. Wisdom is a combination of awareness and foresight (Barbuto & Wheeler, 2006). Courage involves taking risks, relying on values and convictions, and trying new approaches (Greenleaf, 1970; Russell & Stone, 2002; van Dierendonck & Nuijten, 2011). Standing back is closely related to authenticity, empowerment, humility, and stewardship (Van Dierendonck & Nuitjen, 2011).

Humility involves understanding one's strong and weak points and seeking assistance from others to overcome weaknesses (Dennis & Bocarnea, 2005; Patterson, 2003; van Dierendonck & Nuitjen, 2011; Wong & Page, 2003). Finally, agapao love includes "embracing the judgment and the deliberate assent of the will as a matter of principle, duty, and propriety" (Patterson, 2003, p. 12). Leading with agapao love focuses on the employees first and then on how the employees' talents can benefit the organization (Patterson, 2003).

In summary, servant leadership is more than a leadership style (Laub, 1999). It is a different way of thinking about life – an opportunity to serve others. Servant leadership is not a title, position, or status. Instead of controlling people, servant leadership enables people towards their full potential (Laub, 1999).

To date, most servant leadership research falls into three categories: conceptually defining and articulating, measuring, and the development of operational models (Parris

& Peachey, 2013). Obviously, despite the consistency and overlap of several characteristics, the introduction and measurement of 44 different characteristics highlights the difficulty of both defining and operationalizing servant leadership. Measurement instruments aside, how does one identify or determine the implementation of servant leadership? According to Greenleaf (1970), the modern originator of servant leadership:

> The best test, and difficult to administer, is: Do those served grow as persons? Do they, while being served, become healthier, wiser, freer, more autonomous, more likely themselves to become servants? And, what is the effect on the least privileged in society; will they benefit, or, at least, not be further deprived? (Greenleaf, 2002, p. 6)

**Servant leadership variable measurement and outcomes** Despite difficulties in the definition of servant leadership and a lack of specific agreement in the semantics of servant leadership instrument variables, numerous empirical studies capture and measure the essence of servant leadership (Parris & Peachey, 2013). The study of servant leadership in at least 11 countries and across multiple religions demonstrates the cross-cultural interest in servant leadership. Likewise, its use in a wide range of organizational settings (e.g., schools, profit, and non-profit) demonstrates its broad appeal for all those interested in leadership (Parris & Peachey, 2013).

Not surprisingly, *leading* was a key variable determined to be statistically significant in many studies (Black, 2010; Boyer, 2012; Caffey, 2012; Herndon, 2007; Irving & Longbotham, 2007; Kelley et al., 2005; Mahembe & Engelbrecht, 2013; Mayer, Bardes, & Piccolo, 2008; McCuddy & Cavin, 2008; Robinson et al., 2008; Shekari &

Nikooparvar, 2012; Steyn, 2012; Tariq & Ambali, 2013; Thompson, 2012; Zhang et al., 2012). Likewise, *servanthood's* statistical significance was also prevalent (Barbuto & Wheeler, 2006; Caffey, 2012; Dennis & Bocarnea, 2003; Dennis & Winston, 2003; Ehrhart, 2004; Laub, 1999; Liden et al., 2008; Mahembe & Engelbrecht, 2013; Patterson, 2003; Reed et al., 2011; Russell & Stone, 2002; Sendjaya and Cooper , 2011; Shekari & Nikooparvar, 2012; Tariq & Ambali, 2013; van Dierendonck & Nuijten, 2011; Zhang et al., 2012). Other common themes in servant leadership research focused on variables that facilitate individual and organizational effectiveness and follower well-being (Parris & Peachey, 2013). These themes often included visioning, developing others, team building, empowering others, and shared decision making.

Irving and Longbotham (2007) conducted a large quantitative, correlational study with 6,000 team members measuring servant leadership's influence on team effectiveness and found significant correlations with leading, servanthood, developing others, team building, shared decision-making, and integrity. Jaramillo, Grisaffe, Chonko, and Roberts (2009) did a study with 501 sales professionals from a variety of industries and determined a significant correlation between servant leadership and effectiveness. Melchar and Bosco (2010) also supported this theme in a qualitative study of servant leadership effectiveness in a service oriented, sales environment. Within education, several studies found significant correlations between servant leadership and school or teacher effectiveness (Black, 2010; Boyer, 2012; Herndon, 2007; Kelley et al., 2005; Mahembe & Engelbrecht, 2013; Mazarei et al., 2013; Metzcar, 2009; Robinson et al., 2008; Thompson, 2012). However, it is notable that Jacobs' (2011) study of 68 teachers

in four universities did not find a statistical significance between servant leadership and teaching effectiveness.

Numerous studies positively correlated the follower benefits of servant leadership (Cerit, 2009; Hunter et al., 2013; Jaramillo et al., 2009; Jenkins & Stewart, 2010; Mayer et al., 2008; Rieke, Hammermeister, & Chase, 2008). Many of these benefits included: a positive climate, job satisfaction, increased commitment, and lower employee turnover (Parris & Peachey, 2013). In keeping with the opponent process model of Wong and Page (2003), a study of 300 workers in Punjab measuring servant leadership variables to earn employee trust reported statistical significance for the characteristic of humility, which is the opposite of egotistic pride (Tariq & Ambali, 2013). Caffey (2012) and Mazarei et al. (2013) recently identified opponent process variables in an educational environment with statistical significance. Caffey's (2012) study measuring job satisfaction of 133 new teachers revealed a strong correlation with the variable *humility*. More significantly, the study by Mazarei et al. (2013) of 205 physical education teachers measuring servant leadership and its influence on organizational commitment revealed significant correlations with both humility and modesty. This study acknowledged characteristics of modesty as a counter characteristic of the abuse of power problems affiliated with authoritarian hierarchical organizations and humility to counter egotistic pride (Mazarei, Hoshyar, & Nourbakhsh, 2013).

**Climate**. Understanding organizational climate is important for leaders; however, it is essential if leaders are to lead (Schein, 2010). It is the only thing of real importance that leaders do (Schein, 2010). Ismat et al. (2011) confirmed the correlation between the role of leadership and the creation of organizational culture and climate.

Organizational culture and climate in education gained significant attention over the past few decades (Lumby & Foskett, 2011). While a search of the Education Resources Information Center (ERIC) lists fewer than 10 articles concerning culture in education during the 1950s, it reveals more than 7,000 between 1953 and 2012. Collectively, this research indicates the necessity to critically engage culture and climate to develop leaders at all levels of education (Lumby & Foskett, 2011).

There are three levels of organizational culture: artifacts, values, and basic underlying assumptions (Schein, 2010). In an educational environment, a classroom layout is an example of an artifact. The grouping or separation of desks provides insight regarding potential or expected communication patterns. National standards and benchmarks, known as the Common Core State Standards (CCSS) is an example of a current value in K–12 education. The intent is to have students, in all states, master common standards in English, Language Arts, Science, and Mathematics. Finally, one basic underlying assumption in American education is mainstreaming special needs students. While it was once common to separate learning support students from their classmates, values against a segregated model changed to require inclusion of such students in the least restrictive educational environment possible.

Obviously, organizations do not possess a culture or climate; they exhibit them (Colakoglu & Littlefield, 2010). Consequently, Fraser, Treagust, and Dennis (1986) developed The CUCEI to help identify and measure climate in an educational environment. The CUCEI measures the following dimensions of classroom climate: student cohesiveness, individualization, innovation, involvement, personalization, satisfaction, and task orientation.

***Student cohesiveness***. Student cohesiveness is a measure of student interactions (Fraser et al., 1986). This dimension includes two of the nine climate dimensions identified by Litwin and Stringer (1968): support and identity. A supportive organizational climate emphasizes employee helpfulness. This support extends beyond organizational peers. Both managers and employees reciprocate it (Litwin & Stringer, 1968). Similarly, the extent to which an employee feels included within the group reflects identity. It includes a sense of value as a contributing member to organizational goals. It creates a common organizational spirit (Litwin & Stringer, 1968). Duke (2006) positively correlated these attributes with a high achievement school climate.

This is a common variable in educational climate instruments (Fisher & Fraser, 1981; Fraser et al., 1986; Fraser et al., 1996; Fraser, Fisher, & McRobbie, 1996; Trickett & Moos, 1973; Walberg & Anderson, 1968). The Classroom Environment Scale (CES) uses the term *affiliation* (Trickett & Moos, 1973). The CLES dimension of *student negotiation* requires the establishment of socially acceptable behavior (Taylor et al., 1995). However, this dimension is conspicuously absent from the Individual Classroom Environment Questionnaire (ICEQ) (Fraser, 1990).

***Individualization***. Individualization refers to the specific treatment of students based on their interests, abilities, and rates of work (Fraser et al., 1986). It also considers the extent to which students are allowed to make decisions. This is similar to Litwin's (Litwin & Stringer, 1968) dimension of *responsibility*. Responsibility refers to employees' feelings of empowerment and of being their own boss. Responsibility means employees do not have to double check every decision. It is recognizing that each individual is accountable for specific tasks (Litwin & Stringer, 1968).

Surprisingly, this dimension is only included in one other educational climate instrument: the ICEQ (Fraser, 1990). Fraser (1990) also developed this instrument. Nevertheless, in this case, he labeled this dimension independence.

***Innovation***. Unusual class activities and new teaching techniques are examples of innovation in a classroom environment (Fraser et al., 1986). It is a positive outcome of the dimension of risk as defined by Litwin and Stringer (1968) because it demonstrates a willingness to take chances instead of playing it safe. Research by (Oliveira & Ferreira, 2012) confirmed a servant leadership climate fosters communication and innovation by removing communication barriers.

Aspects of this dimension appear in several common educational environment instruments: the SLP-R, the LEI, the CLES, the SLEI, and the CES. (Fraser et al., 1996; Taylor et al., 1995; Trickett & Moos, 1973; Walberg & Anderson, 1968). The LEI includes these characteristics in its dimension of *diversity* (Walberg & Anderson, 1968). In this case, the need to provide for individual student differences requires innovation in lieu of a standard cookie-cutter approach (Walberg & Anderson, 1968). The *uncertainty of science* dimension in the CLES promotes innovation by welcoming unconventional theories (Taylor et al., 1995). Likewise, the SLEI promotes innovation through divergent approaches to experimentation (Fraser et al., 1996).

***Involvement***. The dimension of involvement measures the extent to which students participate in discussions and activities (Fraser et al., 1986). Two climate dimensions from Litwin and Stringer (1968) that encourage involvement are conflict and identity. Conflict addresses the degree to which managers and workers encourage different opinions. It supports open communication and problem sharing. Moreover,

without involvement as a contributing member of the group, students are less likely to obtain a sense of group identity (Litwin & Stringer, 1968). Research by Oliveira and Ferreira (2012) confirmed a servant leadership climate fosters communication and involvement. It seeks member participation (Ebener & O'Connell, 2010).

At the classroom level involving teachers, servant leadership improves student engagement, learning, and achievement (Bowman, 2005; Hays, 2008; Metzcar, 2009; (Scardino, 2013). These communication patterns become organizational artifacts (Schein, 2010). Duke (2006) positively correlated these attributes with a high achievement school climate.

The CES and WIHIC instruments each contain a scale labeled *involvement* (Trickett & Moos, 1973; Fraser et al., 1996). The LEI scale of *democracy* measures involvement through shared decision-making (Walberg & Anderson, 1968). By measuring shared *control*, the CLES also includes this dimension (Fraser et al., 1996). Additionally, the ICEQ uses the term participation (Fraser, 1990). Yet, this dimension is not included in the MCI or SLEI instruments (Fisher & Fraser, 1981; Fraser et al., 1996).

***Personalization***. The dimension of personalization reflects both the opportunities for individual student interactions with the teacher and the teacher's concern for each student's personal welfare and social growth (Fraser et al., 1986). Litwin and Stringer (1968) categorized this type of caring as *helpfulness*. However, it is also indicative of characteristics within the dimension of *warmth* (Litwin & Stringer, 1968).

Caring for members is a direct servant leadership attribute that contributes to a positive organizational climate (Ebener & O'Connell, 2010). Improving student-teacher relationships, study conditions, and student metacognitive orientation has both direct and

indirect effects on student learning and achievement (Pitkäniemi & Vanninen, 2012). Again, Duke (2006) positively correlated these attributes with a high achievement school climate.

This dimension is present in the CES, ICEQ, and WIHIC instruments (Fraser, 1990; Fraser et al., 1996; Trickett & Moos, 1973). Trickett and Moos (1973) and Fraser et al. (1996) called this dimension teacher support. Nevertheless, it is absent from the LEI, MCI, SLEI, and CLES instruments.

***Satisfaction***. According to Fraser et al. (1986), s*atisfaction* is simply a measure of how much the students enjoy the class. There are two aspects to this dimension. First, do the students believe the class is worthwhile? Second, do the students enjoy working in the class? This is an important dimension in educational pedagogy (Marzano & Marzano, 2003; Waters et al., 2003). Beginning at the school level with administrators, a servant leadership approach increased both teacher job satisfaction and student achievement (Caffey, 2012; Watkins, 2012). These findings were confirmed by Cerit, (2009) and Thompson (2012).

Ironically, many educational climate instruments (CES, ICEQ, SLEI, CLES, and WIHIC) do not consider this dimension an essential aspect of climate (Fraser et al., 1996; Taylor et al., 1995; Trickett & Moos, 1973). However, Walberg and Anderson (1968) included it in the LEI. Likewise, Fisher and Fraser (1981) included it in the MCI.

***Task orientation***. The clarity and organization of work determine the task orientation (Fraser et al., 1986). Students do well in this dimension when they know exactly what the teacher expects (Walberg & Anderson, 1968). Litwin and Stringer (1968) used two dimensions to encompass task orientation: standards and values.

Standards reflect the implicit and explicit achievement goals. And values reflect the acceptable standards of behavior and thinking regarding the way things are done around here. Values are reflected when leaders propose solutions to problems. Values that successfully solve problems become organizational beliefs, and eventual underlying assumptions (Schein, 1990).

The LEI, CES, SLEI, and WIHIC instruments all incorporate task orientation (Fraser et al., 1996; Walberg & Anderson, 1968; and Trickett & Moos, 1973). The LEI labels this dimension goal direction (Walberg & Anderson, 1968). Fraser et al. (1996) refer to this dimension as rule clarity. The MCI, ICEQ, and CLES instruments do not include this dimension.

***Climate characteristic refinements***. In subsequent research, Litwin and Stringer (1968) identified strong relationships between warmth and identity, identity and support, and warmth and support. Consequently, the characteristic of warmth and support combined these dimensions (Sims Jr. & Lafollette, 1975). And the characteristic approval replaced standards (Canaan Messarra & El-Kassar, 2013). Furthermore, several authors identified structural, perceptual, and interactive aspects of creating climate (Campbell, Dunnette, Lawler, & Weick, 1970); Field & Abelson, 1982) ; Glick, 1985; Hellriegel & Slocum, 1974; James & Jones, 1974; Litwin & Stringer, 1968; (Payne & Pugh, 1976; Schneider, 1975; Tagiuri & Litwin, 1968; Woodman & King, 1978). Unfortunately, there is still a lack of agreement regarding the basic dimensions of organizational climate (Thumin & Thumin, 2011).

Despite consistency with many variables, analysis of the most common educational climate instruments reveals 37 different dimensions. Moreover, according to Ashkanasy, Broadfoot, and Falkus (2000), many climate instruments fail to include reliability information. Therefore, despite numerous attempts, even those intimately involved with the dynamics of organizational culture and climate experienced difficulty distinguishing between them (Denison, 1996). Accordingly, these should be considered differences in interpretation rather than differences in phenomenon (Denison, 1996).

***Climate variable measurement and outcomes***. Due to a plethora of climate instruments in a variety of contextual environments, this review of climate variables focuses only on those affiliated within an educational environment. In this arena, several recent studies consolidate and review current research in more than 90 empirical studies, 50 literature reviews, and 100+ educational climate instruments (Clifford, Menon, Gangi, Condon, & Hornung, 2012; Faster & Lopez, 2013; Fraser, 2012; Gangi, 2010; Guffey, 2012; Haggerty, Elgin, & Woolley, 2011; Thapa et al., 2013). From this literature, three main research themes of climate instruments include measuring innovation, practical attempts to improve the environment, and the correlation between climate and student achievement (Fraser, 2012). Gangi (2010) reviewed 102 educational climate instruments and identified wide usage, established reliability, and a long history as essential aspects of the best instruments. Faster and Lopez (2013) subsequently confirmed this finding.

Reviews by Clifford et al. (2012), Guffy (2012), Fraser (2012), Haggerty et al. (2011), and Thapa et al. (2013) identified cohesiveness, task orientation, individualization, innovation, involvement, and personalization as statistically significant, key variables in climate assessment. A review of 73 instruments by Haggerty et al. (2011) identified the best instruments as those measuring socio-emotional issues that include variables like student cohesiveness, individualization, involvement, personalization, satisfaction, and task orientation. In addition, a rigorous analysis of 25 instruments by Clifford et al. (2012) also identified these variables as components of the 11 best instruments.

In a yearlong study of classroom climate with 144 students, Skinner and Belmont (1993) significantly correlated individualization and involvement with student motivation and behavior. Similarly, a study of 382 African American and 1,456 European American students identified student cohesiveness as the most significant variable influencing both student behavior and achievement (Mattison & Aber, 2007). Higgins-D'Alessandro (2011) concluded innovation is a core characteristic of a liberal education. Finally, in a decade long, longitudinal study of school climate in more than 400 schools in Chicago, Bryk (2010) concluded personalization was the key variable that affects school climate.

**Methodology**. Despite multiple variations, combinations, and permutations, most research in the social sciences can be generally categorized as qualitative, quantitative, or a combination of the two often referred to as mixed method (Murakami, 2013). Yet, a researcher's selection of a methodology should not be arbitrary (Downey & Duane Ireland, 1979). Careful consideration of the

predominant characteristics of each methodology leads to the appropriate methodological selection (Dobrovolny & Fuentes, 2008).

There are several characteristics common to both qualitative and quantitative methodologies (Dobrovolny & Fuentes, 2008). Both methodologies involve decision making or judging that is susceptible to accusations of political or emotional bias. However, both are also based on established codes of conduct and ethical standards (Dobrovolny & Fuentes, 2008).

A qualitative methodology frequently helps to develop theory (Bynum & Pranter, 2013; Higgins, 2009). According to Dobrovolny and Fuentes (2008), researchers typically start from a broad perspective and attempt to describe or understand its context. Data are usually narrative in nature and the researcher is frequently instrumental as an observer with direct influence on data input in the form of coded transcripts (Dobrovolny & Fuentes, 2008). Consequently, the subjectivity and expertise of the researcher is critical to the validity of the study (Downey & Ireland, 1979).

Conversely, quantitative research is usually appropriate to test, rather than develop, theory (Higgins, 2009). Usually, the purpose of the research is to confirm or refute one or more hypotheses (Dobrovolny & Fuentes, 2008). Statistical analysis of numerical data does not include input from the researcher and subjectivity in the study comes only from the subjects (Dobrovolny & Fuentes, 2008). Furthermore, study validity is related to statistical analysis (Downey & Ireland, 1979).

Understandably, these characteristic differences are subject to specific criticisms (Hubbard & Meyer, 2013; Murakami, 2013). Qualitative studies must guard against bias and their narrative nature, by their choices of specific words, may lead to different interpretations by readers (Murakami, 2013). However, Hubbard and Meyer (2013) included and concurred with 28 studies in their argument that the statistically significant *p* value in most quantitative studies is grossly over rated.

Each methodology has both benefits and detriments (Dobrovolny & Fuentes, 2008). Fortunately, there are some general guidelines to assist researchers in selecting an appropriate methodology for their studies (Alonso & Barredo, 2013; Fairbrother, 2007; Dobrovolny & Fuentes, 2008; Murakami, 2013). Dobrovolny and Fuentes (2008) created a methodological flowchart to assist in navigating through the characteristics of each methodology.

In conclusion, Alonso and Barredo (2013) recommended a quantitative methodology when the research investigated models of theory. Likewise, Fairbrother (2007) concluded the quantitative method is most appropriate to clarify a relationship. Therefore, a quantitative methodology was chosen for this research to correlate the models of servant leadership and classroom climate. Use of the flowchart created by Dobrovolny and Fuentes (2008) also supported the selection of a quantitative methodology for this research. Finally, similar studies correlating servant leadership in an educational environment all used a quantitative methodology (Black, 2010; Boyer, 2012; Herndon, 2007; Kelley et al., 2005; Robinson et al., 2008).

**Instrumentation**. This study aimed to advance scientific knowledge by examining to what degree there was a relationship between teachers' servant leadership behaviors and classroom climate and student achievement at the collegiate level. Prior research studies demonstrated a positive correlation between servant leadership, school culture, and student achievement at the elementary and secondary levels of education (Boyer, 2012; Hays, 2008; Hiller et al., 2011; Robinson et al., 2008). While this study was different in that it sought to discover a correlation at the collegiate level, it was reasonable to anticipate similar results. It was also reasonable to utilize instruments that had been used in the previous studies (Bowman, 2005; Boyer, 2012; Cunningham, 2008; Drobot & Roşu, 2012; Hays, 2008; Metzcar, 2009; Scardino, 2013). As discussed in detail above in relation to specific characteristics of servant leadership and classroom climate, several measures have been developed that the researcher reviewed. These include the LEI, the CLES, the SLEI, CES, ICEQ, and WIHIC (Fraser et al., 1996; Taylor et al., 1995; Trickett & Moos, 1973; Walberg & Anderson, 1968 WIHIC). Two of the instruments used in this research, which were used in prior studies, provided the best fit: The Servant Leadership Profile—Revised [SLP-R] (Wong & Page, 2003) and The College and University Classroom Environment Inventory [CUCEI] (Fraser et al., 1986). The SLP-R was the only instrument that also accounted for the potential negative leadership characteristics of egotistic pride and abuse of power and the CUCEI is the most frequently used classroom climate instrument in similar research (Fraser, Tobin, & McRobbie, 2012). The third instrument, end of course student grades, served as a measure of student

achievement. While studies at the elementary and secondary school levels relied on standardized test results as a measure of student achievement, there was no equivalent at the collegiate level.

**Summary**

History provides multiple examples demonstrating the irony of great leaders who influence others by placing themselves in subordinate positions (Keith, 2008). The foundational theories for this research—servant leadership and organizational climate—partially explicate this paradox. These theories were developed by Greenleaf (2007), Litwin and Stringer (1968), and Schein (1984), and were used to study transformational follower development and unifying values within organizations to align behavior. In concert, leadership and organizational culture and climate are symbiotic (Kotter, 2009; Stringer Jr., 2012).

Saphier and King (1985) identified the importance of organizational culture in education. The historic factory model of education is no longer producing desired results (Chance & Chance, 2002; Zeitvogel, 2010). Waters et al. (2003) synthesized 30 years of leadership in education and recommended careful attention to school culture. Saphier (2011) recommended changing teacher-student paradigms to increase learning effectiveness. In the 21st century educational environment, there is a greater need for educational leaders than professional teachers (Luqman et al., 2012). Furthermore, it is known that educational climate influences student achievement (Cunningham, 2008;Herndon, 2007). More specifically, contemporary research recommended servant leadership to enhance and improve academic environments and achievement (Black, 2010; Boyer, 2012; Herndon, 2007; Hiller et al., 2011; Kelley et al., 2005; Luqman et al.,

2012; Spillane, 2005).

At the macro environmental level of education, research identified strong positive correlations between servant leadership and improved achievement (Hays, 2008; Hiller et al., 2011; Robinson et al., 2008; van Dierendonck & Nuitjen, 2011). However, while overall school climate affects student achievement, the past studies create a gap in the literature with respect to leadership in the classroom and the influence of servant leadership in higher education (Black, 2010; Herndon, 2007). This research addresses the following problem: It is not known to what degree there is a relationship between teachers' servant leadership behaviors, classroom climate, and improved student achievement in a college setting. Specifically, the extent to which a servant leadership classroom climate affects student achievement is not known.

Quantitative, correlational research is the most frequent empirical design examining the trivariate correlations of servant leadership, climate, and student achievement. Fortunately, there are established survey instruments for both servant leadership and classroom climate—SLP-R (Wong & Page, 2005) and the CUCEI (Fraser et al., 1986). Teachers' servant leadership behavior and classroom climate were the predictor variables in this study. Student achievement was the criterion variable.

This study examined the correlations between servant leadership, classroom climate, and student achievement. To date, these studies only exist at the administrative levels for primary and secondary education (Black, 2010; Boyer, 2012; Herndon, 2007; Hiller et al., 2011; Kelley et al., 2005; Spillane, 2005). This study sought to identify these correlations at the classroom level in higher education. Understanding this dynamic was critical to identify, confirm, or refute a popular leadership paradigm—servant

leadership—in an educational context. Additionally, although this research supported current practices of teacher pedagogy at the collegiate level, it also recommends a closer examination of the professional development of collegiate teachers in the areas of leadership and pedagogy (in addition to subject matter expertise). Chapter 3 contains the specific methodological elements of this research.

# Chapter 3: Methodology

## Introduction

Teacher leadership styles are as varied as teachers are. However, the principles, values, and practices of servant leadership can make a profound difference on the learning experience for both students and teachers (Hays, 2008). These findings are significant because the United States' world education rankings have declined. Fortunately, the link has been established between administrative servant leadership, school climate and student achievement (Black, 2010; Kelley et al., 2005; Herndon 2007; and Robinson et al., 2008). Unfortunately, the link has not been established for teacher servant leadership to classroom climate and student achievement in higher education. The purpose of this quantitative research was to see to what degree a relationship exists between servant leadership, classroom climate, and student achievement for students and faculty at a small university in Northwest Pennsylvania.

The methodology of the study is explained in this chapter. Components of this process include the statement of the problem, research hypotheses, research methodology, research design, population and sampling procedures, instrumentation, validity, reliability, data collection and analysis procedures, and ethical considerations. Each of these areas are discussed in detail.

## Statement of the Problem

This quantitative, correlational study examined the relationships between servant leadership, classroom climate, and student achievement. It was not known whether and to what degree teachers' servant leadership behaviors correlated with classroom climate and student achievement. The educational environment of this research was a small, private,

Catholic university in Northwest Pennsylvania. The data for this study were drawn from two survey instruments and final course grades. The first instrument, the SLP-R, was used to collect data on the servant leadership characteristics of the teachers. The second instrument, the CUCEI, was used to collect data on the nature of each classroom climate. Finally, students' end of course grades were used to reflect student achievement.

**Research Questions and Hypotheses**

The research questions and hypotheses for this study focused on the identification and measurement of teachers' servant leadership behaviors, the classroom climate created by these behaviors, and subsequent student achievement. Values determine behaviors (McClelland, 1985). This concept is not new. It is foundational to understanding human psychology and behavior and the premise underlying behavioral models such as Maslow's (1954) hierarchy of needs and Herzberg's motivation to work (Herzberg, 1959). Collectively, "common values are the glue that binds an organization together; they motivate and create a sense of community. If properly implemented, the employees can be trusted in the absence of direct rules and regulations" (Brytting & Trollestad, 2000, p. 55). These common values create the culture of the organization and directly influence the climate (Schein, 2010). And, as stated previously, climate influences achievement (Cunningham, 2008; Herndon, 2007).

Values-based leadership presumes moral and ethical leadership, in its purest form, like servant leadership, ensures rational and emotional commitment to organizational objectives (McCoy & McCoy, 2007). O'Toole (1996) identified integrity, vision, trust, listening, respect for followers, clear thinking, and inclusion as the primary characteristics of values-based leadership.

> If we use beliefs to make decisions, our decisions will reflect our past history in dealing with similar situations…If we use our values to make decisions; our decisions will align with the future we want to experience. Values transcend both contexts and experiences. (Barrett, 2007, p.1)

As stated previously, the inherent values that manifest leadership behavior work to create the underlying values and beliefs (culture) of an organization. This culture, in turn, is observable in the daily behaviors that regulate the organizational climate. While there is an abundance of research that correlates leadership behavior with follower achievement, empirical research directly correlating an organizational classroom climate (because of leader behaviors) to student achievement is missing.

The following research questions and hypotheses guided this study:

R1: What is the relationship between teachers' servant leadership behaviors and classroom climate as reported by students?

$H_1$: There is a positive correlation between teachers' servant leadership behaviors, measured by "The Servant Leadership Profile" and classroom climate reported by students.

$H_0$: There is not a positive correlation between teachers' servant leadership behaviors, measured by "The Servant Leadership Profile" and classroom climate reported by students.

R2: What is the relationship between servant leadership behavior and student achievement?

$H_2$: There is a positive correlation between servant leadership behaviors, measured by the SLP-R and student achievement, measured by final course grades.

$H_0$: There is not a positive correlation between servant leadership behaviors, measured by the SLP-R and student achievement, measured by final course grades.

R3: To what extent is the relationship between servant leadership behavior and student achievement mediated by classroom climate?

$H_3$: There is a positive correlation between servant leadership behavior and student achievement mediated by classroom climate, measured by the CUCEI.

$H_0$: There is not a positive correlation between servant leadership behavior and student achievement mediated by classroom climate, measured by the CUCEI.

**Research Methodology**

This research used a quantitative methodology and correlational research design because that methodology could help to ascertain whether and to what extent there was a relationship between servant leadership, classroom climate, and student achievement. It did not explain why the dynamics of servant leadership and classroom climate affected student achievement. Rather, it helped to identify the strength of the relationship between these variables. Evidence-based practice and research measures and quantifies a phenomenon (Vance et al., 2013). The research questions would not be supported by a qualitative methodology, which aims to discover how and why a phenomenon occurs, but does not support the correlation between variables (Bernard & Ryan, 2009) . Fortunately, the availability of established instruments to look at the relationships between teacher servant leadership, classroom climate, and student achievement precluded the need to establish and validate questions or instruments for a qualitative or mixed methods

approach and lent themselves to a quantitative correlational study. Furthermore, this study was designed to be consistent with prior research studies in this area of research.

There is extensive research on leadership and organizational climate (Fernando & Chowdhury, 2010; Groves, 2006; Karakas, 2011; Leithwood & Mascall, 2008). Similar studies demonstrated a positive correlation between servant leadership, school culture, and student achievement at the elementary and secondary levels of education (Boyer, 2012; Hays, 2008; Hiller et al., 2011; Robinson et al., 2008). While this study was different in that it sought to discover a correlation at the collegiate level, it was reasonable to anticipate similar results. Prior research and results were the genesis of the

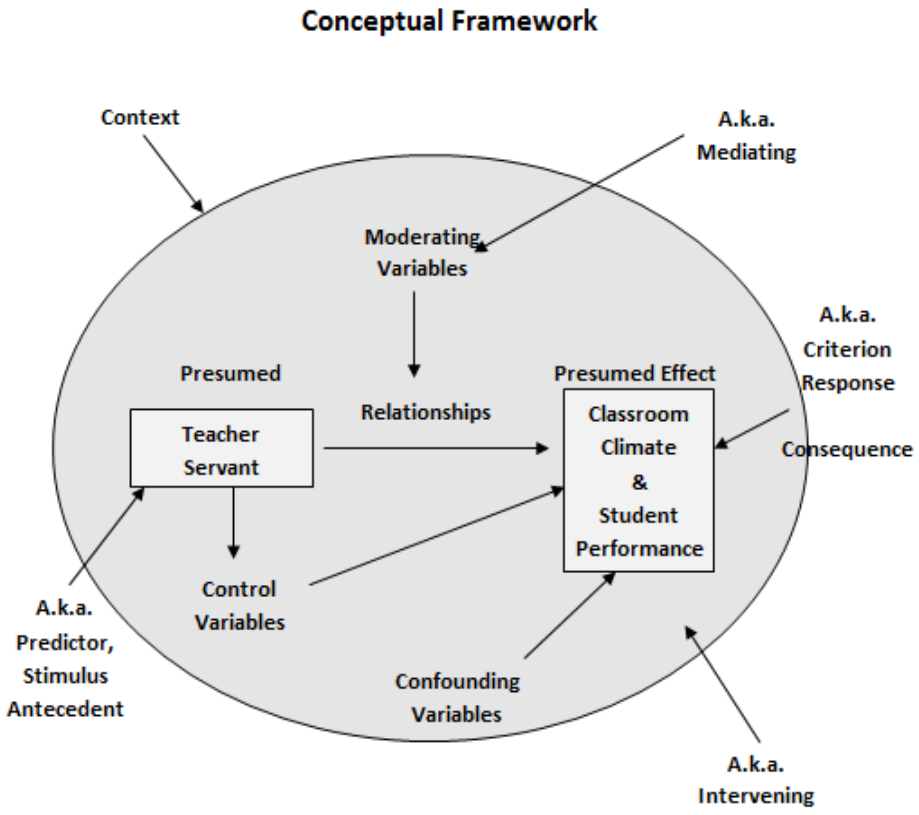


*Figure 2*. Conceptual framework model.
Adapted from Latham (2013). Original copyright 2005. Used with permission.

research questions and hypotheses for this study. Moreover, since the focus of this research was on correlating leadership and climate to student achievement instead of. correlating leadership with student achievement or climate with student achievement individually, it was possible to use established leadership and climate instruments

This study was conducted at a small, private, Catholic, university. There was a presumption that the predictor variable of teachers' servant leadership behaviors was the predictor stimuli. Classroom climate was the primary moderating variable in the relationship between the teacher and the criterion variable student achievement. Using established survey instruments as the criterion response, based upon similar studies, the primary hypothesis was that the presumed effect will be a more favorable classroom climate and improved student achievement. However, it was important to acknowledge the potential influence of confounding variables that may have intervened with our results. Figure 2 shows a diagram of the conceptual framework.

**Research Design**

This was a quantitative, correlational study. The study sought to measure and correlate real world classroom dynamics. In this study, mean values for servant leadership, classroom climate, and student achievement were used to support or refute the research hypotheses. While subsequent research may examine more complicated relationships, for this research, the framing of these variables was linear. Since classroom climate and student achievement data were paired—not independent of each other—"It is important to account for this pairing in the analysis…[and]…concentrate on the differences between the pairs of measurements rather than on the measurements themselves" (Whitley & Ball, 2002, p. 3).

Epistemologically, a postpositivist worldview is one in which causes determine effects; this perspective framed the origins of this research. The SLP-R and CUCEI research instruments in this study converted individual values into numerical values. "The aim of descriptive statistics is to quantitatively summarize a data set …used to support statements about the population that the data are thought to represent" (Marusteri & Bacarea, 2010, p.16). Therefore, a real world, numeric comparison of individual differences in teachers' servant leadership behaviors, classroom climate, and student achievement reflects the realism of a postpositivist worldview.

The foundational theories for this research included servant leadership and organizational climate. These were developed by Greenleaf (2007), Litwin and Stringer (1968), and Schein (1984), and were used to study transformational follower development and unifying values within an organization to align behavior. These theories indicate that a servant leadership paradigm emphasizes the development of the follower and the organizational climate helps to facilitate follower receptivity to leadership direction.

This correlational study did not question established theories in use; rather, it attempted to identify the strength of the correlation between the variables. Thus, it was consistent with a quantitative, correlational research study. In this study, correlating the variables of teacher servant leadership behavior with classroom climate and classroom climate with student achievement required servant leadership and climate instrumentation and end of course grades.

For this research, the SLP-R and CUCEI surveys provided numerical scale scores to determine the correlation between the level of teacher servant leadership in a

classroom and classroom climate. The survey results were correlated with student achievement as measured by end of course grades. Teachers' servant leadership behavior and classroom climate were the predictor variables in this study. Student achievement was the criterion variable. The unit of analysis for this study was the classroom.

**Population and Sample Selection**

The general population for this study included teachers and students. According to the most recent academic year of complete educational statistics (2009-2010), the U.S. Census Bureau reported 76.3 million students and 4.7 million teachers in the United States. Within the general population, there are 20.6 million collegiate students comprised of 11.7 million women and 8.9 million men. It also includes 313,156 female and 415,821 male collegiate teachers totaling 728,977 faculty (U.S. Census Bureau, 2011).

The study population was drawn from approximately 3,600 students and 260 faculty members at a small, private university in Northwest Pennsylvania. The average class size was fewer than 25 students and teaching assistants did not teach classes. The tenets of the university's Catholic origins remain a strong cultural influence.

An a priori power analysis calculation recommended a sample size of 34 (see Appendix L). However, the small faculty population and instrumentation constraints (non-science-related lecture classes without laboratory periods) made attainment of this sample size unlikely. A compromise power analysis with a hypothetical sample size of 15 determined a power of .83 (see Appendix L). Finally, a post hoc power analysis computed a power of 0.76 for correlation and 0.47 for multiple linear regression (see Appendix L).

The University email system was used to contact and recruit potential participants, who were adult students; the email was sent to instructors inviting them to participate by handing out sealed paper-based surveys to the adult students in their classes. The study was geographically limited to students and teachers at the main campus location only. Additionally, participation requirements limited the study to non-science-related lecture classes without laboratory periods. To avoid participant identification and encourage candid responses, each set of class data was assigned an alphabetic code. The alphabetic coding of survey instruments in the research design protected participant confidentiality by recording all data anonymously. In an attempt to obtain the largest possible sample from the university, the sampling procedure was purposely open to the entire university.

**Instrumentation**

The necessary data for this research was provided by instruments that reveal teacher servant leadership, classroom climate and student achievement. Fortunately, there are established survey instruments for both servant leadership and classroom climate—The SLP-R (Wong & Page, 2005) and the CUCEI (Fraser et al., 1986). Finally, end of course student grades were collected. While collegiate grades may not follow a traditional bell curve, within this environment, they are the only established differentiator of student achievement where, unlike the K-12 educational environment, there is no standardized test to measure student achievement.

**The Servant Leadership Profile-Revised Survey Instrument.** Page and Wong (2000) created the Servant Leadership Profile instrument to "measure what servant-leadership is and how it achieves its positive results" (p.12). This 100 item instrument

focused on four over-arching characteristics of servant leadership: (1) character – orientation (focuses on the attitude toward integrity, humility, and servanthood of the leader); (2) people-orientation (focuses on how the leader cares for, empowers, and develops followers); (3) task-orientation (focuses on the leader's concern with productivity and success); and (4) process-orientation (focuses on the leaders concern for increasing the efficiency of the organization).

Subsequently, Wong and Page (2003) developed SLP-R based on empirical research and an opponent-process model which "explicitly identifies autocratic leadership as antithetic to the practice of servant leadership" (Wong, Davey, & Church, 2007, p. 5). This revised 62 item instrument includes two additional subscales: abuse of power and egotistic pride (Wong & Page, 2003). The instrument employs a seven point Likert scale ranging from (1) strongly disagree to (7) strongly agree. Validity of this instrument is established by voluminous research in the creation of its predecessor – the 99-item Servant Leadership Profile. According to Page and Wong (2000), this instrument has an alpha reliability score of 0.937. It is the preferred servant leadership instrument of the Greenleaf Center for Servant Leadership (Page, 2012).

**The College and Classroom Environment Inventory Survey Instrument**. In 1986, Fraser et al. concluded despite numerous classroom psychosocial environment instruments available at the primary and secondary levels of education, "surprisingly little analogous work has been conducted at the tertiary level" (p.43). The CUCEI assesses perceptions of seven classroom dimensions: personalization, involvement, student cohesiveness, task orientation, satisfaction, innovation, and individualization. Each of the 49 items is rated on a five-point scale: strongly agree, agree, neutral or no answer,

disagree, and strongly disagree. Cross validation of the instrument over several studies determined alpha reliability scores ranging from 0.85 to 0.96 across the seven dimensions. It is an established instrument. According to the most recent addition of the *Second International Handbook Of Science Education* (Fraser, Tobin, & McRobbie, 2012), the CUCEI is still one of the two most frequently used instruments specifically designed for use at the collegiate level of education. The other instrument, The Science Laboratory Environment Inventory (SLEI), is only applicable for science laboratory classes. The SLP-R instrument produces a scale score. Likewise, the CUCEI produces a scale score. And students' final letter grades were numerically coded to produce a scale score as follows: A equaled six; B+ equaled five; B equaled four; C+ equaled three; C equaled two: D+ or lower equaled one.

**Validity**

There are two aspects to research validity. Face validity is a subjective evaluation whether the instrument appears to measure what it purports to measure (Kouzes & Posner, 2002). The SLP-R was created to "measure what servant-leadership is and how it achieves its positive results" (Wong & Page, 2002, p.12). This 62 question instrument assesses six dimensions of servant leadership: character orientation, people orientation, task orientation, process orientation, abuse of power, and egotistic pride (Wong & Page, 2003). The CUCEI is a 49-question instrument assessing perceptions of seven classroom dimensions: personalization, involvement, student cohesiveness, task orientation, satisfaction, innovation, and individualization (Fraser et al., 1986). In both cases, these instruments appear to measure appropriate aspects of servant leadership and classroom climate.

The second aspect of research validity includes empirical research, or internal validity (Kouzes & Posner, 2002). Internal validity refers to "the extent to which the design and conduct of a study are likely to have prevented bias" (Collaboration, 2005, p. 22). The SLP-R was originally validated by more than 1,000 participants in development of the instrument (Wong & Page, 2003). Subsequently, a Google Scholar search identifies dozens of studies confirming its validity. The creators of the CUCEI cross-validated their instrument in multiple studies in both Australia and the United States with more than 400 participants (Fraser et al., 1986).

**Reliability**

Experimental reliability is "the degree to which results obtained by a measurement procedure can be replicated" (*Collaboration*, 2005, p. 38). An alpha reliability score of 0.937 indicates high internal reliability for the SLP-R (Page and Wong, 2000). Likewise, alpha reliability scores between 0.85 and 0.96 over several studies indicates high internal reliability for this CUCEI (Fraser et al., 2012, pp. 1196-1197).

**Data Collection and Management**

The general population for this research included all teachers and students at a small university in Northwest Pennsylvania. The targeted population consisted of collegiate professors and students. The sample consisted of approximately 260 faculty and 3600 students at a small university in Northwest Pennsylvania. The study was geographically limited to students and teachers at the main campus location only. Additionally, participation requirements limited the study to non-science related lecture

classes without laboratory periods. The University email system was used to contact and recruit potential participants.

The data required for this research included the SLP-R instrument completed by teachers and a corresponding CUCEI instrument for the students in each teacher's class. Lastly, end of course student grades were collected. The teachers' servant leadership behavior as measured by the SLP-R and the classroom climate as measured by CUCEI were the predictor variables. The students' final course grade was the criterion variable. The data collection occurred in the latter half of the semester (to allow sufficient time for the classroom climate to be established).

Participating teachers received a coded packet from the survey coordinator that included participant informed consent forms, one SLP-R survey instrument with a sealable envelope, and enough CUCEI instruments for each student in the class (approximately 25). To ensure teacher anonymity and confidentiality, the survey coordinator distributed and collected these packets to/from participating teachers. This step was included to ensure teachers that the researcher would not know which specific packet corresponded to them.

First and foremost, each survey instrument begin with an explanation of this research and a request for participation by asking each respondent to sign an informed consent form. This form included an explanation that informed participants that the survey was to be completed anonymously to ensure confidentiality. Additionally, this explanation included a statement that participation in this study was voluntary.

The survey instruments were paired with their instructor's SLP-R. For example, the SLP-R instrument completed by the teacher labeled "A" and the corresponding

CUCEI instruments completed by students in that class were also labeled “A”. Upon completion of the survey instruments, teachers were asked to replace their completed SLP-R survey into the envelope provided and seal it. Thus, while the survey coordinator knew which survey the teacher completed (in this example, A), the sealed envelope ensured the coordinator could not see the teacher’s data and, therefore, protected teacher confidentiality and anonymity. This sealed envelope, all completed consent forms, and all completed CUCEI surveys were replaced into the research packet, in separate groups, and returned to the survey coordinator.

The researcher collected the completed survey packets from the survey coordinator. Based upon completed Student Informed Consent forms, the researcher prepared a student participation roster. Again, while the researcher knew the identity of participating students based on completed consent forms, the separate groups of consent forms and surveys ensured the researcher was not be able to identify which student completed each survey. The intent of this roster was to ensure that final course grades collected only included the grades of students who voluntarily participated in the study. This participation roster served as a collection aid for each teacher. The coded Student Participation Rosters were given to the Survey Coordinator to be returned to each appropriate teacher. Again, this ensured the researcher could not identify the teachers.

Finally, at the conclusion of the semester, teachers were asked to use this participation roster to aggregate and record final grades of participating students. To reiterate, while the teacher knew who participated in the study – an unavoidable dynamic when informed consent forms are required–like the researcher, the teacher did not see which student provided specific data, so student confidentiality was maintained. Each

roster was accompanied by a final grade chart where the total grade distribution was recorded (see Figure 3). Again, to ensure teacher anonymity with the researcher, the completed Participating Students' Grade Distribution sheets were returned to the Survey Coordinator.

**Participating Students' Grade Distribution** **A1-A20**

**Number of Participating Students** 20

| | |
|---|---|
| A | 3 |
| B+ | 5 |
| B | 9 |
| C+ | 2 |
| C | 1 |
| D+ or lower | 0 |
| Total | 20 |

*Figure 3.* Participating students' grade distribution example.

In summary, the researcher received a coded packet from each teacher. The packet contained the SLP-R survey completed by the teacher, the corresponding CUCEI surveys completed by students, and the final grade distributions from the Participating Students' Grade Distribution sheets. This procedure protected the individual data of participating teachers and students. Even though the data were recorded anonymously to protect the identity and security of participants, per institutional IRB guidelines, they were also maintained in secure storage in a locked file cabinet at the researcher's home office. To prepare the data for analysis, each survey instrument was tabulated according to its corresponding evaluation criteria. This resulted in scale scores (continuous and interval level scores) for the SLP-R and CUCEI. Final course grades were converted into ordinal numbers per the following chart (see Figure 4). All data will be kept in the secure,

locked location at the researcher's home office for 5 years following conferral of the doctoral degree, and will then be destroyed by shredding.

| | |
|---|---|
| A | 6 |
| B+ | 5 |
| B | 4 |
| C+ | 3 |
| C | 2 |
| D+ or lower | 1 |

*Figure 4*. Letter grade to ordinal number conversion chart.

**Data Analysis Procedures**

This research helped to identify the correlations between servant leadership, climate, and student achievement in an educational environment. These correlations provide insight and helped answer the following research questions. First, what is the relationship between teachers' servant leadership behaviors and classroom climate as reported by students? Second, what is the relationship between servant leadership behavior and student achievement? Third, to what extent is the relationship between servant leadership behavior and student achievement mediated by classroom climate? Based upon results of similar studies at lower levels of education, the hypotheses for this study were as follows:

$H_1$: There is a positive correlation between teachers' servant leadership behaviors, measured by "The Servant Leadership Profile" and classroom climate reported by students.

$H_0$: There is not a positive correlation between teachers' servant leadership behaviors, measured by "The Servant Leadership Profile" and classroom climate reported by students.

$H_2$: There is a positive correlation between servant leadership behaviors, measured by the SLP-R and student achievement, measured by final course grades.

$H_0$: There is not a positive correlation between servant leadership behaviors, measured by the SLP-R and student achievement, measured by final course grades.

$H_3$: There is a positive correlation between servant leadership behavior and student achievement mediated by classroom climate, measured by the CUCEI.

$H_0$: There is not a positive correlation between servant leadership behavior and student achievement mediated by classroom climate, measured by the CUCEI.

**Preparation of data**. The raw data for this research was comprised of servant leadership profile scores, classroom climate scores, and students' final grades. The researcher screened the data to ensure there were properly recorded answers to each question in the instruments. Incomplete instruments were not used. The SLP-R and CUCEI survey instruments require the use of coding keys to aggregate and tabulate overall leadership and climate scores for each participant. For example, The SLP-R included 62 questions and categorized seven factors of servant leadership. Use of the coding key determined a score for each factor. Then, the average of the seven category scores created an overall servant leadership score. Finally, the professors received a participant worksheet to identify and provide participant student grades. Responses to the surveys were entered into an excel spreadsheet and then uploaded to SPSS. Due to the nature of the study design, the ratio of servant leadership profile data to classroom

climate and final grade data approximated the teacher to student ratio of participating classes. Consequently, the sample size of teachers was expected to be much smaller than the sample size of students.

Empirically, the two instruments for this study, SLP-R and the CUCEI, generate scale scores. Therefore, a Pearson correlation was appropriate to address the first research question and hypothesis. The data for the second research question and hypothesis consisted of an interval level variable from the SLP-R and an ordinal value (student grades). Consequently, a Spearman correlation was appropriate for this analysis. Finally, the data for the third research question and hypothesis consisted of two predictor variables (servant leadership behavior and classroom climate) and one criterion variable (student achievement). "Regression analysis is a statistical tool for the investigation of relationships between variables. Usually, the investigator seeks to ascertain the causal effect of one variable upon another" (Sykes, 1993, p. 1). Thus, multiple linear regression analysis of the predictor variables (servant leadership and classroom climate) and the criterion variable (student achievement) was appropriate.

The established survey instruments for this research report high levels of statistical significance. The SLP-R instrument reports an alpha reliability score of 0.937. The CUCEI instrument reports alpha reliability scores between 0.85 and 0.96. Therefore, for this analysis, a reasonable level of statistical significance-alpha-was set at p=.05.

**Tests of assumptions**. The Pearson's correlation measures the strength of a linear association. The variables must be continuous and linear (see Figure 10), there must be a normal distribution (see Table 8 for the Schapiro-Wilk's test and the more stringent Kolmogorov-Smirnov test), and no significant outliers as shown in scatterplots Figure 10

and Figure 17. The Spearman's correlation measures the strength and direction of an association of two variables. The tests of assumptions for the Spearman's correlation were that the data consisted of an interval level variable from the SLP-R and an ordinal value (student grades). Figure 17 shows a monotonic relationship between the two variables. The test of assumptions for the multiple linear regression included the fact that there were two predictor variables, the criterion variable was continuous, and there was a linear relationship between the variables. The study assumed equal error variance across all levels of the predictors which is usually tested using a scatterplot. The study also assumed that there was no multicollinearity and no significant outliers in the data that were collected.

**Ethical Considerations**

This correlational study was completed with minimal intrusions on the privacy and rights of the subjects. Names of the subjects were not required. Numbered servant leadership instruments protected the identities of the teachers. The classroom climate instruments were anonymous. However, they were coded to be associated with the same code assigned to the teacher. This anonymity was important for several reasons. First, because this research used instruments that evaluated leadership and classroom climate, it was likely that some teachers would not be willing to participate out of fear that they may be labeled a poor leader or have a poor classroom climate. Respect for individuals demanded extreme care with data that may be perceived as embarrassing or harmful to the participants. Second, to ensure research design integrity, survey anonymity reduced the likelihood of participants attempting to manipulate their survey answers to look better. Therefore, participant anonymity was highly likely to reduce bias. All participants

completed the surveys on paper, and the final class grades were also provided on paper. The data were collected in coded, sealed envelopes, unsealed by the researcher, and are stored in those same envelopes in a locked file cabinet in the researcher's home office. All data will be kept for five years after conferral of the doctoral degree. At that time, the records will be shredded.

The study required institutional IRB approval. Information for informed consent emphasized the voluntary nature of this research and was provided to all prospective participants. Additionally, site authorization was obtained through IRB and individual Department Chair approval at the university (See Appendix A).

**Limitations**

There were several limitations to this study, which are described in detail below.

1. This study was limited by a small sample. While there were more than 300 CUCEI responses from student participants, there were only 18 SLP-R instruments from teachers. Therefore, in essence, there were only 18 data points of servant leadership to be correlated against 18 aggregated classroom climate scores. The unit of analysis was the classroom.

2. This study was limited to the validity and reliability of the survey instruments.

3. This study was limited by the disproportionate sample sizes of criterion versus predictor variables. The ratio of predictor variables teacher servant leadership and classroom climate surveys to the criterion variable, final grades, was approximately 1:17 (average class size).

4. This study was limited by population constraints. That is, the instruments required non-science-related lecture classes without laboratory periods.

5. This study was limited by the double blind study design that precluded in-depth analysis of potential differences in data. At face value, based upon the correlation between teacher servant leadership, classroom climate, and student achievement, several individual correlations did not reveal a statistical significance and, therefore, lowered the overall statistical significance of these correlations. However, upon review, the kind of courses that were selected for inclusion in the study (e.g., basic, university-required courses as well as senior elective courses) were sufficiently different in kind as to affect the results. The data from the senior elective courses showed disproportionally high grades on

average, which may have reflected higher knowledge levels among the learners than did non-elective courses. In those cases of senior elective courses, teacher leadership may not have been the true determinant of student achievement. In contrast, a large class of students in a university-required course may have been more likely to approximate a normal bell curve of grades. In those cases, teacher servant leadership may have been a more influential determinant of classroom climate and student achievement. Likewise, lower achievement may be more attributable to the difficulty of content than the classroom climate created by a teacher's leadership. Unfortunately, due to the double blind design, intended as a strong identity protection measure of this study, prevented the researcher from exploring this dynamic.

6. The survey of collegiate students was delimited to a private, Catholic University in Northwest Pennsylvania, limiting the demographic sample. The study habits and characteristics of students at a private Catholic University may not be generalizable to the entire population of collegiate students.

**Summary**

This chapter contained the problem statement, research questions and hypotheses, research methodology and design, population and sampling selection. The chapter also contained descriptions of the sampling, data collection, and analysis procedures. Instrumentation, validity, reliability, ethical considerations, and limitations associated with the methodology of this study. Finally, an explanation of the foundational framework supported the quantitative research methodology.

The problem statement revealed the focus of this research: it was not known whether and to what degree teachers' servant leadership behaviors correlated with classroom climate and improved student achievement. The research questions and hypotheses expected positive correlations between servant leadership, classroom climate, and student achievement. The foundational theories for this research included servant leadership and organizational climate as developed by Greenleaf (2007) and Schein, (1984). These theories suggest a servant leadership paradigm that emphasizes the development of the follower and the organizational climate that could facilitate follower

receptivity to leadership direction. Since this correlational study attempted to identify the strength of the correlation between variables, it was consistent with a quantitative, correlational research study.

Power analysis revealed an acceptable sample size of 18 teachers and their assigned students (see Appendix L) from a sample population of approximately 260 faculty and 3000 students at a small, private, Catholic institution in Northwest Pennsylvania. Fortunately, the use of established instrumentation provided alpha reliability scores ranging from 0.85 to 0.96. These scores and the popularity of these instruments in contemporary research indicated high degrees of validity and reliability.

The raw data for this research was comprised of servant leadership profile scores, classroom climate scores, and student's final grades. A Pearson correlation was appropriate to address the relationship between teacher servant leadership behavior and classroom climate because the two instruments in this study generate scale scores. A Spearman correlation was appropriate to address the relationship between teacher servant leadership and student achievement because the relevant data consisted of an interval level variable from the SLP-R and an ordinal value (student grades). Finally, multiple linear regression analysis of the predictor variables (servant leadership and classroom climate) and criterion variable (student achievement) was appropriate to identify the mediation effects of classroom climate between teacher servant leadership and student achievement (Sykes, 1993).

The anonymity of the research design and data collection procedures demonstrated a high regard for ethical considerations associated with this research. Study participation was voluntary and it was impossible to link study data to individual study

participants. While these procedures decreased possible bias limitations to this research, disproportionate, variable sample sizes, a relatively homogenous sample population (small, private, Catholic institution), and the inability to conduct further in depth analysis on individual data sets revealed potential limitations. The raw data, results, and analysis of this research are presented and discussed in Chapter 4.

# Chapter 4: Data Analysis and Results

## Introduction

The purpose of this study was to determine the degree to which a relationship existed between servant leadership, classroom climate, and student achievement for students and faculty at a small university in Northwest Pennsylvania. It was not known how teacher servant leadership correlated with classroom climate and student achievement at the collegiate level. The researcher sought to examine to what degree servant leadership characteristics were present in classroom teachers in one university as measured by the revised Servant Leadership Profile (SLP-R) developed by Wong and Page (2005). The SLP-R scores were obtained from 18 teachers and 301 students. In addition, the researcher sought to examine to what degree there was a relationship between servant leadership and classroom climate, the latter measured by the College and University Classroom Environment Inventory (CUCEI) developed by Fraser et al. (1986). The research targeted 18 faculty members within the university, and collected data from 301 students within those 18 classes.

The basic research questions and hypotheses of this study asked whether teachers' servant leadership behaviors, as perceived by students, created a positive classroom climate and the extent to which the resultant classroom climate affected student achievement. Specifically:

R1: What is the relationship between teachers' servant leadership behaviors and classroom climate as reported by students?

$H_1$: There is a positive correlation between teachers' servant leadership behaviors, measured by "The Servant Leadership Profile" and classroom climate reported by students (SLP-R) (Wong & Page, 2003).

$H_0$: There is not a positive correlation between teachers' servant leadership behaviors, measured by "The Servant Leadership Profile" and classroom climate reported by students (Wong & Page, 2003).

R2: What is the relationship between servant leadership behavior and student achievement?

$H_2$: There is a positive correlation between servant leadership behaviors, measured by the SLP-R and student achievement, measured by final course grades (Wong & Page, 2003).

$H_0$: There is not a positive correlation between servant leadership behaviors, measured by the SLP-R and student achievement, measured by final course grades (Wong & Page, 2003).

R3: To what extent is the relationship between servant leadership behavior and student achievement mediated by classroom climate?

$H_3$: There is a positive correlation between servant leadership behavior and student achievement mediated by classroom climate, measured by the CUCEI (Fraser et al., 1986).

$H_0$: There is not a positive correlation between servant leadership behavior and student achievement mediated by classroom climate, measured by the CUCEI (Fraser et al., 1986).

The research methodology that was used within the study was quantitative, with a correlational research design. The approach examined the results of two survey instruments, the SLP-R and CUCEI, and end of semester student grades.

This chapter explained the descriptive data, data analysis procedures, and results of the study. After the descriptive data, the individual results of each instrument are presented. Then, the analyses of correlations between data sets are presented. These results will be presented for each research question and hypothesis. The chapter will conclude with a summary of major findings of the research.

**Descriptive Data**

The setting for this study was a small, private, Catholic, liberal arts university in Northwest Pennsylvania. The population for this research included teachers and students. The targeted population comprised of collegiate professors and students. The sample included students and faculty at a small, private, Catholic, liberal arts university in Northwest Pennsylvania. The sample characteristics reflected a small, private, Catholic university.

The sample for this research included 18 classrooms from several departments (Business, World Languages, Criminal Justice, Philosophy, Communications, Intelligence Studies, English, Economics, and Political Science) with a sample size of 301 students at a small university in Northwest Pennsylvania. The courses taught in the classrooms that participated in this study included both university-required and elective programs of study. The course curricula thus ranged from introductory to advanced material. The average class size was 17 students. Faculty experience ranged from 5 ½ to more than 30 years, and the majority (10), had at least 10 years of collegiate teaching

experience. Students enrolled from freshman through senior years were included. The teacher/class profiles for each class are presented in Figures 5 and 6. Figure 5 illustrates faculty teaching experience. All teacher participants had significant teaching experience. Attaining tenure at this university requires a minimum of seven years of teaching experience. Every faculty participant had at least seven years of experience. Moreover, the majority of the faculty (62.5%) had more than 10 years of collegiate teaching experience.

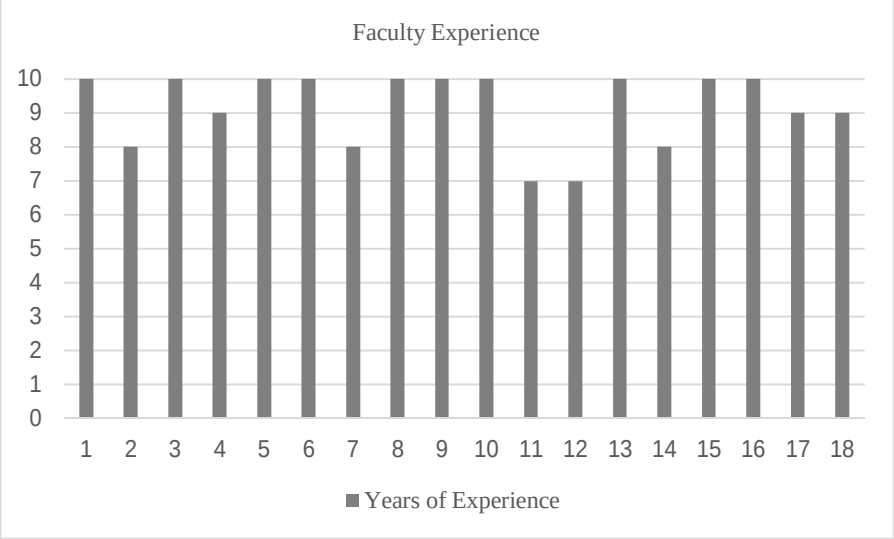


*Figure 5*. Faculty experience profile.

The majority of the classes (66%) had at least 15 students who participated in the study. While the actual student sample size was 301, the average class size for this study was 17 students. Since the unit of analysis was the classroom and there was one teacher per classroom (18 classrooms), the sample size was 18.

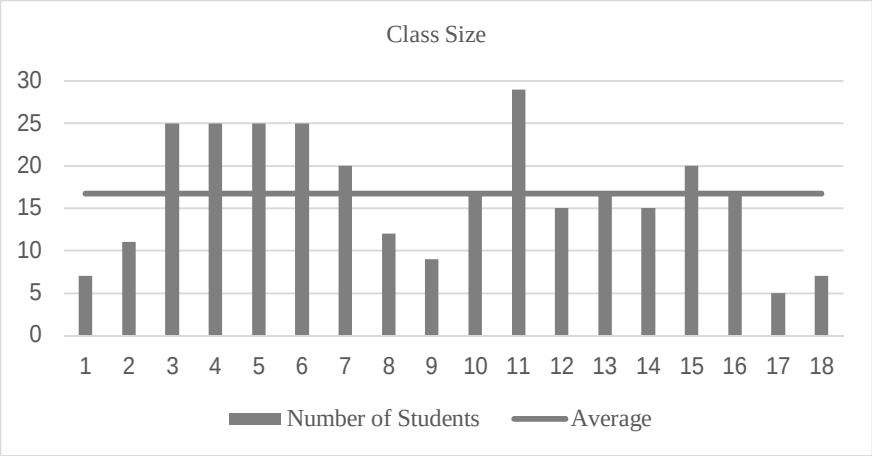


*Figure 6.* Class size.

Due to an expected small sample size, an original compromise power analysis determined a reasonably acceptable sample of 15. As the faculty participation of 6.9% coincided with the usual social sciences study return rate of 7%, the actual study sample size of 18 yielded a Post hoc power analysis of .76 for correlational analysis. The details are listed in Appendix L.

**Data Analysis Procedures**

Descriptive statistics were used to draw conclusions from the sample. Three sets of data were necessary for this analysis: the SLP-R, the CUCEI, and end of course student grades. The data for each instrument are described in the following sections. Details about the data analysis procedures follow.

**Servant Leadership Profile-Revised**. The SLP-R measures servant leadership and employs a seven point Likert scale ranging from (1) strongly disagree to (7) strongly agree. It is an opponent process model instrument that defines servant leadership by both the presence of certain positive qualities, and the absence of certain negative qualities. The positive qualities include: (a) Servanthood, (b) Leadership, (c) Visioning, (d) Developing others, (e) Empowering others, (f) Team-building, (g) Shared decision-

making, and (h) Integrity. The SLP-R combines some of these eight characteristics into six factors. For example, *Developing others* and *Empowering others* were combined and created *Factor 1: Developing and Empowering others*. It also combined the negative characteristics of *Abuse of Power and Control*, and *Pride and Narcissism,* into *Factor 2: Power and Pride (vulnerability and humility).* Thus, the SLP-R measures six positive and one negative factor: *Developing and Empowering others, Power and Pride, Authentic Leadership, Participatory Leadership, Inspiring Leadership, Visionary Leadership,* and *Courageous Leadership*.

The negative qualities include: (a) Abuse of Power and Control, and (b) Pride and narcissism. A simple way to determine whether one is a servant leader is to see whether one scores high on Servanthood and Leadership, but low on Abuse of Power and Pride. Thus, scoring high on Abuse of Power and Pride automatically disqualifies one as a servant leader, regardless of high scores on the other subscales. That is why the inclusion of these two negative subscales was important in the revised Servant Leadership Profile. Therefore, Factor Two: Power and Pride (Vulnerability and Humility) became the initial determinant of a servant leader. Subsequently, the scores for the other factors indicated a relative strength of servant leadership attributes. The raw data scores for the SLP-R are listed in Table 1.

Table 1

*Servant Leadership Profile-Revised Raw Scores*

| | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 |
|---|---|---|---|---|---|---|---|
| Survey Code | Developing & Empowering Others | Power & Pride (vulnerability & Humility) | Authentic Leadership | Participatory Leadership | Inspiring Leadership | Visionary Leadership | Courageous Leadership |
| 1 | 4.00 | 5.00 | 4.18 | 6.20 | 4.42 | 4.80 | 5.40 |
| 2 | 5.00 | 3.12 | 4.36 | 5.60 | 4.71 | 3.80 | 5.40 |
| 3 | 6.12 | 2.62 | 5.90 | 6.40 | 6.00 | 6.40 | 6.40 |
| 4 | 5.00 | 3.25 | 5.09 | 6.00 | 4.57 | 4.80 | 5.40 |
| 5 | 6.75 | 1.75 | 6.90 | 7.00 | 6.57 | 6.80 | 7.00 |
| 6 | 3.50 | 4.25 | 3.81 | 3.50 | 4.00 | 3.40 | 3.00 |
| 7 | 5.00 | 3.12 | 4.36 | 5.60 | 4.71 | 3.80 | 5.40 |
| 8 | 6.81 | 1.37 | 6.18 | 6.90 | 6.85 | 6.60 | 6.60 |
| 9 | 5.75 | 2.87 | 5.45 | 5.80 | 6.14 | 5.60 | 6.60 |
| 10 | 6.62 | 1.00 | 6.63 | 7.00 | 6.71 | 6.40 | 6.60 |
| 11 | 5.37 | 1.75 | 5.63 | 5.60 | 4.71 | 3.80 | 5.20 |
| 12 | 7.00 | 1.00 | 6.63 | 6.90 | 6.57 | 6.40 | 7.00 |
| 13 | 5.56 | 1.00 | 5.27 | 6.40 | 5.42 | 4.80 | 6.40 |
| 14 | 5.00 | 3.12 | 4.36 | 5.60 | 4.71 | 3.80 | 5.40 |
| 15 | 5.75 | 3.25 | 5.90 | 6.40 | 5.85 | 6.00 | 6.20 |
| 16 | 5.31 | 2.50 | 5.63 | 6.00 | 5.28 | 5.80 | 6.00 |
| 17 | 5.56 | 3.75 | 5.54 | 6.00 | 5.42 | 5.20 | 6.20 |
| 18 | 5.68 | 3.75 | 5.54 | 6.00 | 5.42 | 5.20 | 6.20 |

Note: Shaded cells represent scores indicating these were not servant leaders.

Based upon the data in Table 1, instructors 1, 6, 17 and 18 scored higher than 3.5 in Factor 2 and were thus identified as non-servant leaders. This identification, however, did not disqualify these teachers from the sample. On the contrary, their inclusion afforded the potential to further validate the basic research hypothesis that better servant leaders would produce higher student achievement. The remaining 14 teachers scored high enough in these areas to be labeled servant leaders. The servant leadership score (an

average of all attributes) reveals the relative strength of servant leadership and is listed in descending order in Table 2.

Table 2

*Instructor Servant Leadership Rankings*

| Rank | Instructor | Average Score |
|---|---|---|
| 1 | 5 | 6.11 |
| 2 | 12 | 5.93 |
| 3 | 8 | 5.9 |
| 4 | 10 | 5.85 |
| 5 | 3 | 5.69 |
| 6 | 15 | 5.62 |
| 7 | 9 | 5.46 |
| 8 | 18 | 5.40 |
| 9 | 17 | 5.38 |
| 10 | 16 | 5.22 |
| 11 | 13 | 4.98 |
| 12 | 4 | 4.87 |
| 13 | 1 | 4.86 |
| 14 | 11 | 4.58 |
| 15 | 2 | 4.57 |
| 16 | 7 | 4.57 |
| 17 | 14 | 4.57 |
| 18 | 6 | 3.64 |

Ironically, while the overall servant leadership scores of instructors 18, 17 and 1 were higher than several other instructors, as stated previously, the high scores in Factor Two (Power and Pride) identified these instructors as self-serving, thus preventing them from meeting the criteria that defines true servant leaders. The servant leadership scores were used to correlate servant leadership and classroom climate (Hypothesis 1), servant leadership and student achievement (Hypothesis 2), and the extent to which servant leadership and student achievement are mediated by classroom climate (Hypothesis 3). Those correlations are presented later in this chapter.

**CUCEI.** The CUCEI assessed perceptions of seven classroom dimensions: personalization, involvement, student cohesiveness, satisfaction, task orientation, innovation, and individualization. Each of the 49 items is rated on a five-point scale: strongly agree, agree, neutral or no answer, disagree, and strongly disagree. The questions measure each of the above dimensions in cyclic order. Additionally, to prevent students from recognizing the cyclical pattern, the scoring is reversed for approximately half of the questions. Higher scores (greater than 3.0) indicate a favorable classroom climate. The raw data scores for the CUCEI are listed in Table 3.

Table 3

*College and University Classroom Environment Inventory Raw Scores*

| | Personalization | Involvement | Student Cohesiveness | Satisfaction | Task Orientation | Innovation | Individualization |
|---|---|---|---|---|---|---|---|
| 1 | 4.49 | 4.22 | 4.20 | 4.53 | 4.37 | 3.10 | 3.10 |
| 2 | 4.70 | 3.97 | 4.56 | 4.06 | 3.88 | 3.16 | 3.08 |
| 3 | 3.78 | 3.18 | 2.18 | 3.96 | 4.27 | 2.41 | 2.25 |
| 4 | 3.82 | 3.44 | 3.09 | 4.04 | 4.20 | 2.45 | 2.42 |
| 5 | 4.23 | 3.98 | 3.77 | 4.11 | 4.41 | 2.70 | 2.49 |
| 6 | 3.27 | 2.46 | 2.47 | 2.18 | 2.89 | 2.04 | 2.52 |
| 7 | 4.17 | 3.56 | 3.24 | 4.02 | 4.09 | 3.30 | 2.68 |
| 8 | 4.23 | 3.95 | 4.46 | 4.38 | 3.63 | 3.69 | 3.55 |
| 9 | 4.43 | 4.00 | 4.13 | 4.06 | 4.57 | 3.59 | 2.54 |
| 10 | 4.23 | 3.74 | 4.01 | 3.97 | 3.74 | 3.41 | 3.14 |
| 11 | 3.62 | 2.87 | 2.11 | 3.20 | 3.95 | 2.06 | 2.16 |
| 12 | 4.34 | 3.39 | 2.51 | 4.11 | 4.30 | 2.57 | 2.45 |
| 13 | 4.14 | 3.48 | 3.46 | 3.04 | 3.82 | 2.86 | 2.46 |
| 14 | 4.34 | 3.56 | 3.36 | 4.15 | 3.91 | 3.17 | 3.15 |
| 15 | 3.83 | 3.66 | 3.09 | 3.14 | 3.24 | 2.76 | 2.85 |
| 16 | 4.42 | 4.00 | 4.55 | 4.31 | 4.24 | 3.45 | 2.65 |
| 17 | 4.26 | 3.54 | 3.46 | 3.94 | 4.31 | 3.40 | 2.71 |
| 18 | 3.55 | 3.86 | 3.57 | 4.10 | 3.76 | 3.00 | 2.45 |

The classroom environment score (an average of all seven dimensions) revealed the relative strength of each classroom climate and is listed in descending order in Table 4. The classroom environment scores were used to correlate servant leadership and classroom climate (Hypothesis 1) and mediating effects between servant leadership and student achievement (Hypothesis 3). Those correlations are presented later in this chapter.

Table 4

*Classroom Environment Rankings*

| Rank | Class | Score |
|---|---|---|
| 1 | 1 | 4.00 |
| 2 | 8 | 3.98 |
| 3 | 16 | 3.95 |
| 4 | 2 | 3.92 |
| 5 | 9 | 3.90 |
| 6 | 10 | 3.75 |
| 7 | 5 | 3.67 |
| 8 | 14 | 3.67 |
| 9 | 17 | 3.66 |
| 10 | 7 | 3.58 |
| 11 | 18 | 3.47 |
| 12 | 12 | 3.38 |
| 13 | 4 | 3.35 |
| 14 | 13 | 3.32 |
| 15 | 15 | 3.22 |
| 16 | 3 | 3.15 |
| 17 | 11 | 2.85 |
| 18 | 6 | 2.55 |

**Student achievement**. Student achievement was measured by final course grades. The university follows an alphabetic grading system with letter grades as follows: A, B+, B, C+, C, D+, D, and F. For this study, the alphabetic grades were converted to ordinal numbers. The grade conversion matrix and raw student grade data are listed in Tables 5 and 6.

Table 5

*Grade Conversion Chart*

| Numeric % | Letter Grade | Study Conversion Score |
|---|---|---|
| 93 – 100 | A | 6 |
| 90 – 92.9 | B+ | 5 |
| 83 – 89.9 | B | 4 |
| 80 – 82.9 | C+ | 3 |
| 73 – 79.9 | C | 2 |
| 70 – 72.9 | D+ | 1 |
| 65 – 69.9 | D | 1 |
| <65 | F | 1 |

Table 6

*Student Grade Raw Scores*

| | A | B+ | B | C+ | C | ≤ D+ | No. of Students |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 2 | | | | 7 |
| 2 | 6 | 4 | 0 | 1 | | | 11 |
| 3 | 12 | 9 | 2 | 1 | 1 | | 25 |
| 4 | 14 | 2 | 7 | | 2 | | 25 |
| 5 | 14 | 9 | 2 | | | | 25 |
| 6 | 10 | 6 | 5 | 2 | 2 | | 25 |
| 7 | 7 | 5 | 4 | 1 | 2 | 1 | 20 |
| 8 | 6 | 2 | 3 | 1 | | | 12 |
| 9 | 5 | 1 | 3 | | | | 9 |
| 10 | 4 | 2 | 6 | 3 | 2 | | 17 |
| 11 | 11 | 9 | 5 | 4 | | | 29 |
| 12 | 6 | 5 | 2 | 1 | 1 | | 15 |
| 13 | 9 | 3 | 3 | 2 | | | 17 |
| 14 | 5 | 3 | 3 | 2 | 1 | 1 | 15 |
| 15 | 11 | 4 | 4 | | 1 | | 20 |
| 16 | 8 | 5 | 3 | 1 | | | 17 |
| 17 | 3 | 1 | 1 | | | | 5 |
| 18 | 3 | 1 | 2 | 1 | | | 7 |

Using the grade conversion chart above and then averaging the class grades generated an overall class student achievement score. It is important to notice the variability of class sizes. For example, Class 17 only had five students, so the variability for that class should be much smaller. In fact, in this case, there was no variability. These class scores are listed in descending order in Table 7.

Table 7

*Class Student Achievement Scores*

| Rank | Class | Score |
|---|---|---|
| 1 | 17 | 6 |
| 2 | 5 | 5.48 |
| 3 | 2 | 5.36 |
| 4 | 9 | 5.22 |
| 5 | 3 | 5.20 |
| 6 | 15 | 5.20 |
| 7 | 16 | 5.18 |
| 8 | 13 | 5.12 |
| 9 | 8 | 5.08 |
| 10 | 4 | 5.04 |
| 11 | 1 | 5.00 |
| 12 | 11 | 4.93 |
| 13 | 12 | 4.93 |
| 14 | 18 | 4.86 |
| 15 | 6 | 4.80 |
| 16 | 7 | 4.55 |
| 17 | 14 | 4.40 |
| 18 | 10 | 4.18 |

The student achievement scores were used to correlate servant leadership and student achievement (Hypothesis 2) and the mediating effects of classroom climate on servant leadership and student achievement (Hypothesis 3). Those correlations are presented later in this chapter.

**Preparation of data**. To prepare the data for analysis, each survey instrument was tabulated according to its corresponding evaluation criteria. This resulted in scale scores (continuous and interval level scores) for the SLP-R and CUCEI. Final course grades were converted into ordinal numbers. The first set of data—Teacher Servant Leadership Scores—was used to correlate the relationship between teachers' servant leadership behaviors and classroom climate as reported by students. Empirically, the two instruments for this study, SLP-R and CUCEI, generated scale scores. Therefore, a Pearson correlation was appropriate to address the first research question and hypothesis. A Pearson correlation measures the strength of a linear association of two continuous variables. It was developed to determine a line of best fit between two sets of data points.

It is denoted by *r*. The coefficient *r* denotes the distance between the data points and the line of best fit (Hauke & Kossowski, 2011).

The data for the second research question and hypothesis were used to correlate the relationship between servant leadership behavior and student achievement. It consisted of an interval level variable from the SLP-R and an ordinal value (student grades). Consequently, a Spearman correlation was appropriate for this analysis. A Spearman correlation describes the relationship between two variables. However, unlike a Pearson correlation, it does not require variables measured on interval scales. Therefore, it is appropriate for a correlation with ordinal values (Hauke & Kossowski, 2011).

Finally, the data for the third research question and hypothesis was used to determine the extent to which the relationship between servant leadership behavior and student achievement was mediated by classroom climate. It consisted of two predictor variables (servant leadership behavior and classroom climate) and one criterion variable (student achievement). However, because the study sample size was too small and did not seek a fit with a causal model, path analysis was not appropriate (Wuensch, 2012). Thus, a descriptive analysis of the relationship between the predictor variables (servant leadership and classroom climate) and the criterion variable (student achievement) was appropriate. The instrument results denoted high levels of internal consistency. The SLP–R had a high level of internal consistency, as determined by a Cronbach's alpha of 0.96. Likewise, Cronbach’s alpha for the CUCEI was 0.89.

**Sources of error**. There are, however, several potential sources of error that may have influenced the data. Foremost, while the overall number of participants was more

than 300, the key correlations pertained to the teachers and their servant leadership as an influence on classroom climate and student achievement. Therefore, with regard to the key parameter of teachers, the sample was only 18. This is an extremely small sample size and a severe limitation to the study.

This same limitation of small sample size is also present in a few individual classes where there were not many students. Because some of the class sizes were very small, the relative significance of each individual student's answer may be exaggerated. This exaggeration would then be carried forward to the overall data correlations. The effect of an outlier score in a very small class has a larger impact on the overall class score. For example, just one student outlier response in a class of five represents a 20% potential variance. Similarly, because the servant leadership scores are aggregated across all seven variables, the disqualifying factor of servant leadership (Factor 2: Abuse of Power and Pride) does not negate the scores of the positive characteristics of those disqualified. Additionally, the substantial differences in class size (ranging from 5 to 25) and variability within each group added an additional dimension not accounted for in the study design. Finally, regarding student grades, the influence of potential grade inflation by the instructors could skew the overall student achievement data upward.

**Results**

This section will present and analyze the data in a non-evaluative and unbiased manner. The data were analyzed using IBM® SPSS® Statistics version 21 data analysis software. Results from the teacher servant leadership profiles and the classroom climate surveys were entered into the SPSS database for further analysis. Statistical analysis was

performed on all gathered data. The data are framed in concert with the research questions and hypotheses.

**Research Question 1**. The first research question of this study was: What is the relationship between teachers' servant leadership behaviors and classroom climate as reported by students? The corresponding hypotheses were:

$H_1$: There is a positive correlation between teachers' servant leadership behaviors, measured by "The Servant Leadership Profile" and classroom climate reported by students (SLP-R) (Wong & Page, 2003).

$H_0$: There is not a positive correlation between teachers' servant leadership behaviors, measured by "The Servant Leadership Profile" and classroom climate reported by students (Wong & Page, 2003).

The SLP-R scores for servant leadership have a possible range from 0.00 to 7.00. The specific range of this study data is from a low servant leadership score of 3.64 to a high of 6.11 as shown in Figure 7.

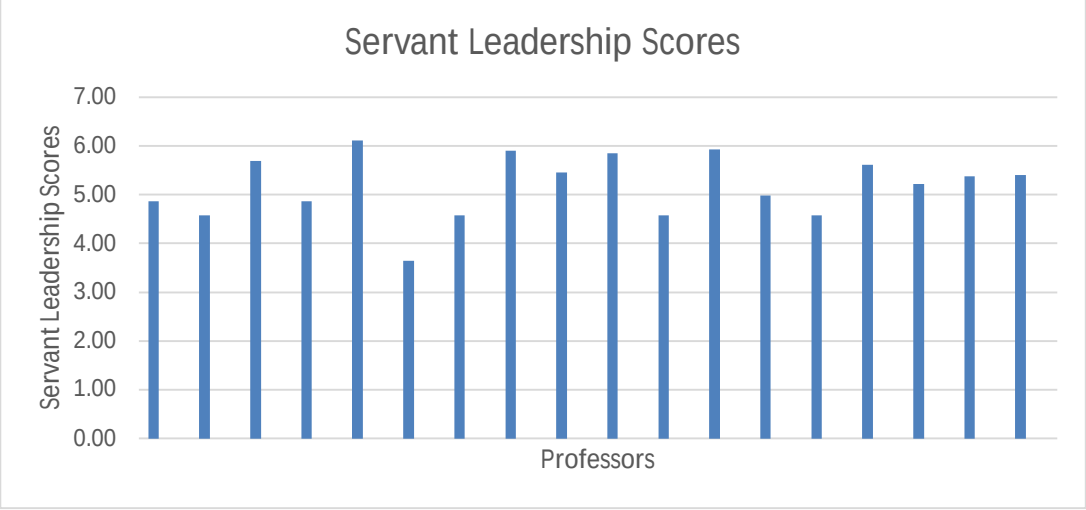


*Figure 7*. Servant leadership scores.

The mean servant leadership score in this study was 5.18. This was slightly lower than the median of 5.30. And the data set mode is 4.57. These data are also depicted in a histogram as shown below in Figure 8.

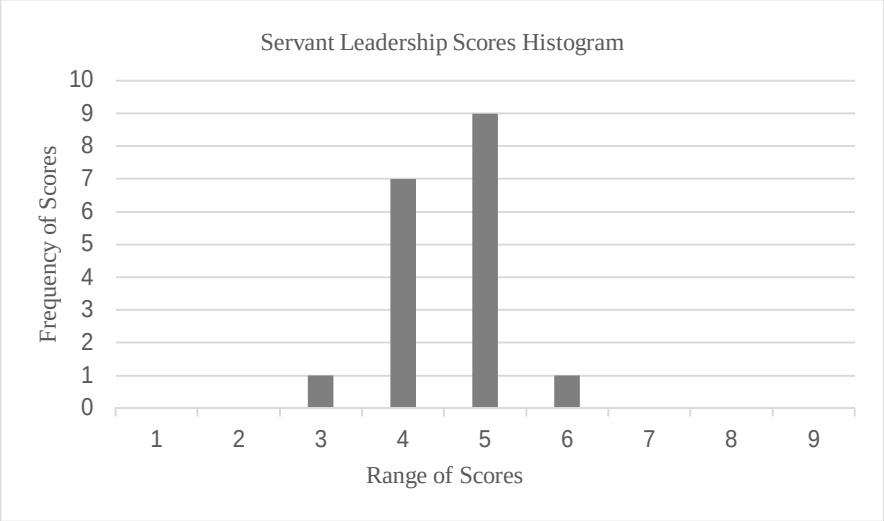


*Figure 8*. Servant leadership scores histogram.

The distribution of scores reflected a majority of scores at a servant leadership rating between 5.00 and 6.00. More specifically, the data are represented in a box-plot as shown in Figure 9.

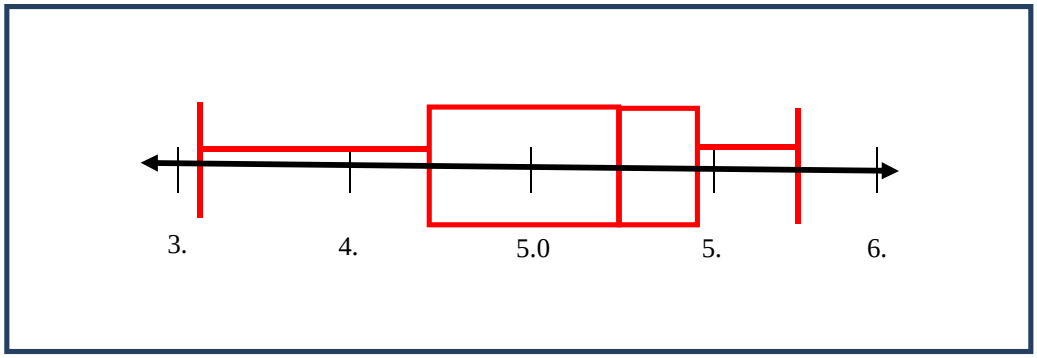


*Figure 9*. Servant leadership scores box-plot.

The lower extreme was 3.64, while the upper extreme was 6.11. The median was 5.30 with a 1st quartile value of 4.58 and a 3rd quartile value of 5.69. Therefore, 50% of

the data fell between servant leadership score values of 4.58 and 5.69. The data were clustered more closely between the median and upper limit.

Using these results to test the first hypothesis, a Pearson correlation between servant leadership scores and classroom climate scores was computed. A Pearson correlation requires meeting several assumptions. First, the relationship between the variables must be linear. This linearity was confirmed by the following scatterplot in Figure 10.

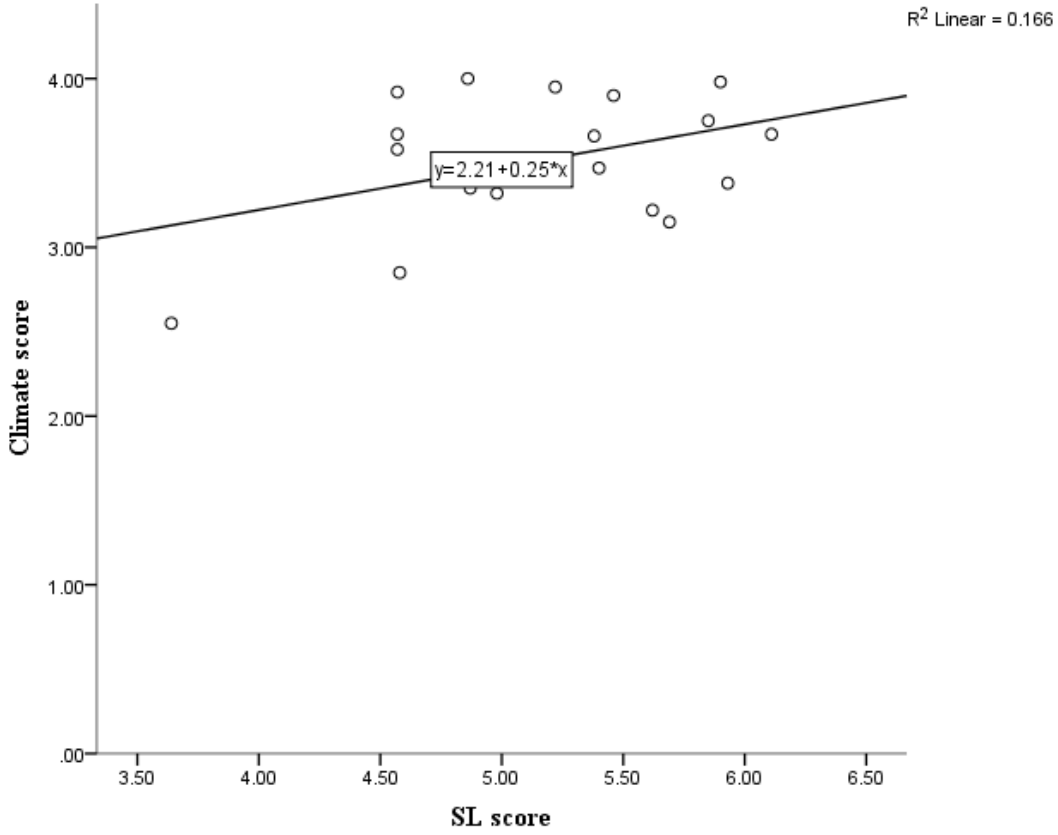


*Figure 10.* Servant leadership to classroom climate scatterplot.

In this scatterplot, the majority of data points occur between a climate score of 3 or 4 and range from 4.5 to 6 on the servant leadership scale. Therefore, a line of best fit is a horizontal line at the climate score level of approximately 3.5. If the data points were

distributed throughout the chart there would not be a line of best fit and the relationship between the variables would not be linear. Second, both variables were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$). The significance levels for each of these variables was .325 and .157 for servant leadership and classroom climate respectively as shown in Table 8 below.

Table 8

*Tests of Normality*

| | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistic | Df | Sig | Statistic | Df | Sig |
| SLPR | .123 | 18 | .200* | .943 | 18 | .325 |
| CUCEI | .135 | 18 | .200* | .925 | 18 | .157 |

Having met the requirements for a Pearson correlation, the computed correlation identified a moderate positive correlation between servant leadership and classroom climate, ($r = .407$). However, the correlation was not significant at a 0.05 level (see Table 9).

Table 9

*Pearson Correlation between Servant Leadership and Classroom Climate, N=18.*

| | | SL | Climate |
|---|---|---|---|
| SL score | Pearson Correlation | 1 | .41 |
| | Sig. (2-tailed) | | .09 |
| | N | 18 | 18 |
| | | | |
| Climate score | Pearson Correlation | .41 | 1 |
| | Sig. (2-tailed) | .09 | |
| | N | 18 | 18 |

The results of the analysis confirm hypothesis 1:

H1: There is a positive correlation between teachers' servant leadership behaviors,

measured by “The Servant Leadership Profile” and classroom climate reported by students (SLP-R) (Wong & Page, 2003). However, the significance is at the .09 level, which does not meet the 95% confidence interval level.

While this level of significance is not academically significant, research by Bosco et al. (2015) suggested that it may be worthy of consideration. A meta-analysis of 147,328 correlations from empirical behavioral research in the social sciences between 1980 and 2010 bear little resemblance to the standard classification and interpretation of effect sizes (Bosco, Aguinis, Singh, Field, & Pierce, 2015). Specifically, in the area of leadership, any correlation greater than .14 is in the top quartile of correlations (Bosco et al., 2015). This research confirms Maxwell's (2004) findings that the current benchmarks in applied psychology research lead to upwardly biased forecasts and – consequently – underpowered studies.

**Research Question 2**. The first research question examined the relationship between servant leadership and classroom climate. The second research question of this study was: What is the relationship between servant leadership behavior and student achievement? The corresponding hypotheses were:

$H_2$: There is a positive correlation between servant leadership behaviors, measured by the SLP-R and student achievement, measured by final course grades (Wong & Page, 2003).

$H_0$: There is not a positive correlation between servant leadership behaviors, measured by the SLP-R and student achievement, measured by final course grades (Wong & Page, 2003).

The scores for classroom climate have a possible range from 1.00 to 5.00. The specific range of this study data were from a low classroom climate score of 2.55 to a high of 4.0 as shown in Figure 11.

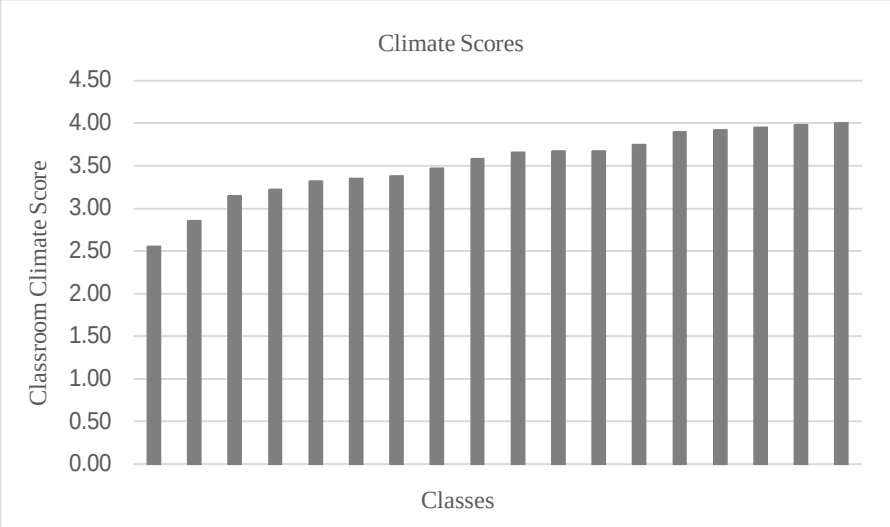


*Figure 11*. Classroom climate scores.

The mean classroom climate score in this study was 3.52. This was slightly lower than the median of 5.62. The data set mode was 3.67. These data are also depicted in a histogram as shown in Figure 12.

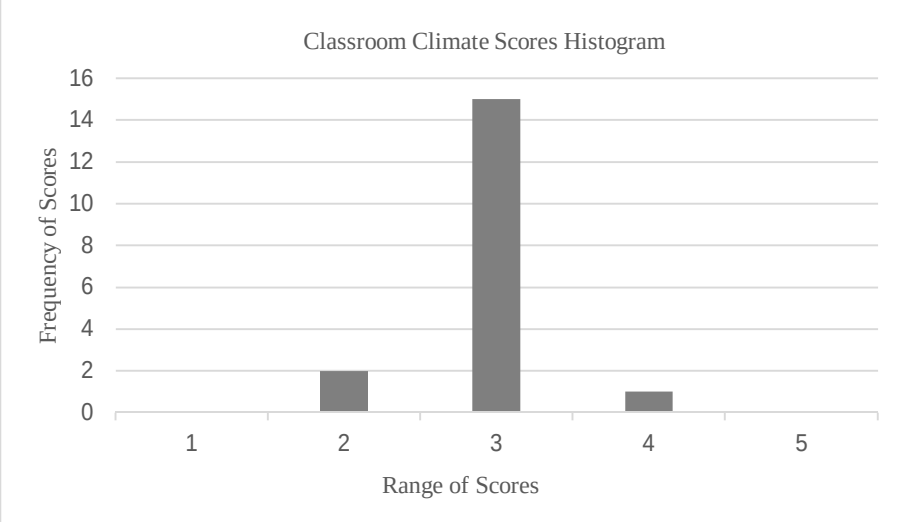


*Figure 12*. Classroom climate scores.

The distribution of scores reflected a majority of scores at a classroom climate rating between 3.0 and 4.0. More specifically, the data are represented in a box-plot as shown in Figure 13.

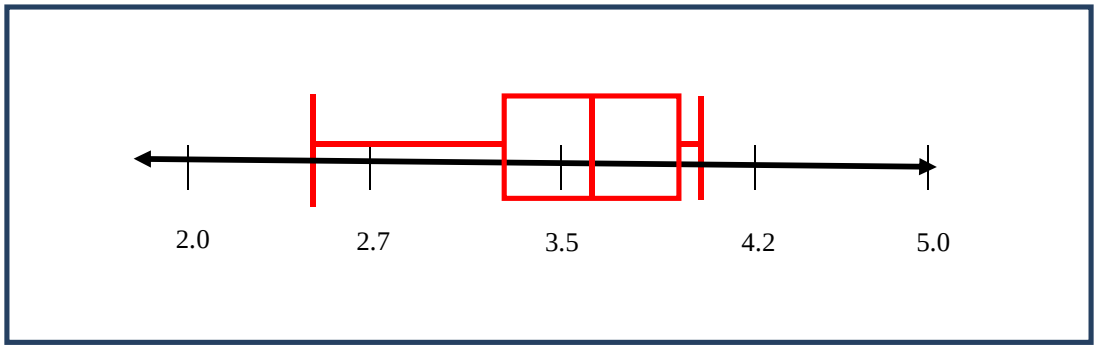


*Figure 13*. Classroom climate scores box-plot.

The lower extreme was 2.55 while the upper extreme was 4.00. The median was 3.62 with a 1st quartile value of 3.32 and a 3rd quartile value of 3.90. Therefore, 50% of the data fell between classroom climate score values of 3.32 and 3.90. The 1st and 3rd quartile values were almost evenly distributed around the median with a greater dispersion between the 1st quartile and the lower extreme. The student grade scores have a possible range from 1.00 to 6.00. The specific range of this study data was from a low grade score of 4.18 to a high of 6.00 as shown in Figure 14.


*Figure 14*. Student grade scores.

The mean classroom student grade score in this study was 5.00. This was slightly lower than the median of 5.06. Additionally, the data set was bimodal with values of 4.93 and 5.20. These data were also depicted in a histogram as shown in Figure 15.

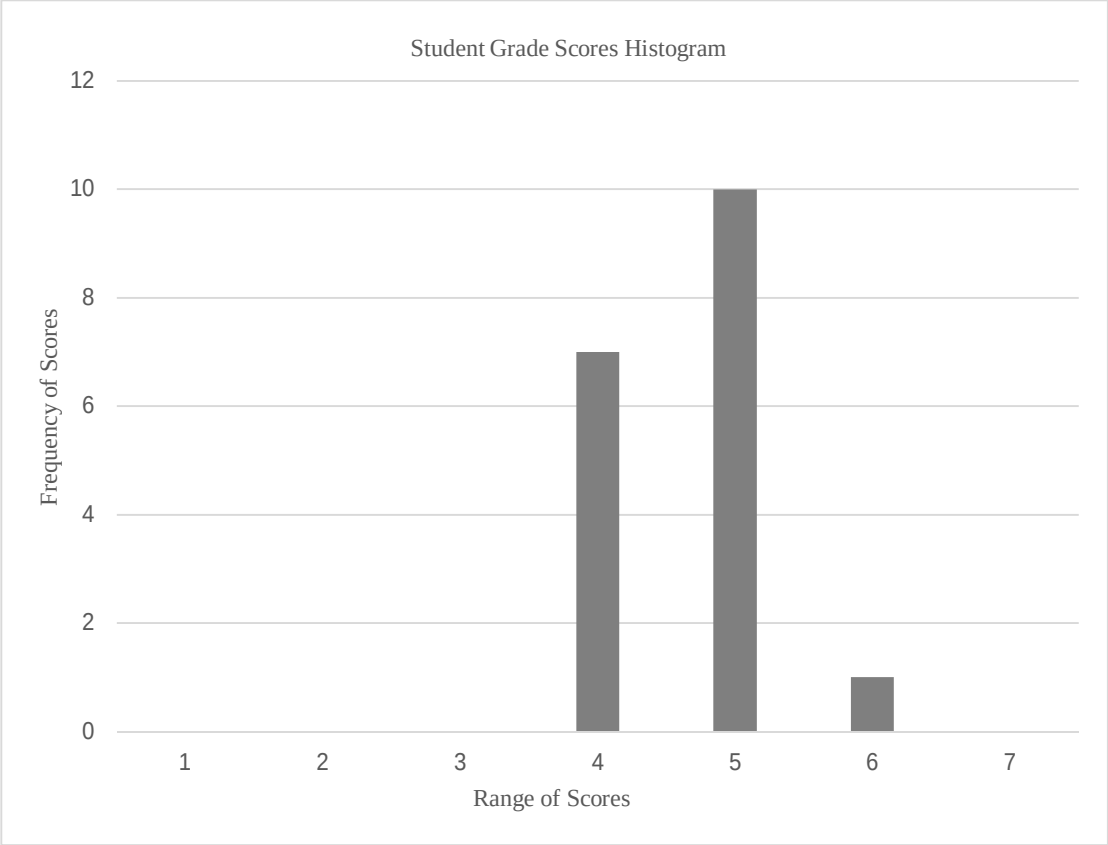


*Figure 15*. Student grade scores histogram.

The distribution of scores reflected a majority of scores between 5.00 and 6.00. More specifically, the data are represented in a box-plot as shown in Figure 16.

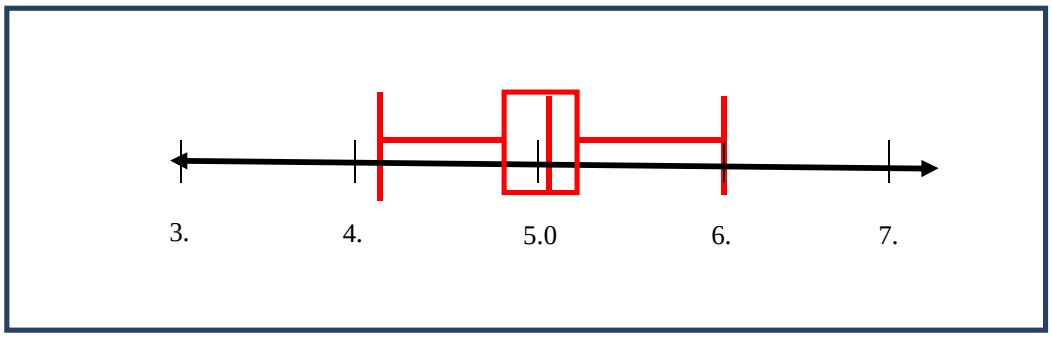


*Figure 16*. Student grade scores box-plot.

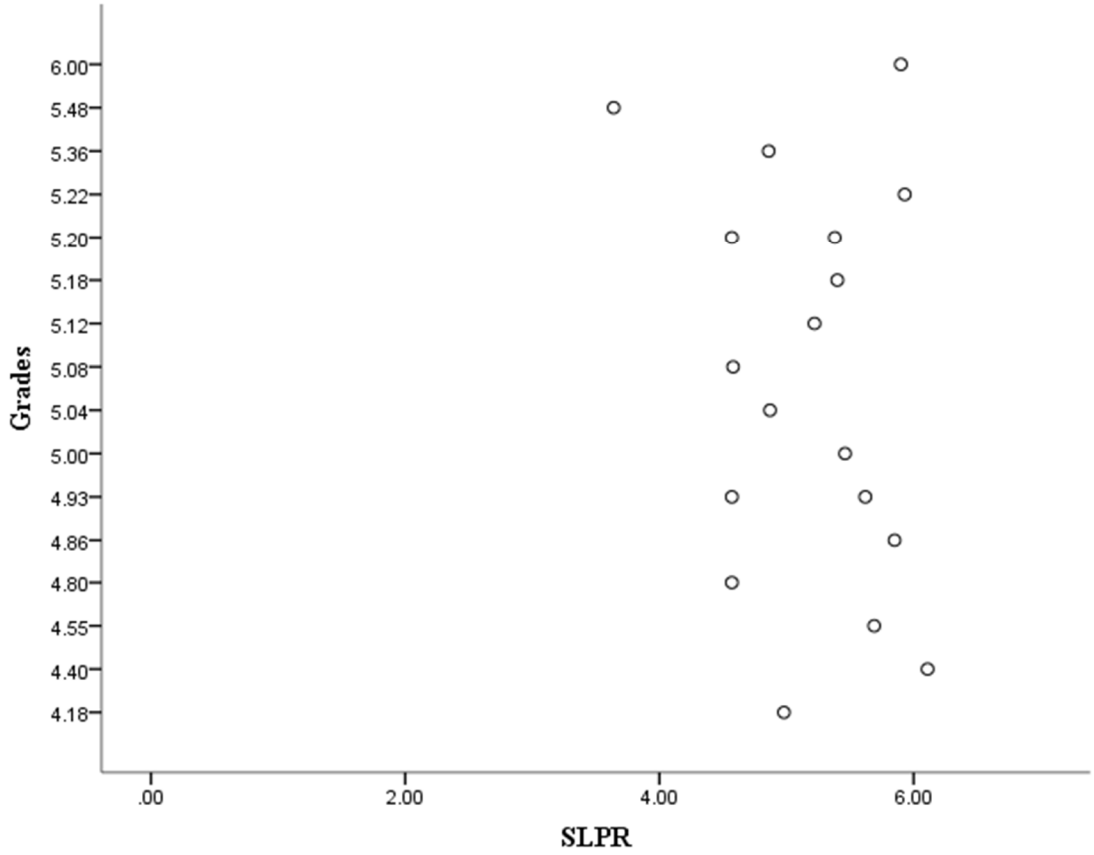


*Figure 17.* Servant leadership to student grades scatterplot.

Using these results to test the second hypothesis, the Spearman rank correlation between the servant leadership scores and student grade scores was computed. A scatterplot showing the relationship of these variables is shown in Figure 17 above. As displayed above, the data points for grades occurred on the Servant Leadership axis between 4.0 and 6.0. This is a narrow range. Consequently, there may not be sufficient variability in grades to detect the true relationship between grades and SLP-R scores.

The Spearman rank correlation between servant leadership scores and effective teaching scores was weak, $r_s$ = -.16, $p$ = .25. Based on the value associated with this correlation, the null hypothesis was accepted, and it was concluded that there was no

statistically significant relationship between servant leadership and teaching effectiveness. The results are shown in Table 10 below.

Table 10

*Spearman Correlation between Servant Leadership and Student Grades*

| | | SLP-R | Grades |
|---|---|---|---|
| SLPR | Correlation Coefficient | 1.00 | -.16 |
| | Sig. (2-tailed) | . | .533 |
| | N | 18 | 18 |
| Grades | Correlation Coefficient | -.16 | 1.00 |
| | Sig. (2-tailed) | .53 | . |
| | N | 18 | 18 |

**Research Question 3**. The third research question of this study was: To what extent is the relationship between servant leadership behavior and student achievement mediated by classroom climate? The corresponding hypotheses were:

$H_3$: There is a positive correlation between servant leadership behavior and student achievement mediated by classroom climate, measured by the CUCEI (Fraser et al., 1986).

$H_0$: There is not a positive correlation between servant leadership behavior and student achievement mediated by classroom climate, measured by the CUCEI (Fraser et al., 1986).

The original study design called for a regression analysis to test this hypothesis. That design was based upon prior research (Black, 2010; Boyer, 2012; Cohen & Brown, 2013; Cunningham, 2008; Herndon, 2007; Kelley, Thornton, & Daugherty, 2005; Reichers & Schneider, 1990; Robinson et al., 2008; Saphier 2011; Saphier & King, 1985; Waters et al., 2003). Those studies were conducted with samples in elementary and high schools, where the relationship between servant leadership, climate and student achievement had

been established. This study was conducted at the collegiate level. As discussed in the limitations section of Chapter 3, there were additional challenges at the collegiate level that may have affected the results. In this study, the lack of a significant correlation between servant leadership and student achievement rendered the mediating effect between these variables moot. Therefore, neither the hypothesis nor its null hypothesis could be accepted or rejected, and no statistical testing was conducted on the third research question.

**Summary**

The researcher used a correlational research design to measure the relationships between teacher servant leadership, classroom climate, and student achievement at the collegiate level of education. This chapter presented the complete analyses for the servant leadership and classroom climate quantitative surveys and the alphabetic grades of students. Initially, the descriptive statistics explained the sample with respect to collegiate departments involved, types of courses taught, class size, and faculty experience.

This quantitative research summarized the statistical findings in relation to three research questions and hypotheses. The first research question was: What is the relationship between teachers' servant leadership behaviors and classroom climate as reported by students? The data indicated both variables were normally distributed, as assessed by Shapiro-Wilk's test ($p > .05$). The significance levels for each of these variables were .325 and .157 for servant leadership and classroom climate, respectively. Having met the requirements for a Pearson correlation, the computed correlation failed to achieve a statistical significance level of 0.05.

The first hypothesis ($H_{1)}$ was: There is a positive correlation between teachers' servant leadership behaviors, measured by "The Servant Leadership Profile" and classroom climate reported by students (SLP-R) (Wong & Page, 2003).
Since the data did not show a statistical significance at the .05 level, the hypothesis was rejected. Consequently, the null hypothesis was supported: There is not a positive correlation between teachers' servant leadership behaviors, measured by "The Servant Leadership Profile" and classroom climate reported by students (Wong & Page, 2003).

The second research question was: What is the relationship between servant leadership behavior and student achievement? The results of a Spearman correlation identified a range of grades that were not significantly influenced by the SLRP scores. The Spearman rank correlation between servant leadership scores and effective teaching scores was weak, $r_s = .14$, $p = .25$. Accordingly, the hypothesis ($H_{2)}$ for this research question was rejected: There is a positive correlation between servant leadership behaviors, measured by the SLP-R and student achievement, measured by final course grades (Wong & Page, 2003). Based on the value associated with this correlation, the null hypothesis ($H_{0,)}$ there is not a positive correlation between servant leadership behaviors, measured by the SLP-R and student achievement, measured by final course grades (Wong & Page, 2003), was accepted. Therefore, it was concluded that there was no statistically significant relationship between servant leadership and teaching effectiveness.

The third research question was: To what extent is the relationship between servant leadership behavior and student achievement mediated by classroom climate? The corresponding hypotheses were:

$H_3$: There is a positive correlation between servant leadership behavior and student achievement mediated by classroom climate, measured by the CUCEI (Fraser et al., 1986).

$H_0$: There is not a positive correlation between servant leadership behavior and student achievement mediated by classroom climate, measured by the CUCEI (Fraser et al., 1986).

As discussed previously, the lack of a significant correlation between servant leadership and student achievement rendered the mediating effect between these variables moot. Therefore, neither the hypothesis nor its null hypothesis could be accepted or rejected.

The data revealed several important concepts. First, the relationship between teacher servant leadership and classroom climate was not significant. Second, the concept of a positive classroom climate positively influencing student achievement was rejected. Finally, the lack of an established significance between servant leadership and the mediating effects of classroom climate between teacher servant leadership and student achievement was not determined to be statistically significant.

Several limitations emerged that may help to explain the study results. First, the small teacher sample size of 18 makes generalizations of these results to the overall population suspect. Second, in some cases, the same limitation of a small sample applies to classes where there were few students. Chapter 5 discusses the implications of these results and presents recommendations for further study of the relationships between teacher servant leadership, classroom climate, and student achievement.

# Chapter 5: Summary, Conclusions, and Recommendations

## Introduction

Is leadership important for effective teaching? According to Shuaib and Olalere (2013), the purpose of teaching is to impart knowledge; one key aspect of effective teaching is learner-focused education. Therefore, it is relevant to look at how teacher leadership practices focus on and influence student achievement.

Is there a leadership style best suited for teaching? According to Hays (2008) "applying the principles, values, and practices of servant leadership to teaching can make a profound difference on the impact of learning and in the learning experience of both students and teachers" (p. 113). Several research studies have shown a direct relationship between leadership and the creation of organizational culture and climate (Fernando & Chowdhury, 2010; Groves, 2006; Karakas, 2011; Leithwood & Mascall, 2008). Based upon the definition of organizational climate as "shared perceptions of organizational policies, practices, and procedures, both informal and formal" (Reichers & Schneider, 1990, p. 22), determined the behavior manifested by the embedded values of the culture affects the organizational climate. Furthermore, because achievement is a measure of behavior, the leadership that creates the organizational climate also becomes a strong determinate of achievement. According to Routman (2012), the best way to improve achievement levels is to improve teaching and, more specifically, by focusing on strong, effective leadership.

Today, more than ever, teacher leadership is essential for student success (Ludlow, 2011). In fact, teacher relations with students (i.e., leadership) is the most important ingredient for student learning (Drobot & Roşu, 2012). Metzcar (2008) found a

strong positive relationship between effective teaching and servant leadership in 764 preschool through 12th grade teachers. In his study, Metzcar (2008) noted that 93.72% of the effective teachers scored themselves as servant leaders utilizing the TLA. A meta-analysis of 27 studies by Robinson et al. (2008) identified a significant positive relationship between servant leadership characteristics and student outcomes.

While prior researchers confirmed the positive impact of servant leadership on student achievement at the K-12 level, they neither confirmed nor refuted this relationship at the collegiate level (Black, 2010; Boyer, 2012; Herndon, 2007; Hiller et al., 2011; Kelley et al., 2005; Spillane, 2005). It was not known to what degree there was a relationship between teachers' servant leadership behaviors, classroom climate, and student achievement at the collegiate level. The purpose of this quantitative research was to see to what degree a relationship existed between servant leadership, classroom climate, and student achievement in a collegiate environment. This was a quantitative, correlational study. The foundational theories for this research included servant leadership and organizational climate that pertain to transformational follower development and unifying values within an organization to align behavior.

This study attempted to determine whether teachers' servant leadership behaviors, as perceived by students, created a positive classroom climate and the extent to which the resultant classroom climate affected student achievement. Specifically:

R1: What is the relationship between teachers' servant leadership behaviors and classroom climate as reported by students?

R2: What is the relationship between servant leadership behavior and student achievement?

R3: To what extent is the relationship between servant leadership behavior and student achievement mediated by classroom climate?

This chapter presents a summary of the research study and a discussion related to findings of the three research questions. These research questions assessed: the relationship between teacher servant leadership behaviors and classroom climate; the relationship between servant leadership and student achievement; and the extent to which servant leadership and student achievement is mediated by classroom climate. Survey based instruments and a quantitative correlational research design was used to conduct the study.

The Servant Leadership Profile – Revised (SLP-R) scores were used to measure the servant leadership behaviors of the teachers. The College and University Classroom Environment Inventory (CUCEI) scores were used to measure the climate of each classroom. And end of course student grades were used to evaluate student achievement. Participants in the study included teachers from 18 classrooms with a total of 301 students at a small, private, catholic university. The remainder of the chapter summarizes the findings and conclusions of the research and provides recommendations for future research. It also describes the implications of this research study.

**Summary of the Study**

The primary purpose of this study was to examine the relationships between teacher servant leadership behavior, classroom climate, and student achievement. The problem statement stated it was not known to what degree there was a relationship between teachers' servant leadership behaviors, classroom climate, and student achievement at the collegiate level. This quantitative study sought to determine whether

high teacher servant leadership behavior was correlated with a more favorable classroom climate and improved student achievement.

This study is significant in that it contributes to a larger body of literature on the relationship between servant leadership and student achievement. Robinson et al. (2008) analyzed 27 studies and identified a significant positive relationship between servant leadership characteristics and student outcomes. Boyer (2012), Hiller et al. (2011), Black (2010), Herndon (2007), Kelley et al. (2005), and Spillane (2005) all identified the positive influence of servant leadership on student achievement. However, these prior studies correlated this effect at the primary and secondary levels of education.

The results of this study were not statistically significant. This result was unexpected since research by Adiele and Abraham (2013), Shuaib and Olalere (2013), Drobot and Rosu (2012), and Routman (2012), all of whose studies showed statistically significant results in primary and secondary levels of education, recommended conducting a study to examine these correlations in higher education. This study sheds light on important variables and dynamics of researching these correlations in a collegiate environment.

This chapter presents a summary of the research study and a discussion related to the findings of the research questions. Specifically:

R1: What is the relationship between teachers' servant leadership behaviors and classroom climate as reported by students?

R2: What is the relationship between servant leadership behavior and student achievement?

R3: To what extent is the relationship between servant leadership behavior and student achievement mediated by classroom climate?

A correlational research design with established survey-based instruments was used for this study. The Servant Leadership Profile – Revised (SLP-R) scores were used to measure the servant leadership behaviors of the teachers. The College and University Classroom Environment Inventory (CUCEI) scores were used to measure the climate of each classroom. End of course student grades were used to evaluate student achievement. Participants in the study included teachers from 18 classrooms with a total of 301 students at a small, private, catholic university. The remainder of the chapter summarizes the findings and conclusions of this research and provides recommendations for future research and practice as well as implications of this study.

**Summary of Findings and Conclusion**

This was a correlational study of collegiate teachers, their servant leadership behavior, their classroom climates, and student achievement. Teacher servant leadership was determined using the Servant Leadership Profile–Revised (SLP-R). The College and University Classroom Environment Inventory (CUCEI) was used to assess classroom climate. Moreover, end of course student grades were used to measure student achievement. Data were analyzed to assess the strength of correlations between these variables. This section provides analysis and conclusions related to the three hypotheses of this study.

**Research Question 1**. This question focused on the relationship between teacher servant leadership behaviors and classroom climate. It was hypothesized that higher levels of teacher servant leadership would create better classroom climates. Data analysis

failed to achieve a statistical significance level of 0.05. Based on these results, one could conclude teacher leadership is not an important variable in creating classroom climate.

This conclusion has little support in the literature. Several research studies have shown a statistically significant relationship between leadership and the creation of organizational culture and climate (Duke, 2006; Fernando & Chowdhury, 2010; Groves, 2006; Karakas, 2011; Kutash et al. 2010; Leithwood & Mascall, 2008; Villavicencio & Grayman, 2012). Saphier and King (1985) identified the importance of organizational culture in education. Waters et al. (2003) synthesized 30 years of leadership in education and recommended careful attention to school culture. Saphier (2011) recommended changing teacher-student paradigms to increase learning effectiveness. This culture, in turn, is observable in the daily behaviors that shape the organizational climate. Using the definition of organizational climate as "shared perceptions of organizational policies, practices, and procedures, both informal and formal" (Reichers & Schneider, 1990, p. 22), it becomes obvious that the leadership behavior of the teacher is directly responsible for creating the classroom climate. More specifically, according to Hays (2008), "applying the principles, values, and practices of servant leadership to teaching can make a profound difference on the impact of learning and in the learning experience of both students and teachers" (p. 113).

**Research Question 2.** The second research question focused on the relationship between teacher servant leadership behavior and student achievement. It was hypothesized that higher levels of servant leadership behavior would result in higher levels of student achievement. The results of a Spearman correlation identified a range of

grades that was not significantly influenced by the SLP-R scores. Accordingly, the hypothesis for this research question was also rejected.

Once again, this finding is not consistent with prior research in this area. According to Routman (2012), the best way to improve achievement levels is to improve teaching and, more specifically, by focusing on strong, effective leadership. In 1996, the National School Climate Center was created to improve educational leadership in the area of school climate to enhance student achievement ("National School Climate Center : School Climate," 1996). In 2007, the National Comprehensive Center for Teacher Quality issued a report titled *Enhancing Teacher Leadership* ("Enhancing Teacher Leadership," 2007) claiming that teacher leadership is essential for successful students and effective schools. In 2008, the Teacher Leadership Exploratory Consortium was formed by a group of national organizations, state education agencies, major universities, and local school systems ("Teacher Leadership Exploratory Consortium - Home," 2008). And the National Board for Professional Teaching Standards is developing a new certification for Teacher Leaders ("Teacher Leadership," 2013). Today, more than ever, teacher leadership is essential for student success (Ludlow, 2011). In fact, teacher relations with students (i.e., leadership) is the most important ingredient for student learning (Drobot & Roşu, 2012).

**Research Question 3**. The third research question focused on the mediating effects of classroom climate between teacher servant leadership and student achievement. Unfortunately, because the study failed to establish a significant correlation between servant leadership and student achievement, it was not possible to measure or analyze mediating effects between two uncorrelated variables. Therefore, the third hypothesis

could be neither accepted nor rejected. However, this phenomenon is recognized in the literature.

Saphier and King (1985) identified the importance of organizational culture in education. Waters et al. (2003) synthesized 30 years of leadership in education and recommended careful attention to school culture. Saphier (2011) recommended changing teacher-student paradigms to increase learning effectiveness. Using the definition of organizational climate as "shared perceptions of organizational policies, practices, and procedures, both informal and formal" (Reichers & Schneider, 1990, p. 22), it becomes obvious that the leadership behavior of the teacher is directly responsible for creating the classroom climate. Furthermore, it is known that educational climate influences student achievement (Cohen & Brown, 2013; Cunningham, 2008; Herndon, 2007).

In conclusion, these study results did not statistically significantly support the hypotheses. This result was unexpected as it is not consistent with prior research on servant leadership, classroom climate, and student achievement in education. It is important to note, however, that this study environment was also not consistent with prior research. The different environmental and participant dynamics of this research study are obviously significant. The theoretical and practical implications arising from this study are discussed in the next section.

**Implications**

The research focus of this study was to determine if and to what extent there was a correlation between servant leadership, classroom climate, and student achievement at the collegiate level. Kelley, Thornton and Daugherty (2005), Black (2010), and Boyer (2012) found principal servant leadership characteristics had a significant effect on

school climate. Herndon (2007) and a meta-analysis of 27 studies by Robinson et al. (2008) found a statistically significant relationship between principals' servant leadership and both school climate and student achievement. The educational environment in which all these studies were conducted was in elementary and high schools. The intent of this study was to add to existing literature by responding to calls to examine these correlations in higher education (Adiele & Abraham, 2013; Drobot & Roşu, 2012; Routman, 2012; Shuaib & Olalere, 2013). The proposed hypotheses for this study were expected to confirm the significance of servant leadership and classroom climate on student achievement at the collegiate level.

**Theoretical implications**. The lack of statistical significance necessary to confirm the theoretical frameworks of this study calls attention to the leadership outcomes of servant leadership, classroom climate, and student achievement. However, it also calls attention to the need for more research of these frameworks in an educational environment. This study begs the question as to whether the theoretical frameworks themselves require additional verification or whether the design and implementation of such research is practical within higher education.

Servant Leadership unapologetically prioritizes the development and welfare of followers over organizational goals (Greenleaf, 1970). This precept is congruent with the goals of higher education. Consequently, in theory, servant leadership is ideally suited for an educational environment. Yet, the results of this study did not statistically significantly confirm this synergy. The lack of statistically significant results may have implications for the choice of instruments as measures of servant leadership and classroom climate, as well as the research design itself.

**Measuring servant leadership**. Since servant leadership has been positively correlated with improved climate and student achievement at the primary and secondary levels of education, it was important to look at the instruments used to validate these relationships. There are dozens of servant leadership instruments. This researcher chose the Servant Leadership Profile–Revised (SLP-R) by Wong and Page (2003) because it included and measured the cancelling effects of authoritarian hierarchy and egotistic pride on servant leadership—two negative aspects of leadership higher education. The SLP-R is a self-reported instrument. Consequently, it is possible that while the teacher may have sincerely believed that he or she were a servant leader–-and reflected that perception in their responses on the instrument, the students may not have perceived the same servant leadership characteristics in action. This difference could have influenced the strength of the correlation between the variables.

***Research site***. Additionally, this study was conducted at a private, Catholic university with experienced teachers. Therefore, it is possible that some of the university's embedded Catholic values may have already proscribed teacher behavior that was consistent with servant leadership. Consequently, regardless of the teachers' self-reported SLP-R scores, classroom policies may have influenced the teachers and students perceptions of servant leadership so that higher levels of servant leadership behaviors were already present.

***Sampling strategy***. If the inclusion criteria for teachers had been more clearly defined, that may have helped to distinguish the teacher behaviors in creating classroom climate. This might have produced results that more clearly showed whether the experience and professional development of the teachers, already in place, provided a

foundation for creating a positive classroom environment? The question remains regarding whether such experience or servant leadership was responsible for classroom climate.

**Measuring classroom climate**. With respect to classroom climate, the plethora of organizational climate instruments (100+) could make choosing the appropriate instrument to use for this type of research in higher education difficult. This researcher chose to use the College and University Classroom Environment Inventory (CUCEI) because of its high internal validity (between 0.85 and 0.96, and 0.89 in this study) and its use in other studies ( Fraser et al., 2012, pp. 1196-1197). Yet, its exclusionary limitations may not have made it ideally suited to correlate the relationship between servant leadership and student achievement. For example, because the instrument excludes hard science courses with labs, teacher subjectivity and grade inflation may unduly influence student achievement measures (in this case, student grades).

**Measuring achievement**. These issues call attention to the basic study design itself. Why was this research not consistent with similar research at lower educational levels? Why did it not attain statistical significance? It is possible that the study design identified the appropriate criterion variable, but the sample (18) was too small. Perhaps it is also possible that the criterion variable was correct but the study did not identify effective measures of achievement. Alternatively, was the study design flawed with respect to measuring student achievement?

Similar research at the primary and secondary levels of education were able to use standardized tests to measure student achievement, and there are no equivalent measures at the collegiate level. This suggests that subjective, end of course grades may not be the

best measure of student achievement in higher education. Instead, like the self-reported SLP-R, an end of course student survey might be a more effective way to measure student achievement.

**Strengths and weaknesses**. A strength of this study has emerged through the lack of statistically significant results in this study, which has raised a question about why the results unexpectedly differed from similar studies conducted at lower educational levels. The fact that the results at the collegiate level were not statistically significant raises the important issue about whether the instruments used to measure the variables are only effective in certain settings. A weakness of the study, in hindsight, was its sampling strategy; the double-blind approach was designed to maintain confidentiality and perceived as a strength in the planning phase for that reason. However, it effectively made some of the data "invisible" to the researcher, thus impeding fuller analysis. Because there are significant differences between a collegiate environment and the educational environments in elementary and high school, the study design could not mirror the design of similar research conducted at lower levels of education. This was not apparent during the planning stage of this research, and it thus has implications for future research.

**Practical implications**. Practical implications from this research are difficult to identify. The lack of statistical significance of this research makes recommendations for current practitioners (i.e., collegiate teachers) questionable. However, as with most research, an examination of the study design and conduct of this research can serve as a starting point for future research.

**Future implications**. Collegiate education is not federally mandated. Therefore, in addition to being more physically and emotionally mature, collegiate students are there by choice. Consequently, the motivational aspects of teacher leadership at the collegiate level may not be as readily apparent.

Current credentialing procedures at the primary and secondary levels of education require professional education and experience in a variety of teaching areas such as lesson design and planning, teaching techniques, and classroom management. Similar training is not required at the collegiate level of education—except in the education departments that train primary and secondary education teachers (Norton, 2013). Therefore, it may be the lack of training in specific teaching skills at the collegiate level could interfere with the influencing aspects of leadership in the classroom.

This study was limited by the disproportionate sample sizes of criterion and predictor variables, thus a final sample size of 18 may have been too small to produce significant results. Since the primary focus of the research was on teacher servant leadership, increasing the number of teachers involved will decrease the possibility of outlier data skewing the overall results.

Similarly, the classroom climate instrument required participation by non-science related lecture classes without laboratory periods. This requirement to avoid hard sciences, and the grouping of results into a letter grade scale, assumed teacher subjectivity in grading was sufficiently discriminating to portray variances in student achievement. It is possible that the numerical grading often associated with hard science exams may have precluded any potential rounding effect created by letter grade groupings.

Furthermore, the design of this study, which included a mixture of both required as distinct from elective, and introductory as distinct from advanced courses, did not reveal possible disparities in the student achievement. For example, the data from the senior elective courses showed disproportionately high grades on average; this may have reflected higher knowledge levels among the learners than was present in non-elective (e.g., required) courses. In those cases, teacher leadership may not have been the most accurate measure of student achievement. Likewise, lower achievement may be more attributable to the unfamiliarity and difficulty of non-elective courses than the classroom climate created by a teacher's leadership. Future research could therefore design studies that more carefully select the level of courses (basic versus advanced) at the collegiate level.

Finally, because this study was conducted at a small, private, Catholic University, the potential philosophical tendencies of both students and teachers may be skewed towards a servant leadership paradigm. Consequently, both teacher and student perceptions of behaviors may be somewhat biased. Thus, these results may not be generalizable to the entire population of collegiate teachers and students.

The strengths and weaknesses of this research reinforce the need for further research. While the individual theoretical frameworks are widely accepted and confirmed at the primary and secondary levels of education, this research failed to confirm their precepts at the collegiate level. Therefore, the question arises as to whether the frameworks are valid throughout education or whether this research design did not appropriately allow the results to measure the theories in practice.

The practical implications of this research highlight the need for future research to be conducted on a more homogenous sample with greater attention to the potential variances likely when conducted across a broad spectrum of courses. Such research would help to confirm or refute the disparities between leadership, climate, and achievement in higher education. Furthermore, it will help to improve our understanding of the roles and importance of these dynamics at the collegiate level.

## Recommendations

This research added to the body of knowledge pertaining to servant leadership, classroom climate, and student achievement in education. In an effort to determine the extent of the correlations between these variables, many potential recommendations for further research became evident. The recommendations were developed from the summary of findings presented in the preceding section. The recommendations for future research are suggestions to clarify and improve upon the design and conduct of this research.

**Recommendations for future research.** While there are many studies of servant leadership, organizational climate, and student achievement, there are limited studies correlating these variables at the collegiate level of education. Moreover, there is a dearth of such studies at the collegiate level. This area of study continues to challenge researchers. Based upon this limited research and the findings of this study, recommendations for future research are as follows:

1. Identify an instrument to measure student achievement at the collegiate level. The study design of the correlations between servant leadership, classroom climate, and student achievement at the collegiate level cannot mirror similar studies at the elementary and secondary levels of education. Numerous state and nationally standardized tests to measure student achievement at lower levels of education provide multiple opportunities for direct correlations with

large sample populations. Unfortunately, similar tests at the collegiate level (CPA exams, State Bar exams, medical boards, GREs, etc.) occur after completion of an entire curriculum with multiple courses. Consequently, it is not feasible to use these tests to correlate student achievement with individual teachers or classrooms.

2. Conduct a mixed-methods study. Design a study at the collegiate level utilizing a mixed-methods approach will allow researchers to capture additional insights regarding teacher servant leadership instead of relying on self-reported servant leadership.

3. Conduct a study with a more specific sampling strategy. Expanding the study across multiple colleges and universities varying specific design variables (e.g., only introductory or general education courses, limiting the study to a specific year group course–i.e., freshman, seniors, etc.) could produce more fine-grained information pertaining to servant leadership, classroom climate, and student achievement in higher education.

4. Conduct a similar study at secular universities. This research was conducted at a small, private, Catholic university. Because the theoretical foundations of servant leadership may be traced to Jesus and catholic principles, it is possible the proclivities of the teachers at the university were already biased towards servant leadership.

5. Conduct a study with a larger sample size. Conducting the study with a larger sample would make the findings of the study more generalizable. This study was limited by a sample of 18 teachers. A single site study at a large university where the same course is taught by multiple teachers would allow for a larger, more directed study that could minimize potential variances.

6. Conduct the study that does not disguise the identity of teachers to the researcher. This almost double blind research design protected the anonymity of the teachers. However, this design did not allow the researcher to conduct drill down analyses of year groups, courses, teacher experience and development or grading tendencies (i.e., grade inflation).

7. Consider using different instruments. Use of a different classroom climate instrument may prevent the exclusion of hard science courses. In those cases, course-wide standardized tests may be used with greater accuracy than courses with predominately subjective grading.

8. Develop clearly defined inclusion criteria for teachers in the sampling strategy. Use teachers with a range of experience. Regardless of formal professional development, experienced teachers are more likely to have developed classroom management skills that may not be attributed to their specific leadership paradigm.

9. Collect more clearly defined demographic data for all respondents. Further delineation and examination of how demographic data are related to the relationships between servant leadership, classroom climate, and student achievement.

**Recommendations for future practice.** There are two key recommendations for practice based on the results of this study.

1. Share the results of this research with the teachers and management at the university where the research was conducted. Even though the results did not rise to the level of statistical significance, as reinforced by research by Bosco et al. (2015), they are worth consideration in practice.

2. Share the results of this research with those interested in how leadership can influence achievement in higher education. This research helps to identify the difficulty in isolating and correlating the dynamics of servant leadership, classroom climate, and student achievement at the collegiate level.

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# Appendix A

## Letter of Approval to Conduct Research

[redacted] UNIVERSITY

Mr. Daniel Mulligan
120 Beau Drive
Edinboro, PA 16412

September 17th, 2013

Dear Mr. Mulligan,

The [redacted] Institutional Review Board has reviewed your research proposal entitled "Clearing the Path: Servant Leadership and It's Impact on Classroom Climate and Student Performance". Based on committee member input, your proposal has been approved. The IRB confirms that there is minimal risk to subjects participating in this study. You may now begin your project.

If you should run into any significant difficulties involving the ethical treatment of your research participants in conducting your study, or if you wish to make significant changes in your procedure, please inform the IRB.

If you have any questions or require any additional information, please contact Mr. [redacted]

Good luck with your research.

Sincerely,

[redacted]

# Appendix B

## Survey Coordinator Informed Consent Form

Grand Canyon University
College of Doctoral Studies
3300 W. Camelback Road
Phoenix, AZ 85017
Phone: 602-639-7804
Fax: 602- 639-7820

## SURVEY COORDINATOR INFORMED CONSENT FORM

**SERVANT LEADERSHIP AND ITS IMPACT ON CLASSROOM CLIMATE AND STUDENT ACHIEVEMENT**

### INTRODUCTION

The purposes of this form are to provide you (as a prospective research study participant) information that may affect your decision as to whether or not to participate in this research and to record the consent of those who agree to be involved in the study.

### RESEARCH

Dan Mulligan, doctoral student at Grand Canyon University, has invited your participation in a research study.

### STUDY PURPOSE

Several studies have been conducted looking into the subject of school leadership and culture with student achievement in primary and secondary education. None have explored these relationships at colleges and universities.

### DESCRIPTION OF RESEARCH STUDY

If you decide to participate, then as a study participant you will join a study involving research of leadership, classroom climate, and student achievement. Your participation will consist of distributing and collecting the surveys in sealed envelopes to participating instructors and collecting participating student aggregate grades (e.g., 5=A, 7=B+, 10=B, 3=C+) from the instructors at the end of the semester.

If you say YES, then your participation should require no more than one hour of your time.

Approximately 300 subjects will be participating in this study.

### RISKS

There are no known risks from taking part in this study, but in any research, there is some possibility that you may be subject to risks that have not yet been identified.

## BENEFITS

Although there may be no direct benefits to you, the possible benefits of your participation in the research are improving leadership and the professional education of College and University faculty.

## NEW INFORMATION

If the researcher finds new information during the study that would reasonably change your decision about participating, then they will provide this information to you.

## CONFIDENTIALITY

All information obtained in this study is strictly confidential. The results of this research study may be used in reports, presentations, and publications, but the researcher will not identify you. In order to maintain confidentiality of your records, Dan Mulligan will alphanumerically code each survey and your ANONYMOUS survey data will be confidentially stored at the researcher's residence. No identifying information that you provide will be published or disclosed. Only the researcher will have access to your completed survey.

## WITHDRAWL PRIVILEGE

Participation in this study is completely voluntary. It is ok for you to say no. Even if you say yes now, you are free to say no later, and withdraw from the study at any time. Nonparticipation in this research WILL NOT affect course grades.

## COSTS AND PAYMENTS

The researcher wants your decision about participating in the study to be absolutely voluntary. Yet he recognizes that your participation may pose some inconvenience. In appreciation for your participation, after all data is collected (but no later than May 30, 2014), you will receive a $250.00 GIFT CERTIFICATE to Barnes & Noble Bookstores.

## VOLUNTARY CONSENT

Any questions you have concerning the research study or your participation in the study, before or after your consent, will be answered by Dan Mulligan, [redacted]

If you have questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Institutional Review Board, through the College of Doctoral Studies at (602) 639-7804.

This form explains the nature, demands, benefits and any risk of the project. By signing this form you agree knowingly to assume any risks involved. Remember, your participation is voluntary. You may choose not to participate or to withdraw your consent and discontinue participation at any time without penalty or loss of benefit. In signing this consent form, you are not waiving any legal claims, rights, or remedies. A copy of this consent form will be given (offered) to you.

Your signature below indicates that you consent to participate in the above study.

| _____ | _____ | _____ _Group A |
|---|---|---|
| Subject's Signature | Printed Name | Date |

## INVESTIGATOR'S STATEMENT

"I certify that I have explained to the above individual the nature and purpose, the potential benefits and possible
risks associated with participation in this research study, have answered any questions that have been raised, and
have witnessed the above signature. These elements of Informed Consent conform to the Assurance given by Grand Canyon University to the Office for Human Research Protections to protect the rights of human subjects. I have provided (offered) the subject/participant a copy of this signed consent document."

Signature of Investigator_____

Date_____

# Appendix C

## Instructor Informed Consent Form

Grand Canyon University
College of Doctoral Studies
3300 W. Camelback Road
Phoenix, AZ 85017
Phone: 602-639-7804
Fax: 602- 639-7820

## INSTRUCTOR INFORMED CONSENT FORM

**SERVANT LEADERSHIP AND ITS IMPACT ON CLASSROOM CLIMATE AND STUDENT ACHIEVEMENT**

### INTRODUCTION

The purposes of this form are to provide you (as a prospective research study participant) information that may affect your decision as to whether or not to participate in this research and to record the consent of those who agree to be involved in the study.

### RESEARCH

Dan Mulligan, doctoral student at Grand Canyon University, has invited your participation in a research study.

### STUDY PURPOSE

Several studies have been conducted looking into the subject of school leadership and culture with student achievement in primary and secondary education. None have explored these relationships at colleges and universities.

### DESCRIPTION OF RESEARCH STUDY

If you decide to participate, then as a study participant you will join a study involving research of leadership, classroom climate, and student achievement. Your participation will consist of ANONYMOUSLY completing a short survey while your students who wish to participate also ANONYMOUSLY complete a short survey. These surveys will be placed in sealed envelopes and returned. At the end of the semester, you will be asked to turn in the aggregate grades of participating students (e.g., 5=A, 7=B+, 10=B, 3=C+). If you are uncomfortable with any survey questions, you may skip them.
If you say YES, then your participation will last for about 10 minutes in class and 10 minutes to compile aggregate grades.

Approximately 300 subjects will be participating in this study.

### RISKS

There are no known risks from taking part in this study, but in any research, there is some possibility that you may be subject to risks that have not yet been identified.

## BENEFITS

Although there may be no direct benefits to you, the possible benefits of your participation in the research are improving leadership and the professional education of College and University faculty.

## NEW INFORMATION

If the researcher finds new information during the study that would reasonably change your decision about participating, then they will provide this information to you.

## CONFIDENTIALITY

All information obtained in this study is strictly confidential. The results of this research study may be used in reports, presentations, and publications, but the researcher will not identify you. In order to maintain confidentiality of your records, Dan Mulligan will alphanumerically code each survey and your ANONYMOUS survey data will be confidentially stored at the researcher's residence. No identifying information that you provide will be published or disclosed. Only the researcher will have access to your completed survey.

## WITHDRAWL PRIVILEGE

Participation in this study is completely voluntary. It is ok for you to say no. Even if you say yes now, you are free to say no later, and withdraw from the study at any time. Nonparticipation in this research WILL NOT affect course grades.

## COSTS AND PAYMENTS

The researcher wants your decision about participating in the study to be absolutely voluntary. Yet he recognizes that your participation may pose some inconvenience. In appreciation for your participation, those who complete the survey and submit aggregate grades, after all data is collected (but no later than Jan 1, 2014), will receive a $25.00 GIFT CERTIFICATE to Barnes & Noble Bookstores.

## VOLUNTARY CONSENT

Any questions you have concerning the research study or your participation in the study, before or after your consent, will be answered by Dan Mulligan, [redacted]

If you have questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Institutional Review Board, through the College of Doctoral Studies at (602) 639-7804.

This form explains the nature, demands, benefits and any risk of the project. By signing this form you agree knowingly to assume any risks involved. Remember, your participation is voluntary. You may choose not to participate or to withdraw your consent and discontinue participation at any time without penalty or loss of benefit. In signing this consent form, you are not waiving any legal claims, rights, or remedies. A copy of this consent form will be given (offered) to you.

Your signature below indicates that you consent to participate in the above study.

| _____ | _____ | _____ |
|---|---|---|
| Subject's Signature | Printed Name | Date |

## INVESTIGATOR'S STATEMENT

"I certify that I have explained to the above individual the nature and purpose, the potential benefits and possible
risks associated with participation in this research study, have answered any questions that have been raised, and
have witnessed the above signature. These elements of Informed Consent conform to the Assurance given by Grand Canyon University to the Office for Human Research Protections to protect the rights of human subjects. I have provided (offered) the subject/participant a copy of this signed consent document."

Signature of Investigator_____

Date_____

# Appendix D

## Student Informed Consent Form


Grand Canyon University
College of Doctoral Studies
3300 W. Camelback Road
Phoenix, AZ 85017
Phone: 602-639-7804
Fax: 602- 639-7820

## ADULT STUDENT INFORMED CONSENT FORM

**SERVANT LEADERSHIP AND ITS IMPACT ON CLASSROOM CLIMATE AND STUDENT ACHIEVEMENT**

### INTRODUCTION

The purposes of this form are to provide you (as a prospective research study participant) information that may affect your decision as to whether or not to participate in this research and to record the consent of those who agree to be involved in the study.

### RESEARCH

Dan Mulligan, doctoral student at Grand Canyon University, has invited your participation in a research study.

### STUDY PURPOSE

Several studies have been conducted looking into the subject of school leadership and culture with student achievement in primary and secondary education. None have explored these relationships at colleges and universities.

### DESCRIPTION OF RESEARCH STUDY

If you decide to participate, then as a study participant you will join a study involving research of leadership and classroom climate. Your participation will consist of ANNONYMOUSLY completing a short survey. Your final course grade will be ANONYMOUSLY aggregated. If you are uncomfortable with any survey questions, you may skip them.

If you say YES, then your participation will last for about 10 minutes in class. Approximately 300 subjects will be participating in this study.

### RISKS

There are no known risks from taking part in this study, but in any research, there is some possibility that you may be subject to risks that have not yet been identified.

### BENEFITS

Although there may be no direct benefits to you, the possible benefits of your participation in the research are improving leadership and the professional education of College and University faculty.

## NEW INFORMATION

If the researcher finds new information during the study that would reasonably change your decision about participating, then they will provide this information to you.

## CONFIDENTIALITY

All information obtained in this study is strictly confidential. The results of this research study may be used in reports, presentations, and publications, but the researcher will not identify you. In order to maintain confidentiality of your records, Dan Mulligan will alphanumerically code each survey and your ANONYMOUS survey will be confidentially stored at the researcher's residence. No identifying information that you provide will be published or disclosed. Only the researcher will have access to your completed survey.

## WITHDRAWL PRIVILEGE

Participation in this study is completely voluntary. It is ok for you to say no. Even if you say yes now, you are free to say no later, and withdraw from the study at any time. Nonparticipation in this research WILL NOT affect course grades.

## COSTS AND PAYMENTS

There is no payment for your participation in the study.

## VOLUNTARY CONSENT

Any questions you have concerning the research study or your participation in the study, before or after your consent, will be answered by Dan Mulligan, [redacted]

If you have questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Institutional Review Board, through the College of Doctoral Studies at (602) 639-7804.

This form explains the nature, demands, benefits and any risk of the project. By signing this form you agree knowingly to assume any risks involved. Remember, your participation is voluntary. You may choose not to participate or to withdraw your consent and discontinue participation at any time without penalty or loss of benefit. In signing this consent form, you are not waiving any legal claims, rights, or remedies. A copy of this consent form will be given (offered) to you.

Your signature below indicates that you consent to participate in the above study.

| _____ | _____ | _____ _Group A |
|---|---|---|
| Subject's Signature | Printed Name | Date |

## INVESTIGATOR'S STATEMENT

"I certify that I have explained to the above individual the nature and purpose, the potential benefits and possible risks associated with participation in this research study, have answered any questions that have been raised, and have witnessed the above signature. These elements of Informed Consent conform to the Assurance given by Grand Canyon University to the Office for Human Research Protections to protect the rights of human subjects. I have provided (offered) the subject/participant a copy of this signed consent document."

Signature of Investigator_____ Date_____

# Appendix E

## Confidentiality Statement

Grand Canyon University
College of Doctoral Studies
3300 W. Camelback Road
Phoenix, AZ 85017
Phone: 602-639-7804
Fax: 602-639-7820

(Persons assisting the researcher should complete this document.
If the study includes sensitive information, it must also be utilized by the researcher.)

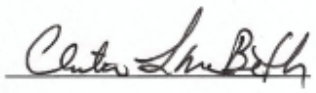
### CONFIDENTIALITY STATEMENT

CLEARING THE PATH: SERVANT LEADERSHIP AND ITS IMPACT ON CLASSROOM CLIMATE AND STUDENT PERFORMANCE

As a researcher working on the above research study at Grand Canyon University, I understand that I must maintain the confidentiality of all information concerning research participants. This information includes, but is not limited to, all identifying information and research data of participants and all information accruing from any direct or indirect contact I may have with said participants. In order to maintain confidentiality, I hereby agree to refrain from discussing or disclosing any information regarding research participants, including information described without identifying information, to any individual who is not part of the above research study or in need of the information for the expressed purposes on the research program.

Daniel F. Mulligan — October 30, 2013

Signature of Researcher — Printed Name — Date

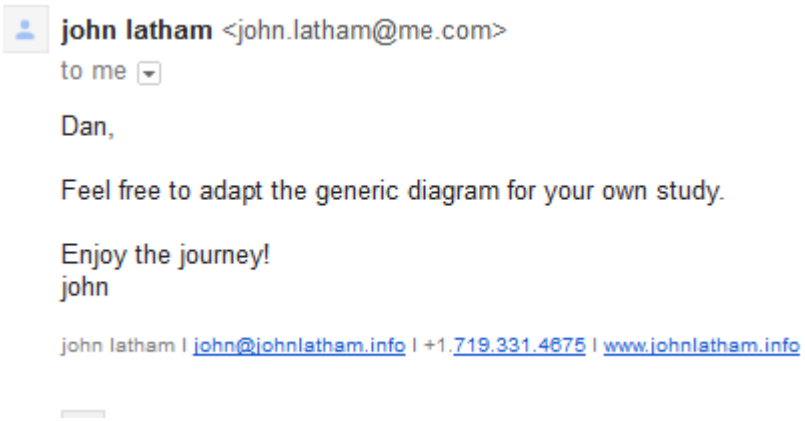


Clint McBeth — October 30, 2013

Signature of Witness — Printed Name — Date

# Appendix F

## Permission Email to Adapt the Conceptual Framework Model



**john latham** <john.latham@me.com>
to me

Dan,

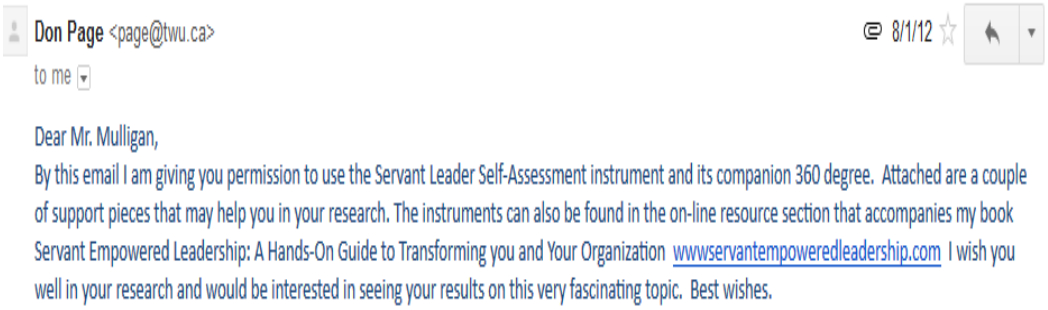
Feel free to adapt the generic diagram for your own study.

Enjoy the journey!
john

john latham I john@johnlatham.info I +1.719.331.4675 I www.johnlatham.info

# Appendix G

## Permission Email to Use the Servant Leadership Profile—Revised



Don Page <page@twu.ca> 8/1/12

to me

Dear Mr. Mulligan,

By this email I am giving you permission to use the Servant Leader Self-Assessment instrument and its companion 360 degree. Attached are a couple of support pieces that may help you in your research. The instruments can also be found in the on-line resource section that accompanies my book Servant Empowered Leadership: A Hands-On Guide to Transforming you and Your Organization wwwservantempoweredleadership.com I wish you well in your research and would be interested in seeing your results on this very fascinating topic. Best wishes.

## Appendix H

## Servant Leadership Profile—Revised (SLP-R)



Leadership matters a great deal in the success or failure of any organization. This instrument was designed to measure both positive and negative leadership characteristics.

Please use the following scale to indicate your agreement or disagreement with each of the statements in describing your own attitudes and practices as a leader. If you have not held any leadership position in an organization, then answer the questions as if you were in a position of authority and responsibility. There are no right or wrong answers. Simply rate each question in terms of what you really believe or normally do in leadership situations.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| **Strongly Disagree (SD)** | | | **Undecided** | | | **Strongly Agree (SA)** |

For example, if you strongly agree, you may circle 7, if you mildly disagree, you may circle 3. If you are undecided, circle 4, but use this category sparingly.

| # | Item | Scale | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | To inspire team spirit, I communicate enthusiasm and confidence | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2 | I listen actively and receptively to what others have to say, even when they disagree with me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3 | I practice plain talking—I mean what I say and say what I mean | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4 | I always keep my promises and commitments to others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| # | Item | Scale | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5 | I grant all my workers a fair amount of responsibility and latitude in carrying out their tasks. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6 | I am genuine and honest with people, even when such transparency is politically unwise. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7 | I am willing to accept other people's ideas, whenever they are better than mine. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8 | I promote tolerance, kindness, and honesty in the workplace. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9 | To be a leader, I should be front and center in every function in which I am involved. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10 | I create a climate of trust and openness to facilitate participation in decision making | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11 | My leadership effectiveness is improved through empowering others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 12 | I want to build trust and honesty and empathy | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13 | I am able to bring out the best in others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14 | I want to make sure that everyone follows orders without questioning my authority. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15 | As a leader, my name must be associated with every initiative. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16 | I consistently delegate responsibility to others and empower them to do their job. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17 | I seek to serve rather than be served. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18 | To be a strong leader, I need to have the power to do whatever I want without being questioned. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 19 | I am able to inspire others with my enthusiasm and confidence in what can be accomplished. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 20 | I am able to transform an ordinary group of individuals into a winning team. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| # | Item | Scale | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 21 | I try to remove all organizational barriers so that others can freely participate in decision-making. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 22 | I devote a lot of energy to promoting trust, mutual understanding and team spirit. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 23 | I derive a great deal of satisfaction in helping others succeed. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 24 | I have the moral courage to do the right thing, even when it hurts me politically. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 25 | I am able to rally people around me and inspire them to achieve a common goal. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 26 | I am able to present a vision that is readily and enthusiastically embraced by others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 27 | I invest considerable time and energy in helping others overcome their weaknesses and develop their potential. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 28 | I want to have the final say on everything, even areas where I don't have the competence. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 29 | I don't want to share power with others, because they may use it against me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 30 | I practice what I preach. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 31 | I am willing to risk mistakes by empowering others to “carry the ball.” | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 32 | I have the courage to assume full responsibility for my mistakes and acknowledge my own limitations. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 33 | I have the courage and determination to do what is right in spite of difficulty or opposition | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 34 | Whenever possible, I give credits to others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 35 | I am willing to share my power and authority with others in the decision making process. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 36 | I genuinely care about the welfare of people working with me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| # | Item | Scale | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 37 | I invest considerable time and energy equipping others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 38 | I make it a high priority to cultivate good relationships among group members. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 39 | I am always looking for hidden talents in my workers. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 40 | My leadership is based on a strong sense of mission. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 41 | I am able to articulate a clear sense of purpose and direction for my organization's future. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 42 | My leadership contributes to my employees/colleagues' personal growth. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 43 | I have a good understanding of what is happening inside the organization. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 44 | I set an example of placing group interests above self-interests | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 45 | I work for the best interests of others rather than self. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 46 | I consistently appreciate, recognize, and encourage the work of others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 47 | I always place team success above personal success. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 48 | I willingly share my power with others, but I do not abdicate my authority and responsibility. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 49 | I consistently appreciate and validate others for their contributions | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 50 | When I serve others, I do not expect any return. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 51 | I am willing to make personal sacrifices in serving others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 52 | I regularly celebrate special occasions and events to foster a group spirit. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 53 | I consistently encourage others to take initiative. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 54 | I am usually dissatisfied with the status quo and know how things can be improved. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 55 | I take proactive actions rather than waiting for events to happen to me. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| # | Item | Scale | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 56 | To be a strong leader, I need to keep all my subordinates under control. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 57 | I find enjoyment in serving others in whatever role or capacity | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 58 | I have a heart to serve others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 59 | I have great satisfaction in bringing out the best in others. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 60 | It is important that I am seen as superior to my subordinates in everything. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 61 | I often identify talented people and give them opportunities to grow and shine. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 62 | My ambition focuses on finding better ways of serving others and making them successful. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

# Appendix I

## Permission Email to Use the College and University Classroom Environment Inventory (CUCEI)

Daniel

You have my permission to use the CUCEI.

Good luck with your research

Barry Fraser

Dr. Barry J Fraser

FIAE FTSE FASSA FAAAS FAERA FACE

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## Appendix J

### College and University Classroom Environment Inventory (CUCEI) survey

**Group _____**

Directions:

The purpose of this questionnaire is to find out your opinion about the class you are attending right now. This form of the questionnaire assesses your opinion about what this class is actually like. Indicate your opinion about each question or statement by circling:

**SA** if you **STRONGLY AGREE:** that it describes what this class is actually like.

**A** if you **AGREE:** that it describes what this class is actually like.

**D** if you **DISAGREE:** that it describes what this class is actually like.

**SD** if you **STRONGLY DISAGREE:** that it describes what this class is actually like.

| | **Item** | **Indicate your opinion about each question or statement by circling one:** | | | |
|---|---|---|---|---|---|
| 1. | The instructor considers students' feelings. | SA | A | D | SD |
| 2. | The instructor talks rather than listens. | SA | A | D | SD |
| 3. | The class is made up of individuals who don't know each other well. | SA | A | D | SD |
| 4. | The students look forward to coming to classes. | SA | A | D | SD |
| 5. | Students know exactly what has to be done in our class | SA | A | D | SD |
| 6. | New ideas are seldom tried out in this class. | SA | A | D | SD |
| 7. | All students in the class are expected to do the same work, in the same way in the same time. | SA | A | D | SD |
| 8. | The instructor talks individually with students | SA | A | D | SD |
| 9. | Students put effort into what they do in classes. | SA | A | D | SD |

| Item | Indicate your opinion about each question or statement by circling one: | | | |
|---|---|---|---|---|
| 10. Each student knows the other members of the class by their first names. | SA | A | D | SD |
| 11. Students are dissatisfied with what is done in the class. | SA | A | D | SD |
| 12. Getting a certain amount of work done is important in this class | SA | A | D | SD |
| 13. New and different ways of teaching are seldom used in this class. | SA | A | D | SD |
| 14. Students are generally allowed to work at their own pace. | SA | A | D | SD |
| 15. The instructor goes out of his/her way to help students. | SA | A | D | SD |
| 16. Students “clock watch” in this class. | SA | A | D | SD |
| 17. Friendships are made among students in this class. | SA | A | D | SD |
| 18. After the class, the students have a sense of satisfaction. | SA | A | D | SD |
| 19. The group often gets sidetracked instead of sticking to the point. | SA | A | D | SD |
| 20. The instructor thinks of innovative activities for students to do. | SA | A | D | SD |
| 21. Students have a say in how class time is spent. | SA | A | D | SD |
| 22. The instructor helps each student who is having trouble with the work. | SA | A | D | SD |
| 23. Students in this class the attention to what others are saying. | SA | A | D | SD |
| 24. Students don't have much chance to get to know each other in this class. | SA | A | D | SD |
| 25. Classes are a waste of time. | SA | A | D | SD |
| 26. This is a disorganized class. | SA | A | D | SD |
| 27. Teaching approaches in this class are characterized by innovation and variety. | SA | A | D | SD |
| 28. Students are allowed to choose activities and how they will work. | SA | A | D | SD |
| 29. The instructor seldom moves around the classroom to talk with students. | SA | A | D | SD |
| 30. Students seldom present their work to the class area. | SA | A | D | SD |

| | Item | Indicate your opinion about each question or statement by circling one: | | | |
|---|---|---|---|---|---|
| 31. | it takes a long time to get to know everybody by his/her first name in this class. | SA | A | D | SD |
| 32. | Classes are boring. | SA | A | D | SD |
| 33. | Class assignments are clear so everyone knows what to do. | SA | A | D | SD |
| 34. | The seating in this class is arranged in the same way each week. | SA | A | D | SD |
| 35. | Teaching approaches allow students to proceed at their own pace | SA | A | D | SD |
| 36. | The instructor isn't interested in students' problems | SA | A | D | SD |
| 37. | There are opportunities for students to express their opinions in this class | SA | A | D | SD |
| 38. | Students in this class get to know each other well. | SA | A | D | SD |
| 39. | Students enjoy going to this class. | SA | A | D | SD |
| 40. | This class seldom start on time. | SA | A | D | SD |
| 41. | The instructor often thinks of unusual class activities | SA | A | D | SD |
| 42. | There is little opportunity for a student to pursue his/her particular interest in this class. | SA | A | D | SD |
| 43. | The instructor is unfriendly and inconsiderate towards students. | SA | A | D | SD |
| 44. | The instructor dominates class discussions. | SA | A | D | SD |
| 45. | Students in this class aren't very interested in getting to know other students. | SA | A | D | SD |
| 46. | Classes are interesting. | SA | A | D | SD |
| 47. | Activities in this class are clearly and carefully planned. | SA | A | D | SD |
| 48. | Students seem to do the same type of activities every class. | SA | A | D | SD |
| 49. | It is the instructor who decides what will be done in our class. | SA | A | D | SD |

# Appendix K

## GCU IRB Approval Letter

GRAND CANYON UNIVERSITY™

3300 West Camelback Road, Phoenix Arizona 85017 602.639.7500 Toll Free 800.800.9776 www.gcu.edu

DATE: November 22, 2013

TO: Daniel Mulligan, M.A.
FROM: Grand Canyon University Institutional Review Board

STUDY TITLE: [510134-1] Servant Leadership and its Impact on Classroom Climate and Student Performance
IRB REFERENCE #:
SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE:

REVIEW CATEGORY: Exemption category # *[7.1]*

Thank you for your submission of New Project materials for this research study. Grand Canyon University Institutional Review Board has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will put a copy of this correspondence on file in our office.

If you have any questions, please contact Stephanie Henkel at 602-639-8010 or stephanie.henkel@gcu.edu. Please include your study title and reference number in all correspondence with this office.

cc:

# Appendix L

## Power Analyses

Table 11

*A Priori Power Analysis to Determine Sample Size*

| Input Parameters: | Output Parameters: |
|---|---|
| Tails = 1 | Noncentrality parameter = 3.36 |
| Effect size (d) = .5 | critical *t* = 1.69 |
| α err prob. = .05 | $D_f$ = 32 |
| Power = .95 | Total Sample Size = 34 |

A Compromise Power Analysis with a hypothetical sample size of 15 revealed parameters as noted.

Table 12

*Compromise Power Analysis*

| Input Parameters | Output Parameters |
|---|---|
| Effect size = .5 | Noncentrality parameter = 1.94 |
| Q = beta/alpha ratio = 1 | Critical *t* = .98 |
| Sample size = 15 | $D_f$ = 14 |
| | error probability = .17 |
| | Power (1 .17 error) = .83 |

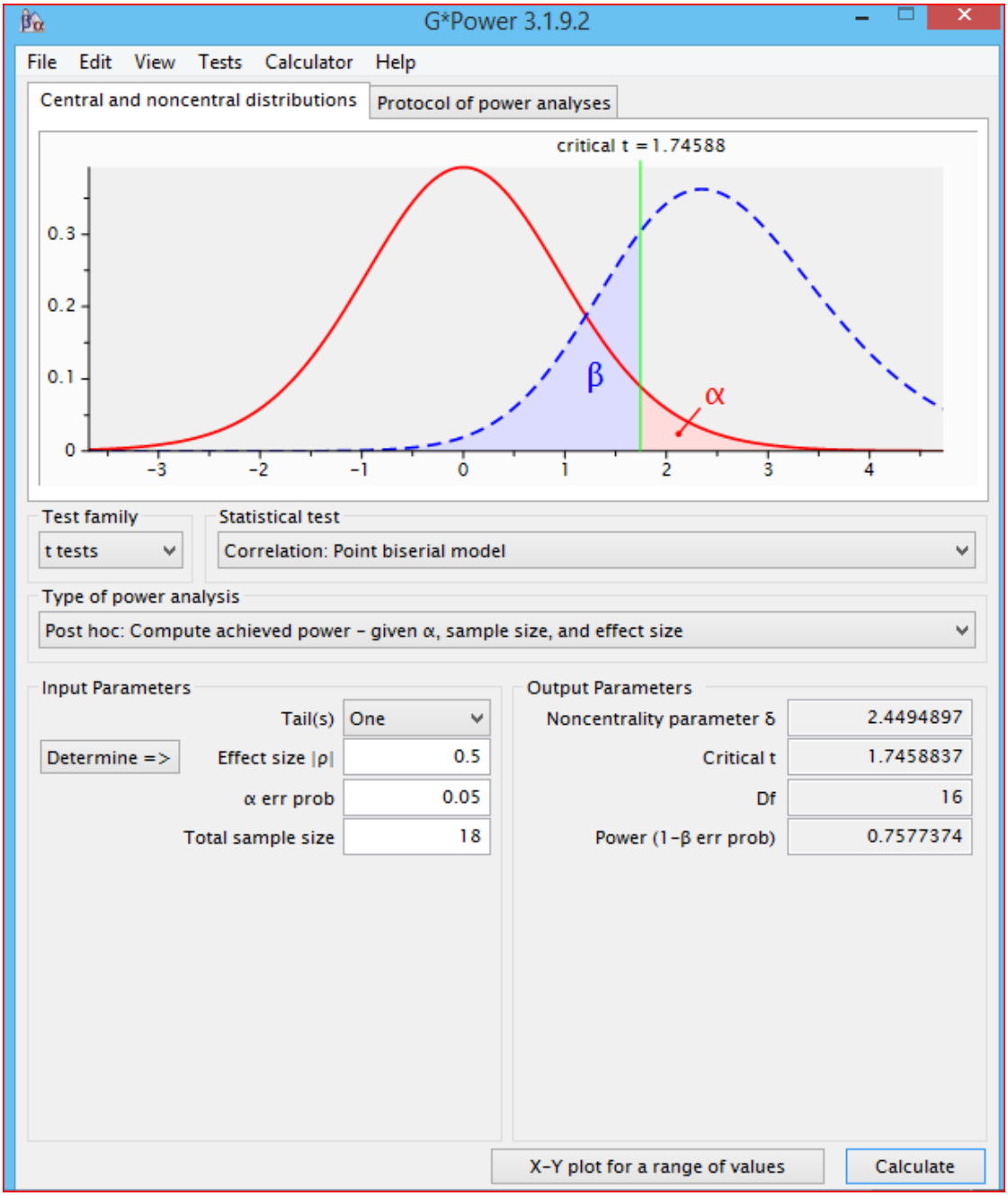


*Figure 18*. Post hoc power analysis for correlation using G power software

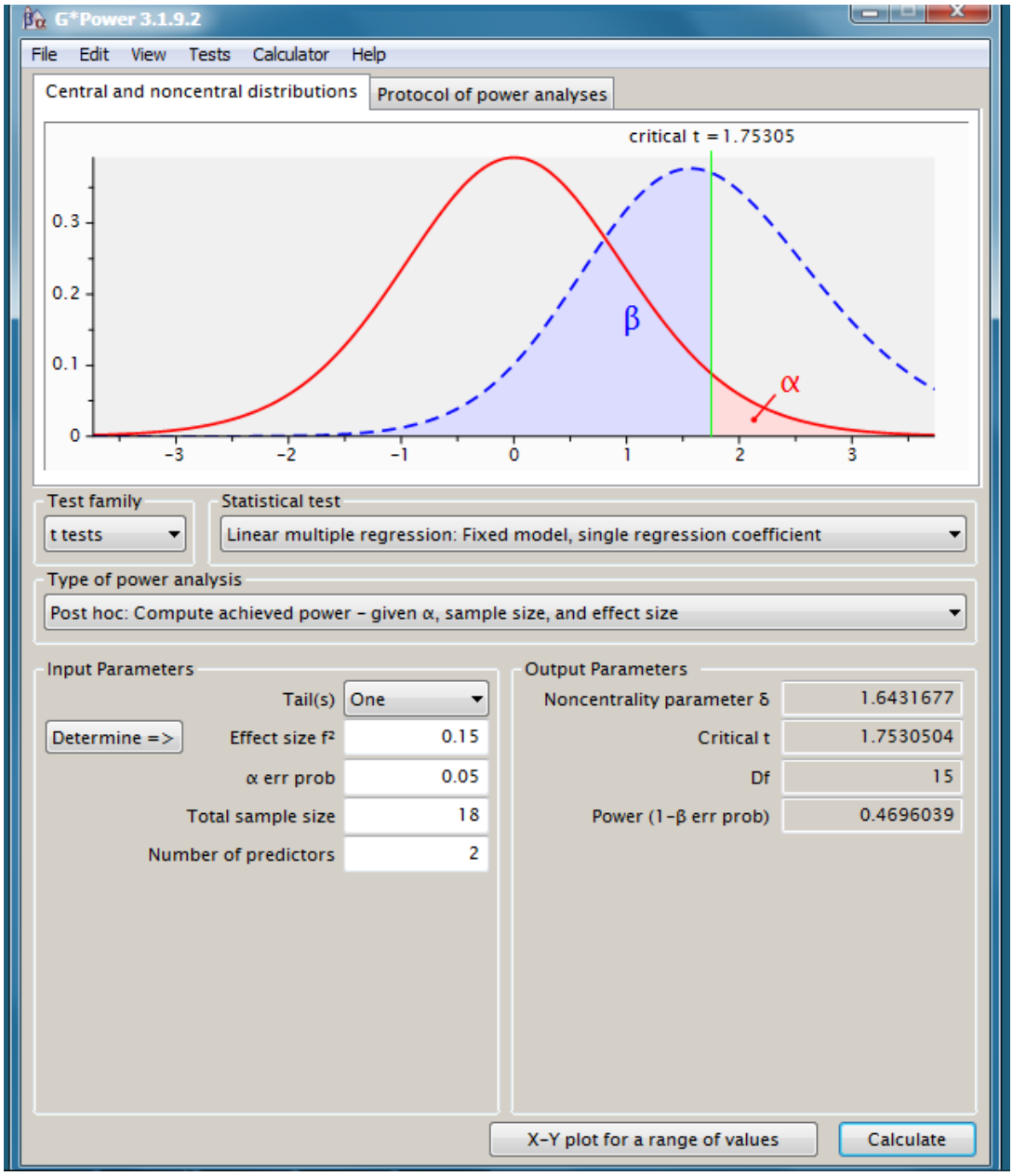


Figure 19. Post-hoc power analysis for linear multiple regression using G power software