THE RELATIONSHIPS AMONG PRINCIPAL LEADERSHIP, SCHOOL CULTURE, AND STUDENT ACHIEVEMENT IN MISSOURI MIDDLE SCHOOLS

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ABSTRACT

The purpose of this study was to analyze the relative impact of transformational leadership and school culture on student achievement. The population of this study consisted of 79 middle schools, defined in this study as schools with a grade configuration of 6 through 8, within the state of Missouri. Quantitative data were collected from two instruments, the Principal Leadership Questionnaire (Jantzi & Leithwood, 1996) and the School Culture Survey (Gruenert, 1998), and analyzed to determine if (a) any zero-order or partial correlations existed among the factors of transformational leadership, school culture, and student achievement; (b) if any predictive linear relationships existed between transformational leadership and school culture; (c) if any predictive linear relationships existed between school culture and student achievement; and, (d) if any predictive linear relationships existed between transformational leadership and school culture in combination and student achievement.

The study found, when controlling for socioeconomic status using the percent of students eligible for free and reduced lunch as the proxy measure, transformational leadership and school culture correlated to student achievement. Using regression analysis, the transformational leadership factors of "Modeling," "Goal Acceptance," and "Individualized Support" were identified as predictors of the school culture factor of

“Collaborative Leadership.” The transformational leadership factor “Goal Acceptance” and school enrollment were predictors of the school culture factor of “Teacher Collaboration.” The transformational leadership factors “Modeling,” “Goal Acceptance,” and “Intellectual Stimulation” were predictors of the school culture factor of “Professional Development.” The transformational leadership factor “Intellectual Stimulation” and school enrollment were predictors of the school culture factor of “Unity of Purpose.” The transformational leadership factor “Goal Acceptance” was a predictor of the school culture factor of “Collegial Support.” The transformational leadership factor “Intellectual Stimulation” and the percent of students eligible for free and reduced lunch were predictors of the school culture factor of “Learning Partnership.” The school culture factor of “Learning Partnership” and the percent of students eligible for free and reduced lunch were predictors of communication arts achievement.

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CHAPTER 1

BACKGROUND OF THE STUDY

Introduction

The citizens of the United States have an obligation to provide a high quality education for the children of this country. This obligation, however, is not being met for every child. The federal government responded to public pressure to improve the educational system in the United States by passing the No Child Left Behind Act (NCLB) in 2001 (Gruenert, 2005). This law places accountability standards on every public school in the United States which receives federal monies (Gruenert, 2005).

The goal of NCLB is for 100% of children to be proficient in communication arts and mathematics by the year 2014 (United States Department of Education (USDOE), 2007). States determine the assessment to be used to measure proficiency, the standards for proficiency, and the yearly percentage benchmarks, referred to as Adequate Yearly Progress (AYP) (USDOE, 2007). Students must score at or above the state-determined proficiency level as the year 2014 approaches. AYP is met only if the entire group of tested students and each subgroup of tested students meet the established incremental standard in communication arts and mathematics for the school year. NCLB is designed to raise standards for all students including students of non-white ethnicity, low socio-economic standing, special education status, and migrant and second language students (USDOE, 2007). A school is identified as "in need of improvement" if the overall percent of tested students in the school or any subgroup of tested students fail to meet the AYP benchmarks (USDOE, 2007).

The State of Missouri uses the Missouri Assessment Program (MAP) to comply with NCLB testing mandates. Missouri had 2,061 schools that participated in MAP testing during the 2005-2006 school year. Of those schools, 603 did not meet the Missouri AYP requirements of NCLB, a failure rate of 29.3% (personal communication, February 9, 2007). There were 202 middle schools in the state of Missouri during the 2005-2006 school year. Of the 202 middle schools, 100 failed to meet AYP, a failure rate of 49.5% (personal communication, December 11, 2007). These rates did not improve during the 2006-2007 school year. Of the 2,100 schools participating in MAP testing in 2006-2007, 975 failed to meet AYP, resulting in a failure rate of 46.4% (personal communication, November 6, 2007). Of the 2,100 schools in Missouri during the 2006-2007 school year there were 186 identified as middle schools. Out of the 186 middle schools, 144 failed to meet AYP, a failure rate of 77.4% (personal communication, December 11, 2007).

School improvement requires changes in existing practice. Policy makers have determined that one way to create educational change is to improve school leaders (Hallinger, 1992; Leithwood, Day, Sammons, Hopkins, and Harris, 2006). Under normal circumstances a leader influences the direction of a school (Maher, Lucas, & Valentine, 2001). Leaders take on even greater importance during times of change (Leithwood, 1994). The general concept of leadership, however, is not easily defined (Leithwood & Duke, 1999; Yukl, 2006), but three common threads are found at least in part in most definitions of leadership. The first thread represents leaders' efforts to improve the organization (Leithwood et al., 2006). The second thread addresses the notion that leaders must set the direction for the organization so it can be improved (Jacobs & Jaques, 1990;

Leithwood, Jantzi, & Steinbach, 1999; Leithwood et al., 2006; Yukl, 2006). The final thread common to leadership definitions is the importance of influence (Jantzi & Leithwood, 1996; Leithwood & Duke, 1999; Leithwood & Jantzi, 1999a; Leithwood et al., 2006; Rauch & Behling, 1984; Yukl, 2006). Yukl (2006) incorporates each of these threads by defining leadership as "the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives" (p. 8). Regardless of how leadership is defined, it plays a critical role in organizational success (Ogawa & Bossert, 1995). Schools are no exception to this rule (Day, Harris, & Hadfield, 2001; Fullan, 2002; Hallinger, Bickman, & Davis, 1996; Hallinger & Heck, 1998; Hallinger & Heck, 1999). The debate becomes what specific form of leadership is best suited to bring about change to the educational environment. Many scholars (Barnett & McCormick, 2004; Bass, 1990; Brown, 1993; Leithwood & Jantzi, 2005) agree that transformational leadership will help schools change.

The theory of transformational leadership was first proposed by James McGregor Burns in 1978 in his seminal work entitled *Leadership* (Burns, 1978). Bernard Bass extended Burns' initial introduction of transformational leadership (Liontos, 1992). Burns and Bass studied transformational leadership in relation to political and business leaders and army officers (Bass, 1990; Burns, 1978; Liontos, 1992). Leithwood and his colleagues extended the study of transformational leadership into the field of education (Stewart, 2006). Leithwood and his colleagues created the most complete model of school transformational leadership (Leithwood & Duke, 1999). A collaborative effort by Leithwood and others to define transformational leadership eventually evolved into an

interpretation which includes three categories and nine practices of transformational leadership (Leithwood & Jantzi, 2005). The first category, setting direction, is evident in a leader's ability to demonstrate competencies in the three practices of building a vision, developing specific goals and priorities, and conveying high performance expectations (Jantzi & Leithwood, 1996; Leithwood, 1994; Leithwood, Jantzi, & Steinbach, 1998; Leithwood et al., 1999; Leithwood & Jantzi, 2005; Leithwood & Jantzi, 2006; Leithwood et al., 2006). The second category, developing people, includes the three practices of providing intellectual stimulation, offering individualized support, and modeling desirable professional practices and values (Jantzi & Leithwood, 1996; Leithwood, 1994; Leithwood et al., 1998; Leithwood et al., 1999; Leithwood & Jantzi, 2005; Leithwood & Jantzi, 2006; Leithwood et al., 2006). The final category created by Leithwood and his colleagues is redesigning the organization. It includes the three practices of developing a collaborative school culture, creating structures which foster participation in school decisions, and creating productive community relationships (Leithwood, 1994; Leithwood et al., 1998; Leithwood et al., 1999; Leithwood & Jantzi, 2005; Leithwood & Jantzi, 2006; Leithwood et al., 2006). Developing a collaborative school culture is of particular importance because of the weight given by scholars to the significance of culture in schools (Cavanaugh & Dellar, 1998; Huber & West, 2002; Kilman, Saxton, & Serpa, 1986; Peterson & Deal, 2002; Pritchard, Marrow, & Marshall, 2005).

Culture, just like leadership, is a difficult term to define and is described in a variety of ways (Deal & Peterson, 1999; Gruenert, 2000; Gruenert, 2005). Schein's (1992) definition of culture consists of three levels: artifacts, espoused values, and basic assumptions. Each level is based upon how visible it is to observers, much like Peterson

and Deal's definition of culture (Schein, 1992). The lowest level of culture, artifacts, is easily visible while the highest level, basic assumptions, is difficult to recognize by those inside and outside the organization (Schein, 1992). Artifacts are things a person sees, hears, and feels. The second level of culture according to Schein (1992) is espoused values. These are the vital values of the organization that have been established and discussed as being critical to the organization's past and present success (Schein, 1992). Basic assumptions make up the highest level of culture (Schein, 1992). Basic assumptions are the actions which are taken for granted and usually not confronted or debated within the organization (Schein, 1992). If this highest level of the culture is altered, anxiety occurs and must be addressed if a change is to become permanent (Schein, 1992). Bolman and Deal (2003) define culture as having two aspects; product and process. Culture is a product because it has been produced by those previously in the organization (Bolman & Deal, 2003). Culture is a process because it is being renewed and recreated as new members enter the culture and make the old ways their own (Bolman & Deal, 2003). Deal and Kennedy (1982) keep their definition of culture very succinct. Culture is "the way we do things around here" (Deal and Kennedy, 1982, p. 4). Deal and Peterson (1999) explain that culture is shaped by the beliefs and actions of organizational members. Fullan and Hargreaves (1996) describe the culture of a school as the guiding beliefs, assumptions, and expectations evident in the way a school operates. No matter how culture is defined, it has been linked with school success (Leithwood et al., 1999; Sagor, 1992; Saphier & King, 1985).

The impact of NCLB is being felt throughout the country as school districts work to meet AYP. Research is needed to identify leadership competencies that influence school culture, which in turn may impact high achievement for all students.

Statement of the Problem

Throughout the United States, school districts face the challenge of continually raising achievement for all students and, more specifically, some particular groups of students. Accountability standards within NCLB require that the overall percentage of tested students and each subgroup of tested students reach progressively higher AYP targets each school year (USDOE, 2007).

School leaders have become the focus of policy makers with the expectations that quality leadership will foster increased achievement for all students (Hallinger, 1992; Leithwood et al., 2006). Research persistently implies that leadership impacts student success in school (Andrews & Soder, 1987; Hallinger & Heck, 1996; Hallinger et al., 1996; Leithwood et al., 2006; Waters, Marzano, & McNulty, 2003). Culture has also been linked theoretically and empirically to student success (Leithwood et al., 1999; Sagor, 1992; Saphier & King, 1985). Barnett and McCormick (2004), Leithwood et al. (2006), and Ogawa and Bossert (1995) all concur that leaders influence the culture of a school. Through strong, positive, collaborative school culture, student achievement can be increased (Cavanaugh & Dellar, 1998; Leithwood et al., 2006; Muijs, Harris, Chapman, Stoll, & Russ, 2004; Stolp, 1994; Waters et al., 2003). NCLB results in Missouri indicate clearly that all students are not attaining academic expectations, so it is essential that action be taken in the educational community to address this issue of NCLB goals not being met.

School leadership and school culture have been found to impact student achievement (Andrews & Soder, 1987; Barnett & McCormick, 2004; Hallinger & Heck, 1996; Hallinger et al., 1996; Le Clear, 2005; Leithwood et al., 2006; Lucas, 2001; Lucas & Valentine, 2002; Miles, 2002; Schooley, 2005; Scope, 2006; Waters et al., 2003). An understanding of the specific influence of the various aspects of transformational leadership and school culture will provide deeper insight about the degree of impact these two broad concepts have on student achievement.

Purpose of the Study

The purpose of this study was to analyze the relative impact of transformational leadership and school culture on student achievement. Findings from this study provide insight about transformational leadership and school culture factors that influenced student achievement.

NCLB has created greater accountability in schools to do everything possible to ensure student success (Gruenert, 2005). The following study helped improve the educational situation of students for a number of reasons. First, future leaders will develop a better understanding of the leadership competencies that influence a school's culture and foster higher student achievement. In addition, if the relationship between transformational leadership and student achievement is verified, human resource personnel will seek candidates with transformational leadership competencies who can enhance student achievement. Finally, if a clear connection can be made between the characteristics of transformational leaders and the dimensions of positive school culture needed for student achievement, then these aspects can be nurtured by leaders in schools across the United States. Schools leaders will be able to use these insights to support

school improvement initiatives that refine leader perception and influence student achievement.

Research Questions

In this study the variables measuring transformational leadership were the six factors from the Principal Leadership Questionnaire (PLQ), developed by Jantzi and Leithwood (1996). The factors used to measure school culture are the six factors from the School Culture Survey (SCS), developed by Gruenert (1998). Achievement, as measured in this study, represented the percent of students achieving at the proficient and advanced levels of the MAP state-wide assessment for grade 8 in communication arts. Grade 8 achievement was selected because it represents the comprehensive, exit measurement of student achievement available for all middle schools with grade configurations of 6 through 8.

The following research questions were examined in this study:

1. Are there significant relationships between transformational leadership, school culture, and student achievement in communication arts in Missouri middle schools?
2. Does transformational leadership influence school culture in Missouri middle schools?
3. Does school culture influence student achievement in communication arts in Missouri middle schools?
4. Do transformational leadership and school culture combine to influence student achievement in communication arts in Missouri middle schools?

Limitations

The following limitations, which focus on methodological issues, apply to this study (Heppner & Heppner, 2004).

1. The findings of the study were limited by the validity and reliability of the instruments.
2. The findings of the study were limited by the accuracy and perception of the participants. It is assumed the teachers responded honestly and interpreted the instrument as intended.
3. The findings of the study were subject to the limitations of survey data collection methods.
4. The findings of this study were based on Likert-type questions which do not allow participants to construct their own responses or allow the researcher to probe for additional insight.

Delimitations

The following delimitations, which focus on study parameters, apply to this study (Heppner & Heppner, 2004).

1. Only schools with a grade configuration of 6 through 8 were included in the study.
2. Only schools with a survey response rate of 50% or higher were included in the study.

Definitions

The terms necessary to understand this study are defined below.

Collaborative Leadership: The degree to which the principal establishes and maintains collaborative relationships with school staff. The principal values teachers' ideas, seeks input, engages staff in decision-making, and trusts the professional judgment of the staff. The principal supports and rewards risk-taking and innovative ideas designed to improve education for the students. The principal reinforces the sharing of ideas and effective practices among all staff (Gruenert, 1998).

Collegial Support: The degree to which teachers work together effectively. Teachers trust each other, value each other's ideas, and assist each other as they work to accomplish the tasks of the school organization (Gruenert, 1998).

Culture: The guiding beliefs, assumptions, and expectations evident in the way a school operates (Fullan & Hargreaves, 1996).

Goal Acceptance: The degree to which the principal promotes cooperation among organizational members and assists them in working together toward common goals (Jantzi & Leithwood, 1996).

High Performance Expectations: The degree to which the principal establishes expectations for excellence, quality, and high performance on the part of the organization's members (Jantzi & Leithwood, 1996).

Individualized Support: The degree to which the principal demonstrates respect for organizational members and concern about their personal feelings and needs (Jantzi & Leithwood, 1996).

Intellectual Stimulation: The degree to which the principal challenges organizational members to reexamine some of the assumptions about their work and rethink how it can be performed (Jantzi & Leithwood, 1996).

Learning Partnership: The degree to which teachers, parents, and students work together for the common good of the student. Parents and teachers share common expectations and communicate frequently about student performance. Parents trust teachers and students generally accept responsibility for their schooling (Gruenert, 1998).

Modeling: The degree to which the principal sets an example for the organizational members to follow consistent with the values the principal espouses (Jantzi & Leithwood, 1996).

Professional Development: The degree to which teachers value continuous personal development and school-wide improvement. Teachers seek ideas from seminars, colleagues, organizations, and other professional sources to maintain current knowledge, particularly current knowledge about instructional practices (Gruenert, 1998).

Teacher Collaboration: The degree to which teachers engage in constructive dialogue that furthers the educational vision of the school. Teachers across the school plan together, observe and discuss teaching practices, evaluate programs, and develop an awareness of the practices and programs of other teachers (Gruenert, 1998).

Transformational Leadership: Leadership that moves individuals toward a level of commitment to achieve school goals by identifying and articulating a school vision, fostering the acceptance of group goals, providing individualized support, providing intellectual stimulation, providing an appropriate model , and having high performance expectations (Jantzi & Leithwood, 1996).

Unity of Purpose: The degree to which teachers work toward a common mission for the school. Teachers understand, support, and perform in accordance with that mission (Gruenert, 1998).

Vision Identification: The degree to which the principal identifies new opportunities for the organization and develops, articulates, and inspires others with a vision of the future (Jantzi & Leithwood, 1996).

Outline of the Study

This chapter contains the overview of the study, including a brief introduction to the topic, the statement of the problem, the purpose of the study, the research questions, the limitations and delimitations of the study, and definitions. Chapter 2 is a review of literature related to school change, leadership, transformational leadership, and school culture. Chapter 3 provides details about the design of the study, including information about the participants, instrumentation, data collection procedures, and statistical analyses. The results of the statistical analyses are presented in Chapter 4. The discussion, implications, and conclusions about the findings are presented in Chapter 5.

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

Introduction

More than 53.6 million students are enrolled in approximately 94,000 kindergarten through 12th grade schools in the United States (Marzano, Waters, & McNulty, 2005). Public schools historically have been considered the great equalizer in American society (Henig, Hula, Orr, & Pedescleaux, 1999); however, American schools have been viewed recently as in need of serious reform efforts (Henig et al., 1999). The quality of schooling for all students has not been adequate to prepare students for the future, including working in a global economy (Murphy & Hallinger, 1992). Current students are growing up in a global, internationally competitive economy (Brown, 1993) and schools must change so American students can succeed and prosper in this environment (Lucas & Valentine, 2002; Mitchell & Tucker, 1992). Policy makers, in particular, are making the link between effective schools and the ability of the national economy to compete in a global marketplace (Leithwood, Jantzi, & Steinbach, 2002). If schools are not improved, the nation will pay a high price economically and socially (Parish & Aquila, 1996).

Policy makers, as well as educators, are concerned about schooling in America (Lam, 2002). Educational stakeholders including teachers, administrators, students, parents, and community members are now paying more attention than ever to improving schools (Peterson & Deal, 2002). A primary focus of these individuals, especially policy makers, is on school leadership. School leaders are in positions seen as pivotal to

educational reform (Hallinger, 1992; Leithwood, Day, Sammons, Hopkins, & Harris, 2006). The principal is a linchpin in educational change because policies are easily written which direct the school reform actions of the principal (Barnett & McCormick, 2004; Hallinger & Heck, 1996). These policy makers are correct to initiate the school improvement process with school leaders. Scholars as far back as Edmonds (1979) made the connection between effective schooling and strong leadership; however, the principal cannot accomplish school reform alone (á Campo, 1993). This is partly because it is not possible for one person to totally "run" a school; reform takes all organizational members, not just those at the top, working to improve the education for all students (á Campo, 1993; Maher, Lucas, & Valentine, 2001). Even with the entire school working toward the goals of school reform, improving a school is a complex task with no precise step-by-step plan to follow which will accomplish reform objectives (Fullan, 2002; Kilman, Saxton, & Serpa, 1986).

Reform efforts being pushed forward by policy makers have the central goal of improving the education of all students in school. This, according to Cavanaugh and Dellar (1998) and Danielson (2002), is the primary mission of the educational system. Policy makers, especially at the federal level, are now taking this notion of academic success for all students to a new level of accountability through the 2001 No Child Left Behind (NCLB) Act (Gruenert, 2005). NCLB makes schools accountable for student academic success through state-wide testing (Gruenert, 2005). Not all in the education field are pleased with this aspect and other stipulations of NCLB; however, Grogan (2004) described the policies within NCLB which require all sub-groups of tested students to perform at a proficient level academically as a positive for the educational

system. She explains that not taking action to improve the education of all students when evidence exists that students are not receiving a high quality education is simply "wrong" (Grogan, 2004). This statement by Grogan is strong encouragement that leaders need to be more concerned with not only improving overall academic achievement in their school, but also with the academic success for every student within the school (Fullan, 2002). As Edmonds (1979) stated, all students are educable and there has never been a time in the United States where schools did not have all of the knowledge they needed to make changes to improve the educational system for all students. The key issue today is how to incorporate that knowledge into the mainstream of educational change so all students can be successful.

Change

Schools have changed little even though they have been the target of many reform movements (Parish & Aquila, 1996). There are still schools where most teachers work autonomously to educate students (Gruenert, 2005). There have been many reform movements but until recently these reforms have been aimed solely at schools on the periphery (Hallinger, 1992). Deal (1990) stated almost every conceivable action had been taken to improve schools. That statement was made almost 20 years ago, and today new and powerful conceptions for school reform continue to be advanced by practitioners and researchers. Reform efforts have not always been positive; in fact, some have produced negative effects in schools (Deal, 1990). The 1990s were precarious times for public education (Kernan-Schloss & Plattner, 1998), and with the passage of NCLB in 2001 schools find themselves in another uncertain and unstable educational environment.

NCLB mandates have influenced school change across the nation, but many schools, even without NCLB, were initiating their own reform efforts to improve the education for their students (Davis, 2003). One reason for self-initiated school reform programs is the uncertainty educators will face in the 21st century American economy. Schools are reevaluating their role in society due to this ambiguous environment (Leithwood, 1994). These changes in society have created not only a need for new organizational thinking, but also new approaches to leadership (Brown, 1993). Leaders must focus on change because the coming era will be dominated by this trend (Leithwood, 1994).

Leaders must acknowledge change as a slow process which takes careful planning and patient execution to accomplish successfully (Davis, 2003). Often in education, change has been unsuccessful because too many programs aimed at comprehensive school reform have been implemented simultaneously (Silins, Mulford, & Zarins, 2002). A few coherent change programs initiated and carried out effectively are far more powerful than many divergent programs which are poorly carried out (Fullan, 2002; Hallinger & Heck, 1999; Henig et al., 1999). Change fails not just as a result of the number of programs but also because of the specific actions taken by the leaders and followers within the organization. Leaders often rush into the change process without a plan, and more importantly without a vision or strategy to accomplish school reform (Davis, 2003). Change also fails because leaders do not build coalitions of followers who support the process. Building coalitions is challenging because many followers are satisfied with the current conditions and do not see a need for change (Davis, 2003). These issues have a detrimental effect on reform processes and can ruin a program before

it has a chance to succeed. A principal must create a plan of action which deals with both internal and external pressures for change (Davis, 2003). Successful school change cannot occur without the principal playing a crucial role (Day, 2000). Studies of leadership continually document that the school leader is a critical element in the successful completion of a change initiative (Leithwood et al., 2006).

School leaders direct the course of the school under typical circumstances (Maher et al., 2001) but play a much more prominent role when change occurs (Leithwood, 1994). A number of scholars (Barnett & McCormick, 2004; Bass, 1990; Brown, 1993; Leithwood & Jantzi, 2005) all point to the need for leaders in schools undergoing change to embody the characteristics of a transformational leader. Bass (1990), as well as Leithwood and Jantzi (2005), stress the need for transformational leadership. The characteristics of this type of leader are appropriate when schools are faced with turbulence brought about by uncertainties in the environment (Bass, 1990; Leithwood & Jantzi, 2005). Hay (2006) explains that a transformational leader during times of organizational change must implement four things. First, the principal must make a compelling case for why change is needed in the organization. Without this action, the faculty will not be committed to the change and open to altering their current practices. Second, a principal must inspire a shared vision. This helps the faculty, once they are successfully committed to change their practices, to set a shared course of action. The change process can move forward when the leader's and teachers' purposes become the same (Brown, 1993). Third, the principal needs to keep the sense of urgency for change at the forefront. Without urgency, the change initiative is likely to falter. Finally, to make the change successful, it must become embedded in the culture of the school. Only after

this stage can the change truly become rooted in "the way we do things around here" (Deal & Kennedy, 1982, p. 4). Fostering change may seem like an easy process, but as Yukl (2006) states, implementing change is one of the most difficult of all leadership responsibilities. One problem with school change is the frequency with which reform movements have been initiated and not completed. The leader must carry out a plan so people in the school are assured the change will be successful (Schlechty, 2000). If teachers believe the change will occur then they will be allies with the principal. If teachers are opposed to the change then they can successfully block its completion (Parish & Aquila, 1996).

Principals play a central role in school change and they directly influence school culture, which affects the change process (Marks & Printy, 2003). One way principals affect culture is through their communication with stakeholders. This communication can be both formal and informal (Norris, 1994). Communicating with stakeholders gives the stakeholders the knowledge necessary to become aware of, and committed to, the need for change (Brown, 1993). Effective communication allows the principal to build a sense of teamwork so change can be successful (Mitchell & Tucker, 1992).

Leaders must admit during the change process that the school is imperfect (Saphier & King, 1985). Imperfection can be overcome in a culture which understands and embraces change (Saphier & King, 1985). An altered culture which embraces change will affect the whole school as both the principal and the teachers become part of the change process (Purkey & Smith, 1982). Altering a school's culture takes between 3-5 years for the school to become a place where nearly everyone willingly embraces change (Fiore, 2004). The time it takes to build this strong school culture is worth the time and

effort because a solid foundation for continued improvement is built (Hopkins, Ainscow, & West, 1994; Leithwood et al., 2006).

Numerous scholars have confirmed over the years that school culture is a key factor in successful school change (Cavanaugh & Dellar, 1998; Deal & Peterson, 1999; Hopkins et al., 1994; Lucas and Valentine, 2002; Norris, 1994; Purkey & Smith, 1982). An old school culture has a tendency to reappear when changes threaten to permanently alter the school (Parish & Aquila, 1996). Cuban (1988) describes the type of change which fundamentally alters the culture of the school as a second-order change. A principal must understand that major structural changes to a school, including changing its culture, will be a difficult task because of resistance (Cuban, 1988). A change to school culture may be difficult to implement because it is a second-order change but the successful implementation of cultural change will support other significant school improvement initiatives (Cuban, 1988; Gruenert, 2000).

Leadership

The concept and definition of leadership has been a topic of debate among scholars for many years. Simple concepts are easily defined but complex concepts such as leadership must be defined more vaguely (Leithwood & Duke, 1999). Defining leadership is difficult because it involves a multitude of follower interactions which take place in many different types of organizations and environments (Leithwood & Duke, 1999; Stewart, 2006). Yukl (2006) states that the concept of leadership has fostered many definitions, with no one definition becoming universal because the concept of leadership is so arbitrary and subjective.

Though leadership is difficult to define, three major areas common to most definitions have been identified. The first is that leadership is based on organizational improvement (Leithwood et al., 2006; Marzano et al., 2005). Leaders are people within an organization attempting to improve the organization in some way. Another commonality in leadership definitions is about direction-setting within the organization (Jacobs & Jaques, 1990; Leithwood, Jantzi, & Steinbach, 1999; Leithwood et al., 2006; Yukl, 2006). Direction-setting is linked to organizational improvement because for leaders to improve an organization they must have a direction toward which they are taking the organization. Without this direction, organizational improvement is not likely to occur. The final commonality to leadership definitions is the importance of leader influence (Jantzi & Leithwood, 1996; Leithwood & Duke, 1999; Leithwood & Jantzi, 1999a; Leithwood et al., 2006; Rauch & Behling, 1984; Yukl, 2006). Influence is important regardless of who is exerting it, how much is exerted, the purpose of exerting it, or its outcome (Leithwood & Duke, 1999). Leaders intentionally exert influence on organizational members in order to affect the organization (Yukl, 2006). Yukl's (2006) definition of leadership encompasses these three commonalities into one definition: "Leadership is the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives" (p. 8). Yukl fails to mention, however, the role and impact of followers in his definition of leadership, a concept common to other leadership definitions (Meindl, 1995).

Burns (1978) explains the interconnectedness of leaders and followers when he describes the nature of leadership. Other scholars (Meindl, 1995; Ogawa & Bossert,

1995) explain this notion further by describing the significance of the relationships created between leaders and followers. This concept helps explain Bass's (1990) observation that most leaders do not rely on legitimate or coercive power as much as relationships. These relationships are critical because leadership cannot and does not occur without followers (Leithwood et al., 2006; Meindl, 1995).

Other scholars (Barnett & McCormick, 2004; Jantzi & Leithwood, 1996; Kezar, Carducci, & Contreras-McGavin, 2006; Leithwood & Jantzi, 1997; Meindl, 1995) take the idea of a follower's place in leadership even farther when they explain how a follower's perception is the key to leadership. This notion is justified because individuals' perceptions are their reality (Kezar et al., 2006). Individuals who perceive a person as a leader are more likely to become followers and therefore allow themselves to be influenced by this leader (Jantzi & Leithwood, 1996; Leithwood & Jantzi, 1997). Leaders, knowing this information, need to focus on the perceptions of followers if they are going to be effective (Kezar et al., 2006). Followers are influenced not only by their own perception of the leader, but also by the perception of the leader as held by other organizational members (Meindl, 1995). Knowing the importance of the perceptions of organizational members as individuals and collectively means leaders must interact in positive ways so followers work toward reaching organizational goals (Barnett & McCormick, 2004). Leaders could find themselves without followers, making them unable to accomplish anything, if they do not take into account the perceptions of others (Jantzi & Leithwood, 1996). The growing focus on the impact of followers has led to a less leader-centric view of leadership in many recent leadership models (Kezar et al., 2006).

Managerial Leadership

The definitions for principal leadership have gone through multiple iterations over the past century. Principals starting in the 1920s and continuing to the 1960s were seen as administrative managers who supervised the day-to-day aspects of the school (Hallinger, 1992). Principals in the 1960s and 1970s started to manage programs, especially federally funded ones like special education and bilingual education, shifting part of a principal's role toward curriculum reform (Hallinger, 1992). This new role pushed principals from being individuals who maintained the status quo during the 1920s to the 1960s to change agents in the 1960s and 1970s (Hallinger, 1992). Principals in the 1960s and 1970s were concerned with making changes but not necessarily about the effectiveness of change (Hallinger, 1992). Regardless of the outcomes, the shift toward being a change agent and being more involved in curriculum issues within the school laid the groundwork for the instructional leadership movement.

Instructional Leadership

The shift toward instructional leadership started in the 1980s and was a response to the public's desire that schools raise standards and improve the academic performance of students (Hallinger, 1992; Hallinger, 2003; Leithwood, 1994: Stewart, 2006). The principal who was an instructional leader became the primary source of educational expertise in the building (Hallinger, 1992; Marks & Printy, 2003). The principal became responsible for managing the school and improving the teaching and learning in the building (Leithwood, 1994). The nature of instructional leadership was typically top-down because most principals set school goals (Hallinger, 1992; Marks & Printy, 2003). The principal "led" the faculty toward attainment of the goals as a means to school

improvement. According to Marks and Printy (2003) however, the practices which defined an instructional leader were not achieved. Educational researchers have noted reasons and limitations of instructional leadership which help explain this failure to change schools.

One major area of concern for scholars is the top-down nature of instructional leadership. School improvement is a complex and diffuse process so top-down leadership is not an effective mechanism to accomplish school change (Hallinger, 1992; Hallinger, 2003). The school improvement process is particularly difficult in secondary schools because the many specialized subject areas mean the principal lacks the curricular knowledge to impact the teaching and learning (Leithwood, 1994). Another flaw in instructional leadership is that sometimes great leaders are not always great classroom teachers (Liontos, 1992). The principal who is an instructional leader must have a solid grounding in teaching and learning (Liontos, 1992). Some leaders do not have a vast knowledge base about teaching and learning but are still able to improve schools (Liontos, 1992). In addition to these flaws in instructional leadership, the top-down approach of this leadership style did not blend well with the shift in the 1980s toward schools becoming more democratic institutions (Marks & Printy, 2003; Stewart, 2006). These issues with instructional leadership provided a type of foundational grounding for one of today's more prevalent perspectives on leadership. That theory is transformational leadership. Leithwood (1992b) predicted that transformational leadership would subsume instructional leadership as the dominate leadership philosophy in schools during the 1990s. Hallinger verified this prediction in his writings in 2003. One of the major driving

forces in the rise of transformational leadership was its ability to assist principals in coping with unplanned actions which are necessary for school reform (Hallinger, 1992).

Leadership Studies

It is widely acknowledged that leadership affects organizations (Ogawa & Bossert, 1995) and this notion holds true for schools as well (Day, Harris, & Hadfield, 2001; Fullan, 2002; Hallinger, Bickman, & Davis, 1996; Hallinger & Heck, 1998; Hallinger & Heck, 1999). Student achievement is primarily used as the dependent variable in studies about the effect of school leadership because achievement is the primary measure of school effectiveness (Hallinger & Heck, 1998). This dependent variable is becoming even more common in studies because of the value NCLB places on student achievement. Numerous scholars (Andrews & Soder, 1987; Hallinger & Heck, 1996; Hallinger et al., 1996; Leithwood et al., 2006; Waters et al., 2003) have determined principals have some degree of impact on student achievement, but the strength of this relationship is still widely contested. Research design has made a difference in the findings related to the effect of principal leadership on student achievement (Hallinger & Heck, 1996). Newer studies have attempted to discover the avenues by which principals affect achievement (Hallinger & Heck, 1998). This is a shift from previous studies which merely focused on whether or not the principal had any affect on student achievement (Hallinger & Heck, 1998). Principals must know what specific actions they can take to improve a school if student achievement is to be improved.

Hallinger and Heck (1996) analyzed studies on leadership and achievement and looked at direct, indirect, and mediated effect research models. Direct research models look for direct relationships between the principal and student achievement (Hallinger &

Heck, 1996). Direct studies of leadership on student achievement showed anywhere from no effect (Hallinger et al., 1996) to weak effect (Hallinger & Heck, 1996; Hallinger & Heck, 1998; Leithwood & Jantzi, 1999a; Leithwood & Jantzi, 2000; Stewart, 2006; Witziers, Bosker, & Kruger, 2003). Hallinger and Heck (1998) conclude that direct effects models do not produce conclusive results concerning leadership and student achievement (Hallinger & Heck, 1998). The complex nature of a school makes it difficult for principals to have a direct effect on achievement because principals have limited contact with students. Indirect studies look for relationships between the principal and student achievement but include other variables which may impact the dependent variable (Hallinger & Heck, 1996). Indirect models show a limited effect of the principal on student achievement when other variables were included such as parent involvement, school social economic status, teacher experience, and principal gender (Hallinger et al., 1996; Hallinger & Heck, 1998; Muijs, Harris, Chapman, Stoll, & Russ, 2004). Hallinger and Heck (1996) refer to the variables in indirect effect models as antecedents. These antecedents are placed in the study to impact the principal leadership (Hallinger and Heck, 1996). The relationship between the principal and the dependent variable can be analyzed in greater detail after this impact is taken into account (Hallinger and Heck, 1996). Antecedents are difficult to use in research models as there are a multitude of factors which impact schools. Datasets using antecedents must be large so Type I statistical errors are not made as the number of variables increase. The mediated effect models of research place variables in the study known to have an impact on principal leadership and student achievement including climate and instructional organization (Hallinger et al., 1996; Hallinger & Heck, 1998). This research design has produced

strong results (Barnett & McCormick, 2004; Hallinger & Heck, 1996; Hallinger et al., 1996; Hallinger & Heck, 1998; Leithwood & Jantzi, 2000). A reason for the strong findings using the mediated effect model is because the principal, through manipulation of the mediated variable, influences others, including teachers, who directly affect students (Hallinger & Heck, 1996; Hallinger & Heck, 1998; Leithwood et al., 1999). The mediated effect model is designed to address the issues of limited principal-student contact which produced no effect to weak effects in the direct effects model.

Leadership effects are not always positive in nature; indeed in some cases leaders can have significantly negative effects on organizations (Stewart, 2006; Waters et al., 2003). Leadership is not a precise process (Brown, 1993) because the leader's actions in one school may not be appropriate for another (Wilmore & Thomas, 2001). The drastic differences in rural/urban and high/low socioeconomic status schools make creating one all encompassing leadership process to achieve student success difficult if not impossible. Changing times call for principals to acquire different skill sets so they continue to be effective in fulfilling their role as school leaders (Leithwood et al., 1999).

Transformational Leadership

James McGregor Burns in 1978 was the first scholar to employ the term transformational leadership (Burns, 1978). Bernard Bass extended Burns' initial introduction of transformational leadership (Liontos, 1992). Burns and Bass studied political leaders, army officers, and business executives (Bass, 1990; Burns, 1978; Liontos, 1992). Leithwood and his colleagues extended the study of transformational leadership into the field of education (Stewart, 2006).

The extensive research which has been done on transformational leadership has not produced any single agreed upon concept for the theory (Leithwood & Jantzi, 1999b: Leithwood & Jantzi, 2000). The lack of an established definition does not mean the concept is irrelevant, especially during the times of change experienced in education (Antonakis & House, 2002; Brown, 1993; Hay, 2006; Roberts, 1985). Transformational leadership provides a flexible approach to change which allows a leader's personal style and the context to vary (Bass, 1990; Deal, 1990; Hallinger, 2003; Leithwood & Jantzi, 2005; Stone, 1992). Flexibility allows organizations to solve problems (Hallinger & Heck, 1998; Marks & Printy, 2003) while raising followers' commitment, motivation, empowerment, and elevating the leader and the follower to a higher purpose to support institutional change (Burns, 1978; Hallinger, 2003; Leithwood & Jantzi, 2005; Yukl, 2006).

The ability to raise follower commitment is essential for a transformational leader to accomplish change, especially in uncertain times (Bass, Waldman, Avolio, & Bebb, 1987; Jantzi & Leithwood, 1996; Leithwood & Jantzi, 1999b; Marks & Printy, 2003). Commitment creates greater individual productivity on behalf of the organization (Bass, 1990; Burns, 1978; Leithwood & Duke, 1999; Leithwood et al., 1999; Leithwood & Jantzi, 2006). Greater productivity allows the organization to meet its goals (Hay, 2006; Leithwood & Jantzi, 2006). Commitment of organization members is also influenced by the motivation transformational leaders instill (Burns, 1978; Leithwood & Jantzi, 2005).

Motivation helps individuals move into positions of greater responsibility (Wilmore & Thomas, 2001). When transformational leaders find and understand what motivates individuals, they are better able to influence the organizational members to

transcend their own self interest for the betterment of the organization (Barnett, McCormick, & Conners, 2001; Burns, 1978; Hay, 2006; Leithwood & Jantzi, 2005; Marks & Printy, 2003). Empowerment of organizational members means the principal may not be the sole transformational leader (Hallinger, 2003; Leithwood & Jantzi, 2006). Transformational leaders, who may or may not be the principal, are those who can influence and inspire the commitment and raise the level of motivation for followers in a school (Leithwood & Duke, 1999; Leithwood & Jantzi, 2000; Leithwood & Jantzi, 2006). Transformational leaders are able to affect individuals because such leaders provide a vision, communicate high expectations, provide intellectual stimulation, provide support and consideration, role model behavior, take risks, show integrity and inspire followers to create change (Bass, 1990; Hay, 2006; Kezar et al., 2006). The transformational leader also creates followers who can become transformational leaders themselves (Bass et al., 1987; Bass, 1990; Bass, 1995).

Transformational leadership creates commitment, motivation, and empowerment in individuals. The transformation of followers is able to create change by followers then pursuing higher goals (Bass, 1990; Burns, 1978; Leithwood & Duke, 1999; Sergiovanni, 1990). The growth of organizational members transforms both the follower and the leader as they work together to improve the organization (Burns, 1978).

Leithwood and his colleagues have created the most fully developed model of transformational leadership in schools (Leithwood & Duke, 1999). Leithwood and his colleagues have created three categories of transformational leadership, each of which has three subcategories referred to as practices. The first category is setting direction, which is evident in a leader's ability to build a vision, develop specific goals and

priorities, and convey high performance expectations (Jantzi & Leithwood, 1996; Leithwood, 1994; Leithwood, Jantzi, & Steinbach, 1998; Leithwood et al., 1999; Leithwood & Jantzi, 2006; Leithwood et al., 2006). The second category is developing people, which includes providing intellectual stimulation, offering individualized support, and modeling desirable professional practices and values (Jantzi & Leithwood, 1996; Leithwood, 1994; Leithwood et al., 1998; Leithwood et al., 1999; Leithwood & Jantzi, 2006; Leithwood et al., 2006). The final category created by Leithwood and his colleagues is redesigning the organization, which includes developing a collaborative school culture, creating structures which foster participation in school decisions, and creating productive community relationships (Jantzi & Leithwood, 1996; Leithwood, 1994; Leithwood et al., 1998; Leithwood et al., 1999; Leithwood & Jantzi, 2006; Leithwood et al., 2006).

Transformational leadership has been studied extensively to determine if it has an impact on student achievement. Research findings have reached varied conclusions on the impact of transformational leadership on student achievement. Research by a number of scholars finds no relationship between transformational leadership and student achievement (Griffith, 2004; Leithwood & Jantzi, 2006; Marks & Printy, 2003). Other scholars find weak effects (Barnett & McCormick, 2004). Leithwood and Jantzi (2005), in a review of research studies, found mixed results between transformational leadership and student achievement. Six of the nine studies in the review found that transformational leadership has a positive impact on student achievement (Leithwood & Jantzi, 2005). The article by Leithwood and Jantzi (2005) did not give adequate details of the studies reviewed which makes it difficult for the reader to determine if the conclusions reached

are valid. In a more recent review of research findings, Leithwood et al. (2006) reached two conclusions. First, the combined direct and indirect effects of transformational leadership on student achievement are small but educationally significant (Leithwood et al., 2006). This conclusion by Leithwood and his colleagues (2006) is not described in great detail. The reader is left to determine what "educationally significant" means according to the authors. Second, three overarching categories of transformational leadership, created by Leithwood and his colleagues, provide robust evidence of the positive effect transformational leaders have on student achievement. These categories are direction setting, developing people, and redesigning the organization (Leithwood et al., 2006). The second conclusion leaves the reader with few details justifying the statement that the three categories of transformational leadership provide "robust evidence" of the impact of transformational leadership on student achievement. Studies repeatedly find a principal's ability to identify and articulate a vision leads to increased student achievement (Hallinger & Heck, 1999; Prater, 2004; Schooley, 2005). Other studies find modeling (Prater, 2004), intellectual stimulation (Schooley, 2005), developing goals (Hallinger & Heck, 1998), and having high expectations (Hallinger et al., 1996) all have statistically significant relationships with student achievement. These studies vary in samples and statistical analysis methods, but the findings do in part suggest that Leithwood and his colleagues' (2006) claims of robust evidence supporting the impact of transformational leadership on student achievement do exist in the literature.

Setting Direction

Schlechty (2000) states that one of the greatest barriers to school reform is the lack of a clear vision. Excellent schools have a clear vision (Sergiovanni, 1984) whereas ineffective schools lack one (Matthews & Sammons, 2005). An important function of leaders is to create this vision (Day et al., 2001; Hallinger & Heck, 1999; Hallinger & Heck, 2002; Leithwood & Jantzi, 2005). Hallinger and Heck (2002) describe vision as the moral and spiritual values which underlie a leader's view of the world and provide the inspiration for the leader's life work. The adoption of a school vision is meant to create a fundamental sense of purpose and guide the activities of a school over a number of years (Deal & Peterson, 1999; Leithwood et al., 1999; Stolp, 1994). Successful leaders must be able to create a vision which others will follow or facilitate the collaborative creation of a vision (á Campo, 1993; Barnett & McCormick, 2004; Bolman & Deal, 1994; Brown, 1993; Day, 2000; Liontos, 1992; Parish & Aquila, 1996). Some scholars (Fullan & Hargreaves, 1996; Stolp, 1994) believe creating a vision through a collaborative process is far more beneficial for the school because more individuals will support an idea they helped create. The school vision also needs to be student-centered to help unite the faculty (Cavanaugh & Dellar, 1998; Lambert, 2003; Leithwood et al., 1999). It is important to periodically revise the vision because it guides the direction of the ever-evolving organization (Hallinger & Heck, 2002; Lambert, 2003; Senge, 1990). Visioning is imperative to the establishment of the direction of an organization, but goals must also be set to achieve this school vision (Leithwood et al., 1999; Leithwood et al., 2006).

Goals are more precise, whereas the vision is more overarching (Hallinger & Heck, 2002). Goal-setting can be done by the principal or through a collaborative

process, which encourages organizational members to be more invested in the goals set by the school (Hallinger, 1992; Leithwood et al., 2006; Mitchell & Tucker, 1992). The gap between current practices and desired practices in a school are identified when schools create goals (Hallinger & Heck, 2002). Goals must be achievable and are usually quantifiable so there is more accountability (Hallinger & Heck, 2002; Hallinger & Murphy, 1986). The implementation of both a vision and goals help increase student achievement by setting a consistent direction for the school (Stolp, 1994). Leaders can help followers accomplish school goals by setting high expectations (Leithwood et al., 2006). High expectations help motivate teachers to work toward goal attainment by comparing current performance to future success (Leithwood et al., 1999).

A leader must be willing to challenge and change the organizational culture so the vision will be fulfilled (Bass, 1990; Norris, 1994). A strong culture is fundamental to fulfilling the school vision (Deal & Peterson, 1999; Marzano et al., 2005; Saphier & King, 1985). Strong school cultures also help ease the adjustment between current practices and future goals, which is essential for goal achievement (Sergiovanni, 1984). The school culture plays a part in the ability of the transformational leader to set the direction (á Campo, 1993).

Developing People

People are the organization (Leithwood et al., 1999). Organizational improvement comes from the improvement of the people who are members of the organization (Leithwood et al., 1999). It is the duty of a transformational leader to create and share knowledge so individuals in a school are developed (Day, 2000; Fullan, 2002). One avenue to develop organizational members is through intellectual stimulation which helps

promote intelligence, rationality, and problem solving (Bass, 1990). Schools in the midst of reform must be able to solve problems. Intellectually stimulating organizational members to look at old problems in new ways is a way of facilitating the solving of complex issues which arise during school reform initiatives (Bass, 1990; Bass et al., 1987; Giancola & Hutchison, 2005; Jantzi & Leithwood, 1996). Professional development is another way to nurture the problem solving ability of teachers (Leithwood et al., 1999; Leithwood et al., 2006; Muijs et al., 2004). Intellectual stimulation through professional development leads to collaboration and the promotion of collective action to reach school goals (Brown, 1993; Poplin, 1992).

Another avenue to improve a school is for the leader to provide individualized support to faculty members (Hay, 2006). Transformational leaders must know their organizational members well to be successful at providing individualized support (Leithwood et al., 2006). Individualized support can be provided in a variety of ways including giving personal attention to teachers (Bass, 1990), assisting individuals when they are struggling personally or professionally (Bass, 1990), and showing concern about staff members' needs and feelings (Jantzi & Leithwood, 1996; Leithwood et al., 1999). A principal is able to create greater motivation by supporting teachers emotionally and professionally (á Campo, 1993; Bass et al., 1987). Direct contact by the principal provides personal motivation, thus creating a feeling of support for the necessary work of successful school change (Brown, 1993; Hallinger & Heck, 1999).

A final means to develop people within an organization is through the modeling of behavior. Modeling behavior allows the principal to set an example for the staff by demonstrating how one should act in order to facilitate the accomplishment of the school

vision and goals (Jantzi & Leithwood, 1996; Lucas & Valentine, 2002). While reflected in the school vision, the principal's beliefs must also be supported by action (Leithwood et al., 2006; Schlechty, 2000). It is essential that the organization members see actions taken by the principal to model behaviors which are in line with the school's vision (Jantzi & Leithwood, 1996; Leithwood et al., 2006).

Developing people in the organization can have an overarching effect on the culture of the school (Fullan & Hargreaves, 1996; Leithwood, 1992a; Norris, 1994; Ogawa & Bossert, 1995). Principals, who meet the needs of their staff members socially and emotionally, encourage them to take risks, and help them grow professionally, help change the culture of their schools (Norris, 1994). Modeling of appropriate behaviors by the principal can also have a positive effect on shaping the school culture (Fiore, 2004; Maher et al., 2001; Norris, 1994; Yukl, 2006).

Redesigning the Organization

Leithwood and his colleagues added the category of redesigning the organization to transformational school leadership in the late 1990s. Numerous scholars (Barnett et al., 2001; Cavanaugh & Dellar, 1998; Stewart, 2006) described the effect a transformational leader has on a school culture. Leaders who impact school culture are able to foster change (Huber & West, 2002). Principal actions, including creating a vision and modeling behavior, impact the culture of the school (Barnett & McCormick, 2004). The school culture creates the conditions which allow for the accomplishing of school-wide goals (Richards & Engle, 1986). Shared decision-making and community relations impact school culture; vision building, goal setting, high performance expectations, intellectual stimulation, individualized support, and modeling also have a strong

influence (á Campo, 1993; Leithwood et al., 2006). Shared decision-making becomes a part of the school as the principal builds consensus for school reform (Silins & Mulford, 2002). Structures and processes, both formal and informal, draw on the strengths of teachers and allow for shared decision-making to occur within a school (Leithwood et al., 1999). Shared decision-making becomes part of the culture, promoting increased teacher motivation and commitment to the school vision (á Campo, 1993; Leithwood et al., 1999). The final piece of the Leithwood and colleagues' (2006) definition of school transformational leadership is building productive relationships with families and communities. A principal must be connected to the community because what is happening outside of the school impacts the performance of students (Leithwood et al., 2006). Connecting to the wider environment allows the school to use new ideas from the community and helps resources flow into the school (Leithwood et al., 2006). It is no longer possible for schools to ignore the impact the family and community have on the school (Fullan, 2002). Schools must build relationships with outside stakeholders to ensure school change (Leithwood et al., 2006).

Culture

Over the last three centuries, American public schools have developed their own stable organizational culture, which have resisted change (Parish & Aquila, 1996). Every school has a unique culture (Marzano et al., 2005). Scholars (Maher et al., 2001; Saphier & King, 1985) state a school's culture is the foundation for successful school improvement. The concept of school culture has been borrowed from the field of anthropology (Smircich, 1983). There is no agreed upon definition of culture in this field of study (Smircich, 1983). The definition of culture is also unclear in the field of

education (Deal & Peterson, 1999; Gruenert, 2000; Gruenert, 2005). The definitions of culture vary, but some of the following words have been used to describe the phenomenon: assumptions, attitudes, behaviors, beliefs, ceremonies, covenants, dress, expectations, fairy tales, heroes, history, ideology, knowledge, language, laws, myths, norms, practices, purpose, rewards, rituals, stores, structure, symbols, traditions, values in a school (Bolman & Deal, 2003; Cavanaugh & Dellar, 1997a; Cavanaugh & Dellar, 1997b; Fiore, 2004; Fullan & Hargreaves, 1996; Gruenert, 2000; Gruenert, 2005; Hallinger & Heck, 1999; Hopkins et al., 1994; Kilman et al., 1986; Leithwood & Jantzi, 1999a; Leithwood & Jantzi, 1999b; Leithwood & Jantzi, 2000; Marzano et al., 2005; Morgan, 2006; Norris, 1994; Parish & Aquila, 1996; Peterson & Deal, 2002; Pritchard, Marrow, & Marshall, 2005; Schein, 1992: Schein, 1996; Sergiovanni, 1984; Stolp, 1994). Marzano, Waters, and McNulty (2005) and á Campo (1993) explain that no matter what the definition of culture, a culture exists as a natural by-product of people working together. The concept of culture as a product is also part of Bolman and Deal's (2003) definition; culture is a product and a process (Bolman & Deal, 2003). Culture is a product because it has been produced by those previously in the organization (Bolman & Deal, 2003). Culture is a process because it is being renewed and recreated as new members enter the culture and make the old ways their own (Bolman & Deal, 2003). The impact of new organizational members on a school's existing culture means a school's culture is not static (Cavanaugh & Dellar, 1998). In his study of culture, Schein (1992) created three levels of analysis for culture. Each level is based upon how visible the culture is to observers (Schein, 1992). The lowest level of culture, artifacts, is easily visible while the

highest level, basic assumptions, is difficult to recognize by those inside and outside the organization (Schein, 1992).

Schein's (1992) first level of culture is the artifacts of the organization. Artifacts are things a person sees, hears, and feels. Schein cautions that this level is easy to see but should not be the sole criterion for analyzing an organizational culture because an individual's personal interpretation of artifacts will affect the findings (Schein, 1992). The second level of culture according to Schein (1992) is espoused values. These are the vital values of the organization that have been established and discussed as being part of the organization's past and present success (Schein, 1992). Espoused values do not have to be in line with Schein's (1992) final level of cultural analysis, basic assumptions. It is far more likely though that the organizational values which are put into action, not just espoused, are in line with the basic assumptions of the organization (Schein, 1992). Basic assumptions are the actions which are taken for granted and usually not confronted or debated within the organization (Schein, 1992). If this level of the culture is changed it will create anxiety which must be addressed if a change is to become permanent (Schein, 1992). Basic assumptions are such an integral part of culture that individuals who do not believe in these basic assumptions are considered outsiders (Schein, 1992). Deal and Kennedy (1982) made their definition of culture concise, stating it as "the way we do things around here" (p. 4). Other scholars have taken this concise approach but included how members of the organization interact with each other (Cunningham & Gresso, 1993; Gruenert, 2000). Fullan and Hargreaves (1996) describe culture in a school as the guiding beliefs, assumptions, and expectations evident in the way a school operates.

Scholars have not only disagreed about the meaning of culture, but also about the different types of school culture. Leithwood (1992b) and Brown (1993) created a dichotomous view of school culture by describing it as being either rigid and top-down with teachers working in isolation or as being collaborative, where members work together to create change. Hopkins, Ainscow, and West (1994) expand on this dichotomous view with four categories including stuck, wandering, promenading, or moving. Stuck schools are low achieving and are characterized by teacher isolation and blame being placed on external stakeholders (Hopkins et al., 1994). Wandering schools are those which are experiencing too many innovations, creating fragmentation and a lack of overall direction for the school (Hopkins et al., 1994). Promenading schools are living in their past achievements and not changing quickly and in any major way (Hopkins et al., 1994). The final type of school according to Hopkins et al. (1994) is a moving school where there is a healthy balance of change and stability as the school improves. No matter how culture is described or the types of culture which appear in schools, the culture of a school impacts educational stakeholders (Cavanaugh & Dellar, 1998; Kilman et al., 1986; Peterson & Deal, 2002; Pritchard et al., 2005). People learn from the culture how to act and often times what to feel and think (Gruenert, 2000; Peterson & Deal, 2002; Stolp, 1994). A negative culture guides people in the wrong direction and puts strong pressure on organizational members to conform (Kilman et al., 1986). The presence of a weak culture may be due to the lack of a transformational leader (Cavanaugh & Dellar, 1998). Literature reviews find principals affect school culture which in turn effects student achievement (Barnett & McCormick, 2004; Hallinger & Heck, 1998). Research findings support the notion that the presence of a transformational

leader and a strong school culture positively impact student achievement (Barnett & McCormick, 2004; Le Clear, 2005; Lucas, 2001; Lucas & Valentine, 2002; Miles, 2002; Schooley, 2005; Scope, 2006). The findings from studies investigating school culture's impact on student achievement are consistent regardless of time, research design, instrumentation, and achievement variables. This variation suggests solid evidence of the strong connection between school culture and achievement. These relationships are consistently statistically significant that school culture can be used as a mediating variable when research is focusing on the impact of leadership on student achievement (Maher, 2000; Maher et al., 2001). The research suggests that a transformational leader can help create strong cultures which will improve the school. Conversely weak cultures hinder school improvement and are characterized by teachers working to solve problems alone instead of collectively (Brown, 1993; Cavanaugh & Dellar, 1998). While a weak and negative culture can divide a school, a strong and positive school culture can unite a school for change (Firestone & Louis, 1999). A positive culture guides the actions of members in the right direction and puts pressure to conform on those working against the culture (Kilman et al., 1986). A common direction in a school leads to the overall growth of the organization (Norris, 1994). The journey to create a strong, positive culture is long, but worthy of the effort put forth by organizational members (Fullan & Hargreaves, 1996).

School culture is one aspect of a school which a leader can influence (Barnett & McCormick, 2004; Leithwood et al., 2006; Ogawa & Bossert, 1995). Principals want to positively affect the culture of the school because it is a major factor in the school improvement process (Gruenert, 2000). However, principals can only impact the school

culture if they understand it (Bolman & Deal, 2003; Saphier & King, 1985; Stolp, 1994). Effective leaders understand the culture so they are able to push for the necessary changes without destroying the school culture (Waters et al., 2003). Large scale change usually requires changing cultures which is a difficult task and cannot be completed by altering a few small things (Parish & Aquila, 1996; Yukl, 2006). A weak school culture can be changed easier than a strong school culture (Kilman et al., 1986). Most cultures, however, are deeply entrenched and to change them is to fundamentally alter the character and identity of the organization (Deal, 1990; Kilman et al., 1986). A leader cannot accomplish change without the support of the teachers (Saphier & King, 1985). A critical mass of teachers is necessary to change a culture. Enough organizational members must be willing to let go of the old and adopt the new if a change in culture is to become permanent (Cavanaugh & Dellar, 1998: Deal, 1990). A culture can change much more quickly if the members want a change to occur (Fiore, 2004). Cavanaugh and Dellar (1998) explain that if change is desired, it can occur in as little time as one year. Gruenert (2000) disagrees with this notion and believes fundamentally changing a culture takes five to seven years.

School success depends on culture (Leithwood et al., 1999; Sagor, 1992; Saphier & King, 1985), so culture cannot be ignored and must be a focus of the school (á Campo, 1993; Maher et al., 2001). Numerous literature reviews (Cavanaugh & Dellar, 1998; Leithwood et al., 2006; Muijs et al., 2004; Stolp, 1994; Waters et al., 2003) link strong, positive, collaborative school cultures and student achievement. Research studies have confirmed this relationship (Gaziel, 1997; Gruenert, 2005; Maher et al., 2001; Pritchard et al., 2005; Zigarelli, 1996). Studies of elementary schools in Arizona (Liu, 2004),

Arkansas (Fowler, 2006), Florida (Cunningham, 2003), Missouri (Schooley, 2005), and Texas (Zuniga-Barrera, 2006) find that culture impacts student achievement. Studies of middle schools in Florida (Vislocky, 2005), New Jersey (Brown, 2004), North Carolina (Brown, 2004), and Pennsylvania (Brown, 2004) and high schools in Ohio (Herrmann, 2007) and Texas (Patterson, 2006) have drawn the same conclusion. The sample sizes, location of the samples, type of school, instrumentation, statistical analysis methods, and other differences are present in these studies. The consistently statistically significant findings suggest the relationship between school culture and student achievement is verifiable and should be used to improvement student achievement in schools. School leaders need to see school culture and student achievement on the same end of the educational spectrum because they are complementary (Gruenert, 2005).

Conclusion

Schools in the United States are under tremendous pressure to improve. Transformational leadership and school culture is a research avenue which must be extensively explored with the anticipation that the findings will confirm or expand existing knowledge. A more thorough understanding of these factors can enhance existing practices and thus improve student achievement.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

Introduction

This chapter is divided into five sections. The first section restates the research questions and states the hypotheses. The second section outlines the characteristics of the respondents who participated in this quantitative study. The third section details the measurement instruments used to answer the research questions. The fourth section describes the step-by-step procedures used to collect the data. The final section of the chapter describes the data analysis procedures from the Statistical Package for the Social Sciences (SPSS) used in the study.

Research Questions

The following research questions were examined in this study:

1. Are there significant relationships between transformational leadership, school culture, and student achievement in communication arts in Missouri middle schools?
2. Does transformational leadership influence school culture in Missouri middle schools?
3. Does school culture influence student achievement in communication arts in Missouri middle schools?
4. Do transformational leadership and school culture combine to influence student achievement in communication arts in Missouri middle schools?

Hypotheses

Ho_1: There are no statistically significant correlational relationships between the factors of transformational leadership, as measured by the Principal Leadership Questionnaire (PLQ), the factors of school culture, as measured by the School Culture Survey (SCS), and student achievement, as measured by the Missouri Assessment Program (MAP), in communication arts in Missouri middle schools.

Ho_2: There are no statistically significant predictive linear relationships for the factors of transformational leadership, as measured by the PLQ, on the factors of school culture, as measured by the SCS, in Missouri middle schools.

Ho_3: There are no statistically significant predictive linear relationships for the factors of school culture, as measured by the SCS, on student achievement, as measured by the MAP, in communication arts in Missouri middle schools.

Ho_4: There are no statistically significant predictive linear relationships for the combined factors of transformational leadership, as measured by the PLQ, and the factors of school culture, as measured by the SCS, on student achievement, as measured by the MAP, in communication arts in Missouri middle schools.

Participants

The participants for this study were Missouri middle school teachers. A middle school, for the purpose of this study, was defined as a school providing education to students in grades 6 through 8. This criterion left 186 schools which met the parameters described above out of the possible 325 middle level schools serving grades 5 through 9 in Missouri during the 2006-2007 school year (Missouri Department of Elementary and Secondary Education, 2006).

The data for this study were collected from Missouri middle school teachers; however, the school was the unit of analysis. A school met two criteria to be included in the study. First, the school had a grade configuration of 6 through 8. Second, a school had a survey response rate of at least 50%. Fifty percent was selected because it was determined to be a large enough sample to represent the faculty for all sizes of school enrollment. The individual responses of the teachers were averaged by each item and factor to create the school-wide data for the study.

Instruments

Two quantitative survey instruments were used to gather data for principal transformational leadership and school culture. The Principal Leadership Questionnaire (PLQ), developed by Jantzi and Leithwood (1996), provided data about transformational leadership. All six factors of the PLQ were used in the data collection. The six PLQ factors were (1) Vision Identification, (2) Modeling, (3) Goal Acceptance, (4) Individualized Support, (5) Intellectual Simulation, and (6) High Performance Expectations. The PLQ had both face and construct validity. The items used to create the factors in the PLQ made sense to measure the concepts being studied. Numerous studies provided construct validity for the PLQ including Prater (2004) and Schooley (2005). The School Culture Survey (SCS), developed by Gruenert (1998), provided data about school culture. All six factors of the SCS were used in the data collection. The six SCS factors were (1) Collaborative Leadership, (2) Teacher Collaboration, (3) Professional Development, (4) Unity of Purpose, (5) Collegial Support, and (6) Learning Partnership. The SCS had both face and construct validity. The items used to create the factors in the SCS made sense to measure the concepts being studied. Numerous studies provided

construct validity for the SCS including Liu (2004), Fowler (2006), Schooley (2006), and Patterson (2006).

The PLQ was used to gather data concerning the principal's transformational leadership characteristics. The PLQ consisted of 24 Likert-type questions with six response options: strongly disagree, disagree, somewhat disagree, somewhat agree, agree, and strongly agree. Each of the six PLQ factors described below used the same scale. After the factor name is a description of the factor, the number of items per factor, and the reliability for each factor given as a Cronbach's alpha.

Goal Acceptance: The degree to which the principal promotes cooperation among organizational members and assists them in working together toward common goals (Jantzi & Leithwood, 1996). This factor has five items and has a Cronbach's alpha of .86.

High Performance Expectations: The degree to which the principal establishes expectations for excellence, quality, and high performance on the part of the organization's members (Jantzi & Leithwood, 1996). This factor has three items and has a Cronbach's alpha of .86.

Individualized Support: The degree to which the principal demonstrates respect for organizational members and concern about their personal feelings and needs (Jantzi & Leithwood, 1996). This factor has five items and has a Cronbach's alpha of .82.

Intellectual Stimulation: The degree to which the principal challenges organizational members to reexamine some of the assumptions about their work and rethink how it can be performed (Jantzi & Leithwood, 1996). This factor has three items and has a Cronbach's alpha of .77.

Modeling: The degree to which the principal sets an example for the organizational members to follow consistent with the values the principal espouses (Jantzi & Leithwood, 1996). This factor has three items and has a Cronbach's alpha of .86.

Vision Identification: The degree to which the principal identifies new opportunities for the organization and develops, articulates, and inspires others with a vision of the future (Jantzi & Leithwood, 1996). This factor has five items and has a Cronbach's alpha of .88.

The SCS was used to gather data concerning the school's culture. The SCS consisted of 35 Likert-type questions with six response options: strongly disagree, disagree, somewhat disagree, somewhat agree, agree, and strongly agree. Each of the six SCS factors described below used the same scale. After the factor name is a description of the factor, the number of items per factor, and the reliability for each factor given as a Cronbach's alpha.

Collaborative Leadership: The degree to which the principal establishes and maintains collaborative relationships with school staff. The principal values teachers' ideas, seeks input, engages staff in decision-making, and trusts the professional judgment of the staff. The principal supports and rewards risk-taking and innovative ideas designed to improve education for the students. The principal reinforces the sharing of ideas and effective practices among all staff (Gruenert, 1998). This factor has 11 items and has a Cronbach's alpha of .91.

Collegial Support: The degree to which teachers work together effectively. Teachers trust each other, value each other's ideas, and assist each other as they work to

accomplish the tasks of the school organization (Gruenert, 1998). This factor has four items and has a Cronbach's alpha of .80.

Learning Partnership: The degree to which teachers, parents, and students work together for the common good of the student. Parents and teachers share common expectations and communicate frequently about student performance. Parents trust teachers and students generally accept responsibility for their schooling (Gruenert, 1998). This factor has four items and has a Cronbach's alpha of .66.

Professional Development: The degree to which teachers value continuous personal development and school-wide improvement. Teachers seek ideas from seminars, colleagues, organizations, and other professional sources to maintain current knowledge, particularly current knowledge about instructional practices (Gruenert, 1998). This factor has five items and has a Cronbach's alpha of .87.

Teacher Collaboration: The degree to which teachers engage in constructive dialogue that furthers the educational vision of the school. Teachers across the school plan together, observe and discuss teaching practices, evaluate programs, and develop an awareness of the practices and programs of other teachers (Gruenert, 1998). This factor has six items and has a Cronbach's alpha of .83.

Unity of Purpose: The degree to which teachers work toward a common mission for the school. Teachers understand, support, and perform in accordance with that mission (Gruenert, 1998). This factor has five items and has a Cronbach's alpha of .82.

In addition to the data provided by the two survey instruments described above, Missouri Assessment Program (MAP) data were used to provide communication arts achievement data for the study. The data used to represent the school's achievement were

a combination of the percent of students at the proficient and advanced levels in communication arts for grade 8. Grade 8 data was used because it represented student performance at the time of exit from the 6 through 8 middle school.

Procedures

A packet of materials containing all of the necessary study documents was mailed to 186 Missouri middle schools with grade configurations of 6 through 8 in January 2007. Each materials box included a folder for the principal, secretary, and each of the classroom teachers in the school. The data collected for this study were part of a larger, comprehensive two-year state-wide study of all middle level schools in the state of Missouri. The materials packet sent to each school included five different sets of teacher surveys. One of the survey sets was distributed to each teacher in the school, thus creating an even distribution of the survey questions across the population of the faculty. The survey items for this study were contained in survey packet B, which was distributed to one fifth of the faculty.

The principal's folder included a cover letter of invitation (Appendix A), a written consent form (Appendix B), and a brief principal survey (Appendix C). The secretary's folder included directions to distribute, collect, and return the completed surveys (Appendix D), a secretary contact form necessary for the incentive process described in the secretary directions (Appendix E), and a secretary checklist to assist in the distribution, collection, and return of the completed surveys (Appendix F). Each teacher folder included a "short version" letter explaining the study (Appendix G), a teacher consent form (Appendix H), a copy of the teacher survey that included items for the Principal Leadership Questionnaire (PLQ) and School Culture Survey (SCS) (Appendix

I), directions for completing and returning the survey (Appendix J), and a "long version" letter explaining the study (Appendix K).

School secretaries were asked to return the completed surveys in one of the two pre-paid envelopes contained in the materials packet within two weeks, or whenever about half of the teachers had completed their surveys. The secretary was then asked to return all of the remaining surveys using the second pre-paid envelope provided in the materials packet within a month and no later than 40 days after the materials were mailed to the school. Upon receipt of the survey packets, staff at the Middle Level Leadership Center (MLLC) entered respondent data into excel spreadsheets, analyzed the data for errors, transferred the data into Microsoft Access, and then into the Statistical Package for the Social Sciences (SPSS), version 15.0. All written consent forms were filed and secured to maintain confidentiality. All data were encrypted and secured to protect respondent confidentiality. All teacher responses were compiled by school to create a school variable for each factor and all analyses were made with the school as the unit of analysis.

Statistical Analyses

Data for this study were quantitative. The level of significance for all statistical tests was set at $\alpha = .05$. The following lists the data analyses for each hypothesis.

Hypothesis one was analyzed in two ways. First, the factors of the Principal Leadership Questionnaire (PLQ), the factors of the School Culture Survey (SCS), and achievement data from the MAP were correlated using Pearson bivariate methods. The data were also analyzed using partial correlation methods. The percent of students eligible for free and reduced lunch and school enrollment separately and in combination

were the control variable(s) in the analysis. A contrast of these findings provided insights into the influence of socioeconomic status (SES) and enrollment on the schools.

Hypothesis two was analyzed using stepwise linear regression of all factors of the PLQ on each of the factors of the SCS. The percent of students eligible for free and reduced lunch and school enrollment for each school were entered as independent variables for each regression model to account for the effect of SES and school size in the equation.

Hypothesis three was analyzed using stepwise linear regression of all factors of the SCS on student achievement data from the MAP in communication arts. The percent of students eligible for free and reduced lunch and school enrollment for each school were entered as independent variables for each regression model to account for the effect of SES and school size in the equation.

Hypothesis four was analyzed using stepwise linear regression of all factors of the PLQ and the SCS on student achievement data from the MAP in communication arts. The percent of students eligible for free and reduced lunch and school enrollment for each school were entered as independent variables for each regression model to account for the effect of SES and school size in the equation.

Following the analysis of the four hypotheses, a statistical explanatory model was developed depicting the relative impact of principal transformational leadership and school culture on student achievement.

All analyses used student achievement data which was the schools' percent of students scoring at the proficient and advanced levels on the 2007 MAP. All data

analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 15.0.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

Introduction

No Child Left Behind's (NCLB) federal mandates have influenced school change initiatives in the United States. This piece of federal legislation has created change and uncertainty in the educational system. During times of change, Leithwood (1994) believes leaders play an increasingly prominent role. Research studies conducted by numerous scholars (Andrews & Soder, 1987; Hallinger & Heck, 1996; Hallinger, Bickman, & Davis, 1996; Leithwood, Day, Sammons, Hopkins, & Harris, 2006; Waters, Marzano, & McNulty, 2003) have attempted to determine if principals have an impact on student achievement, but the conclusions of these studies have provided few clear answers to this important question.

The complex nature of a school makes it difficult for principals to have a direct effect on achievement because principals have limited contact with students. The mediated effect models of research analysis place variables in the study known to have an impact on principal leadership and student achievement, including climate and instructional organization (Hallinger et al., 1996; Hallinger & Heck, 1998). This research design has produced strong results (Barnett & McCormick, 2004; Hallinger & Heck, 1996; Hallinger et al., 1996; Hallinger & Heck, 1998; Leithwood & Jantzi, 2000). A reason for the strong findings using the mediated effect model was because the principal, through manipulation of the mediated variable, influences others, including teachers, who directly affect students (Hallinger & Heck, 1996; Hallinger & Heck, 1998; Leithwood,

Jantzi, & Steinbach, 1999). The mediated effect model was designed to address the issues of limited principal-student contact which produced no effect or weak effects in the direct effect research models. Of the numerous mediating variables which could have been studied, school culture has been selected for further examination in the study.

Study Design

The purpose of this study was to analyze the relative impact of transformational leadership and school culture on student achievement. Data were used to determine the correlational relationships, if any existed, among transformational leadership, school culture, and student achievement in communication arts in Missouri middle schools. Data were also used to determine the predictive relationships, if any existed, between transformational leadership to school culture, school culture to student achievement, and transformational leadership and school culture to student achievement.

Two quantitative instruments were used to collect data for this study. The Principal Leadership Questionnaire (PLQ), by Jantzi and Leithwood (1996), provided data about principal transformational leadership. All six factors of the PLQ were used in the study. These six factors were (1) Vision Identification, (2) Modeling, (3) Goal Acceptance, (4) Individualized Support, (5) Intellectual Simulation, and (6) High Performance Expectations. The School Culture Survey (SCS), by Gruenert (1998), provided data about school culture. All six factors of the SCS were used in the study. These six factors were (1) Collaborative Leadership, (2) Teacher Collaboration, (3) Professional Development, (4) Unity of Purpose, (5) Collegial Support, and (6) Learning Partnership. Student achievement data used in this study was the percent of students scoring at the proficient and advanced level on the grade 8 Missouri Assessment Program

(MAP) in communication arts from the 2006-2007 school year. The percent of students eligible for free and reduced lunch and school enrollment were used in stepwise regressions to account for their effect on the dependent variable. Witte and Walsh (1990) suggest the use of both the percent of minority students and the percent of students eligible for free and reduced lunch during data analysis creates unacceptable multicollinearity resulting in statistical inaccuracies. This rationale was used as the basis for the decision to only include the percent of students eligible for free and reduced lunch and not the percent of minority students.

Data were collected for this study as part of a comprehensive, two-year state-wide study of all middle level schools in the state of Missouri. For that comprehensive study, middle level schools were defined as all schools serving students in grades 5 through 9 with at least two grades, one of which was either grade 7 or grade 8. There were 325 middle level schools in the state-wide population (Missouri Department of Elementary and Secondary Education, 2006). The data for the comprehensive study were collected in two phases. The first phase was a survey of principals to determine the details of the programs and practices used in the middle level schools of the state. Data for the first phase were collected in the 2005-2006 school year. The second phase, from which data for this study were collected, was a set of teacher surveys measuring perceptions and practices about leadership, culture, climate, trust, commitment, efficacy, and assessment. Data for phase two were collected in the 2006-2007 school year. For the second phase, 188 schools provided teacher-survey responses. Two criteria were used to select the schools for this study.

The first criterion addressed grade level. Only schools serving students in grades 6 through 8 were included. This created a set of schools serving the same age students for the same number of years and fit the most common grade pattern definition for middle schools (Valentine, Clark, Hackmann, & Petzko, 2002). The second criterion addressed participant response rate. Only schools with participant response rates of 50% or higher were included in the study. Because the unit of analysis for the study was the school level, the 50% response rate was used to ensure a representative measure of teacher perceptions for the variables of transformational leadership and school culture.

Application of the above criteria resulted in a study sample of 80 schools. Three assumptions about the data were considered. The first assumption was homogeneity of variance. The data were analyzed by creating graphical representations of the data. From the graphs, homogeneity was affirmed. The second assumption, independence of observations, was met as a result of the manner with which the data were collected. Finally, the Kolmogorov-Smirnov analysis was run on the data to analyze the third assumption, normality. From the analysis, it was determined that the dataset of 80 schools did not meet the assumption of normality. Graphic representations of the data were created and one case was identified as an extreme outlier. The case in question was a school with achievement data more than two standard deviations from the mean for the 80 schools in the study. This one case, when removed from the dataset, created a set of schools that met the assumption of normality. The deletion of the one school resulted in a study sample of 79 schools.

Type I errors occur when statistically significant findings occur which are in fact not statistically significant (Field, 2005). These are errors that occur “by chance” and the

possibility of Type I errors increases as the number of statistical analyses increase. The data from a sample size of 79 schools and the large number of independent variables analyzed in this study increased the potential for a Type I statistical error. However, the findings from this study are both logical and consistent. The chance of a Type I error, therefore, was unlikely.

Research Questions

The following research questions were examined in this study:

1. Are there significant relationships between transformational leadership, school culture, and student achievement in communication arts in Missouri middle schools?
2. Does transformational leadership influence school culture in Missouri middle schools?
3. Does school culture influence student achievement in communication arts in Missouri middle schools?
4. Do transformational leadership and school culture combine to influence student achievement in communication arts in Missouri middle schools?

Hypotheses

Ho_1: There are no statistically significant correlational relationships between the factors of transformational leadership, as measured by the Principal Leadership Questionnaire (PLQ), the factors of school culture, as measured by the School Culture Survey (SCS), and student achievement, as measured by the Missouri Assessment Program (MAP), in communication arts in Missouri middle schools.

Ho_2: There are no statistically significant predictive linear relationships for the factors of transformational leadership, as measured by the PLQ, on the factors of school culture, as measured by the SCS, in Missouri middle schools.

Ho_3: There are no statistically significant predictive linear relationships for the factors of school culture, as measured by the SCS, on student achievement, as measured by the MAP, in communication arts in Missouri middle schools.

Ho_4: There are no statistically significant predictive linear relationships for the combined factors of transformational leadership, as measured by the PLQ, and the factors of school culture, as measured by the SCS, on student achievement, as measured by the MAP, in communication arts in Missouri middle schools.

Descriptive Findings

The following sections provide descriptive findings from the 79 schools included in this study. The sections are organized by school and principal demographic, achievement, leadership, and culture data.

School Demographic Data

Demographic data for school enrollment, the percent of students eligible for free and reduced lunch, the percent of Average Daily Attendance (ADA), principal experience, and the percent of students who were state-identified as Asian, black, Hispanic, American Indian, and white were collected from building principals or available through the Missouri Department of Elementary and Secondary Education (DESE) for each school. The school enrollment for the 79 schools in the study ranged from 73 to 1267 students with a mean of 514.52 and a standard deviation of 268.54. The percent of students eligible for free and reduced lunch ranged from 9.50 to 96.70 with a

mean of 40.08 and a standard deviation of 18.60. The percent of Average Daily Attendance (ADA) for schools in the study ranged from 67.10 to 96.70 with a mean of 93.76 and a standard deviation of 4.67. The percent of state-identified Asian students included in the study ranged from 0 to 7.50. The mean percent of Asian students was 1.07 with a standard deviation of 1.48. The percent of state-identified black students included in the study ranged from 0 to 98.90. The mean percent of black students was 13.98 with a standard deviation of 22.90. The percent of state-identified Hispanic students included in the study ranged from 0 to 17.50. The mean percent of Hispanic students was 2.35 with a standard deviation of 2.88. The percent of state-identified American Indian students included in the study ranged from 0 to 2.80. The mean percent of American Indian students was 0.35 with a standard deviation of 0.50. The percent of state-identified white students included in the study ranged from 1.10 to 100.00. The mean percent of white students was 82.23 with a standard deviation of 23.44. The school demographic data are presented in Table 1.

Table 1
School Demographics (N=79)

Demographic	Min	Max	Mean	SD
Enrollment	73	1267	514.52	268.54
% Free/Reduced Lunch	9.50	96.70	40.08	18.60
% of Average Daily Attendance	67.10	96.70	93.76	4.67
% Asian	0.00	7.50	1.07	1.48
% Black	0.00	98.90	13.98	22.90
% Hispanic	0.00	17.50	2.35	2.88
% American Indian	0.00	2.80	0.35	0.50
% White	1.10	100.00	82.23	23.44

SD = Standard Deviation

Principal Demographic Data

The study included self-reported demographic data about the principal of each school including gender, race, age, total years as principal, and years as principal at the

school included in the study. Of the 79 principals included in the study, 49 were male (62.03%) and 30 were female (37.97%); all principals responded to this question (Table 2). The ethnicity reported by the principals was 68 Caucasian (86.07%), 8 African-American (10.13%), with 3 principals (3.80%) not responding to the question (Table 3). Data about the principals, including age, total years as principal, and years at their current school, are presented in Table 4. The principals ranged in age from a low of 29 to a high of 66 with an average age of 45.58 and a standard deviation of 7.99. The principals served a minimum of one year as a principal to a maximum of 30 years with a mean of 7.18 years and a standard deviation of 6.06. The length of time principals served in their current position ranged from one to thirty years with an average of 5.62 years and a standard deviation of 5.05.

Table 2
Principal Gender (N=79)

Gender	Number	Percent
Male	49	62.03
Female	30	37.97
No Response	0	0

Table 3
Principal Race (N=79)

Race	Number	Percent
Caucasian	68	86.07
African-American	8	10.13
No Response	3	3.80

Table 4
Principal Age and Experience (N=79)

Demographic	Min	Max	Mean	SD
Age	29	66	45.58	7.99
Total Years as Principal	1	30	7.18	6.06
Years as Principal at Current School	1	30	5.62	5.05

Achievement Data

The Missouri Assessment Program (MAP) communication arts results from the 2006-2007 school year were used to analyze student achievement for each school. The MAP test was scored using four levels including below basic, basic, proficient, and advanced. The score for each school was the percent of students at the proficient and advanced level of the communication arts MAP. Only grade 8 communication arts MAP data were used because those data represent student performance at the time of exit from the 6 through 8 middle school. The MAP communications arts mean score for the 79 schools was 43.76 percent of students scoring at the proficient and advanced levels. The minimum score was 5.60 and the maximum score of 70.0 with a standard deviation of 12.58 (Table 5).

Table 5
Missouri Assessment Program (MAP) Data (N=79)

Demographic	Min	Max	Mean	SD
% of Students in Top Two Categories	5.60	70.00	43.76	12.58

Transformational Leadership Data

The Principal Leadership Questionnaire (PLQ) (Jantzi & Leithwood, 1996) was used to gather data about the principal's transformational leadership characteristics. The PLQ consists of 24 Likert-type questions with six response options: strongly disagree, disagree, somewhat disagree, somewhat agree, agree, and strongly agree. Each of the six PLQ factors described below used the same scale. There are six factors of the PLQ and all six factors of the PLQ were used in the data collection. The six PLQ factors are (1) Vision Identification, (2) Modeling, (3) Goal Acceptance, (4) Individualized Support, (5) Intellectual Simulation, and (6) High Performance Expectations. The higher the score on

the respective factor of the PLQ, the more the respondents agreed with the factor statements. A copy of the PLQ is provided in Appendix I.

The data of the PLQ including the minimum and maximum score, the mean score, and the standard deviation are outlined in Table 6. The mean score for each factor was: Vision Identification (4.70), Modeling (4.68), Goal Acceptance (4.78), Individualized Support (4.81), Intellectual Stimulation (4.69), and High Performance Expectations (4.90).

Table 6
Principal Leadership Questionnaire (PLQ) Factor Data (N=79)

PLQ Factor	Min	Max	Mean	SD
Vision Identification	3.15	5.93	4.70	.73
Modeling	3.11	6.00	4.68	.80
Goal Acceptance	3.27	5.87	4.78	.62
Individualized Support	3.13	5.93	4.81	.66
Intellectual Stimulation	3.38	5.83	4.69	.63
High Performance Expectations	2.83	6.00	4.90	.64

School Culture Data

The School Culture Survey (SCS) (Gruenert, 1998) was used to gather data about the school's culture. The SCS consists of 35 Likert-type questions with six response options: strongly disagree, disagree, somewhat disagree, somewhat agree, agree, and strongly agree. Each of the six SCS factors described below used the same scale. There are six factors of the SCS and all six factors of the SCS were used in the data collection. The six SCS factors are (1) Collaborative Leadership, (2) Teacher Collaboration, (3) Professional Development, (4) Unity of Purpose, (5) Collegial Support, and (6) Learning Partnership. The higher the score on the respective factor of the SCS, the more the respondents agreed with the factor statements. A copy of the SCS is provided in Appendix I.

The data of the SCS including the minimum and maximum score, the mean score, and the standard deviation are outlined in Table 7. The mean score for each factor was: Collaborative Leadership (4.49), Teacher Collaboration (4.08), Professional Development (4.87), Unity of Purpose (4.82), Collegial Support (4.90), and Learning Partnership (4.10).

Table 7
School Culture Survey (SCS) Factor Data (N=79)

SCS Factor	Min	Max	Mean	SD
Collaborative Leadership	3.12	5.73	4.49	.55
Teacher Collaboration	2.83	5.50	4.08	.52
Professional Development	3.93	5.73	4.87	.38
Unity of Purpose	3.93	5.80	4.82	.39
Collegial Support	4.19	5.75	4.90	.36
Learning Partnership	2.88	5.18	4.10	.45

Hypotheses Testing

Four hypotheses were tested in this study. Hypothesis one was tested by analyzing the correlational relationships between the factors of the Principal Leadership Questionnaire (PLQ), the factors of the School Culture Survey (SCS), the percent of students scoring at the proficient and advanced level on the grade 8 Missouri Assessment Program (MAP) communication arts achievement data, and selected demographics including student race, principal experience, school enrollment, and the percent of students eligible for free and reduced lunch using zero-order correlations. Partial correlations were also analyzed, using the same variables described above, while controlling for school enrollment and the percent of students eligible for free and reduced lunch, as the proxy measure of socioeconomic status (SES), separately and in combination. The second, third, and fourth hypotheses were tested using stepwise

multiple regression analysis with school enrollment and the percent of students eligible for free and reduced lunch entered as independent variables.

Hypothesis One

Hypothesis one in this study was: There are no statistically significant correlational relationships between the factors of transformational leadership, as measured by the Principal Leadership Questionnaire (PLQ), the factors of school culture, as measured by the School Culture Survey (SCS), and student achievement, as measured by the Missouri Assessment Program (MAP), in communication arts in Missouri middle schools. Zero-order correlations and partial correlations, which controlled for school enrollment and the percent of students eligible for free and reduced lunch separately and in combination, were calculated to determine the relationship between the factors of the PLQ, SCS, MAP achievement data in communication arts, and selected demographics.

Cohen's (1992) research provided guidelines used to describe the effect size in the correlations: an *r* value of .10 to .29 was considered to have a small effect size, an *r* value of .30 to .49 had a medium effect size, and an *r* value of .50 or higher had a large effect size (Cohen, 1992).

Zero-order correlations.

The zero-order correlations of the six factors of the PLQ measuring transformational leadership to achievement and student race, principal experience, enrollment, and free and reduced lunch demographics are reported in Table 8. A significant correlation with a small effect size existed between the percent of American Indian students and the factors of Vision Identification ($r = .263$, $p = .019$), Modeling ($r = .264$, $p = .029$), Goal Acceptance ($r = .291$, $p = .009$), and Individualized Support (*r* =

.274, p = .014). As the percent of American Indian students increased, so did the factor scores of Vision Identification, Modeling, Goal Acceptance, and Individualized Support. Of the 79 schools, 49 reported no American Indian enrollment and only 7 schools reported more than a one percent enrollment of American Indian students. No statistically significant relationships existed between achievement data and any of the six factors of the PLQ.

Table 8
Zero-order Correlations of Transformational Leadership Factors, Achievement, and Selected Demographics

		Vision Identification	Modeling	Goal Acceptance	Individualized Support	Intellectual Stimulation	High Performance Expectations
Comm. Arts 06-07	*r*	.093	.057	.091	.192	.117	.068
% in Top Two	sig.	.413	.621	.425	.089	.304	.549
% Asian	*r*	.039	.053	.078	.058	.053	.062
	sig.	.730	.643	.495	.613	.642	.587
% Black	*r*	-.022	-.029	-.038	-.077	-.055	.036
	sig.	.844	.800	.740	.499	.630	.755
% Hispanic	*r*	.033	.032	.066	.031	.031	.081
	sig.	.773	.779	.566	.786	.784	.479
% American	*r*	.263*	.264*	.291**	.274*	.207	.189
Indian	sig.	.019	.029	.009	.014	.068	.095
% White	*r*	.009	.015	.017	.062	.042	-.053
	sig.	.934	.893	.879	.589	.714	.644
Total Yrs as	*r*	-.050	-.056	-.121	.048	-.012	.067
Principal	sig.	.664	.625	.293	.678	.916	.561
Yrs as Principal at	*r*	-.048	-.083	-.067	.042	-.018	.018
Current School	sig.	.675	.472	.558	.715	.879	.876
School	*r*	-.187	-.167	-.163	-.161	-.153	-.042
Enrollment	sig.	.098	.140	.152	.157	.179	.710
% Free/Reduced	*r*	.137	.164	.119	.102	.131	.152
Lunch	sig.	.228	.149	.295	.372	.250	.181

* p<.05, ** p<.01

Statistically significant relationships were found using zero-order correlations between four of the six factors of the SCS and communication arts achievement. Relationships were also found between factors of the SCS and student race, enrollment, and the percent of students eligible for free and reduced lunch. Achievement data from the 2006-2007 communication arts MAP were statistically significant for four factors of the SCS. Professional Development (r = .245, p = .029), Unity of Purpose (r = .256, p = .023), Collegial Support (r = .250, p = .026), and Learning Partnership (r = .451, p = .000) had either a small or medium effect size correlation. For each analysis, when the culture rating was higher, so was the achievement on the communication arts MAP. Learning Partnership also had statistically significant negative correlations with a small effect size to the percent of black students (r = -.269, p = .016) and the percent of students eligible for free and reduced lunch (r = -.227, p = .045) and a positive correlation with a small effect size to the percent of white students (r = .260, p = .021). Learning Partnership tended to be lower in schools where the percent of black students and students eligible for free and reduced lunch was higher; however, when the percent of white students was higher, the factor scores for Learning Partnership were higher. Unity of Purpose negatively correlated with a small effect size to school enrollment (r = -.268, p = .017). As the school enrollment increased, the Unity of Purpose score decreased. The factor Teacher Collaboration from the SCS correlated with a small effect size to the percent of American Indians (r = .231, p = .041). The Teacher Collaboration score increased as the percent of American Indian students increased. The complete set of correlations for the six factors of the SCS, achievement and student race, principal

experience, school enrollment, and free and reduced lunch demographics can be found in Table 9.

Table 9
Zero-order Correlations of School Culture Factors, Achievement, and Selected Demographics

		Collaborative Leadership	Teacher Collaboration	Professional Development	Unity of Purpose	Collegial Support	Learning Partnership
Comm. Arts 06-07	*r*	.166	.085	.245*	.256*	.250*	.451**
% in Top Two	sig.	.144	.455	.029	.023	.026	.000
% Asian	*r*	.015	.116	.002	-.023	.019	.124
	sig.	.895	.307	.983	.838	.866	.278
% Black	*r*	-.097	.035	-.100	-.191	-.184	-.269*
	sig.	.396	.760	.381	.092	.104	.016
% Hispanic	*r*	.101	.134	-.090	-.007	-.100	-.040
	sig.	.374	.238	.430	.950	.382	.728
% American	*r*	.203	.231*	.121	.172	.034	-.041
Indian	sig.	.073	.041	.287	.130	.764	.722
% White	*r*	.076	-.063	.106	.185	.190	.260*
	sig.	.504	.580	.355	.103	.093	.021
Total Yrs as	*r*	-.031	-.140	.077	.054	-.036	.014
Principal	sig.	.787	.221	.505	.642	.753	.906
Yrs as Principal at	*r*	.038	-.064	.097	.088	.009	.062
Current School	sig.	.740	.578	.400	.444	.939	.592
School	*r*	-.156	.037	-.220	-.268*	-.186	-.097
Enrollment	sig.	.170	.746	.051	.017	.101	.393
% Free/Reduced	*r*	.074	.145	.064	.030	-.066	-.227*
Lunch	sig.	.518	.202	.577	.790	.563	.045

* p<.05, ** p<.01

Several statistically significant relationships were present when achievement data and the demographics of student race, principal experience, school enrollment, and the percent of students eligible for free and reduced lunch correlated. The achievement data from the 2006-2007 communication arts MAP positively correlated with a medium effect size to the percent of Asian students (r =.330, p = .003) and with a large effect size to the

percent of white students (r =.580, p = .000). The higher the percent of Asian and white students, the higher the percent of students scoring at the proficient and advanced level on the communication arts MAP. Negative correlations existed with a large effect size between achievement data from the 2006-2007 communication arts MAP with the percent of black students (r = -.618, p = .000) and the percent of students eligible for free and reduced lunch (r = -.718, p = .000). Communication arts scores decreased as the percent of black students and the percent of student eligible for free and reduced lunch increased. The percent of Asian students correlated to the percent of Hispanic students (r = .287, p = .010) and school enrollment (r = .389, p = .000) with a small and medium effect size respectively. As the percent of Asian students increased, so did the percent of American Indian students in the school and the size of the school. The percent of Asian students negatively correlated with the percent of students eligible for free and reduced lunch (r = -.317, p = .004) with a medium effect size. The higher the percent of Asian students in the school, the lower the percent of students eligible for free and reduced lunch. The percent of black students correlated with a small effect size to school enrollment (r = .246, p = .029), a large effect size of the percent of students eligible for free and reduced lunch (r = .590, p = .000), and a large effect size for the negative correlation with the percent of white students (r = -.987, p = .000). Schools with a higher percent of black students were more likely to have higher enrollment and percent of students eligible for free and reduced lunch with a lower percent of white students. The percent of Hispanic students positively correlated with a medium effect size to both the percent of American Indian students (r = .393, p = .000) and school enrollment (r = .426, p = .000). When the percent of Hispanic students was higher, the percent of American

Indian students and school enrollment was higher. The percent of white students negatively correlated to both school enrollment with a medium effect size (r = -.319, p = .004) and the percent of students eligible for free and reduced lunch with a large effect size (r = -.550, p = .000). Unlike black students who were more likely to go to a school with higher enrollment and a higher percent of students eligible for free and reduced lunch, white students were more likely to attend a school with lower enrollment and a lower percent of students eligible for free and reduced lunch. The total years the principal had served in that role correlated to the years the principal had been at the current school with a large effect size (r = .820, p = .000). As the number of years a principal had served increased so did the number of years the principal had been at the current school in the study. These statistically significant correlations, as well as correlations which were not statistically significant, appear in Table 10.

Table 10
Zero-order Correlations of Selected Demographics

		Comm. Arts 06-07 % in Top Two	% Asian	% Black	% Hispanic	% American Indian	% White
Comm. Arts 06-07 % in Top Two	*r*	1.00					
	sig.						
% Asian	*r*	.330**	1.00				
	sig.	.003					
% Black	*r*	-.618**	.058	1.00			
	sig.	.000	.612				
% Hispanic	*r*	.014	.287**	.063	1.00		
	sig.	.902	.010	.584			
% American Indian	*r*	.071	.132	-.049	.393**	1.00	
	sig.	.531	.248	.669	.000		
% White	*r*	.580**	-.158	-.987**	-.211	-.030	1.00
	sig.	.000	.166	.000	.062	.793	
Total Yrs as Principal	*r*	.122	.023	-.132	-.011	.007	.129
	sig.	.286	.843	.249	.926	.948	.259
Yrs as Principal at Current School	*r*	.116	.028	-.132	-.083	-.107	.140
	sig.	.311	.809	.250	.470	.351	.222
School Enrollment	*r*	-.018	.389**	.246**	.426**	.056	-.319**
	sig.	.873	.000	.029	.000	.624	.004
% Free/Reduced Lunch	*r*	-.718**	-.317**	.590**	-.072	.145	-.550**
	sig.	.000	.004	.000	.526	.201	.000

* p<.05, ** p<.01

Table 10 (Continued)
Zero-order Correlations of Selected Demographics

		Total Yrs as Principal	Yrs as Principal at Current School	School Enrollment
Total Yrs as Principal	*r*	1.00		
	sig.			
Yrs as Principal at Current School	*r*	.820**	1.00	
	sig.	.000		
School Enrollment	*r*	-.141	-.150	1.00
	sig.	.217	.190	
% Free/Reduced Lunch	*r*	-.106	-.081	-.180
	sig.	.354	.479	.112

* p<.05, ** p<.01

Partial correlations using free and reduced lunch.

The partial correlations using the percent of students eligible for free and reduced lunch as the control variable for the six factors of the PLQ, achievement data, and the demographics of student race, principal experience, and school enrollment are presented in Table 11. The percent of students eligible for free and reduced lunch was the variable selected to be partialed-out in the analysis. A meta-analysis by Sirin (2005), which replicated a previous meta-analysis from the early 1980s, found that socioeconomic status has an influence on student achievement.

When the percent of students eligible for free and reduced lunch was controlled, achievement data from the 2006-2007 communication arts MAP were all statistically significant when correlated to all six factors of the PLQ. These correlations were Vision Identification (r = .277, p = .015), Modeling (r = .253, p = .026), Goal Acceptance (r = .253, p = .026), Individualized Support (r = .382, p = .001), Intellectual Stimulation (r =

.310, p = .006), and High Performance Expectations (r = .261, p = .022) with a mix of small and medium effect sizes. As the transformational principal leadership behavior increased so did student achievement as measured by the percent of students scoring proficient and advanced on the communication arts MAP test when the effect of the percent of students eligible for free and reduced lunch was partialed-out for the analysis. This contrasts to the findings of no significant correlations for these same PLQ variables when the percent of students eligible for free and reduced lunch was not controlled (Table 8).

The percent of American Indian students correlated with a small effect size to Vision Identification (r = .250, p = .028), Modeling (r = .229, p = .045), Goal Acceptance (r = .281, p = .013), and Individualized Support (r = .266, p = .019). The principal transformational leadership behaviors of Vision Identification, Modeling, Goal Acceptance, and Individualized Support increased as the percent of American Indian students increased when controlling for the effect of the percent of students eligible for free and reduced lunch. These findings parallel those of the zero-order correlations found in Table 8.

Table 11
Partial Correlations (controlling for Percent of Students Eligible for Free and Reduced Lunch) of Transformational Leadership Factors, Achievement, and Selected Demographics

		Vision Identification	Modeling	Goal Acceptance	Individualized Support	Intellectual Stimulation	High Performance Expectations
Comm. Arts 06-07 % in Top Two	*r*	.277*	.253*	.253*	.382**	.310**	.261*
	sig.	.015	.026	.026	.001	.006	.022
% Asian	*r*	.090	.113	.125	.097	.100	.117
	sig.	.438	.326	.278	.399	.387	.310
% Black	*r*	-.127	-.156	-.131	-.168	-.169	-.070
	sig.	.270	.174	.225	.144	.142	.546
% Hispanic	*r*	.048	.049	.082	.045	.040	.093
	sig.	.679	.674	.479	.700	.732	.420
% American Indian	*r*	.250*	.229*	.281*	.266*	.191	.171
	sig.	.028	.045	.013	.019	.097	.138
% White	*r*	.100	.127	.096	.138	.142	.040
	sig.	.386	.272	.407	.230	.218	.732
Total Yrs as Principal	*r*	-.036	-.040	-.109	.059	.002	.084
	sig.	.756	.733	.345	.609	.998	.465
Yrs as Principal at Current School	*r*	-.038	-.070	-.058	.051	.-.007	.031
	sig.	.746	.542	.616	.661	.952	.791
School Enrollment	*r*	-.167	-.142	-.140	-.142	-.140	-.019
	sig.	.147	.219	.224	.218	.224	.871

* p<.05, ** p<.01

Numerous partial correlations were significant, when using the percent of students eligible for free and reduced lunch as the control variable, between the six factors of the SCS and the demographics of student race, principal experience, and school enrollment (Table 12). The achievement data from the 2006-2007 communication arts MAP significantly correlated to all the factors of the SCS as follows: Collaborative Leadership (r = .321, p = .004), Teacher Collaboration (r = .280, p = .014), Professional Development (r = .418, p = .000), Unity of Purpose (r = .403, p = .000), Collegial

Support (r = .290, p = .010), and Learning Partnership (r = .431, p = .000). As the achievement data increased, so did all six factors of the SCS. This differed from when the percent of students eligible for free and reduced lunch was not controlled (Table 9). Only four factors of the SCS were statistically significant without controlling for the percent of students eligible for free and reduced lunch (Table 9). When the percent of students eligible for free and reduced lunch was not controlled for, Collaborative Leadership had an r value of .166 and a p value of .144 as compared to an r value of .321 and a p value of .004 when the percent of students eligible for free and reduced lunch was controlled for in the analysis. The inclusion of the control variable made this correlation statistically significant. When the percent of students eligible for free and reduced lunch was not controlled for, Teacher Collaboration had an r value of .085 and a p value of .455 as compared to an r value of .280 and a p value of .014 when the percent of students eligible for free and reduced lunch was a control variable in the analysis. The inclusion of the control variable made this correlation statistically significant. The correlations for Professional Development, without the control (r = .245, p = .029) and with the control (r = .418, p = .000), Unity of Purpose, without the control (r = .256, p = .023) and with the control (r = .403, p = .000), and Collegial Support, without the control (r = .250, p = .026) and with the control (r = .290, p = .010), increased both the r value and the level of significance when the control variable was introduced. Learning Partnership without the control (r = .451, p = .000) and with the control (r = .431, p = .000) had a decrease in the r value. The Unity of Purpose factor had a small effect size negatively correlated to the percent of black students (r = -.262, p = .021) and school enrollment (r = -.277, p = .015) and a positive correlation with a small effect size to the percent of white students (r =

.245, p = .031). An increase in the percent of black students or an increase in enrollment meant the Unity of Purpose score was lower when controlling for the percent of students eligible for free and reduced lunch while an increase in the percent of white students meant the Unity of Purpose score was higher when controlling for the percent of students eligible for free and reduced lunch.

Table 12
Partial Correlations (controlling for Percent of Students Eligible for Free and Reduced Lunch) of School Culture Factors, Achievement, and Selected Demographics

		Collaborative Leadership	Teacher Collaboration	Professional Development	Unity of Purpose	Collegial Support	Learning Partnership
Comm. Arts 06-07 %	*r*	.321**	.280*	.418**	.403**	.290**	.431**
in Top Two	sig.	.004	.014	.000	.000	.010	.000
% Asian	*r*	.039	.172	.026	-.015	.000	.055
	sig.	.737	.135	.824	.899	.999	.636
% Black	*r*	-.181	-.068	-.168	-.262*	-.178	-.178
	sig.	.115	.555	.144	.021	.121	.122
% Hispanic	*r*	.103	.144	-.082	-.006	-.101	-.063
	sig.	.371	.211	.479	.961	.381	.588
% American Indian	*r*	.193	.213	.115	.169	.046	-.009
	sig.	.092	.063	.318	.141	.690	.359
% White	*r*	.148	.025	.166	.245*	.182	.173
	sig.	.199	.828	.150	.031	.113	.132
Total Yrs as Principal	*r*	-.024	-.127	.084	.057	-.043	-.011
	sig.	.839	.272	.467	.622	.707	..925
Yrs as Principal at	*r*	.044	-.053	.102	.091	.004	.044
Current School	sig.	.702	.648	.376	.433	.975	.701
School	*r*	-.159	.060	-.212	-.277*	-.200	-.155
Enrollment	sig.	.168	.606	.065	.015	.081	.177

* p<.05, ** p<.01

Partial correlations, using the percent of students eligible for free and reduced lunch as the control variable, were completed using achievement data, and the demographics of student race, principal experience, and school enrollment as variables

(Table 13). The percent of students scoring proficient and advanced on the communication arts MAP positively correlated with a small and medium effect size respectively to the percent of American Indian students (r = .264, p = .020) and the percent of white students (r = .304, p = .007). As communication arts scores increased the percent of American Indian and white students increased in the school. A negative correlation existed between the percent of students scoring proficient and advanced on the communication arts MAP and the percent of black students (r = .336, p = .003). As communication arts scores increased the percent of black students decreased. The percent of Asian students positively correlated to the percent of black students (r = .315, p = .005), the percent of Hispanic students (r = .274, p = .016), and school enrollment (r = .353, p = .002) with either a small or medium effect size. As the percent of Asian students increased so did the percent of black and Hispanic students and school enrollment. A negative correlation with a medium effect size existed between the percent of Asian students and the percent of white students (r = -.416, p = .000). The higher the percent of Asian students in the school, the lower the percent of white students. The percent of black students positively correlated with a medium effect size to school enrollment (r = .425, p = .000) and a large effect size with a negative correlation to the percent of white students (r = -.982, p = .000). As the percent of black students increased, the school enrollment increased but the percent of white students decreased. The percent of Hispanic students positively correlated to the percent of American Indian students (r = .406, p = .000) and school enrollment (r = .397, p = .000) both with a medium effect size, but a negative correlation existed with the percent of white students (r = -.281, p = .013), a small effect size. The greater the percent of Hispanic students in the school, the higher the percent of

American Indian students and the larger the school enrollment but the lower the percent of white students. School enrollment had a medium effect size with a negative correlation with the percent of white students (r = -.489, p = .000). As the enrollment size in a school increased the percent of white students decreased. A correlation with a large effect size existed between the total number of year the principal served in that role and the total number of years served at the current school (r = .819, p = .000). The more years a principal had been in this current assignment the more years the principal had served in this same role throughout his/her career.

Table 13
Partial Correlations (controlling for Percent of Students Eligible for Free and Reduced Lunch) of Selected Demographics

		Comm. Arts 06-07 % in Top Two	% Asian	% Black	% Hispanic	% American Indian	% White
Comm. Arts 06-07 % in Top Two	*r*	1.00					
	sig.						
% Asian	*r*	.164	1.00				
	sig.	.155					
% Black	*r*	-.336*	.315**	1.00			
	sig.	.003	.005				
% Hispanic	*r*	-.036	.274*	.109	1.00		
	sig.	.758	.016	.345			
% American Indian	*r*	.264*	.187	-.179	.406**	1.00	
	sig.	.020	.104	.120	.000		
% White	*r*	.304**	-.416**	-.982**	-.281*	.071	1.00
	sig.	.007	.000	.000	.013	.539	
Total Yrs as Principal	*r*	.066	-.012	-.086	-.019	.023	.085
	sig.	.566	.919	.456	.870	.841	.462
Yrs as Principal at Current School	*r*	.083	.002	-.104	-.090	-.097	.114
	sig.	.471	.986	.368	.438	.403	.323
School Enrollment	*r*	-.194	.353**	.425**	.397**	.073	-.489**
	sig.	.092	.002	.000	.000	.527	.000

* p<.05, ** p<.01

Table 13 (Continued)
Partial Correlations (controlling for Percent of Students Eligible for Free and Reduced Lunch) of Selected Demographics

		Total Yrs as Principal	Yrs as Principal at Current School
Total Yrs as Principal	*r*	1.00	
	sig.		
Yrs as Principal at Current School	*r*	.819**	1.00
	sig.	.000	
School Enrollment	*r*	-.166	-.169
	sig.	.150	.142

* p<.05, ** p<.01

Partial correlations using school enrollment.

The partial correlations, using school enrollment as the control variable, for the six factors of the PLQ, achievement data, and the demographics of student race, principal experience, and the percent of students eligible for free and reduced lunch are presented in Table 14. The statistically significant correlations were between the percent of American Indian students and Vision Identification (r = .278, p =.014), Modeling (r = .258, p = .023), Goal Acceptance (r = .305, p = .007), and Individualized Support (r = .287, p = .011). All of these correlations have either a small or medium effect size. As the percent of American Indian students increased so did the scores for the PLQ factors of Vision Identification, Modeling, Goal Acceptance, and Individualized Support. These findings reflect the same statistically significant relations as the zero-order correlations displayed in Table 8 and in Table 11, which used the percent of students eligible for free and reduced lunch as the control variable. Statistically significant partial correlations were found between all factors of the PLQ and communication arts MAP scores in Table

11 which used the percent of students eligible for free and reduced lunch as the control variable. Those findings were not present when school enrollment was used as the control variable.

Table 14
Partial Correlations (controlling for School Enrollment) of Transformational Leadership Factors, Achievement, and Selected Demographics

		Vision Identification	Modeling	Goal Acceptance	Individualized Support	Intellectual Stimulation	High Performance Expectations
Comm. Arts 06-07	*r*	.095	.057	.090	.194	.122	.070
% in Top Two	sig.	.413	.624	.435	.091	.292	.543
% Asian	*r*	.126	.132	.156	.133	.127	.087
	sig.	.276	.254	.176	.249	.272	.453
% Black	*r*	.023	.011	.002	-.040	-.022	.046
	sig.	.842	.924	.988	.729	.847	.691
% Hispanic	*r*	.125	.114	.151	.111	.104	.109
	sig.	.277	.322	.190	.337	.366	.347
% American	*r*	.278*	.258*	.305**	.287*	.216	.191
Indian	sig.	.014	.023	.007	.011	.059	.096
% White	*r*	-.052	-.039	-.036	.012	-.003	-.068
	sig.	.653	.738	.754	.918	.981	.555
Total Yrs as	*r*	-.079	-.082	-.146	.026	-.036	.061
Principal	sig.	.496	.478	.204	.823	.758	.599
Yrs as Principal at	*r*	-.079	-.111	-.093	.019	-.043	.011
Current School	sig.	.496	.338	.419	.871	.712	.924
% Free/Reduced	*r*	.106	.137	.093	.075	.103	.146
Lunch	sig.	.361	.236	.423	.519	.372	.207

* p<.05, ** p<.01

Numerous partial correlations were significant, using school enrollment as the control variable, between the six factors of the SCS and the demographics of student race, principal experience, and the percent of students eligible for free and reduced lunch (Table 15). Achievement data from the 2006-2007 communication arts MAP were statistically significant for four factors of the SCS including Professional Development (*r*

= .251, p = .028), Unity of Purpose (r = .270, p = .018), Collegial Support (r = .253, p = .026), and Learning Partnership (r = .458, p = .000). For each analysis, when the culture factor was higher, so was the achievement on the communication arts MAP. Learning Partnership also had statistically significant negative correlations with a small effect size to the percent of black students (r = -.258, p = .023) and the percent of students eligible for free and reduced lunch (r = -.253, p = .026) but a positive correlation with a small effect size to the percent of white students (r = .247, p = .030). Learning Partnership tended to be lower in schools where the percent of black students and students eligible for free and reduced lunch was higher but scores were higher for Learning Partnership in schools with a higher percent of white students. A correlation with a small effect size existed between the percent of American Indian students and Teacher Collaboration (r = .229, p = .046). The percent of American Indian students increased with the scores for the Teacher Collaboration factor of the SCS. These statistically significant findings are also reflected in Table 9. The percent of black and white students correlated to the SCS factor of Unity of Purpose when the percent of students eligible for free and reduced lunch was the control variable (Table 12). The correlation between the percent of black and white students and Unity of Purpose was not statistically significant when school enrollment was controlled (Table 15). Collaborative Leadership and Teacher Collaboration were statistically significant in Table 12, which used the percent of students eligible for free and reduced lunch as the control, and not in Table 15, which used school enrollment as the control.

Table 15
Partial Correlations (controlling for School Enrollment) of School Culture Factors, Achievement, and Selected Demographics

		Collaborative Leadership	Teacher Collaboration	Professional Development	Unity of Purpose	Collegial Support	Learning Partnership
Comm. Arts 06-07	*r*	.173	.089	.251*	.270*	.253*	.458**
% in Top Two	sig.	.132	.444	.028	.018	.026	.000
% Asian	*r*	.087	.112	.099	.096	.102	.179
	sig.	.450	.332	.390	.409	.377	.119
% Black	*r*	-.067	.025	-.050	-.140	-.147	-.258*
	sig.	.564	.828	.664	.225	.202	.023
% Hispanic	*r*	.183	.130	.002	.118	-.024	-.001
	sig.	.110	.260	.983	.305	.835	.993
% American	*r*	.212	.229*	.136	.192	.045	-.038
Indian	sig.	.064	.046	.237	.095	.698	.746
% White	*r*	.035	-.053	.040	.115	.142	.247*
	sig.	.765	.649	.727	.318	.217	.030
Total Yrs as	*r*	-.056	-.137	.047	.015	-.064	-.001
Principal	sig.	.626	.234	.683	.897	.581	.991
Yrs as Principal at	*r*	.013	-.060	.066	.049	-.019	.047
Current School	sig.	.910	.604	.568	.674	.868	.688
% Free/Reduced	*r*	.042	.153	.023	-.024	-.104	-.253*
Lunch	sig.	.714	.183	.839	.836	.368	.026

* p<.05, ** p<.01

When achievement data and the demographics of student race, school enrollment, principal experience, and the percent of students eligible for free and reduced lunch were correlated and school enrollment was the control variable there were several statistically significant relationships (Table 16). The achievement data from the 2006-2007 communication arts MAP positively correlated with a medium and large effect size respectively to the percent of Asian students (r =.363, p = .001) and the percent of white students (r =.602, p = .000). The higher the communication arts MAP scores, the higher the percent of Asian and white students. Negative correlations existed with a large effect

size between achievement data from the 2006-2007 communication arts MAP with the percent of black students (r = -.631, p = .000) and the percent of students eligible for free and reduced lunch (r = -.732, p = .000). Communication arts scores decreased as the percent of black students and the percent of students eligible for free and reduced lunch increased. The percent of Asian students correlated negatively with the percent of students eligible for free and reduced lunch (r = -.270, p = .018) with a small effect size. The higher the percent of Asian students in the school, the lower the percent of students eligible for free and reduced lunch. The percent of black students correlated with a large effect size to the percent of students eligible for free and reduced lunch (r = .646, p = .000), and a large effect size for the negative correlation with the percent of white students (r = -.989, p = .000). Schools with a higher percent of black students were more likely to have a higher percent of students eligible for free and reduced lunch and a lower percent of white students. The percent of Hispanic students positively correlated with a medium effect size to the percent of American Indian students (r = .407, p = .000). The larger the percent of Hispanic students was in a school, the larger the percent of American Indian students. The percent of white students negatively correlated to the percent of students eligible for free and reduced lunch with a large effect size (r = -.650, p = .000). Unlike black students who were more likely to go to a school with a higher percent of students eligible for free and reduced lunch, white students were more likely to attend a school with a lower percent of students eligible for free and reduced lunch. The total years the principal had served in that role correlated to the years the principal had been at the current school, which produced a large effect size (r = .816, p = .000). As the total number of years a principal has served in this role increased so did the number of

years the principal has been the principal of the current school. One additional correlation was statistically significant in Table 10, the zero-order correlations, but not in Table 16. Partialing out the percent of students eligible for free and reduced lunch produced findings indicating the percent of black, Hispanic, and white students each correlated to the percent of Asian students (Table 13). The percent of white students also correlated to the percent of Hispanic students while the percent of American Indian students correlated to the communication arts MAP data (Table 13). However, the percent of Asian students correlated to the percent of students scoring proficient and advanced on the communication arts MAP in Table 16 but not Table 13. These four partial correlations using the percent of students eligible for free and reduced lunch were not present when school enrollment was used as the control variable in Table 16. A correlation existed between the total years the principal had served in that role and the years the principal had served at the current school in the study in the zero-order correlations and the partial correlations, which used either the percent of students eligible for free and reduced lunch or school enrollment as the control.

Table 16
Partial Correlations (controlling for School Enrollment) of Selected Demographics

		Comm. Arts 06-07 % in Top Two	% Asian	% Black	% Hispanic	% American Indian	% White
Comm. Arts 06-07 % in Top Two	*r*	1.00					
	sig.						
% Asian	*r*	.363**	1.00				
	sig.	.001					
% Black	*r*	-.631**	-.034	1.00			
	sig.	.000	.738				
% Hispanic	*r*	.031	.150	-.054	1.00		
	sig.	.790	.193	.644			
% American Indian	*r*	.007	.122	-.068	.407**	1.00	
	sig.	.504	.290	.555	.000		
% White	*r*	.602**	-.043	-.989**	-.083	-.009	1.00
	sig.	.000	.712	.000	.476	.936	
Total Yrs as Principal	*r*	.124	.085	-.104	.051	.014	.093
	sig.	.281	.461	.368	.659	.905	.423
Yrs as Principal at Current School	*r*	.118	.095	-.102	-.025	-.102	.101
	sig.	.305	.413	.378	.830	.378	.380
% Free/Reduced Lunch	*r*	-.732**	-.270*	.646**	.000	.156	-.650**
	sig.	.000	.018	.000	.997	.176	.000

* p<.05, ** p<.01

Table 16 (Continued)
Partial Correlations (controlling for School Enrollment) of Selected Demographics

		Total Yrs as Principal	Yrs as Principal at Current School
Total Yrs as Principal	*r*	1.00	
	sig.		
Yrs as Principal at Current School	*r*	.816**	1.00
	sig.	.000	
% Free/Reduced Lunch	*r*	-.137	-.113
	sig.	.235	.327

* p<.05, ** p<.01

Partial correlations using free and reduced lunch and school enrollment.

The partial correlations, using the percent of students eligible for free and reduced lunch and school enrollment as the control variables, for the six factors of the PLQ, achievement data, and the demographics of student race and principal experience are presented in Table 17. When the percent of students eligible for free and reduced lunch and school enrollment were controlled for, achievement data from the 2006-2007 communication arts MAP were all statistically significant when correlated to all six factors of the PLQ. These correlations were: Vision Identification (r = .253, p = .027), Modeling (r = .232, p = .044), Goal Acceptance (r = .233, p = .043), Individualized Support (r = .365, p = .001), Intellectual Stimulation (r = .291, p = .011), and High Performance Expectations (r = .262, p = .022), providing a mix of small and medium effect sizes. As the transformational principal leadership behavior increased so did student achievement as measured by the percent of students scoring proficient and

advanced on the 2006-2007 communication arts MAP test when controlling for the percent of students eligible for free and reduced lunch and school enrollment. This contrasts to the findings of no significant correlations for these same PLQ variables in the zero-order correlations and in the partial correlations which used only school enrollment as the control variable (Table 8 and Table 14). The percent of American Indian students correlated with a small effect size to Vision Identification (r = .267, p = .020), Modeling (r = .242, p = .035), Goal Acceptance (r = .295, p = .010), and Individualized Support (r = .280, p = .014). By controlling for the percent of students eligible for free and reduced lunch and school enrollment, the principal transformational leadership behaviors of Vision Identification, Modeling, Goal Acceptance, and Individualized Support increased as the percent of American Indian students increased. These same statistically significant relationships were found in the partial correlations which used only the percent of students eligible for free and reduced lunch (Table 11). The inclusion of school enrollment with the percent of students eligible for free and reduced lunch as opposed to only using the percent of students eligible for free and reduced lunch as the control caused five of the six PLQ factor r values to decrease and one to increase. The inclusion also decreased the significance level of four of the six factors with two keeping the same p value. The inclusion of enrollment also caused all four of the correlations related to the percent of American Indians shared between Table 11 and Table 17 to increase in r value and decrease in p value.

Table 17
Partial Correlations (controlling for Percent of Students Eligible for Free and Reduced Lunch and School Enrollment) of Transformational Leadership Factors, Achievement, and Selected Demographics

		Vision Identification	Modeling	Goal Acceptance	Individualized Support	Intellectual Stimulation	High Performance Expectations
Comm. Arts 06-07	*r*	.253*	.232*	.233*	.365**	.291*	.262*
% in Top Two	sig.	.027	.044	.043	.001	.011	.022
% Asian	*r*	.161	.177	.189	.159	.161	.132
	sig.	.164	.127	.103	.169	.163	.254
% Black	*r*	-.063	-.107	-.080	-.120	-.122	-.068
	sig.	.588	.356	.491	.301	.294	.557
% Hispanic	*r*	.126	.115	.151	.111	.105	.110
	sig.	.278	.320	.192	.339	.367	.346
% American	*r*	.267*	.242*	.295**	.280*	.203	.172
Indian	sig.	.020	.035	.010	.014	.078	.136
% White	*r*	.022	.066	.032	.080	.085	.035
	sig.	.851	.568	.787	.493	.465	.765
Total Yrs as	*r*	-.065	-.065	-.136	.037	-.022	.082
Principal	sig.	.575	.580	.243	.753	.851	.479
Yrs as Principal at	*r*	-.068	-.097	-.084	.028	-.031	.028
Current School	sig.	.561	.406	.472	.814	.787	.810

* p<.05, ** p<.01

Six relationships were found to be statistically significant when the percent of students eligible for free and reduced lunch and school enrollment were used as control variables between the six factors of the SCS and the demographics of student race and principal experience (Table 18). The achievement data from the 2006-2007 communication arts MAP correlated significantly to each of the factors of the SCS as follows: Collaborative Leadership (r = .300, p = .008), Teacher Collaboration (r = .298, p = .009), Professional Development (r = .393, p = .000), Unity of Purpose (r = .370, p = .001), Collegial Support (r = .261, p = .023), and Learning Partnership (r = .414, p =

.000). As the achievement data increased so did each of the six factors of the SCS. These findings differed from the zero-order correlations (Table 9) and partial correlations using only school enrollment (Table 15). In those analyses, there were three additional correlations, but the SCS factors of Collaborative Leadership and Teacher Collaboration were not statistically significant. The findings in Table 18 also differed when the percent of students eligible for free and reduced lunch was the only control variable (Table 12). The percent of black students and the percent of white students correlated to the SCS factor of Unity of Purpose, were present when only the percent of student eligible for free and reduced lunch was included (Table 12). The addition of school enrollment to the partial correlations of the SCS factors caused one *r* value to increase but the five other *r* values to decrease.

Table 18
Partial Correlations (controlling for Percent of Students Eligible for Free and Reduced Lunch and School Enrollment) of School Culture Factors, Achievement, and Selected Demographics

		Collaborative Leadership	Teacher Collaboration	Professional Development	Unity of Purpose	Collegial Support	Learning Partnership
Comm. Arts 06-07	*r*	.300**	.298**	.393**	.370**	.261*	.414**
% in Top Two	sig.	.008	.009	.000	.001	.023	.000
% Asian	*r*	.103	.161	.110	.093	.077	.119
	sig.	.377	.164	.345	.427	.507	.307
% Black	*r*	-.127	-.104	-.088	-.166	-.105	-.125
	sig.	.274	.373	.449	.153	.368	.283
% Hispanic	*r*	.184	.131	.002	.118	-.024	-.001
	sig.	.112	.258	.984	.308	.836	.993
% American Indian	*r*	.208	.210	.134	.198	.062	-.002
	sig.	.072	.069	.248	.087	.593	.986
% White	*r*	.082	.062	..073	.131	.099	.113
	sig.	.482	.592	.530	.259	.397	.532
Total Yrs as Principal	*r*	-.051	-.119	.051	.012	-.079	-.038
	sig.	.661	.307	.662	.919	.496	.747
Yrs as Principal at Current School	*r*	.018	-.044	.069	.046	-.031	.019
	sig.	.877	.709	.553	.691	.788	.873

* p<.05, ** p<.01

Partial correlations, using the percent of students eligible for free and reduced lunch and school enrollment as the control variables, were completed for achievement and for the demographics of student race and the years of principal experience (Table 19). The percent of students scoring at the proficient and advanced level on the grade 8 communication arts MAP scores from the 2006-2007 school year positively correlated with a medium effect size to the percent of Asian students (r = .253, p = .028), the percent of American Indian students (r = .284, p = .013), and the percent of white students (r = .245, p = .033). As the percent of Asian, American Indian, and white

students increased, so did the scores on the communication arts MAP. A negative correlation existed between the percent of students scoring at the proficient and advanced level on the grade 8 communication arts MAP scores from the 2006-2007 school year and the percent of black students *(r* = -.286, p = .012). As the percent of black students increased the scores on the communication arts MAP decreased. A medium effect, negative correlation existed between the percent of Asian students and the percent of white students (*r* = -.298, p = .009). The higher the percent of Asian students in the school, the lower was the percent of white students. The percent of black students had a small effect size in a negative correlation to the percent of American Indian students (*r* = -.232, p = .043) and a large effect size in a negative correlation to the percent of white students (*r* = -.980, p = .000). As the percent of black students increased, the percent of American Indian and white students decreased. The percent of Hispanic students had a positive correlation to the percent of American Indian students (*r* = .412, p = .000) with a medium effect size. The greater the percent of Hispanic students in the school, the higher was the percent of American Indian students. A large effect size correlation existed between the total number of year of experience as a principal and the total number of years served as the principal of the current school (*r* = .814, p = .000). The more years a principal had been in this current assignment, the more the total years experience of serving as the principal. There were more correlations present when both the percent of students eligible for free and reduced lunch and school enrollment were used as control variables (Table 19) compared to the zero-order correlations (Table 10) and the partial correlations which controlled only for school enrollment (Table 16). The findings in Table 19 differed from when the percent of students eligible for free and reduced lunch

was the only controlled variable (Table 13). Three different correlations were present when only the percent of students eligible for free and reduced lunch was included (Table 13) while only two different correlations were present when both the percent of students eligible for free and reduced lunch and school enrollment were used as control variables (Table 19). The addition of school enrollment to the six partial correlations shared between Table 13, which used only the percent of students eligible for free and reduced lunch, and Table 19, which used both the percent of students eligible for free and reduced lunch and school enrollment, caused two *r* values to increase but the four other *r* values to decrease.

Table 19
Partial Correlations (controlling for Percent of Students Eligible for Free and Reduced Lunch and School Enrollment) of Selected Demographics

		Comm. Arts 06-07 % in Top Two	% Asian	% Black	% Hispanic	% American Indian	% White
Comm. Arts 06-07 % in Top Two	*r*	1.00					
	sig.						
% Asian	*r*	.253*	1.00				
	sig.	.028					
% Black	*r*	-.286*	.195	1.00			
	sig.	.012	.092				
% Hispanic	*r*	.046	.156	-.072	1.00		
	sig.	.695	.178	.537			
% American Indian	*r*	.284*	.173	-.232*	.412**	1.00	
	sig.	.013	.136	.043	.000		
% White	*r*	.245*	-.298**	-.980**	-.108	.123	1.00
	sig.	.033	.009	.000	.352	.291	
Total Yrs as Principal	*r*	.036	.051	-.018	.052	.036	.005
	sig.	.760	.664	.879	.657	.758	.967
Yrs as Principal at Current School	*r*	.052	.067	-.036	-.025	-.086	.037
	sig.	.653	.565	.757	.830	.462	.753

* p<.05, ** p<.01

Table 19 (Continued)
Partial Correlations (controlling for Percent of Students Eligible for Free and Reduced Lunch and School Enrollment) of Selected Demographics

		Total Yrs as Principal	Yrs as Principal at Current School
Total Yrs as Principal	*r*	1.00	
	sig.		
Yrs as Principal at Current School	*r*	.814**	1.00
	sig.	.000	

* p<.05, ** p<.01

Hypothesis Two

Hypothesis two in this study was: There are no statistically significant predictive linear relationships for the factors of transformational leadership, as measured by the PLQ, on the factors of school culture, as measured by the SCS, in Missouri middle schools. A multiple regression method of analysis using stepwise modeling was conducted to determine if linear relationships existed between transformational leadership as measured by the PLQ and each of the factors of school culture as measured by the SCS.

The multiple linear regression analysis technique was used to determine the variance in the linear models. Stepwise linear regression models were used to determine what predictor (independent) variables provided the best estimate, predictive power, for the dependent variable. The independent variables were selected based on findings from the zero-order and partial correlations. Each of the six factors of the PLQ and each of the six factors of the SCS were found to be statistically significant with the percent of

students scoring at the proficient and advanced level on the grade 8 communication arts MAP scores from the 2006-2007 school year. The percent of students eligible for free and reduced lunch and school enrollment were entered as independent variables for each regression. If either of these two variables were found to be significant they were noted in the models; if they were absent from the model it was because they were not found to be significant in their ability to explain variance in the dependent variable.

Six stepwise regression models were conducted in total. The criteria for independent variables to be entered into and removed from the stepwise analysis in all of the regression analyses were entry $p < .05$ and removal $p > .10$. The statistics presented in each table include the model summary data and more specifically: the number of models produced, R, R^2, R^2 Change, Adjusted R^2, and the standard error of the estimate. The sum of squares (regression, residual, and total), degrees of freedom, mean squares, F value and the significance of the F value are presented for each individual model. For each variable found to be statistically significant in the model, the beta value, the standard error of the beta, the standardized beta (β), the *t* value, and the significance of the *t* value are provided.

The first stepwise regression included the independent variables of: Vision Identification, Modeling, Goal Acceptance, Individualized Support, Intellectual Stimulation, High Performance Expectations, the percent of students eligible for free and reduced lunch, and school enrollment. These independent variables were entered to determine which variable(s) best predicted the school culture factor of Collaborative Leadership. Goal Acceptance, Individualized Support, and Modeling were statistically significant and included in the regression model. Model 1, which only included the

independent variable Goal Acceptance, accounted for 67.9% of the variance in the school culture factor of Collaborative Leadership (Adjusted R^2 = .679, F = 165.660, p = .000). The inclusion of Individuated Support in Model 2 increased the variance to 71.2% (Adjusted R^2 = .712, F = 97.254, p = .000). Model 3 included the independent variable of Modeling. The combination of the three independent variables accounted for 72.5% of the variance in Collaborative Leadership (Adjusted R^2 = .725, F = 69.534, p = .000). According to the standardized beta coefficients (β), the majority of the influence on the school culture factor of Collaborative Leadership was from Goal Acceptance (β = .691, p = .000) while Individualized Support (β = .509, p = .000) had a smaller effect and Modeling (β = -.334, p = .034) had a smaller effect which was negative. Vision Identification, Intellectual Stimulation, High Performance Expectations, the percent of students eligible for free and reduced lunch, and school enrollment did not explain any variance in the school culture factor of Collaborative Leadership and therefore were not entered into the model. Based on the stepwise regression analysis, hypothesis two was rejected. The results of the regression analysis are presented in Table 20.

Table 20

Linear Regression: Transformational Leadership Factors, Percent of Students Eligible for Free and Reduced Lunch, and School Enrollment with School Culture Factor of Collaborative Leadership

Model

Model	R	R^2	R^2 Change	Adjusted R^2	Std. Error of the Est.
1	.826[a]	.683	.683	.679	.31139
2	.848[b]	.719	.36	.712	.29493
3	.858[c]	.736	.17	.725	.28804

a. Predictors: (Constant), Goal Acceptance

b. Predictors: (Constant), Goal Acceptance, Individualized Support

c. Predictors: (Constant), Goal Acceptance, Individualized Support, Modeling

ANOVA

Model 1	SS	*df*	MS	*F*	Sig. *F*
Regression	16.063	1	16.063	165.660	.000
Residual	7.466	77	.097		
Total	23.530	78			

Model 2	SS	*df*	MS	*F*	Sig. *F*
Regression	16.919	2	8.459	97.254	.000
Residual	6.611	76	.087		
Total	23.530	78			

Model 3	SS	*df*	MS	*F*	Sig. *F*
Regression	17.307	3	5.769	69.534	.000
Residual	6.223	75	.083		
Total	23.530	78			

Coefficients

Model 1	B	Std. Error	β	*t*	Sig. *t*
(Constant)	.988	.274		3.599	.001
Goal Acceptance	.733	.057	.826		.000

Model 2	B	Std. Error	β	*t*	Sig. *t*
(Constant)	.856	.263		3.252	.002
Goal Acceptance	.457	.103	.515	4.422	.000
Individualized Support	.302	.096	.365	3.136	.002

Model 3	B	Std. Error	β	*t*	Sig. *t*
(Constant)	.608	.282		2.159	.034
Goal Acceptance	.614	.124	.691	4.940	.000
Individualized Support	.420	.109	.509	3.864	.000
Modeling	-.229	.106	-.334	-2.163	.034

The second stepwise regression included the independent variables of: Vision Identification, Modeling, Goal Acceptance, Individualized Support, Intellectual Stimulation, High Performance Expectations, the percent of students eligible for free and reduced lunch, and school enrollment. These independent variables were entered to determine which variable(s) best predicted the school culture factor of Teacher Collaboration. Goal Acceptance and school enrollment were statistically significant and included in the regression model. Model 1, which only included the independent variable Goal Acceptance, accounted for 54.2% of the variance in the school culture factor of Teacher Collaboration (Adjusted $R^2 = .542$, $F = 93.244$, $p = .000$). The inclusion of school enrollment in Model 2 increased the variance to 56.2% (Adjusted $R^2 = .562$, $F = 51.016$, $p = .000$). According to the standardized beta coefficients (β), the majority of the influence on the school culture factor of Teacher Collaboration was from Goal Acceptance ($\beta = .766$, $p = .000$) while school enrollment ($\beta = .162$, $p = .037$) had a smaller effect. Vision Identification, Modeling, Individualized Support, Intellectual Stimulation, High Performance Expectations, and the percent of students eligible for free and reduced lunch did not explain any variance in the school culture factor of Teacher Collaboration and therefore were not entered into the model. Based on the stepwise regression analysis hypothesis two was rejected. The results of the regression analysis are presented in Table 21.

Table 21

Linear Regression: Transformational Leadership Factors, Percent of Students Eligible for Free and Reduced Lunch, and School Enrollment with School Culture Factor of Teacher Collaboration

Model

Model	R	R^2	R^2 Change	Adjusted R^2	Std. Error of the Est.
1	.740[a]	.548	.548	.542	.35120
2	.757[b]	.573	.25	.562	.34344

a. Predictors: (Constant), Goal Acceptance

b. Predictors: (Constant), Goal Acceptance, School Enrollment

ANOVA

Model 1	SS	*df*	MS	*F*	Sig. *F*
Regression	11.501	1	11.501	93.244	.000
Residual	9.497	77	.123		
Total	20.998	78			

Model 2	SS	*df*	MS	*F*	Sig. *F*
Regression	12.034	2	6.017	51.016	.000
Residual	8.964	76	.118		
Total	20.998	78			

Coefficients

Model 1	B	Std. Error	β	*t*	Sig. *t*
(Constant)	1.116	.310		3.605	.001
Goal Acceptance	.621	.064	.740	9.656	.000

Model 2	B	Std. Error	β	*t*	Sig. *t*
(Constant)	.850	.327		.2596	.011
Goal Acceptance	.643	.064	.766	10.089	.000
School Enrollment	.000	.000	.162	2.127	.037

The third stepwise regression included the independent variables of: Vision Identification, Modeling, Goal Acceptance, Individualized Support, Intellectual Stimulation, High Performance Expectations, the percent of students eligible for free and reduced lunch, and school enrollment. These independent variables were entered to determine which variable(s) best predicted the school culture factor of Professional Development. Intellectual Stimulation, Goal Acceptance, and Modeling were statistically

significant and included in the regression model. Model 1, which only included the independent variable Intellectual Stimulation, accounted for 47.7% of the variance in the school culture factor of Professional Development (Adjusted R^2 = .477, F = 72.094, p = .000). The inclusion of Goal Acceptance in Model 2 increased the variance to 50.4% (Adjusted R^2 = .504, F = 40.602, p = .000). Model 3 included the independent variable of Modeling. The combination of the three independent variables accounted for 52.5% of the variance in Professional Development (Adjusted R^2 = .525, F = 29.740, p = .000). According to the standardized beta coefficients (β), the majority of the influence on the school culture factor of Professional Development was from Goal Acceptance (β = .578, p = .003) while Intellectual Stimulation (β = .567, p = .001) had a smaller effect and Modeling (β = -.418, p = .039) had a smaller effect which was negative. Vision Identification, Individualized Support, High Performance Expectations, the percent of students eligible for free and reduced lunch, and school enrollment did not explain any variance in the school culture factor of Professional Development and therefore were not entered into the model. Based on the stepwise regression analysis hypothesis two was rejected. The results of the regression analysis are presented in Table 22.

Table 22

Linear Regression: Transformational Leadership Factors, Percent of Students Eligible for Free and Reduced Lunch, and School Enrollment with School Culture Factor of Professional Development

Model

Model	R	R^2	R^2 Change	Adjusted R^2	Std. Error of the Est.
1	.695[a]	.484	.484	.477	.27576
2	.719[b]	.517	.33	.504	.26855
3	.737[c]	.543	.26	.525	.26275

a. Predictors: (Constant), Intellectual Stimulation

b. Predictors: (Constant), Intellectual Stimulation, Goal Acceptance

c. Predictors: (Constant), Intellectual Stimulation, Goal Acceptance, Modeling

ANOVA

Model 1	SS	*df*	MS	*F*	Sig. *F*
Regression	5.482	1	5.482	72.094	.000
Residual	5.855	77	.076		
Total	11.338	78			

Model 2	SS	*df*	MS	*F*	Sig. *F*
Regression	5.856	2	2.928	40.602	.000
Residual	5.481	76	.072		
Total	11.338	78			

Model 3	SS	*df*	MS	*F*	Sig. *F*
Regression	6.160	3	2.053	29.740	.000
Residual	5.178	75	.069		
Total	11.338	78			

Coefficients

Model 1	B	Std. Error	β	*t*	Sig. *t*
(Constant)	2.903	.234		12.417	.000
Intellectual Stimulation	.419	.049	.695	8.491	.000

Model 2	B	Std. Error	β	*t*	Sig. *t*
(Constant)	2.720	.242		11.262	.000
Intellectual Stimulation	.238	.093	.395	2.567	.012
Goal Acceptance	.216	.095	.351	2.278	.026

Model 3	B	Std. Error	β	*t*	Sig. *t*
(Constant)	2.496	.259		9.623	.000
Intellectual Stimulation	.342	.103	.567	3.306	.001
Goal Acceptance	.356	.114	.578	3.114	.003
Modeling	-.199	.095	-.418	-2.096	.039

The fourth stepwise regression included the independent variables of: Vision Identification, Modeling, Goal Acceptance, Individualized Support, Intellectual Stimulation, High Performance Expectations, the percent of students eligible for free and reduced lunch, and school enrollment. These independent variables were entered to determine which variable(s) best predicted the school culture factor of Unity of Purpose. Intellectual Stimulation and school enrollment were statistically significant and included in the regression model. Model 1, which only included the independent variable Intellectual Stimulation, accounted for 52.6% of the variance in the school culture factor of Unity of Purpose (Adjusted $R^2 = .526$, $F = 87.604$, $p = .000$). The inclusion of school enrollment in Model 2 increased the variance to 54.6% (Adjusted $R^2 = .546$, $F = 47.871$, $p = .000$). According to the standardized beta coefficients (β), the majority of the influence on the school culture factor of Unity of Purpose was from Intellectual Stimulation ($\beta = .705$, $p = .000$) while school enrollment ($\beta = -.161$, $p = .041$) had a smaller effect which was negative. Vision Identification, Modeling, Goal Acceptance, Individualized Support, High Performance Expectations, and the percent of students eligible for free and reduced lunch did not explain any variance in the school culture factor of Unity of Purpose and therefore were not entered into the model. Based on the stepwise regression analysis hypothesis two was rejected. The results of the regression analysis are presented in Table 23.

Table 23

Linear Regression: Transformational Leadership Factors, Percent of Students Eligible for Free and Reduced Lunch, and School Enrollment with School Culture Factor of Unity of Purpose

Model

Model	R	R^2	R^2 Change	Adjusted R^2	Std. Error of the Est.
1	.730[a]	.532	.532	.526	.26921
2	.747[b]	.557	.25	.546	.26355

a. Predictors: (Constant), Intellectual Stimulation

b. Predictors: (Constant), Intellectual Stimulation, School Enrollment

ANOVA

Model 1	SS	*df*	MS	*F*	Sig. *F*
Regression	6.349	1	6.349	87.604	.000
Residual	5.580	77	.072		
Total	11.929	78			

Model 2	SS	*df*	MS	*F*	Sig. *F*
Regression	6.650	2	3.325	47.871	.000
Residual	5.279	76	.069		
Total	11.929	78			

Coefficients

Model 1	B	Std. Error	β	*t*	Sig. *t*
(Constant)	2.699	.228		11.826	.000
Intellectual Stimulation	.451	.048	.730	9.360	.000

Model 2	B	Std. Error	β	*t*	Sig. *t*
(Constant)	2.891	.242		11.963	.000
Intellectual Stimulation	.436	.048	.705	9.131	.000
School Enrollment	.000	.000	-.161	-2.083	.041

The fifth stepwise regression included the independent variables of: Vision Identification, Modeling, Goal Acceptance, Individualized Support, Intellectual Stimulation, High Performance Expectations, the percent of students eligible for free and reduced lunch, and school enrollment. These independent variables were entered to determine which variable(s) best predicted the school culture factor of Collegial Support. One factor, Goal Acceptance, was statistically significant and included in the regression

model. Model 1, which only included the independent variable Goal Acceptance, accounted for 36.1% of the variance in the school culture factor of Collegial Support (Adjusted $R^2 = .361$, $F = 45.012$, $p = .000$). According to the standardized beta coefficients (β), the influence of Goal Acceptance on the school culture factor of Collegial Support was $\beta = .607$, $p = .000$. Vision Identification, Modeling, Individualized Support, Intellectual Stimulation, High Performance Expectations, the percent of students eligible for free and reduced lunch, and school enrollment did not explain any variance in the school culture factor of Collegial Support and therefore were not entered into the model. Based on the stepwise regression analysis hypothesis two was rejected. The results of the regression analysis are presented in Table 24.

Table 24
Linear Regression: Transformational Leadership Factors, Percent of Students Eligible for Free and Reduced Lunch, and School Enrollment with School Culture Factor of Collegial Support

Model

Model	R	R^2	R^2 Change	Adjusted R^2	Std. Error of the Est.
1	.607[a]	.369	.369	.361	.29013

a. Predictors: (Constant), Goal Acceptance

ANOVA

Model 1	SS	*df*	MS	*F*	Sig. *F*
Regression	3.789	1	3.789	45.012	.000
Residual	6.482	77	.084		
Total	10.271	78			

Coefficients

Model 1	B	Std. Error	β	*t*	Sig. *t*
(Constant)	3.202	.256		12.521	.000
Goal Acceptance	.356	.053	.607	6.709	.000

The sixth and final stepwise regression included the independent variables of: Vision Identification, Modeling, Goal Acceptance, Individualized Support, Intellectual

Stimulation, High Performance Expectations, the percent of students eligible for free and reduced lunch, and school enrollment. These independent variables were entered to determine which variable(s) best predicted the school culture factor of Learning Partnership. Intellectual Stimulation and the percent of students eligible for free and reduced lunch were statistically significant and included in the regression model. Model 1, which only included the independent variable Intellectual Stimulation, accounted for 33.1% of the variance in the school culture factor of Learning Partnership (Adjusted R^2 = .331, F = 39.546, p = .000). The inclusion of the percent of students eligible for free and reduced lunch in Model 2 increased the variance to 41.8% (Adjusted R^2 = .418, F =28.977, p = .000). According to the standardized beta coefficients (β), the majority of the influence on the school culture factor of Learning Partnership was from Intellectual Stimulation (β = .623, p = .000) while the percent of students eligible for free and reduced lunch (β = -.308, p = .001) had a smaller effect which was negative. Vision Identification, Modeling, Goal Acceptance, Individualized Support, High Performance Expectations, and school enrollment did not explain any variance in the school culture factor of Learning Partnership and therefore were not entered into the model. Based on the stepwise regression analysis hypothesis two was rejected. The results of the regression analysis are presented in Table 25.

Table 25

Linear Regression: Transformational Leadership Factors, Percent of Students Eligible for Free and Reduced Lunch, and School Enrollment with School Culture Factor of Learning Partnership

Model

Model	R	R^2	R^2 Change	Adjusted R^2	Std. Error of the Est.
1	.583[a]	.339	.339	.331	.36995
2	.658[b]	.433	.94	.418	.34508

a. Predictors: (Constant), Intellectual Stimulation

b. Predictors: (Constant), Intellectual Stimulation, Percent Free/Reduced Lunch

ANOVA

Model 1	SS	*df*	MS	*F*	Sig. *F*
Regression	5.412	1	5.412	39.546	.000
Residual	10.538	77	.137		
Total	15.951	78			

Model 2	SS	*df*	MS	*F*	Sig. *F*
Regression	6.901	2	3.450	28.977	.000
Residual	9.050	76	.119		
Total	15.951	78			

Coefficients

Model 1	B	Std. Error	β	*t*	Sig. *t*
(Constant)	2.148	.314		6.848	.000
Intellectual Stimulation	.417	.066	.583	6.289	.000

Model 2	B	Std. Error	β	*t*	Sig. *t*
(Constant)	2.313	.296		7.806	.000
Intellectual Stimulation	.445	.062	.623	7.147	.000
% Free/Reduced Lunch	-.007	.002	-.308	-3.536	.001

Hypothesis Three

Hypothesis three in this study was: There are no statistically significant predictive linear relationships for the factors of school culture, as measured by the SCS, on student achievement, as measured by the MAP, in communication arts in Missouri middle schools. A multiple regression method of analysis using stepwise modeling was conducted to determine if linear relationships existed between school culture as measured

by the SCS and the percent of students scoring at the proficient and advanced level on the grade 8 communication arts MAP from the 2006-2007 school year.

The multiple linear regression analysis technique was used to determine the variance in the linear models. Stepwise linear regression models were used to determine what predictor (independent) variables provided the best estimate, predictive power, for the dependent variable. The independent variables were selected based on findings from the zero-order and partial correlations. Each of the six factors of the PLQ and each of the six factors of the SCS were found to be statistically significant with the percent of students scoring at the proficient and advanced level on the grade 8 communication arts MAP scores from the 2006-2007 school year. The percent of students eligible for free and reduced lunch and school enrollment were entered as independent variables for each regression. If either of these two variables were found to be significant they were noted in the models; if they were absent from the model it was because they were not found to be significant in their ability to explain variance in the dependent variable.

One stepwise regression model was conducted. The criteria for independent variables to be entered into and removed from the stepwise analysis in all of the regression analyses were entry $p < .05$ and removal $p > .10$. The statistics presented in each table include the model summary data and more specifically: the number of models produced, R, R^2, R^2 Change, Adjusted R^2, and the standard error of the estimate. The sum of squares (regression, residual, and total), degrees of freedom, mean squares, F value and the significance of the F value are presented for each individual model. For each variable found to be statistically significant in the model, the beta value, the standard

error of the beta, the standardized beta (β), the *t* value, and the significance of the *t* value are provided.

The stepwise regression included the independent variables of: Collaborative Leadership, Teacher Collaboration, Professional Development, Unity of Purpose, Collegial Support, Learning Partnership, the percent of students eligible for free and reduced lunch, and school enrollment. These independent variables were entered to determine which variable(s) best predicted the percent of students scoring at the proficient and advanced level on the grade 8 communication arts MAP from the 2006-2007 school year. The percent of students eligible for free and reduced lunch and Learning Partnership were statistically significant and included in the regression model. Model 1, which only included the independent variable of the percent of students eligible for free and reduced lunch, accounted for 50.9% of the variance in the percent of students scoring at the proficient and advanced level on the grade 8 communications arts MAP from the 2006-2007 school year (Adjusted $R^2 = .509$, $F = 81.716$, $p = .000$). The inclusion of Learning Partnership in Model 2 increased the variance to 59.2% (Adjusted $R^2 = .592$, $F = 57.631$, $p = .000$). According to the standardized beta coefficients (β), the majority of the influence on the percent of students scoring at the proficient and advanced level on the grade 8 communication arts MAP from the 2006-2007 school year, even though it was a negative influence, was from the percent of students eligible for free and reduced lunch ($\beta = -.649$, $p = .000$) while Learning Partnership ($\beta = .304$, $p = .000$) had a smaller effect which was positive. Collaborative Leadership, Teacher Collaboration, Professional Development, Unity of Purpose, Collegial Support, and school enrollment did not explain any variance in the percent of students scoring at the proficient and

advanced level on the grade 8 communication arts MAP from the 2006-2007 school year and therefore were not entered into the model. Based on the stepwise regression analysis, hypothesis three was rejected. The results of the regression analysis are presented in Table 26.

Table 26

Linear Regression: School Culture Factors, Percent of Students Eligible for Free and Reduced Lunch, and School Enrollment with 2006-2007 Grade 8 communication arts MAP

Model

Model	R	R^2	R^2 Change	Adjusted R^2	Std. Error of the Est.
1	.718[a]	.515	.515	.509	8.8223
2	.776[b]	.603	.88	.592	8.0367

a. Predictors: (Constant), Percent Free/Reduced Lunch

b. Predictors: (Constant), Percent Free/Reduced Lunch, Learning Partnership

ANOVA

Model 1	SS	*df*	MS	*F*	Sig. *F*
Regression	6360.224	1	6360.224	81.716	.000
Residual	5993.168	77	77.833		
Total	12353.392	78			

Model 2	SS	*df*	MS	*F*	Sig. *F*
Regression	7444.640	2	3722.320	57.631	.000
Residual	4908.752	76	64.589		
Total	12353.392	78			

Coefficients

Model 1	B	Std. Error	β	*t*	Sig. *t*
(Constant)	63.218	2.371		26.668	.000
% Free/Reduced Lunch	-.486	.054	-.718	-9.040	.000

Model 2	B	Std. Error	β	*t*	Sig. *t*
(Constant)	26.614	9.191		2.896	.005
% Free/Reduced Lunch	-.439	.050	-.649	-8.737	.000
Learning Partnership	8.465	2.066	.304	4.098	.000

Hypothesis Four

Hypothesis four in this study was: There are no statistically significant predictive linear relationships for the combined factors of transformational leadership, as measured by the PLQ, and the factors of school culture, as measured by the SCS, on student achievement, as measured by the MAP, in communication arts in Missouri middle schools. A multiple regression method of analysis using stepwise modeling was conducted to determine if linear relationships existed between transformational leadership, as measured by the PLQ, and school culture, as measured by the SCS, and the percent of students scoring at the proficient and advanced level on the grade 8 communication arts MAP from the 2006-2007 school year.

The multiple linear regression analysis technique was used to determine the variance in the linear models. Stepwise linear regression models were used to determine what predictor (independent) variables provided the best estimate, predictive power, for the dependent variable. The independent variables were selected based on findings from the zero-order and partial correlations. Each of the six factors of the PLQ and each of the six factors of the SCS were found to be statistically significant with the percent of students scoring at the proficient and advanced level on the grade 8 communication arts MAP scores from the 2006-2007 school year. The percent of students eligible for free and reduced lunch and school enrollment were entered as independent variables for each regression. If either of these two variables were found to be significant they were noted in the models; if they were absent from the model it was because they were not found to be significant in their ability to explain variance in the dependent variable.

One stepwise regression model was conducted. The criteria for independent variables to be entered into and removed from the stepwise analysis in all of the regression analyses were entry $p < .05$ and removal $p > .10$. The statistics presented in each table include the model summary data and more specifically: the number of models produced, R, R^2, R^2 Change, Adjusted R^2, and the standard error of the estimate. The sum of squares (regression, residual, and total), degrees of freedom, mean squares, F value and the significance of the F value are presented for each individual model. For each variable found to be statistically significant in the model, the beta value, the standard error of the beta, the standardized beta (β), the *t* value, and the significance of the *t* value are provided.

The stepwise regression included the independent variables of: Collaborative Leadership, Teacher Collaboration, Professional Development, Unity of Purpose, Collegial Support, Learning Partnership, Vision Identification, Modeling, Goal Acceptance, Individualized Support, Intellectual Stimulation, High Performance Expectations, the percent of students eligible for free and reduced lunch, and school enrollment. These independent variables were entered to determine which variable(s) best predicted the percent of students scoring at the proficient and advanced level on the grade 8 communication arts MAP from the 2006-2007 school year. The percent of students eligible for free and reduced lunch and Learning Partnership were statistically significant and included in the regression model. Model 1, which only included the independent variable the percent of students eligible for free and reduced lunch accounted for 50.9% of the variance in the percent of students scoring at the proficient and advanced level on the grade 8 communication arts MAP from the 2006-2007 school year (Adjusted R^2 =

.509, F = 81.716, p = .000). The inclusion of Learning Partnership in Model 2 increased the variance to 59.2% (Adjusted R^2 = .592, F =57.631, p = .000). According to the standardized beta coefficients (β), the majority of the influence on the percent of students scoring at the proficient and advanced level on the grade 8 communication arts MAP from the 2006-2007 school year, even though it was a negative, was from the percent of students eligible for free and reduced lunch (β = -.649, p = .000). Learning Partnership (β = .304, p = .000) had a smaller effect which was positive. Collaborative Leadership, Teacher Collaboration, Professional Development, Unity of Purpose, Collegial Support, Vision Identification, Modeling, Goal Acceptance, Individualized Support, Intellectual Stimulation, High Performance Expectations, and school enrollment did not explain any variance in percent of students scoring at the proficient and advanced level on the grade 8 communication arts MAP from the 2006-2007 school year and therefore were not entered into the model. Based on the stepwise regression analysis hypothesis four was rejected. The results of the regression analysis are presented in Table 27.

Table 27

Linear Regression: Transformational Leadership Factors, School Culture Factors, Percent of Students Eligible for Free and Reduced Lunch, and School Enrollment with 2006-2007 Grade 8 communication arts MAP

Model

Model	R	R^2	R^2 Change	Adjusted R^2	Std. Error of the Est.
1	.718[a]	.515	.515	.509	8.8223
2	.776[b]	.603	.88	.592	8.0367

a. Predictors: (Constant), Percent Free/Reduced Lunch

b. Predictors: (Constant), Percent Free/Reduced Lunch, Learning Partnership

ANOVA

Model 1	SS	*df*	MS	*F*	Sig. *F*
Regression	6360.224	1	6360.224	81.716	.000
Residual	5993.168	77	77.833		
Total	12353.392	78			

Model 2	SS	*df*	MS	*F*	Sig. *F*
Regression	7444.640	2	3722.320	57.631	.000
Residual	4908.752	76	64.589		
Total	12353.392	78			

Coefficients

Model 1	B	Std. Error	β	*t*	Sig. *t*
(Constant)	63.218	2.371		26.668	.000
% Free/Reduced Lunch	-.486	.054	-.718	-9.040	.000

Model 2	B	Std. Error	β	*t*	Sig. *t*
(Constant)	26.614	9.191		2.896	.005
% Free/Reduced Lunch	-.439	.050	-.649	-8.737	.000
Learning Partnership	8.465	2.066	.304	4.098	.000

Summary

Zero-Order Correlations

A summary of the findings from the zero-order correlations are presented in Table 28. The statistically significant findings which were positive are indicated with a "+" and the statistically significant findings which were negative are indicated with a "-." The final rows in the table provide a total count for statistically significant findings related to

the independent variables, the dependent variable, and a combined total for both the independent and dependent variables.

Table 28
Summary of the Significant Zero-Order Correlation Findings for All Variables

	VI	M	GA	Ind	Int	HPE	CL	TC	PD	UP	CS	LP	%A	%B	%H	%AI	%W	TYP	YPCS	ENR	FRL	CA MAP
%B												-										
%H													+									
%AI	+	+	+	+				+							+							
%W														-								
YPCS																		+				
ENR										-			+	+	+		-					
FRL												-	-	+			-					
CA MAP									+	+	+	+	+	-		+					-	
#C w/ IV	1	1	1	1	0	0	0	1	0	1	0	2	3	3	2	0	2	1	0	0	0	0
#C w/ DV	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	0	0	0	1	0
Total #C	1	1	1	1	0	0	0	1	1	2	1	3	4	4	2	1	2	1	0	0	1	0

(VI: Vision Identification; M: Modeling; GA: Goal Acceptance; Ind: Individualized Support; Int: Intellectual Stimulation; HPE: High Performance Expectations; CL: Collaborative Leadership; TC: Teacher Collaboration; PD: Professional Development; UP: Unity of Purpose; CS: Collegial Support; LP: Learning Partnership; %A: Percent of Asian students; %B: Percent of black students; %H: Percent of Hispanic students; %AI: Percent of American Indian students; %W: Percent of white students; TYP: Total years served as principal; YPCS: Years served as principal at current school; ENR: School enrollment; FRL: Percent of students eligible for free and reduced lunch; CA MAP: Percent of students scoring proficient and advanced on the Grade 8 communication arts Missouri Assessment Program (MAP); #C w/ IV: Number of zero-order correlations with the Independent Variables; #C w/ DV: Number of zero-order correlations with the Dependent Variable; Total #C: Total number of zero-order correlations)

Partial Correlations

A summary of the findings from the partial correlations, which used the percent of students eligible for free and reduced lunch as the control variable, are presented in Table 29. The statistically significant findings which were positive are indicated with a "+" and the statistically significant findings which were negative are indicated with a "-." The final rows in the table provide a total count for statistically significant findings related to

the independent variables, the dependent variable, and a combined total for both the independent and dependent variables.

Table 29
Summary of the Significant Partial Correlations for All Variables when controlling for the Percent of Students Eligible for Free and Reduced Lunch

	VI	M	GA	Ind	Int	HPE	CL	TC	PD	UP	CS	LP	%A	%B	%H	%AI	%W	TYP	YPCS	ENR	CA MAP
%B										-			+								
%H													+								
%AI	+	+	+	+											+						
%W										+			-	-	-						
YPCS																		+			
ENR										-			+	+	+		-				
CA MAP	+	+	+	+	+	+	+	+	+	+	+	+		-		+	+				
#P w/ IV	1	1	1	1	0	0	0	0	0	3	0	0	4	2	3	0	1	1	0	0	0
#P w/ DV	1	1	1	1	1	1	1	1	1	1	1	1	0	1	0	1	1	0	0	0	0
Total #P	2	2	2	2	1	1	1	1	1	4	1	1	4	3	3	1	2	1	0	0	0

(VI: Vision Identification; M: Modeling; GA: Goal Acceptance; Ind: Individualized Support; Int: Intellectual Stimulation; HPE: High Performance Expectations; CL: Collaborative Leadership; TC: Teacher Collaboration; PD: Professional Development; UP: Unity of Purpose; CS: Collegial Support; LP: Learning Partnership; %A: Percent of Asian students; %B: Percent of black students; %H: Percent of Hispanic students; %AI: Percent of American Indian students; %W: Percent of white students; TYP: Total years served as principal; YPCS: Years served as principal at current school; ENR: School enrollment; CA MAP: Percent of students scoring proficient and advanced on the Grade 8 communication arts Missouri Assessment Program (MAP); #P w/ IV: Number of partial correlations using the percent of students eligible for free and reduced lunch with the Independent Variables; #P w/ DV: Number of partial correlations using the percent of students eligible for free and reduced lunch with the Dependent Variable; Total #P: Total number of partial correlations using the percent of students eligible for free and reduced lunch)

A summary of the findings from the partial correlations, which used school enrollment as the control variable, are presented in Table 30. The statistically significant findings which were positive are indicated with a "+" and the statistically significant findings which were negative are indicated with a "-." The final rows in the table provide a total count for statistically significant findings related to the independent variables, the

dependent variable, and a combined total for both the independent and dependent variables.

Table 30
Summary of the Significant Partial Correlations for All Variables when controlling for the School Enrollment

	VI	M	GA	Ind	Int	HPE	CL	TC	PD	UP	CS	LP	%A	%B	%H	%AI	%W	TYP	YPCS	FRL	CA MAP
%B												-									
%AI	+	+	+	+				+							+						
%W												+		-							
YPCS																		+			
FRL												-	-	+			-				
CA MAP									+	+	+	+	+	-			+				
#P w/ IV	1	1	1	1	0	0	0	1	0	0	0	3	1	2	1	0	1	1	0	0	0
#P w/ DV	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0	1	0	0	0	0
Total #P	1	1	1	1	0	0	0	1	1	1	1	4	2	3	1	0	2	1	0	0	0

(VI: Vision Identification; M: Modeling; GA: Goal Acceptance; Ind: Individualized Support; Int: Intellectual Stimulation; HPE: High Performance Expectations; CL: Collaborative Leadership; TC: Teacher Collaboration; PD: Professional Development; UP: Unity of Purpose; CS: Collegial Support; LP: Learning Partnership; %A: Percent of Asian students; %B: Percent of black students; %H: Percent of Hispanic students; %AI: Percent of American Indian students; %W: Percent of white students; TYP: Total years served as principal; YPCS: Years served as principal at current school; FRL: Percent of students eligible for free and reduced lunch; CA MAP: Percent of students scoring proficient and advanced on the Grade 8 communication arts Missouri Assessment Program (MAP); #P w/ IV: Number of partial correlations using school enrollment with the Independent Variables; #P w/ DV: Number of partial correlations using school enrollment with the Dependent Variable; Total #P: Total number of partial correlations using school enrollment)

A summary of the findings from the partial correlations, which used the percent of students eligible for free and reduced lunch and school enrollment as the control variables, are presented in Table 31. The statistically significant findings which were positive are indicated with a "+" and the statistically significant findings which were negative are indicated with a "-." The final rows in the table provide a total count for statistically significant findings related to the independent variables, the dependent variable, and a combined total for both the independent and dependent variables.

Table 31

Summary of the Significant Partial Correlations for All Variables when controlling for the Percent of Students Eligible for Free and Reduced Lunch and School Enrollment

	VI	M	GA	Ind	Int	HPE	CL	TC	PD	UP	CS	LP	%A	%B	%H	%AI	%W	TYP	YPCS	CA MAP
%AI	+	+	+	+										-	+					
%W													-	-						
YPCS																		+		
CA MAP	+	+	+	+	+	+	+	+	+	+	+	+	+	-		+	+			
#P w/ IV	1	1	1	1	0	0	0	0	0	0	0	0	1	2	1	0	0	1	0	0
#P w/ DV	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	0	0	0
Total #P	2	2	2	2	1	1	1	1	1	1	1	1	2	3	1	1	1	1	0	0

(VI: Vision Identification; M: Modeling; GA: Goal Acceptance; Ind: Individualized Support; Int: Intellectual Stimulation; HPE: High Performance Expectations; CL: Collaborative Leadership; TC: Teacher Collaboration; PD: Professional Development; UP: Unity of Purpose; CS: Collegial Support; LP: Learning Partnership; %A: Percent of Asian students; %B: Percent of black students; %H: Percent of Hispanic students; %AI: Percent of American Indian students; %W: Percent of white students; TYP: Total years served as principal; YPCS: Years served as principal at current school; CA MAP: Percent of students scoring proficient and advanced on the Grade 8 communication arts Missouri Assessment Program (MAP); #P w/ IV: Number of partial correlations using the percent of students eligible for free and reduced lunch and school enrollment with the Independent Variables; #P w/ DV: Number of partial correlations using the percent of students eligible for free and reduced lunch and school enrollment with the Dependent Variable; Total #P: Total number of partial correlations using the percent of students eligible for free and reduced lunch and school enrollment)

The zero-order and partial correlations produced multiple common findings including those related to the percent of American Indian, black, and white students, the percent of students eligible for free and reduced lunch, school enrollment, and each of the six factors of both the Principal Leadership Questionnaire (PLQ) and the School Culture Survey (SCS). The percent of American Indian students consistently correlated with the same four factors for the PLQ. The percent of black students correlated negatively with the percent of white students and the percent of students scoring proficient and advanced on the grade 8 communication arts Missouri Assessment Program (MAP) in all of the correlations. The percent of black students also correlated to the school enrollment and

the percent of students eligible for free and reduced lunch in every correlation where it was possible. The percent of white students correlated negatively to enrollment and free and reduced lunch, when possible, and positively to communication arts MAP scores in the partial correlations. The factors of the PLQ and the SCS consistently correlated with communication arts achievement when controlling for free and reduced lunch.

Multiple Regressions

A summary of the findings from the multiple regressions are presented in Table 32. The statistically significant findings which were positive are indicated with a "+" and the statistically significant findings which were negative are indicated with a "-." The final rows in the table provide a total count for statistically significant findings of the independent variables related to the dependent variables. The negative impact of Modeling, the prevalence of Goal Acceptance and Intellectual Stimulation, and the varied impact of enrollment are noteworthy findings. The repeated findings of the positive impact of Learning Partnership and the negative impact of the percent of students eligible for free and reduced lunch related to the percent of students scoring proficient and advanced on the grade 8 communication arts Missouri Assessment Program (MAP) provide meaningful data needed for further exploration.

Table 32

Summary of the Significant Multiple Regression Findings for All Entered Variables

		Independent Variables													
		VI	M	GA	Ind	Int	HPE	CL	TC	PD	UP	CS	LP	ENR	FRL
Dependent Variables	CL		-	+	+										
	TC			+										+	
	PD		-	+		+									
	UP					+								-	
	CS			+											
	LP					+									-
	CA MAP												+		-
	Total	0	2	4	1	3	0	0	0	0	0	0	1	2	2

(VI: Vision Identification; M: Modeling; GA: Goal Acceptance; Ind: Individualized Support; Int: Intellectual Stimulation; HPE: High Performance Expectations; CL: Collaborative Leadership; TC: Teacher Collaboration; PD: Professional Development; UP: Unity of Purpose; CS: Collegial Support; LP: Learning Partnership; ENR: School enrollment; FRL: Percent of students eligible for free and reduced lunch; CA MAP: Percent of students scoring proficient and advanced on the Grade 8 communication arts Missouri Assessment Program (MAP); Total: Total number of statistically significant findings of the independent variables related to the dependent variables)

The findings summarized above provide the basis for the discussions of findings in Chapter 5. The chapter will include a brief review of the findings, a discussion of the findings, the conclusions that can be made from the findings, and a visual model of the relationships of leadership to culture, culture to achievement, and both leadership and culture to student achievement. Recommendations for research and leadership practice are also presented in the final chapter.

CHAPTER 5

DISCUSSION OF FINDINGS

Introduction

The No Child Left Behind Act (NCLB) has created greater accountability in public schools since it was passed in 2001 (Gruenert, 2005). The goal of NCLB is 100% of students will be proficient in communication arts and mathematics by the year 2014 (United States Department of Education, 2007). Changes must occur in current educational practices if this goal is to be accomplished. However, NCLB is not the only reason to improve upon current educational practices with the goal of improving student learning. The field of public education has both a moral and ethical obligation to the citizens of the United States to provide a high quality education for each and every student. Policy makers have determined they will focus their attention on the school improvement process by targeting the actions of school leaders (Hallinger, 1992; Leithwood, Day, Sammons, Hopkins, and Harris, 2006). Research persistently implies that leadership impacts student success in school (Andrews & Soder, 1987; Hallinger & Heck, 1996; Hallinger, Bickman, & Davis, 1996; Leithwood et al., 2006; Waters, Marzano, & McNulty, 2003). Though policy makers have not placed as much emphasis on school culture, research studies have linked school culture to student success (Leithwood, Jantzi, & Steinbach, 1999; Sagor, 1992; Saphier & King, 1985). Barnett and McCormick (2004), Leithwood et al. (2006), and Ogawa and Bossert (1995) all concur that leaders influence the culture of a school. Through strong, positive, collaborative school culture student achievement can be increased (Cavanaugh & Dellar, 1998;

Leithwood et al., 2006; Muijs, Harris, Chapman, Stoll, & Russ, 2004; Stolp, 1994; Waters et al., 2003). The exact relationship of leadership, culture, and student achievement must be investigated more thoroughly in order for school leaders to be able to meet the goals created by NCLB.

Overview of the Study

The purpose of this study was to analyze the relative impact of transformational leadership and school culture on student achievement. Findings from this study provide insight about transformational leadership and school culture factors that influenced student achievement.

Data were collected for this study as part of a comprehensive, two-year state-wide study of all middle level schools in the state of Missouri. For that comprehensive study, middle level schools were defined as all schools serving students in grades 5 through 9 with at least two grades, one of which was either grade 7 or grade 8. There were 325 middle level schools in the state-wide population (Missouri Department of Elementary and Secondary Education, 2006). The data for the comprehensive study were collected in two phases. The first phase was a survey of principals to determine the details of the programs and practices used in the middle level schools of the state. Data for the first phase were collected in the 2005-2006 school year. The second phase, from which data for this study were collected, was a set of teacher surveys measuring perceptions and practices about leadership, culture, climate, trust, commitment, efficacy, and assessment. Data for phase two were collected in the 2006-2007 school year. For the second phase, 188 school provided teacher-survey responses. Two criteria were used to select the schools for this study. The first criterion addressed grade level. Only schools serving

students in grades 6 through 8 were included. This created a set of schools serving the same age students for the same number of years and fit the most common grade pattern definition for middle schools (Valentine, Clark, Hackmann, & Petzko, 2002). The second criterion addressed participant response rate. Only schools with participant response rates of 50% or higher were included in the study. Because the unit of analysis for the study was the school level, the 50% response rate was used to ensure a representative measure of teacher perceptions for the variables of transformational leadership and school culture. These criteria produced a study sample of 79 of the 188 eligible schools. This was a useable inclusion rate of 42% of the population.

Two quantitative survey instruments were used to gather data for principal transformational leadership and school culture. The first quantitative survey instrument used to collect data for this study was the Principal Leadership Questionnaire (PLQ), developed by Jantzi and Leithwood (1996). The PLQ was used to gather data concerning the principal's transformational leadership characteristics. The PLQ consists of 24 Likert-type questions with six response options: strongly disagree, disagree, somewhat disagree, somewhat agree, agree, and strongly agree. Each of the six PLQ factors listed below use the same scale. All six factors of the PLQ were used in the data collection. The six PLQ factors were (1) Vision Identification, (2) Modeling, (3) Goal Acceptance, (4) Individualized Support, (5) Intellectual Simulation, and (6) High Performance Expectations.

The second quantitative survey instrument used to collect data in this study was the School Culture Survey (SCS), developed by Gruenert (1998). The SCS was used to gather data concerning the school's culture. The SCS consists of 35 Likert-type questions

with six response options: strongly disagree, disagree, somewhat disagree, somewhat agree, agree, and strongly agree. Each of the six SCS factors listed below use the same scale. All six factors of the SCS were used in the data collection. The six SCS factors were (1) Collaborative Leadership, (2) Teacher Collaboration, (3) Professional Development, (4) Unity of Purpose, (5) Collegial Support, and (6) Learning Partnership.

In addition to the data provided by the two survey instruments described above, Missouri Assessment Program (MAP) data were used to provide communication arts achievement data for the study. The data used to represent the school's achievement were a combination of the percent of students at the proficient and advanced levels in communication arts for grade 8. Grade 8 data were used because they represent student performance at the time of exit from the 6 through 8 middle school.

Research Questions

The following research questions were examined in this study:

1. Are there significant relationships between transformational leadership, school culture, and student achievement in communication arts in Missouri middle schools?
2. Does transformational leadership influence school culture in Missouri middle schools?
3. Does school culture influence student achievement in communication arts in Missouri middle schools?
4. Do transformational leadership and school culture combine to influence student achievement in communication arts in Missouri middle schools?

Hypotheses

Ho_1: There are no statistically significant correlational relationships between the factors of transformational leadership, as measured by the Principal Leadership Questionnaire (PLQ), the factors of school culture, as measured by the School Culture Survey (SCS), and student achievement, as measured by the Missouri Assessment Program (MAP), in communication arts in Missouri middle schools.

Ho_2: There are no statistically significant predictive linear relationships for the factors of transformational leadership, as measured by the PLQ, on the factors of school culture, as measured by the SCS, in Missouri middle schools.

Ho_3: There are no statistically significant predictive linear relationships for the factors of school culture, as measured by the SCS, on student achievement, as measured by the MAP, in communication arts in Missouri middle schools.

Ho_4: There are no statistically significant predictive linear relationships for the combined factors of transformational leadership, as measured by the PLQ, and the factors of school culture, as measured by the SCS, on student achievement, as measured by the MAP, in communication arts in Missouri middle schools.

Summary of the Findings

Descriptive Results

The following sections provide descriptive findings from the 79 schools included in this study. The sections are organized by school, principal demographic, achievement, leadership, and culture data.

School demographic data.

Means for school enrollment, the percent of students eligible for free and reduced lunch, the percent of Average Daily Attendance (ADA), principal demographic data, and the percent of students who were state-identified as Asian, black, Hispanic, American Indian, and white are presented below. The mean school enrollment for the 79 schools in the study was 514.52 students. The mean percent of students eligible for free and reduced lunch was 40.08. The mean percent of ADA for schools in the study was 93.76. The mean percent of state-identified Asian students was 1.07. The mean percent of state-identified black students was 13.98. The mean percent of state-identified Hispanic students was 2.35. The mean percent of state-identified American Indian students was 0.35. The mean percent of state-identified white students was 82.23.

Principal demographic data.

The study included self-reported demographic data about the principal of each school including gender, race, age, total years as principal, and years as principal at the school included in the study. A number of principals chose not to answer all of the demographic data; the non responses are noted. Of the 79 principals included in the study, 49 were male (62.03%) and 30 were female (37.97%); all principals responded to this question. The ethnicity reported by the principals was 68 Caucasian (86.07%), 8 African-American (10.13%), with 3 principals (3.80%) not responding to the question. The mean age of the principals in the study was 45.58. The mean number of years a principal served as principal was 7.18. The mean number of years a principal served in his/her current position was 5.62

Achievement data.

The Missouri Assessment Program (MAP) communication arts results from the 2006-2007 school year were used to analyze student achievement for each school. The MAP test was scored using four levels including below basic, basic, proficient, and advanced. The score for each school was the percent of students at the proficient and advanced level of the communication arts MAP. The MAP communications arts mean score for the 79 schools was 43.76 percent of students scoring at the proficient and advanced levels.

Transformational leadership data.

The Principal Leadership Questionnaire (PLQ) (Jantzi & Leithwood, 1996) was used to gather data about the principal's transformational leadership characteristics. The mean score for each of the six factors of the PLQ was: Vision Identification (4.70), Modeling (4.68), Goal Acceptance (4.78), Individualized Support (4.81), Intellectual Stimulation (4.69), and High Performance Expectations (4.90).

School culture data.

The School Culture Survey (SCS) (Gruenert, 1998) was used to gather data about the school's culture. The mean score for each of the six factors of the SCS was: Collaborative Leadership (4.49), Teacher Collaboration (4.08), Professional Development (4.87), Unity of Purpose (4.82), Collegial Support (4.90), and Learning Partnership (4.10).

Hypothesis Testing

Hypothesis one.

Hypothesis one in this study, there are no statistically significant correlational relationships between the factors of transformational leadership, as measured by the Principal Leadership Questionnaire (PLQ), the factors of school culture, as measured by the School Culture Survey (SCS), and student achievement, as measured by the Missouri Assessment Program (MAP), in communication arts in Missouri middle schools, was rejected. There were statistically significant zero-order and partial correlations between transformational leadership factors and achievement data and school culture factors and achievement data.

Hypothesis two.

Hypothesis two in this study, there are no statistically significant predictive linear relationships for the factors of transformational leadership, as measured by the PLQ, on the factors of school culture, as measured by the SCS, in Missouri middle schools, was rejected. There were predictive linear relationships between five of the six factors of the Principal Leadership Questionnaire and the factors of the School Culture Survey.

Hypothesis three.

Hypothesis three in this study, there are no statistically significant predictive linear relationships for the factors of school culture, as measured by the SCS, on student achievement, as measured by the MAP, in communication arts in Missouri middle schools, was rejected. There was a predictive linear relationship between the School Culture Survey factor of Learning Partnership and student achievement.

Hypothesis four.

Hypothesis four in this study, there are no statistically significant predictive linear relationships for the combined factors of transformational leadership, as measured by the PLQ, and the factors of school culture, as measured by the SCS, on student achievement, as measured by the MAP, in communication arts in Missouri middle schools, was rejected. There was a predictive linear relationship between the School Culture Survey factor of Learning Partnership and student achievement.

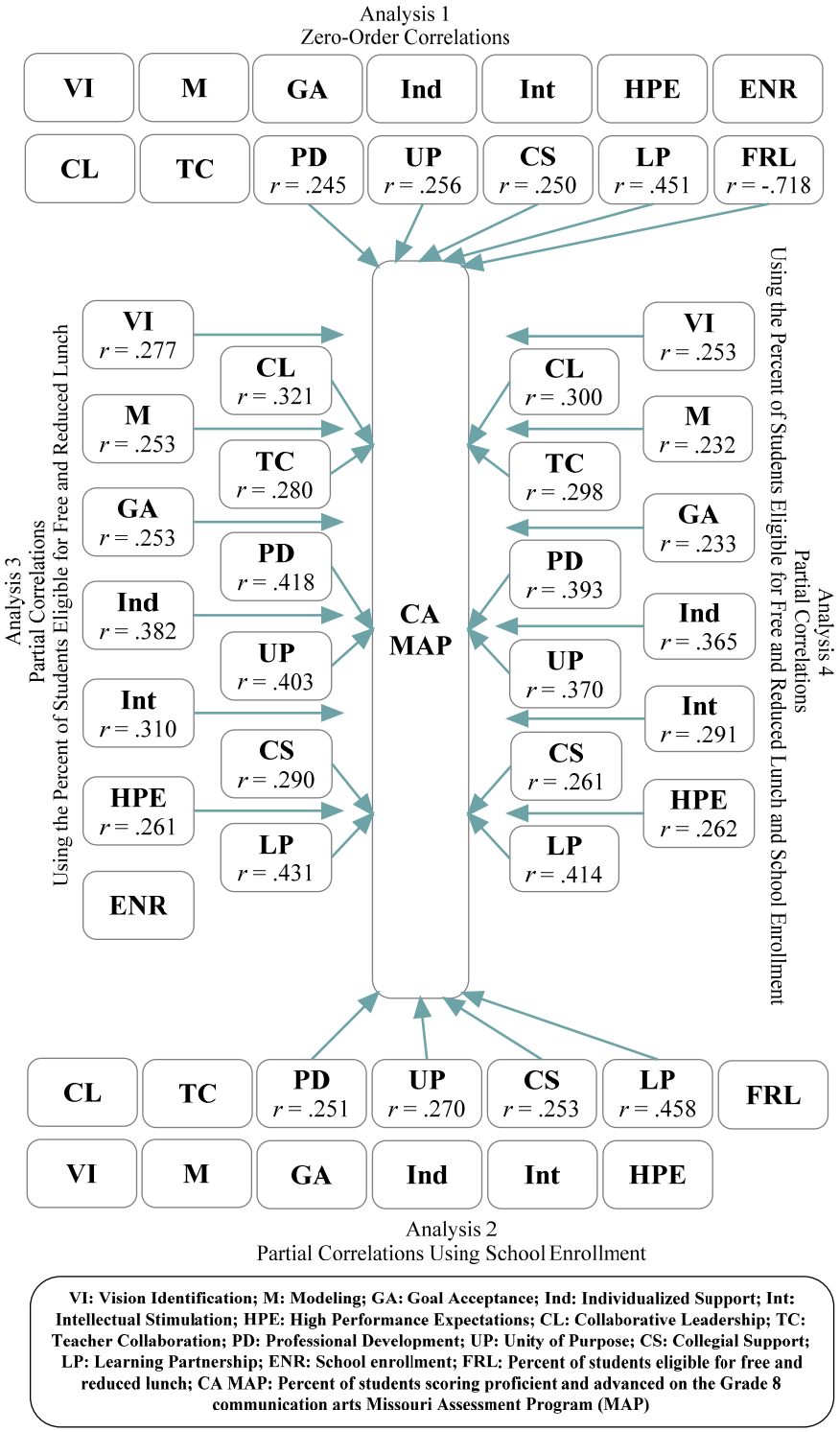
Discussion

Correlation Findings

The data were correlated in four different ways. The analyses entered the variables of transformational leadership, as measured by the PLQ, school culture, as measured by the SCS, the percent of students eligible for free and reduced lunch, as a proxy measure of socioeconomic status, school enrollment, and the percent of students scoring proficient and advanced on the communication art MAP. The first correlations, which were zero-order, included all of the variables described above (Figure 1). The analyses produced five statistically significant relationships of a possible 14 relationships which were tested. The second analysis was a partial correlation using school enrollment as the control variable; the same set of variables was entered except that school enrollment was partialed out (Figure 1). This second set of analyses produced four statistically significant relationships out of a possible 13 relationships which were tested. The third analysis was another partial correlation which used the percent of students eligible for free and reduced lunch as the control variable; the same set of variables was entered except for the percent of students eligible for free and reduced lunch because it

Figure 1

Summary of the statistically significant correlations for the transformational leadership factors, school culture factors, the percent of students eligible for free and reduced lunch, school enrollment, and student achievement



was partialed out (Figure 1). This analysis produced 12 statistically significant relationships out of a possible 13. The final analysis of partial correlations controlled for both the percent of students eligible for free and reduced lunch and school enrollment and used the same set of variables as the other analyses but did not include the percent of students eligible for free and reduced lunch or school enrollment because they were partialed out (Figure 1). Each of the 12 relationships were statistically significant. Even though the same number of correlations were found when the percent of students eligible for free and reduced lunch was used as the sole control variable and in combination with school enrollment, the following discussion addresses the correlations present when only the percent of students eligible for free and reduced lunch was used as the control variable. There are two reasons for this decision. First, Sirin's (2005) research found that socioeconomic status was the major factor influencing student achievement. In this study, controlling for school enrollment did not affect the relationships to the same extensive degree as the percent of students eligible for free and reduced lunch. In this study, the effects of school enrollment were not as significant as the effects of the percent of students eligible for free and reduced lunch, as evidenced by the fact that the factors correlated when the percent of students eligible for free and reduced lunch was the control variable but did not correlate when only enrollment was the variable. Second, of the 12 relationships found in the partial correlations which used the percent of students eligible for free and reduced lunch as the lone control variable, 10 of the 12 statistically significant correlations had higher *r* values than when the percent of students eligible for free and reduced lunch and school enrollment were both used as control variables.

In addition to the correlational analyses described above and reported in the following subsections of this chapter, the correlational relationships between the factors of transformational leadership and school culture when controlling for the percent of students eligible for free and reduced lunch were computed. The correlations were strong and positive. As principal leadership behaviors increased positively, so too did school culture. Those relationships, well documented in other studies (Lucas, 2001; Maher, 2000; Maher, Lucas, & Valentine, 2001; Miles, 2002) were not a focus of this study and thus they are not reported or discussed in this text. They are presented, however, in Appendix M.

Transformational leadership.

The Principal Leadership Questionnaire (PLQ) (Jantzi & Leithwood, 1996), which measures transformational leadership, had six factors including: Vision Identification, Modeling, Goal Acceptance, Individualized Support, Intellectual Simulation, and High Performance Expectations. None of the six factors of transformational leadership were found to be statically significant when correlated, using zero-order correlations, to student achievement (Figure 1). Likewise, no correlations were found when controlling for enrollment (Figure 1).

When partial correlations controlling for the percent of students eligible for free and reduced lunch were completed, all six factors of the PLQ were found to be statistically significant (Figure 1). As the transformational leadership behaviors of the principal increased, so did their respective school scores in communication arts. A meta-analysis by Sirin (2005), which replicated a previous meta-analysis from the early 1980s, found that socioeconomic status has an influence on student achievement. In this study,

controlling for the percent of students eligible for free and reduced lunch, the proxy measure of socioeconomic status, removed the influence of a major factor that is well documented as being associated with student achievement. Principal leadership was significantly correlated with student achievement when the percent of students eligible for free and reduced lunch and school enrollment are both entered as control variables. Clearly, as principal transformational leadership increases, student achievement also increases when the effect of the percent of students eligible for free and reduced lunch is used as a control variable.

Vision identification is an action taken by schools leaders to improve academic success (Day, Harris, & Hatfield, 2001; Deal & Peterson, 1999; Hallinger & Heck, 1999; Hallinger & Heck, 2002; Leithwood et al., 1999; Leithwood & Jantzi, 2005; Matthews & Sammons, 2005; Schlechty, 2000; Sergiovanni, 1984; Stolp, 1994). According to Jantzi and Leithwood (1996), vision identification is the degree to which the principal identifies new opportunities for the organization and develops, articulates, and inspires others with a vision of the future. The higher the leader's vision identification in the school, the higher the student achievement when controlling for the percent of student eligible for free and reduced lunch (r = .277). NCLB created a focus on student achievement for all public schools, though public schools have an ethical and moral obligation without federal legislation to create the highest level of student success possible for each student. A principal's role is to create a vision for the school that will move the school in a positive direction. NCLB mandated that schools move toward higher student achievement. A school's vision should focus on student achievement and, as a school works toward reaching that vision of improving student performance, student

achievement will increase as well. A principal facilitates the completion of this vision by articulating it to the faculty and inspiring others to achieve it. The principal, even as the school leader, does not directly teach students; therefore, he/she must inspire others in the school to work toward accomplishing the school vision of improving student academic performance. As the degree of vision identification increased, student achievement increased when the effect of the percent of students eligible for free and reduced lunch was eliminated.

Modeling was another factor of the PLQ that correlated with communication arts student achievement when the percent of students eligible for free and reduced lunch was the control variable (r = .253). Modeling is the degree to which the principal sets an example for the organizational members to follow consistent with the values the principal espouses (Jantzi & Leithwood, 1996). As modeling behavior of the principal increased, the scores on the communications arts MAP increased. A principal must set the behavioral example for the faculty through actions, not by telling. Faculty members see the actions of the principal and they respect and emulate them. These actions must align with the school's vision, which means with student achievement in the era of NCLB (Jantzi & Leithwood, 1996; Leithwood et al., 2006). If the principal takes positive actions directly related to improving student achievement, the faculty will be more likely to take similar actions in their teacher roles. The actions of the principal directly impact the actions of teachers, which will then impact the students. As the degree of modeling increased, student achievement also increased when the effect of the percent of students eligible for free and reduced lunch was eliminated.

Goal Acceptance correlated to the communication arts MAP (r = .253) when controlling for the percent of students eligible for free and reduced lunch. In schools where the ability of a principal to get the faculty to accept the school goals was higher, achievement in the communication arts MAP was also higher. School goals are precise targets the schools are trying to achieve in a more limited amount of time than a school vision, which is generally broad in nature (Hallinger & Heck, 2002). The role of the transformational principal is to facilitate the faculty working together to create and work toward the achievement of school goals (Jantzi & Leithwood, 1996). A principal is able to accomplish this role by first discussing with the faculty school issues associated with the vision. The principal's actions allow for the faculty to participate in the discussion or problem-solving process. The school-wide investigation of issues, when completed, identifies the gap between current practices and desired practices in the school (Hallinger & Heck, 2002). The inventory of desired practices is reduced to a manageable set of school goals though faculty consensus. The goals in their final form are usually quantifiable so there is more accountability for goal accomplishment (Hallinger & Heck, 2002; Hallinger & Murphy, 1986). Once these school goals are agreed upon, the principal's role is to encourage faculty to work toward achieving the same goals and, when necessary, help the faculty evaluate progress toward goal achievement. When the school goals are designed to improve the academic outcomes for students, it is logical that as principal leadership in goal acceptance increases, the faculty acceptance and fulfillment of the school goals will result in increased achievement. As the degree of goal acceptance increased, student achievement also increased when the effect of the percent of students eligible for free and reduced lunch was eliminated.

Individualized Support correlated to the communication arts MAP (r = .382). As the level of individualized support provided by the principal increased, so too did the percent of students scoring at the proficient and advanced level of the grade 8 communication arts MAP. The central notion of individualized support is showing concern for not only the professional, but also the personal, needs of the staff. Leithwood and his colleagues (1999) place a high value on supporting individuals within an organization because people are the organization and for the organization to improve the people within it must improve. A transformational principal sees the value in developing people by giving personal attention to teachers (Bass, 1990), assisting individuals when they are struggling personally or professionally (Bass, 1990), and showing concern about staff members' needs and feelings (Jantzi & Leithwood, 1996; Leithwood et al., 1999). A principal who understands the unique needs of each staff member and is thoughtful of each individual's personal needs will be able to build personal relationships with these individuals. The caring and respectful personal relationship formed by being attentive to the personal needs of the teacher creates greater teacher motivation which is channeled into harder work on behalf of schools (á Campo, 1993; Bass, Waldman, Avolio, & Bebb, 1987). This personal motivation thus creates a feeling of support for the work necessary in successful school change (Brown, 1993; Hallinger & Heck, 1999). A transformational leader meets the personal emotional needs of teachers in conjunction with meeting their professional needs. The principal must provide resources necessary for a faculty member to implement the school's programs and goals. The actions of the principal that affect the teacher are passed down from teacher to student thereby giving the principal another indirect avenue to impact student achievement. As the degree of individualized support

increased, student achievement also increased when the effect of the percent of students eligible for free and reduced lunch was eliminated.

A principal must challenge organizational members to reexamine their assumptions about their work so they will rethink how to perform their duties. This notion describes intellectual stimulation as defined by the PLQ (Jantzi & Leithwood, 1996). Intellectual Stimulation correlated to the communication arts MAP (r = .310) when controlling for the percent of students eligible for free and reduced lunch. As intellectual stimulation in a building increased, so too did the communication arts MAP scores. The best way to accomplish increasing the level of intellectual stimulation in the building is for the principal to share knowledge with individuals in the school, which encourages them to look at old problems in new ways so problem-solving can occur (Bass, 1990; Bass et al., 1987; Giancola & Hutchison, 2005; Jantzi & Leithwood, 1996). The solutions that the principal helps the teachers reach should be implemented at the classroom level in the school. As the degree of intellectual stimulation increased, student achievement also increased when the effect of the percent of students eligible for free and reduced lunch was eliminated.

High Performance Expectations was the sixth and final factor from the PLQ to be statistically correlated with communications arts MAP (r = .261) when controlling for the percent of students eligible for free and reduced lunch. In a school with a transformational principal who holds high expectations for the faculty, the principal establishes expectations for excellence, quality, and high performance. The principal accomplishes this by holding high expectations and not settling for second rate performances from the faculty. These actions help the faculty accomplish school goals by

motivating teachers (Leithwood et al., 1999; Leithwood et al., 2006). As the degree of high performance expectations increased, student achievement increased when the effect of the percent of students eligible for free and reduced lunch was eliminated.

School culture.

The factors of the School Culture Survey (SCS) (Gruenert, 1998) were Collaborative Leadership, Teacher Collaboration, Professional Development, Unity of Purpose, Collegial Support, and Learning Partnership. When these factors were correlated using a zero-order correlation and partial correlations controlling for school enrollment, the factors of Professional Development, Unity of Purpose, Collegial Support, and Learning Partnership were significant (Figure 1). When partial correlations that included the percent of students eligible for free and reduced lunch were computed, all six factors of the SCS were found to be statistically significant (Figure 1). For the schools in this study, as the school culture scores increased, so did the scores on the communication arts MAP, when controlling for the effect of the percent of students eligible for free and reduced lunch.

The factor of Collaborative Leadership correlated with student achievement in communication arts when controlling for the percent of students eligible for free and reduced lunch (r = .321). At the core of collaborative leadership is the leader behavior of involving others in the decision-making process. The process of shared decision-making begins with keeping teachers informed about school issues. When teachers are informed about the workings of the school they are able to provide ideas which will help resolve issues which have arisen. Those ideas are taken seriously by school leaders. The teachers and principals work together to make school decisions (á Campo, 1993; Leithwood et al.,

2006). These collaborative processes move the school toward student success (Silins & Mulford, 2002). Key collaborative leaders' behaviors included creating and maintaining collaborative relationships, valuing teachers' ideas and input, engaging staff in decision-making, trusting the professional judgment of the staff, and supporting and rewarding risk-taking and innovative ideas designed to improve education for the students. As the degree to which these types of collaborative leadership behaviors increased, student achievement also increased.

Teacher Collaboration also correlated to communication arts MAP (r = .280). As teacher collaboration increased, achievement in communication arts also increased. Teacher collaboration is a result of how the principal facilitates the interactions among the teachers in a school. The principal creates opportunities for dialogue and planning across grades and subjects by establishing a schedule which allows for collaboration. Peer observations also foster collaboration among teachers. The more the faculty collaborates, the more they reflect openly and candidly and the more effectively they evaluate existing practices. These actions help create change within the school (Leithwood, 1992b). As the degree to which these types of collaborative behaviors increased among faculty, student achievement also increased.

Professional Development correlated to the communication arts MAP (r = .418). Professional development through conferences and networking provides teachers with a more complete knowledge of best practices. The knowledge expands to all staff when information gained by a few who attend the professional development opportunities is shared with other teachers increasing collaboration at the school (Brown, 1993; Poplin, 1992). Schools need strategies to disseminate good ideas and insight which help improve

the teaching and learning in the building and create problem solving abilities in the faculty (Leithwood et al., 1999; Leithwood et al., 2006; Muijs et al., 2004). As the degree to which the types of professional development practices in a school increases, so too does student achievement increases

The culture factor of Unity of Purpose correlated to the communication art MAP (r = .403). Unity of purpose is present in a school where teachers are working toward a common mission for the school. The mission must reflect the values of the faculty and community. This unity of purpose moves the entire school in one direction and puts pressure on those who are not conforming to work toward the mission (Kilman, Saxton, & Serpa, 1986). This move toward the common purpose will help lead to overall improvement in the school (Norris, 1994). As this level of common commitment increases in a school, so does student achievement.

The factor of Collegial Support correlated with communication arts achievement (r = .290). Collegial support describes the degree to which faculty work together in a supportive, trusting manner. If teachers trust each other and are willing to help each other, collegial teacher relationships will be built. As collegial support within a school increased, achievement in communication arts also increased.

The factor of Learning Partnership correlated with communication arts achievement (r = 431). Learning partnership describes the degree to which parents and teachers work together for the common good of the student. As the public takes more interest in the public education system, parents are becoming more involved in the educational system (Peterson & Deal, 2002). Leithwood and his colleagues have also seen the importance of parental and community involvement in school (Jantzi &

Leithwood, 1996; Leithwood, 1994; Leithwood, Jantzi, & Steinbach, 1998; Leithwood et al., 1999; Leithwood & Jantzi, 2006; Leithwood et al., 2006). The more the teachers, parents, and students work for the common good of the student, the higher the student achievement. This learning partnership is created when parents and teachers share common expectations for student performance and strategize in support of student performance. These common expectations are developed and supported through frequent contact between school and home. Through frequent contacts and common expectations, trust develops. As trust grows, the confidence in the partnership grows and student success and responsibility increases. The more that all of these learning partnership behaviors occur, the more student achievement increases.

Summary.

Two of the transformational leadership factors of this study are about direction, three are about supporting direction, and one is about the expectations of quality for the direction. Of the six school culture factors in this study, four are about fostering and maintaining relationships, one is about direction, and one is about support for both relationships and direction. Achievement, when fostered via leadership or culture separately or in combination, requires vision, direction, and a set of goals. Relationships are necessary to establish and accomplish the vision, direction, and goals. Through the correlational analyses of this study, it was evident that increases in both the school leadership factors and the school culture factors consistently related to increases in student achievement, when accounting for the influence of socioeconomic status of the students in the school. Based upon teachers' perceptions of leadership and culture, as principals increased the school's focus on a vision of high expectations for student

success while simultaneously providing leadership for a collaborative culture built upon establishing relationships among the individuals of the schools and supporting the efforts of those individuals, student achievement increased.

Regression Findings

Transformational leadership with school culture

As noted previously, high correlations existed between the factors of transformational leadership and school culture. A regression analysis of the factors of the Principal Leadership Questionnaire, along with the demographic variables of the percent of students eligible for free and reduced lunch and school enrollment, was completed against the factors of the School Culture Survey. These findings are reported in this section by each of the six dependent factors of school culture and the independent variables which impact each of them.

For the culture factor of collaborative leadership, three transformational leadership factors were significant predictors. The factors of goal acceptance, individualized support, and modeling accounted for 72.5% of the variance. Goal acceptance was the primary factor impacting collaborative leadership, accounting for 67.9% of the variance, followed by individualized support (3.3% of the variance) and modeling (1.3% of the variance).

Collaborative leadership is defined as the degree to which the principal establishes and maintains collaborative relationships with school staff by valuing teachers' ideas, seeking input, engaging staff in decision-making, and trusting the professional judgment of the staff. The principal also supports and rewards risk-taking and innovative ideas designed to improve education for the students and reinforces the

sharing of ideas and effective practices among all staff (Gruenert, 1998). The central notion of collaborative leadership is that the principal leads the school with the help of the teachers. Three PLQ factors of goal acceptance, individualized support, and modeling, influence this factor of the SCS.

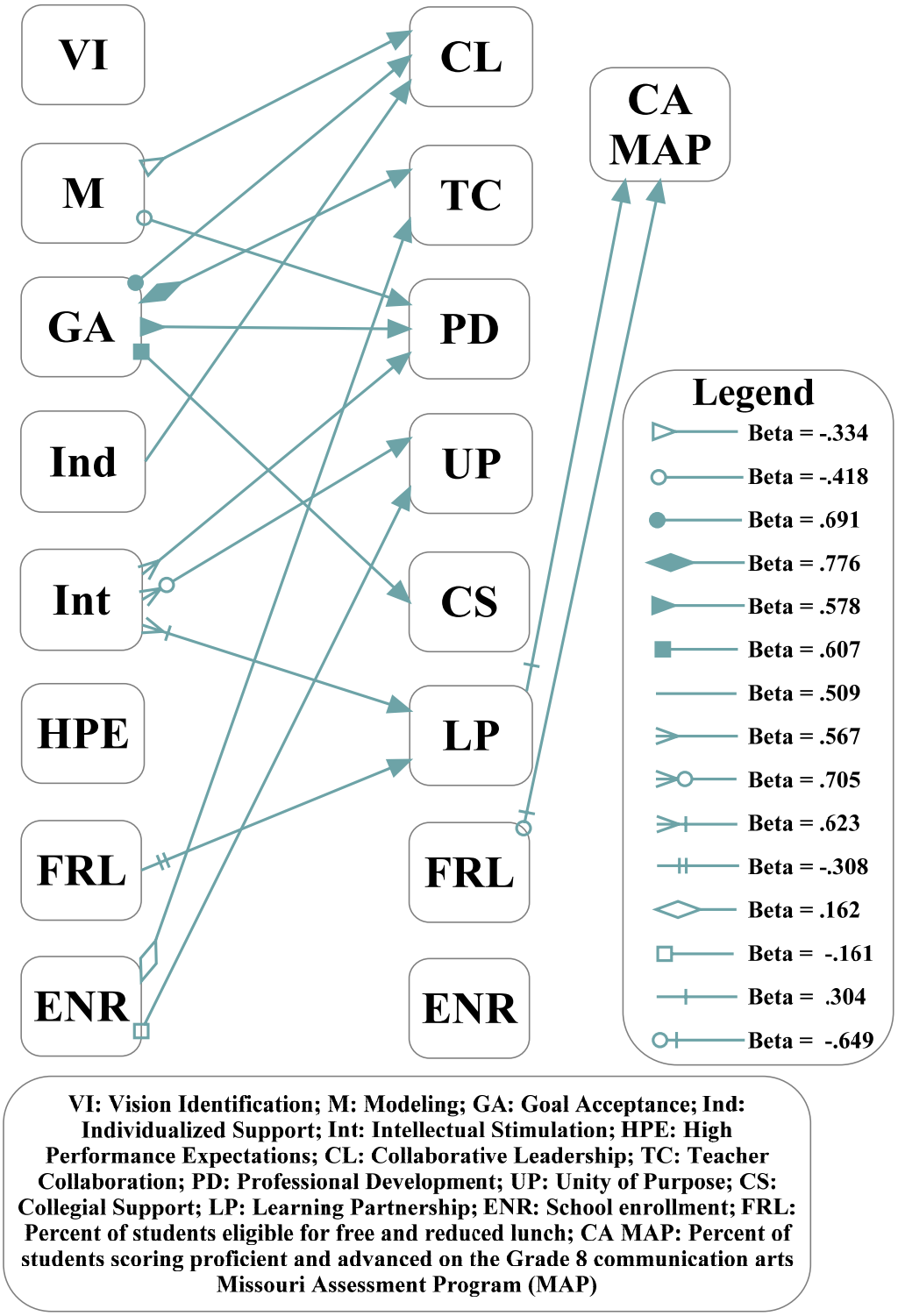
Goal acceptance and individualized support positively influence collaborative leadership ($\beta = .691$ and $\beta = .509$ respectively). Goal acceptance is the actions of the principal which promotes cooperation among organizational members and assists them in working together toward common goals (Jantzi & Leithwood, 1996). These principal actions, when present, define a collaborative leader. Principals who promote cooperation in order to attain school-wide goals are likely valuing teacher ideas, seeking input from teachers, and allowing staff to be involved in the decision-making process. These strategies used by principals are key features of a collaborative leader.

Individualized support is present in schools where the principal is concerned about the personal feeling and needs of teachers (Jantzi & Leithwood, 1996). Principals who are attentive to the professional and personal needs of teachers as individuals are more likely to be able to use the positive relationships grounded in personalized support to build collaborative professional relationships.

Modeling had a negative impact on collaborative leadership ($\beta = -.334$), so an increase in modeling resulted in a decrease in collaborative leadership. Modeling, according to Jantzi and Leithwood (1996), is the example set by the principal for the organizational members to follow consistent with the values the principal espouses. One plausible explanation of this puzzling finding can be found in how or what principals might model. If a principal models his/her beliefs and those are not congruent with the

Figure 2

Summary of the statistically significant regressions for the transformational leadership factors, school culture factors, the percent of students eligible for free and reduced lunch, school enrollment, and student achievement



beliefs of the school faculty or with the mission or vision of the school, then the faculty might view the principal as espousing personal beliefs and reject the principal's beliefs or values. In fact, the faculty may view the modeling as an imposition of expectations. If so, then the faculty will not view the leaders as exhibiting collaborative leadership qualities. However, if the principal models beliefs congruent with those of the faculty, then the collaborative leadership would be positive. With this as a plausible explanation, it implies that far too many schools have a disconnect between the beliefs of the principal and the beliefs of the faculty. Further research is needed to better understand and explain this phenomenon.

Of note is the fact that the variables of the percent of students eligible for free and reduced lunch and enrollment did not surface as significant predictors of collaborative leadership. In essence, goal acceptance, individualized support, and modeling were more significant than either demographic variable. These three factors have more influence on collaborative principal-teacher relationships than do the percent of students eligible for free and reduced lunch or enrollment. Principals have the power to create collaboration regardless of how rich or poor the school community or how large or small the school.

For the culture factor of teacher collaboration, one transformational leadership factor and one other independent variable were significant predictors. The factors of goal acceptance and school enrollment accounted for 56.2% of the variance. Goal acceptance was the primary factor impacting teacher collaboration, accounting for 54.2% of the variance, with school enrollment accounting for 2.0% of the variance.

Teacher collaboration is present in schools where teachers work together to improve the school. Goal acceptance ($\beta = .776$), from the PLQ, and school enrollment (β

= .162) influence the level of teacher collaboration in schools. Goal acceptance is based on the notion that the principal allows the faculty to work together to generate a list of possible goals, narrow the list, and adopt a reasonable number of school goals. This process is centered on teachers working together with the principal to create these goals which will lead the school. The principal facilitates teacher collaboration as teachers dialogue across grades and subjects to further the educational vision of the school. In addition, the principal encourages faculty to work toward achieving the same goals by creating ongoing conversations within the faculty that allow teachers to design strategies to achieve the goals.

The size of the school, as measured by school enrollment, also predicts teacher collaboration ($\beta = .162$). The larger the enrollment, the greater the perceived teacher collaboration. An increase in enrollment translates into an increase in the number of teachers in the building. In a larger school, multiple teachers teach specific content areas and work on grade level teams or interdisciplinary teams, providing more opportunities for these teachers to work together within their subgroup. These sub-groups within a faculty provide multiple opportunities for collaboration, a factor not present in smaller schools.

Larger schools are more complex organizations with concerns and issues not present in smaller schools (Bolman & Deal, 2003). More concerns and issues necessitate more solutions, with collaboration being a primary strategy for resolution of the concerns and issues.

For the culture factor of professional development, three transformational leadership factors of intellectual stimulation, goal acceptance, and modeling were

significant predictors. They accounted for 52.5% of the variance. Intellectual stimulation was the primary factor impacting professional development, accounting for 47.7% of the variance, followed by goal acceptance (2.7% of the variance) and modeling (2.1% of the variance).

The professional development factor is about teachers valuing continuous personal development through personal interactions with colleagues, both inside and outside the building, with the goal of increasing their knowledge base so school-wide improvement can occur.

Logically, intellectual stimulation and professional development are significantly related ($\beta = .567$). Intellectual stimulation occurs when principals encourage teachers to reevaluate what they are doing for students in the school. The reflection can thus lead to professional development that provides opportunities for teachers to learn new information which will challenge their current practices.

Goal acceptance significantly influences professional development ($\beta = .578$). Problem-solving school issues are one avenue to create goals. A problem is identified and a goal is created in order to solve the problem. Out of school-wide faculty conversations, school goals are created. After these goals are created, the principal encourages faculty members to evaluate progress toward these goals. If progress is not being made, professional development can provide teachers with the knowledge and insight needed to better meet the goals of the school.

The transformational leadership behavior of modeling has a negative impact on the professional development of the school faculty ($\beta = -.418$). As noted previously, modeling by the principal has a curious relationship with school culture factors. The more

a principal leads by doing rather than telling, exemplifies success and accomplishments, and provides good behavioral models for faculty to follow, the less the faculty value continuous professional development. This may be a situation where schools that need high levels of change are the very schools most resistant to change. And the more the principal espouses change and promotes professional development, the more faculty members resist the development and view professional development negatively.

For the culture factor of unity of purpose, one transformational leadership factor and one other independent variable were significant predictors. The factors of intellectual stimulation and school enrollment accounted for 54.6% of the variance. Intellectual stimulation was the primary factor impacting teacher collaboration, accounting for 52.6% of the variance, with school enrollment accounting for 2.0% of the variance.

Schools moving in the same direction with faculty working toward accomplishing a common mission for the school have unity of purpose. The unity of purpose factor of the SCS increases as intellectual stimulation in the building increases and school enrollment decreases. Increases in intellectual stimulation of the faculty by the principal positively influences unity of purpose within a building ($\beta = .705$). Intellectual stimulation frequently challenges teachers' long-held assumptions about teaching and learning. As the principal provides educationally sound knowledge and insight about best practices and fosters faculty-wide study and reflection, individual assumptions evolve and a common mission of purpose unfolds. This singular mission or focus is an essential foundation from which unity of purpose evolves.

Larger schools are more complex organizations with more challenges than smaller schools (Bolman & Deal, 2003). The larger the school, the more difficult it is for the

school to have a unified purpose in the form of a common mission toward which everyone is working (β = -.161). Teachers in larger schools may view the school mission as incongruent with their own personal beliefs and the size of the school allows them to have anonymity in their beliefs and subsequent behavior. Therefore, they may invest more time and commitment to their personal beliefs. Unfortunately, personal rather than collective commitments may be divisive and hinder progressive change. The mission of the school is not likely to be achieved if it is not supported by teachers. In a larger school it is necessary to establish a collaboratively developed mission supported by the entire faculty that provides a clear sense of direction for all personnel and programs in the school.

For the culture factor of collegial support, one transformational leadership factor was a significant predictor. The factor of goal acceptance accounted for 36.1% of the variance for the school culture factor of collegial support.

Collegial support is the degree to which teachers work together effectively to accomplish the tasks of the schools. Goal acceptance was the only variable which explained a significant portion of the collegial support in a school (β = .607). Goal acceptance describes the degree to which the principal fosters cooperation among faculty toward goal achievement. Cooperation of the faculty is a common thread for both collegial support and goal acceptance. The more faculty engage in cooperative endeavors related to accomplishing common goals, the more teachers develop the capacity to work together effectively, build trust, appreciate other's ideas, and assist each other in the accomplishment of the school's goals and the myriad of other tasks necessary in the school organization.

For the culture factor of learning partnership, one transformational leadership factor and one other independent variable were significant predictors. The factors of intellectual stimulation and the percent of students eligible for free and reduced lunch accounted for 41.8% of the variance. Intellectual stimulation was the primary factor influencing learning partnership, accounting for 33.1% of the variance. School enrollment accounted for 8.7% of the variance.

Learning partnership is the collaboration of teachers, parents, and students in the interest of the student. Two variables, intellectual stimulation and the percents of students eligible for free and reduced lunch, significantly influenced the learning partnership in a school ($\beta = .623$ and $\beta = -.308$ respectively).

Intellectual stimulation occurs when the principal challenges teachers to reexamine assumptions they have about their job role. When a principal focuses intellectual thought, knowledge, and insight toward building relationship between teachers and parents and teachers and students, these groups develop greater capacity to work together for the common good of the student. These efforts result in higher levels of trust among the teacher, parent, and student, with students generally accepting greater responsibility for the schooling.

The percent of students eligible for free and reduced lunch was negatively associated with learning partnership. Simply stated, the greater the wealth across the school community, the greater the degree to which teachers, parents, and students worked together for the common good of the student. Inversely, the greater the poverty across the school community, the less these participants collaborated effectively. The school

leader's challenge is to build the high level of cooperation regardless of the socioeconomic status of the community.

School culture with student achievement.

Numerous literature reviews (Cavanaugh & Dellar, 1998; Leithwood et al., 2006; Muijs et al., 2004; Stolp, 1994; Waters et al., 2003) link strong, positive, collaborative school cultures to student achievement. Research studies have confirmed the positive impact of culture on achievement (Gaziel, 1997; Gruenert, 2005; Maher, Lucas, & Valentine, 2001; Pritchard, Marrow, & Marshall, 2005; Zigarelli, 1996), including studies specifically in elementary schools (Cunningham, 2003; Fowler, 2006; Liu, 2004; Schooley, 2005; Zuniga-Barrera, 2006), middle schools (Brown, 2004; Vislocky, 2005), and high schools (Herrmann, 2007; Patterson, 2006). The findings of this study add to the body of research, affirming that school culture does influence student achievement.

For student achievement, as measured by the percent of students scoring at the proficient and advanced levels on the grade 8 communication arts MAP, the independent variable of the percent of students eligible for free and reduced lunch and the culture factor of learning partnership were significant predictors. The variable of the percent of students eligible for free and reduced lunch was the primary factor impacting student achievement, accounting for 50.9% of the variance. Learning partnership accounted for 8.3% of the variance.

The independent variables of the percent of students eligible for free and reduced lunch ($\beta = -.649$) and learning partnership ($\beta = .304$) predicted higher scores on the communication arts MAP (Figure 2). The meta-analysis by Sirin (2005) found that socioeconomic status has an influence on student achievement. The data from this study

reached the same conclusion. The percent of students eligible for free and reduced lunch is not a factor which principals can control; however, school leaders, working with teachers, can impact the partnership created between school and home, thus positively impacting student achievement.

As school and home work together for the common good of the students, the higher the student achievement. As described previously in this chapter, when teachers, parents, and students work cooperatively toward the common good of the student, the likelihood of success increases significantly. Schools with strong connections to parents and students will have higher student achievement.

Transformational leadership and school culture with student achievement.

Each of the six factors of transformational leadership, each of the six factors of the school culture, the percent of students eligible for free and reduced lunch, and school enrollment were regressed against student achievement. The findings from that specific data analysis were an exact replica of the findings for the analysis of the six factors of school culture, the percent of students eligible for free and reduced lunch, and school enrollment (Figure 2) as described in the previous section of this chapter. The percent of students eligible for free and reduced lunch and the school culture factor of learning partnership were the only variables that significantly explained variance in student achievement.

Summary.

A transformational leader can impact the culture of a school. A positive school culture is linked to increased student achievement (Barnett & McCormick, 2004; Hallinger & Heck, 1998). The impact of a principal is not direct, but studies by Barnett

and McCormick (2004), Hallinger, Bickman, and Davis (1996), Hallinger & Heck (1996; 1998), Leithwood & Jantzi (2000), Marzano, Waters, & McNulty (2005), and Waters et al. (2003) provide evidence of the indirect impact principals can have on achievement. Knowing that a principal may not have a direct influence, but rather an indirect influence, enables principals to focus their limited time and energy on those indirect activities that influence student achievement.

Discussion of Key Findings

No Child Left Behind (NCLB) has changed public education in America. At no time in public education's history has a law like NCLB been passed that mandates accountability standards which requires all public schools to provide evidence that all students are learning (Noguera, 2004). This drastic change in accountability for schools has completely altered the context within which schools function. Central office and building leadership are coming under increasing pressure to raise test scores. This pressure may be producing a shift in the relationships between leaders and teachers in public education.

NCLB has increased the pressure exerted by district and building leadership to improve standardized test scores to meet NCLB mandates. In a study of one Texas school district, Maxcy (in press) found that top-down monitoring of school success had increased within the district as NCLB pressures increased. Top-down leadership is a shift from what was a growing trend of site-based, distributed, democratic, transformational and other participatory leadership models which were steadily emerging before and during the early stages of NCLB. However, as NCLB requirements were not being met at

the building level, pressure from the central office on the building leadership may have shifted principals toward a more top-down leadership style.

Modeling and Collaborative Leadership

In the schools in this study, modeling negatively influenced collaborative leadership. Increased pressure from district and building leadership to improve test scores may explain in part or whole the negative effect of modeling on perceived collaborative leadership. The more schools struggle with improving their test scores, the more pressure the district places on principals, therefore causing principals to place more pressure on faculties to change. This pressure could explain why modeling scores were negative when regressed against collaborative leadership. Principals who, more than ever before, find it crucial to emphasize necessary and urgent change are perceived by teachers as less collaborative leaders. The pressure on principals to improve means they are modeling behaviors and espousing beliefs that may not be congruent with their true beliefs but which have to be espoused given the increasingly strong pressure to improve student achievement to meet NCLB standards. Logic dictates that when a principal espouses beliefs which are not held by the faculty, and perhaps not even by the principal, the principal will be perceived as less collaborative. The principal, who feels it necessary to emphasize change, may be the lone voice for change. If so, the faculty will undoubtedly view the need for change as top-down. Principals are being forced, either from increased pressure from the central office or through their own desires, to stress improvement in student achievement. An analysis of data from this study found that modeling in the lowest achieving schools in the study was not significantly different than the modeling in the highest achieving schools. As the NCLB minimal mandated standards continue to rise

each year, it appears that both the lower achieving and the higher achieving schools are feeling the pressure for change. This pervasive pressure may, in fact, be reshaping how principals believe they must lead to accrue change. In essence, NCLB may be having a deleterious effect on leadership and even on collaborative culture. In an era when principals need to foster greater levels of collaboration with teachers, the aggressive espousing of change incongruent with principals' and teachers' educational beliefs may be producing unintended consequences of negativity by the teaches who must make the needed changes.

SES and Learning Partnership

The socioeconomic status (SES) of a student has consistently been a strong predictor of student achievement (Sirin, 2005). This study confirms that long-standing finding. At times, some educators tend to blame a student's achievement on factors such as home environment, SES, and other external variables, not on the failures of the educational system (Shields, 2004). Educators must understand that their claims of treating all groups of students the same does not mean they are above having biases against groups of students (Larson & Ovando, 2001). Biases are natural as educators live in society and society itself perpetuates biases (Larson & Ovando, 2001). Though the presence of biases may be common, biased views hinder the ability of individuals, including educators, to change their current professional practices (Larson & Ovando, 2001). Education can ill afford for its educators to use excuses, such as students being from impoverished homes, being from single-parent households, being second language learners, and a host of other external issues, to justify a student's poor performance in school (Shields, 2004).

The presence of a learning partnership, found in schools with a strong relationship between school and home based around helping students succeed, was found in this study to influence student achievement. Learning partnership, unlike SES, can be influenced by school leaders. Principals can encourage faculties to take action that will build relationships with parents. However, the faculty must be capable of seeing parents as a partner for student success. A principal must build within the faculty the capacity to work with parents for the benefit of the student.

The socioeconomic status of students and the learning partnership created between school and home to benefit the student were significant indicators of student achievement for the communication arts state assessment. Educators must fight the "knee jerk" reaction they may have to people who are different from themselves, including those who are of a lower socioeconomic status (Larson & Ovando, 2001). They must take the differences present in their students and not see them as deficits (Shields, 2004). For example, a major bias of some educators is to believe that parents from poverty do not participate in the educational system because they are disinterested (Noguera, 2004). There is no evidence to support such biases (Noguera, 2004). This unfounded bias often prevents educators from connecting with these parents (Larson & Ovando, 2001). The findings from this study about learning partnerships between school and home provide evidence that educators must overcome their biases about parents from poverty and actively work to improve relationships between the school and home. For the partnership between school and home to occur, teachers must initiate the relationships and foster meaningful dialogue with parents. Teacher biases must be addressed and changed, otherwise teachers will not expend the energy and time on what they feel will be an

unproductive and unsuccessful endeavor. Principals must take an active role in addressing and changing any biases that impede building effective teacher-parent relationships with parents from low socioeconomic status.

Intellectual Stimulation and Learning Partnership

Intellectual stimulation influences learning partnerships and learning partnerships influences student academic success. Therefore, the role of the principal as a leader who fosters the study and examination of teachers' assumptions about their work is critical. Principals have the responsibility to stimulate thought-provoking, challenging conversations about the very issues discussed in previous sections. If the principal cannot foster study and open discussions about the research related to parents from poverty and the importance of building strong teacher-parent relationships regardless of the home environment, the principal is not addressing a key factor in student success. Principals have an obligation to both understand the significance of these variables and act accordingly. Intellectual stimulation through aggressive leader behavior using collaborative conversations is a necessary building-leader skill.

Implications

Implications for Practice

The percent of students eligible for free and reduced lunch is the most consistent predictor of student achievement (Figure 2). However, this variable is not within the control of building principals, so principals must address other avenues within their control in their efforts to influence student achievement. The factor of intellectual stimulation does significantly influence learning partnership, which in turn influences student achievement. Therefore, principals should focus efforts on those behaviors and

activities that foster intellectual stimulation. They should challenge staff to reexamine their assumptions about their work, including those related to building collaborative relationships with parents and students. They should challenge staff to think about how to better perform their work. Principals should help teachers think of ways to more effectively implement the school's programs and achieve the school's mission and vision. Principals should provide materials to, and support conversations among, teachers about teaching and learning. They should provide the opportunity for teachers to study data and compare their analyses with data from highly effective schools. In essence, principals must foster more reflective and deeper thought among teachers about the teachers' assumptions and work.

A critical focus of the principal's intellectual stimulation efforts should be about the development of learning partnerships. Teachers, parents, and students must develop high levels of capacity to work together for the common good of the student. They must develop common expectations and communicate frequently about student performance. They must build trust with parents and foster student personal responsibility for learning. These forms of effective teacher behaviors seldom evolve unless the principal establishes a culture for their development. The principal has the responsibility to establish and maintain a collaborative, problem-solving, intellectual culture that supports teachers as they work to build these critical relationships.

Implications for Future Research

This study included middle schools of grades 6 through 8 in the state of Missouri. Studies in other state middle school populations analyzing the same variables will

provide expanded insight about the merit of these findings. In addition, similar studies at other grade levels will provide insight about the significance of the variables.

The significance of the intellectual stimulation factor and the learning partnership factor should be analyzed more extensively, both quantitatively and qualitatively. The modeling factor provided some curious findings. Additional inquiry into the factors of this study may provide insight about the negative relationship between modeling and collaborative leadership and professional development. Zero-order and partial correlations, using the percent of students eligible for free and reduced lunch and school enrollment separately and in combination, showed positive correlations between the percent of American Indian students and the transformational leadership factors of Vision Identification, Modeling, Goal Acceptance, and Individualized Support. These findings need further study because of their consistency.

Conclusion

The changing educational context caused by NCLB has altered the manner in which principals function. Increasing pressure to improve results may lead to principals modeling espoused values which are not in line with what the principal actually believes or what teachers believe is best for students. Such modeling creates a more top-down leadership role for the principal which is perceived negatively by the faculty. A principal cannot run a school alone. By modeling in a manner that impedes collaborative leadership, the principal is placing him/herself in that position. Though pressure is mounting for change, principals must continue to work within a collaborative framework to create successful school improvement. The use of intellectual stimulation and modeling through truly collaborative leadership behavior may be one way to foster

appropriate teacher-parent learning partnerships. Open, engaging, discussions based upon research that challenges inaccurate teacher assumptions about the importance of parent-teacher relationships provides the opportunity for principals and teachers to create the all-important collaborative conversations while addressing a critical issue for student success.

With increasing pressure from state and federal governments to improve achievement for all students, and more importantly with an understanding of the moral and ethical obligations to support academic success for all students, today's principal is more equipped than ever with insight about how to influence student achievement. School leaders have an obligation to use the insight from findings such as those cited above to address their use of intellectual stimulation and modeling behaviors, their collaborative efforts, their support for teachers to build accurate insight about parents of poverty, and the importance of establishing effective parent-teacher relationships.

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Appendix A

Principal Cover Letter of Invitation

Middle Level Leadership Center

University of Missouri-Columbia • 211 Hill Hall • Columbia, MO 65211
Director: Jerry Valentine (573) 882-0944
Assistants: Bernard Solomon (573) 882-0947; Kris Matthews (573) 882-0947; Greg Mees (573) 882-0947
Fax: 884-7922 • Email: ValentineJ@missouri.edu

Principal «PRINFN» «PRINLN»:

I am writing to seek your support of this comprehensive statewide study of Middle Level Education being conducted at the Middle Level Leadership Center at the University of Missouri. What I am asking of you is simple. Please ask your secretary to read the enclosed Secretary letter and complete the brief tasks listed in the letter. The envelope for your school secretary has the directions and materials necessary to distribute and collect the surveys. Essentially, we are asking each of the 10,000 plus Missouri middle level teachers to complete one survey, requiring 15-20 minutes of time. And we are asking 343 secretaries to handle the distribution and collection of the surveys. Please support that effort with a few kind words of encouragement to your teachers and your secretary.

To garner the support of the secretaries for this study and to express appreciation to those who go an extra mile to obtain as many returns as possible, I will give a $50 gift card to the secretaries of the twenty schools with the highest percentage of returned completed teacher surveys. To make that distribution as fair as possible, I have divided the 343 middle level schools in the state into quartiles by enrollment. The five secretaries from each enrollment quartile with the highest percentage of returned completed teacher surveys within forty days from the original MU postmark will receive the gift cards.

As you can see, I consider this to be a very important study and am thus willing to recognize the efforts of the secretaries who help us make the study a success. The information gained from this study is extremely important to middle level education. This comprehensive study of all Missouri middle level schools is the largest of its kind ever conducted. From this study, more will be learned about specific successful practices in middle level education than from any previous study of middle level education. For Missouri, it will provide the opportunity to make policy recommendations to the Commissioner and other state policy makers in support of best practices for educating young adolescents. Also, it will provide the opportunity for each of the 343 middle level principals in the state to compare the aggregated statewide findings with practices used in individual schools. However, please be assured that at no time in this study will the names of schools or individual respondents be reported. All individual responses will be rendered anonymous and all data about schools will be aggregated and will be confidential.

What I am asking of you, therefore, is both important and straightforward. Please:

a) Complete the brief Principal Survey (about 5-10 minutes)
b) Sign the Principal Consent Form,
c) Enclose both the Principal Consent Form and the completed Principal Survey in the envelope provided,
d) Seal the envelope,
e) Give the envelope to your school secretary so it can be returned to the Middle Level Leadership Center at MU,
f) Encourage your teachers to complete their survey, and
g) Encourage your secretary to follow through promptly with the process of collecting and returning surveys.

Please feel free to review any of the enclosed materials. The survey questions focus on a variety of key factors that affect student success, including programs and assessment practices, school culture and climate, principal and teacher leadership, and teacher commitment and efficacy. None of the materials ask sensitive questions but all are vital to build the necessary comprehensive picture of school effectiveness that allows us to study those variables that most directly affect student success.

Thank you for your time and for all of the energy and commitment you provide as a middle school leader. Please contact me if you have any questions about the study or the tasks I am asking you to complete. Look for the results of the study on the MLLC website so you can contrast your school with the statewide findings. I will also disseminate findings directly back to all participating Missouri schools through an email attachment.

Responses from your school and the other middle level schools across Missouri are vital to this effort as we work together to improve middle level education in our state and beyond. Thank you for your support.

Have a great school year!

Sincerely,

Jerry Valentine
Professor and Director, Middle Level Leadership Center
211 Hill Hall
University of Missouri
Columbia, MO 65211
(573) 882-0944
ValentineJ@missouri.edu
www.MLLC.org

PLEASE SUPPORT THIS STUDY IN YOUR SCHOOL BY:

- **GIVING THE PACKET OF MATERIALS TO YOUR SECRETARY**

- **ASKING THE SECRETARY TO FOLLOW THROUGH WITH THE APPROPRIATE TASKS**
- **ENCOURAGING YOUR TEACHERS TO TAKE THE FEW MINUTES NECESSARY TO RESPOND TO THEIR RESPECTIVE SURVEYS.**

THANK YOU!

Appendix B

Principal Consent Form

Principal Consent Form

As noted in your cover letter, the purpose of this study is to obtain information that will allow educators to better understand effective practices in middle level schools across the state. From that insight, policy and program recommendations will be made to state school leaders and an understanding of highly effective practices can be shared with middle level educators. The information your teachers provide about your school is extremely valuable in this effort. We are collecting data for this statewide study this winter and expect to analyze the data this spring.

Because our Center is a part of the University of Missouri, we must follow University guidelines when we conduct surveys. Therefore, even though there are no sensitive questions in this survey, we are obligated to inform you of your rights as a school leader whose school is participating in this study:

> *Your participation in this research study is voluntary and your responses, participation, or non-participation will not be used in any evaluative manner. You may choose not to participate for any reason; you may discontinue participation at any time, and you may refuse to answer any questions that may be uncomfortable for you. There are no foreseeable risks or discomforts because of participation. The responses from you and your teachers will be confidential and will go directly to the Middle Level Leadership Center. In compliance with University regulations, all data will be stored at the Middle Level Leadership Center in a locked storage cabinet for three years from the completion of the study. If you have any questions about the survey or its use, please contact Dr. Jerry Valentine, Center Director, at (573) 882-0944. If you have any concerns or questions regarding compliance with this statement, you may contact the University Institutional Review Board office for Human Subjects Research at (573) 882-9585.*

Please (a) sign this Consent Form, (b) enclose both the Consent Form and the completed Survey in the envelope provided, (c) seal the envelope, (d) give the envelope to your school secretary so it can be returned to the Middle Level Leadership Center at MU, (e) encourage your teachers to complete their survey, and (f) encourage your secretary to follow through promptly with the process of collecting and returning surveys to MLLC. When we open your envelope at our Center, your consent form will be filed and the data about your school will remain confidential. Your teachers' responses will also be separated from their consent forms before they are entered into the data set for your school. Your school will be assigned a number code to maintain confidentiality of the school throughout the study. Thus, all individual teacher responses will be confidential and then anonymous; school-wide data will be confidential; and, data will be analyzed and reported as aggregated group data. Neither your teachers' responses nor data about your school will be identified in any of the reports or recommendations from this statewide study.

Thank you for participating in this survey administered by the Middle Level Leadership Center. Your time and support are vitally important to middle level programs across the state.

_____ _____

Principal Signature Date

Thank you,

Jerry Valentine
Director, Middle Level Leadership Center
211 Hill Hall, University of Missouri
Columbia, MO 65211

Appendix C

Principal Survey

MISSOURI STUDY OF MIDDLE LEVEL EDUCATION

Principal Survey School Name: _____

Please take a moment to respond to the following demographic items. Please seal your responses in the envelope and give it to your secretary for mailing to my office at MU. Thank you for taking the time to complete this brief survey and supporting this important study in your school. What we learn will be extremely valuable to middle schools across the state and nation. The items are spaced for quick read and response. It will take you about 5-10 minutes to complete this survey. Thank you!
Jerry

Questions		Responses
1.	What is the current enrollment in your school?	
2.	How many full-time-equivalent teachers (staffing units for individuals who teach) do you have in your building (half-time teacher is .5, full-time teacher is 1.0, etc.)?	
3.	What grades are included in your school (e.g. 6-7-8, 7-8, etc.)?	
4.	What percent of your students are eligible for free or reduced lunch?	
5.	What do you estimate is the percent of average daily attendance for your student body?	
6.	What is your gender?	
7.	With what ethnic group do you identify yourself?	
8.	What is your age?	
9.	How many years were you a classroom teacher, counselor, or other non-administrator regardless of grade level?	
10.	How many years were you a classroom teacher, counselor, or other non-administrator at the middle level?	
11.	How many years were you an assistant principal, regardless of grade level?	
12.	How many years were you an assistant principal at the middle level?	
13.	How many years have you served as a principal, regardless of grade level, including this school year?	
14.	How many years have you served as a middle level principal, including this school year?	
15.	How many years have you served as the principal of this school?	

Please use this scale to indicate the degree to which you agree with the following statements.

1=Strongly Disagree 2=Disagree 3=Somewhat Disagree 4=Somewhat Agree 5=Agree 6=Strongly Agree

16.	Overall, the culture of our school is positive, caring and collaborative.	**1**	**2**	**3**	**4**	**5**	**6**
17.	Overall, our school climate is positive, trusting, and respectful.	**1**	**2**	**3**	**4**	**5**	**6**
18.	Overall, our school is a healthy work environment.	**1**	**2**	**3**	**4**	**5**	**6**
19.	Overall, the teachers in our school trust their fellow teachers.	**1**	**2**	**3**	**4**	**5**	**6**
20.	Overall, the teachers in our school trust the clients (students and parents) they serve.	**1**	**2**	**3**	**4**	**5**	**6**
21.	Overall, the teachers in our school trust me (their principal).	**1**	**2**	**3**	**4**	**5**	**6**
22.	Overall, the teachers in our school trust the district-level leadership (district administrators and school board members).	**1**	**2**	**3**	**4**	**5**	**6**
23.	Overall, the teachers in our school are committed to the success of our school.	**1**	**2**	**3**	**4**	**5**	**6**
24.	Overall, the teachers in our school are committed to the personal and academic success of each and every student.	**1**	**2**	**3**	**4**	**5**	**6**
25.	Overall, our school faculty believes they can make a difference in the lives of our students.	**1**	**2**	**3**	**4**	**5**	**6**
26.	Overall, our school faculty effectively uses instructional strategies that enhance learning for each and every student.	**1**	**2**	**3**	**4**	**5**	**6**
27.	Overall, our school faculty effectively uses assessment strategies and data to improve instruction and achievement for each and every student.	**1**	**2**	**3**	**4**	**5**	**6**
28.	Overall, the teacher leaders in our school effectively lead other faculty in our school-wide efforts toward excellence in teaching and learning.	**1**	**2**	**3**	**4**	**5**	**6**
29.	Overall, I provide effective leadership toward excellence in teaching and learning.	**1**	**2**	**3**	**4**	**5**	**6**
30.	Overall, I provide effective leadership for our school.	**1**	**2**	**3**	**4**	**5**	**6**
31.	Overall, the “leadership team” (principal, assistants, counselors, chairs, team leaders, etc.) provides effective leadership for our school.	**1**	**2**	**3**	**4**	**5**	**6**

Thank you for taking the time to complete this survey. Please seal this Survey and your Consent Form in the envelope provided and return it to the office secretary for mailing to the Middle Level Leadership Center.

Items in this survey not developed by the Middle Level Leadership Center were used with permission of the authors. Do not duplicate or use this survey without written permission from MLLC or the contributing authors. For information about the use of the survey or survey items, contact Jerry Valentine, Director, Middle Level Leadership Center.

Appendix D

Secretary Directions

Middle Level Leadership Center

University of Missouri-Columbia • 211 Hill Hall • Columbia, MO 65211
Director: Jerry Valentine (573) 882-0944
Assistants: Bernard Solomon (573) 882-0947; Kris Matthews (573) 882-0947; Greg Mees (573) 882-0947
Fax: 884-7922 • Email: ValentineJ@missouri.edu

Dear School Secretary:

I am asking for your support of this comprehensive statewide study of Middle Level Education being conducted by the Middle Level Leadership Center at the University of Missouri. This study is the most comprehensive and significant study ever conducted in Missouri's middle level schools. For this study to be effective, I need your assistance. What I am asking of you is simple, but critical. Please complete the tasks listed below.

1. From state records we identified the approximate number of full-time classroom teachers in your school. Our numbers may be close, but not exact. Please distribute the enclosed surveys to your full-time classroom teachers in a random manner. Note that there are five different forms labeled "A" through "E" and that those five forms should be distributed evenly among the classroom teachers. Normally, this would be done by loading the surveys in a systematic manner in teachers' mailboxes. But if you prefer to use a teacher list, a faculty meeting, or some other form of distribution and collection, we will leave that to your judgment. We simply need to be sure that the surveys are distributed evenly to the full-time classroom teachers first and then any remaining surveys distributed to part-time teachers.
2. After two or three days, please offer a reminder to classroom teachers to complete and return the survey sealed in their appropriate envelope.
3. When you have about half of the teacher responses (or after one or two weeks), use the first of the two larger addressed, postage-paid envelopes I have provided to send the completed, sealed surveys to me at the Middle Level Leadership Center.
4. When you have all or nearly all of the classroom teachers' responses (or after two or three weeks), use the second larger addressed, postage-paid envelope to return the remainder of the completed, sealed surveys to the Middle Level Leadership Center.
5. If you have additional surveys returned to you after you have used the last large envelope, please call our office at (573) 882-0944 and I will be glad to send you an additional return, postage-paid envelope.
6. Please remember to ask your principal for the completed Principal Survey Form and include the principal's survey envelope when you return the teacher surveys.

7. If you need additional materials, including surveys or envelopes, please call my office at (573) 882-0944 and I will send the materials immediately.
8. Finally, please take a moment to complete the secretary contact form, providing us with a means to contact you in case you win one of the secretary gift cards described below.

To express appreciation to the individual designated to collect and return the survey packets to my office, I will give a **$50 gift card** to the individual from each of the 20 schools that return the highest percentage of completed teacher responses. To make that distribution as fair as possible, I have divided Missouri's middle level schools into quartiles by enrollment. The five individuals from each enrollment quartile with the highest percentage of returned completed teacher responses will receive the gift cards. To be considered for this $50 gift card, the returns must be received within 40 days from the original MU postmark.

Please contact me if you have any questions about the study or the tasks I am asking you to complete. As you can tell, responses from your schools and other middle level schools across Missouri are vital to this effort to support and improve middle level education in our state and beyond our state. Thank you for your time and effort to make this study a success.

Sincerely,

Jerry Valentine
Professor and Director
Middle Level Leadership Center
211 Hill Hall
University of Missouri
Columbia, MO 65211
(573) 882-0944
ValentineJ@missouri.edu
www.MLLC.org

Appendix E

Secretary Contact Form

Middle Level Leadership Center

University of Missouri-Columbia • 211 Hill Hall • Columbia, MO 65211
Director: Jerry Valentine (573) 882-0944
Assistants: Bernard Solomon (573) 882-0947; Kris Matthews (573) 882-0947; Greg Mees (573) 882-0947
Fax: 884-7922 • Email: ValentineJ@missouri.edu

SECRETARY CONTACT FORM

So that a $50 gift card can be presented to the individual from those schools that have the highest percentage of completed returns, please complete the following basic contact information.

(Please insert the name of the individual responsible for collecting and returning the surveys…in other words, the individual who should receive the gift card if your school is one of the schools with the highest return rate.)

PLEASE PRINT LEGIBLY

Individual's Name: _____
School Name: _____
School Mailing Address: _____
_____
School Phone Number: _____

In this packet we have also placed a "checklist" of the tasks we are asking you to complete. Please read the checklist before distributing the surveys and use it as your guide during the collection and return of the surveys.

Thank you very much for your help with this important study.

Jerry Valentine
Professor and Director
Middle Level Leadership Center
211 Hill Hall
University of Missouri
Columbia, MO 65211
(573) 882-0944
ValentineJ@missouri.edu
www.MLLC.org

Appendix F

Secretary Checklist

Middle Level Leadership Center

University of Missouri-Columbia • 211 Hill Hall • Columbia, MO 65211
Director: Jerry Valentine (573) 882-0944
Assistants: Bernard Solomon (573) 882-0947; Kris Matthews (573) 882-0947; Greg Mees (573) 882-0947
Fax: 884-7922 • Email: ValentineJ@missouri.edu

SCHOOL SECRETARY CHECKLIST

- ☐ Distribute the five different surveys labeled "A" through "E" evenly among the classroom teachers. Please give priority to full-time classroom teachers and then, if you have enough surveys, distribute the surveys to part-time teachers, reading specialists, and other faculty who have classroom teaching responsibilities. Please do not distribute surveys to counselors, media specialists, or other faculty unless they have some teaching responsibilities.

- ☐ After two or three days, remind the teachers to complete and return their surveys.

- ☐ After one or two weeks, use the first of the large, addressed, postage-paid envelopes to send the first batch of completed surveys to the Middle Level Leadership Center.

- ☐ After two or three weeks, send the remaining completed surveys to the Middle Level Leadership Center in the second addressed, postage-paid envelope. (Extremely large schools will receive more than two postage-paid envelopes.)

- ☐ Please remember to include the Principal's Survey Envelope (which should include the principal survey and consent form) and the Secretary Contact Form when you return the teacher surveys.

- ☐ If you have any surveys returned to you after you have used the postage-paid return envelopes or if you need an additional postage-paid envelope because we did not provide enough,

please call the Middle Level Leadership Center at (573) 882-0944 and another postage-paid envelope will be sent to you.

To express appreciation to the secretary or office assistant designated to collect and return the survey packets to my office, a $50 gift card will be presented to the individual from each of the 20 schools with the highest percentage of completed teacher responses. To make that distribution as fair as possible, I have divided Missouri's middle level schools into quartiles by enrollment. The five individuals from each enrollment quartile with the highest percentage of returned completed teacher responses will receive the gift cards. To be considered for this $50 gift card, the returns must be received within 40 calendar days from the original MU postmark.

If you have any questions, please call my office at (573) 882-0944 or (573) 882-0947. If I am not available, one of my three assistants should be able to assist you. Thank you for your help with this important statewide study.

Jerry Valentine

Appendix G

Teacher “Short Version” Letter

Middle Level Leadership Center

University of Missouri-Columbia • 211 Hill Hall • Columbia, MO 65211
Director: Jerry Valentine (573) 882-0944
Assistants: Bernard Solomon (573) 882-0947; Kris Matthews (573) 882-0947; Greg Mees (573) 882-0947
Fax: 884-7922 • Email: ValentineJ@missouri.edu

Teacher Instructions -- SHORT VERSION

There are two cover letters explaining this study and requesting your help. This is the "SHORT VERSION." Please take a moment to read this first and if it does not convince you to complete this survey, please read the "LONG VERSION" on the last page. We need your help, but we also want to honor your time…thus this SHORT explanation.

WHAT ARE WE ASKING OF YOU?

1. Read the Directions (if you want to…or you can just begin the survey)
2. Sign the Teacher Consent Form…Please!
3. Complete the enclosed survey of Missouri Middle Level Teachers…Please!
4. Seal the completed items in the envelope provided and return them to your school office so the secretary can mail the sealed responses back to our office at the Middle Level Leadership Center at Mizzou…Please!

Your responses will be confidential and then anonymous (see below).

WHY IS THIS STUDY IMPORTANT TO MISSOURI AND TO YOU?

The fifteen minutes it will take you and fellow teachers to complete this survey will provide vital information about Missouri's middle school programs and practices. Your responses and those of fellow teachers across the state will:

1. Provide findings about key aspects of best practices in Missouri middle schools, including programs, culture, climate, leadership, commitment, efficacy, and assessment practices.
2. Provide findings that can shape policy changes in Missouri so we can better serve students.
3. Provide findings so you can contrast your programs and practices with those across Missouri.

WHO IS CONDUCTING THIS STUDY?

The Middle Level Leadership Center (MLLC) at the University of Missouri is conducting this study. Dr. Jerry Valentine (ValentineJ@missouri.edu), MU Professor and Director of the Center, is a nationally recognized researcher, author, and presenter in middle level education. MLLC is the only research and service Center in the nation devoted

specifically to serving the needs of teachers and leaders in middle level schools. Learn more about the work of the Center at www.MLLC.org.

HOW IS THIS STUDY ORGANIZED?

This statewide study is so comprehensive that each teacher in your school will receive one of five randomly distributed surveys. The results will be returned directly to MLLC. When opened in our office, the Teacher Consent Form will be filed separately from the survey responses. Therefore, your responses will become anonymous and compiled with other responses to create a confidential school-wide profile. At no time will those identities or responses be linked to individuals or schools.

P L E A S E P A R T I C I P A T E . . . E D U C A T I O N N E E D S Y O U R I N S I G H T. T H A N K S!

Appendix H

Teacher Consent Form

Teacher Consent Form

As noted in the cover letter, the purpose of this survey is to obtain information that will allow educators to better understand effective practices in middle level schools across the state. From that insight, policy and program recommendations will be made to state school leaders and an understanding of highly effective practices can be shared with middle level educators. The information you provide about your school is extremely valuable in this effort. We are collecting data for this statewide study this winter and expect to analyze the data this spring.

Because our Center is a part of the University of Missouri, we must follow University guidelines when we conduct surveys. Therefore, even though there are no sensitive questions in this survey, we are obligated to inform you of your rights as a survey respondent:

> *Your participation in this research study is voluntary and your responses, participation, or non-participation will not be used in any evaluative manner. You may choose not to participate for any reason, you may discontinue participation at any time, and you may refuse to answer any question that might be uncomfortable for you. There are no foreseeable risks or discomforts because of participation. Your responses will be confidential and will go directly to the Middle Level Leadership Center when you complete the survey. In compliance with University research regulations, all data will be stored at the Middle Level Leadership Center in a locked storage cabinet for three years from the completion of the study. If you have any questions about the survey or its use, please contact Dr. Jerry Valentine, Center Director, at (573) 882-0944. If you have any concerns or questions regarding compliance with this statement you may contact the University Institutional Review Board office for Human Subjects Research at (573) 882-9585.*

Please (a) sign this Consent Form, (b) enclose both the Consent Form and the completed Survey in the envelope provided, (c) seal the return envelope, and (d) give the sealed envelope to the school secretary for return to our Center at MU. When we open your envelope at our Center, we will separate your Consent Form from the survey and keep both on file, thus rendering your responses anonymous. We will then enter your anonymous responses into the data set for your school and then issue a number code for the school and maintain confidentiality of the school name throughout the study. Thus, all individual responses will be confidential and then anonymous; school-wide data will be confidential; and, data will be analyzed and reported as aggregated group data. Neither your responses nor data about your school will be identified in any of the reports or recommendations from this statewide study.

Thank you for participating in this survey administered by the Middle Level Leadership Center. Your time and responses are vitally important to our efforts to support middle level programs across the state.

_____ _____
Respondent Signature Date

Thank you,
Jerry Valentine
Director, Middle Level Leadership Center
211 Hill Hall, University of Missouri
Columbia, MO 65211

Appendix I

Teacher Survey B

(Principal Leadership Questionnaire and School Culture Survey)

MISSOURI STUDY OF MIDDLE LEVEL EDUCATION

Teacher Survey Form B

School Name:_____

Please use the following key to indicate the degree to which each statement applies to your school. This survey may look lengthy, but the items have been spaced for easy reading to save you time. The typical time to complete this survey is about 15-20 minutes.

1=Strongly Disagree 2=Disagree 3=Somewhat Disagree 4=Somewhat Agree 5=Agree 6=Strongly Agree (Circle, check, or darken the number that applies)

1.	Teachers utilize professional networks to obtain information and resources for classroom instruction.	**1**	**2**	**3**	**4**	**5**	**6**
2.	Leaders value teachers' ideas.	**1**	**2**	**3**	**4**	**5**	**6**
3.	Teachers have opportunities for dialogue and planning across grades and subjects.	**1**	**2**	**3**	**4**	**5**	**6**
4.	Teachers trust each other.	**1**	**2**	**3**	**4**	**5**	**6**
5.	Teachers support the mission of the school.	**1**	**2**	**3**	**4**	**5**	**6**
6.	Teachers and parents have common expectations for student performance.	**1**	**2**	**3**	**4**	**5**	**6**
7.	Leaders in this school trust the professional judgments of teachers.	**1**	**2**	**3**	**4**	**5**	**6**
8.	Teachers spend considerable time planning together.	**1**	**2**	**3**	**4**	**5**	**6**
9.	Teachers regularly seek ideas from seminars, colleagues, and conferences.	**1**	**2**	**3**	**4**	**5**	**6**
10.	Teachers are willing to help out whenever there is a problem.	**1**	**2**	**3**	**4**	**5**	**6**
11.	Leaders take time to praise teachers that perform well.	**1**	**2**	**3**	**4**	**5**	**6**
12.	The school mission provides a clear sense of direction for teachers.	**1**	**2**	**3**	**4**	**5**	**6**
13.	Parents trust teachers' professional judgments.	**1**	**2**	**3**	**4**	**5**	**6**
14.	Teachers are involved in the decision-making process.	**1**	**2**	**3**	**4**	**5**	**6**
15.	Teachers take time to observe each other teaching.	**1**	**2**	**3**	**4**	**5**	**6**
16.	Professional development is valued by the faculty.	**1**	**2**	**3**	**4**	**5**	**6**

1=Strongly Disagree 2=Disagree 3=Somewhat Disagree 4=Somewhat Agree 5=Agree 6=Strongly Agree

17.	Teachers' ideas are valued by other teachers.	**1**	**2**	**3**	**4**	**5**	**6**
18.	Leaders in our school facilitate teachers working together.	**1**	**2**	**3**	**4**	**5**	**6**
19.	Teachers understand the mission of the school.	**1**	**2**	**3**	**4**	**5**	**6**
20.	Teachers are kept informed on current issues in the school.	**1**	**2**	**3**	**4**	**5**	**6**
21.	Teachers and parents communicate frequently about student performance.	**1**	**2**	**3**	**4**	**5**	**6**
22.	My involvement in policy or decision making is taken seriously.	**1**	**2**	**3**	**4**	**5**	**6**
23.	Teachers are generally aware of what other teachers are teaching.	**1**	**2**	**3**	**4**	**5**	**6**
24.	Teachers maintain a current knowledge base about the learning process.	**1**	**2**	**3**	**4**	**5**	**6**
25.	Teachers work cooperatively in groups.	**1**	**2**	**3**	**4**	**5**	**6**
26.	Teachers are rewarded for experimenting with new ideas and techniques.	**1**	**2**	**3**	**4**	**5**	**6**
27.	The school mission statement reflects the values of the community.	**1**	**2**	**3**	**4**	**5**	**6**
28.	Leaders support risk-taking and innovation in teaching.	**1**	**2**	**3**	**4**	**5**	**6**
29.	Teachers work together to develop and evaluate programs and projects.	**1**	**2**	**3**	**4**	**5**	**6**
30.	The faculty values school improvement.	**1**	**2**	**3**	**4**	**5**	**6**
31.	Teaching performance reflects the mission of the school.	**1**	**2**	**3**	**4**	**5**	**6**
32.	Administrators protect instruction and planning time.	**1**	**2**	**3**	**4**	**5**	**6**
33.	Teaching practice disagreements are voiced openly and discussed.	**1**	**2**	**3**	**4**	**5**	**6**
34.	Teachers are encouraged to share ideas.	**1**	**2**	**3**	**4**	**5**	**6**
35.	Students generally accept responsibility for their schooling, for example they engage mentally in class and complete homework assignments.	**1**	**2**	**3**	**4**	**5**	**6**
36.	Overall, the culture of our school is positive, caring, and collaborative.	**1**	**2**	**3**	**4**	**5**	**6**
37.	My principal has both the capacity and the judgment to overcome most obstacles.	**1**	**2**	**3**	**4**	**5**	**6**

1=Strongly Disagree 2=Disagree 3=Somewhat Disagree 4=Somewhat Agree 5=Agree 6=Strongly Agree

38.	My principal commands respect from everyone on the faculty.	**1**	**2**	**3**	**4**	**5**	**6**
39.	My principal excites faculty with visions of what we may be able to accomplish if we work together as a team.	**1**	**2**	**3**	**4**	**5**	**6**
40.	My principal makes faculty members feel and act like leaders.	**1**	**2**	**3**	**4**	**5**	**6**
41.	My principal gives the faculty a sense of overall purpose for its leadership role.	**1**	**2**	**3**	**4**	**5**	**6**
42.	My principal leads by “doing” rather than simply by “telling.”	**1**	**2**	**3**	**4**	**5**	**6**
43.	My principal symbolizes success and accomplishment within the profession of education.	**1**	**2**	**3**	**4**	**5**	**6**
44.	My principal provides good models for faculty members to follow.	**1**	**2**	**3**	**4**	**5**	**6**
45.	My principal provides for our participation in the process of developing school goals.	**1**	**2**	**3**	**4**	**5**	**6**
46.	My principal encourages faculty members to work toward the same goals.	**1**	**2**	**3**	**4**	**5**	**6**
47.	My principal uses problem solving with the faculty to generate school goals.	**1**	**2**	**3**	**4**	**5**	**6**
48.	My principal works toward whole faculty consensus in establishing priorities for school goals.	**1**	**2**	**3**	**4**	**5**	**6**
49.	My principal regularly encourages faculty members to evaluate our progress toward achievement of school goals.	**1**	**2**	**3**	**4**	**5**	**6**
50.	My principal provides for extended training to develop my knowledge and skills relevant to being a member of the school faculty.	**1**	**2**	**3**	**4**	**5**	**6**
51.	My principal provides the necessary resources to support my implementation of the school’s program.	**1**	**2**	**3**	**4**	**5**	**6**
52.	My principal treats me as an individual with unique needs and expertise.	**1**	**2**	**3**	**4**	**5**	**6**
53.	My principal takes my opinion into consideration when initiating actions that affect my work.	**1**	**2**	**3**	**4**	**5**	**6**
54.	My principal behaves in a manner thoughtful of my personal needs.	**1**	**2**	**3**	**4**	**5**	**6**

1=Strongly Disagree 2=Disagree 3=Somewhat Disagree 4=Somewhat Agree 5=Agree 6=Strongly Agree

55.	My principal challenges me to reexamine some basic assumptions I have about my work in the school.	**1**	**2**	**3**	**4**	**5**	**6**
56.	My principal stimulates me to think about what I am doing for the school's students.	**1**	**2**	**3**	**4**	**5**	**6**
57.	My principal provides information that helps me think of ways to implement the school's program.	**1**	**2**	**3**	**4**	**5**	**6**
58.	My principal insists on only the best performance from the school's faculty.	**1**	**2**	**3**	**4**	**5**	**6**
59.	My principal shows us that there are high expectations for the school's faculty as professionals.	**1**	**2**	**3**	**4**	**5**	**6**
60.	My principal does not settle for second best in the performance of our work as the school's faculty.	**1**	**2**	**3**	**4**	**5**	**6**
61.	Overall, our principal effectively leads our school-wide efforts toward excellence in teaching and learning.	**1**	**2**	**3**	**4**	**5**	**6**

Demographic Items

Demographic responses provide the opportunity to gain insight into differences and similarities of responses from the various groups. Such information is very valuable in this comprehensive statewide study of middle level education. Please circle or mark the most appropriate response item. Select only one response per question. Please understand that demographic items will not be used in any way to identify individual respondents. Thank you for taking a moment to respond to these items.

1. Which of the following most accurately describes your teaching area?
   a. Core content area (math, science, social studies, language arts)
   b. Non-core exploratory or elective content area
   c. Special education teacher
   d. Other, or not sure which of these to select

2. Which of the following most accurately describes your teaching assignment?
   a. I am a member of an interdisciplinary teaching team of four or more teachers.
   b. I am a member of an interdisciplinary team of two or three teachers.
   c. I am not a member of an interdisciplinary team.
   d. Other, or not sure which of these to select

3. How many years (including this year) have you been an educator?
a. 1 to 2 years b. 3 to 5 years c. 6 to 10 years d. 11 to 20 years e. 21+ years

4. What is your gender?
   a. Female b. Male

5. How many years (including this year) have you been at your present school?
a. 1 to 2 years b. 3 to 5 years c. 6 to 10 years d. 11 to 20 years e. 21+ years

6. What subjects do you teach?
   a. Math b. Science c. Social Studies d. English/Language Arts
   e. Reading f. Other, or not sure which to select

7. Through which means did you obtain your certification? a. Traditional certification program b. Alternative certification program c. I do not hold teacher certification d. Other, or not sure which of these to select
8. As part of your teacher certification coursework, were you required to take a course on student assessment? a. Yes b. No
9. Do you teach in your area of your certification? a. Yes b. No
10. Please indicate the grade level of your certification: (please select the most appropriate response) a. Elementary b. Middle c. High d. Elementary/Middle e. Middle/High f. K-8 g. K-12 h. I don't know i. Other, not sure which of these to select

If you would like to provide any feedback to our Center about this survey or other information that would help us understand your school and the items asked in this survey, please use the following space.

Thank you for taking the time to complete this survey. Please seal this Survey and your Consent Form in the envelope provided and return it to the office secretary for mailing to the Middle Level Leadership Center.

Appendix J

Teacher Survey Directions

Missouri Study of Middle Level Education
Teacher Survey Directions

Completion Time

The enclosed letter explained the significance of this statewide study of middle-level schools. I know how busy each teacher is every day of the school year and I have kept the items to a minimum. In addition, the survey has been divided into five parts, with every fifth teacher in your school responding to a different set of items. Therefore, completion of the survey should take approximately 15-20 minutes. The items are easy to read and can be answered about as fast as you can read them.

Response Candor

Please be candid in your responses to each question. Honest responses provide the foundation for a good study. There are not highly sensitive items in this survey, so please be candid.

Response Confidentiality

Please remember to write the name of your school on the survey so your responses can be compiled with those of other teachers from your school and thus create the data set for your school. Your responses will be anonymous and your school will never be identified by name. Results will be reported as aggregated findings, never identifying schools or individuals.

Demographic Questions

This survey includes a few demographic questions. Responses to these items provide the opportunity to analyze broad categories of responses from across the state. For example, “Are the perceptions of newer teachers different than those of veteran teachers? Do teachers with certifications in certain content areas view issues differently than those with different certifications?” These items are only for disaggregation of responses. All responses, from all respondents, will remain confidential and become anonymous as soon your sealed responses are opened and separated from your Consent Form. The demographic items will not be used in any way to identify individual respondents. Please complete them.

Returning Responses

Please seal your completed Survey and the Consent Form in the envelope provided and return it to the office secretary. The secretary will mail the sealed envelopes in a larger envelope to the Middle Level Leadership Center at the University. The sealed envelope you give to the secretary should include:

1. Your signed Teacher Consent Form
2. Your completed Teacher Survey

Thank you,
Jerry Valentine
Professor and Director, Middle Level Leadership Center

Appendix K

Teacher “Long Version” Letter

Middle Level Leadership Center

University of Missouri-Columbia • 211 Hill Hall • Columbia, MO 65211
Director: Jerry Valentine (573) 882-0944
Assistants: Bernard Solomon (573) 882-0947; Kris Matthews (573) 882-0947; Greg Mees (573) 882-0947
Fax: 884-7922 • Email: ValentineJ@missouri.edu

Teacher Instructions – LONG VERSION

I know the tendency will be to toss this letter and the accompanying survey into the trash can…I have been a teacher and fully understand the urge, especially given the many tasks we are asked to complete each day.

However, before you toss these materials please take a moment to read this letter and consider this request. It will take you about five minutes to read this cover letter and the consent form, and about ten or fifteen minutes to complete the enclosed survey. Your time will be a significant contribution toward the development of a better understanding about the most effective practices for Missouri's middle level schools. Middle Level Schools are those that specifically serve students between grades five and nine, meaning with grade configurations such as 6-7-8, 5-6-7-8, 7-8, 8-9, and all combinations in between.

The importance of this study to Missouri…

Throughout our state middle level schools are coming under attack for low student achievement test scores. State officials repeatedly note that MAP test scores in elementary schools are improving significantly while MAP scores in middle schools are less impressive. Few policy makers understand the challenges of working with young adolescents who are intently focused on self and peers, attempting to adjust to new bodies, new emotions, and new social roles, while educators and policy makers continue to add "increased academic expectations" to their already stressful world. Simultaneously, societal changes in our nation are making early adolescence more challenging than ever. Little wonder young adolescents have difficulty developing the focus and commitment needed to achieve those academic standards. In this analysis of middle level education across Missouri, we are trying to understand the types of programs and environments that hold the greatest promise for supporting student success during these challenging years. Without effective middle level programs designed to address young adolescent development, we would have more dropouts and lower grades; with effective programs, we help students successfully navigate early adolescence so they can then be successful in high school. The dilemma is perplexing and we need your

assistance to help us all understand what works and what does not work in our middle level schools.

The survey placed in your box by the secretary is one of five different survey forms randomly distributed to the teachers in your school and to the more than 10,000 teachers in each of the 343 middle level schools across Missouri. You will be able to respond to the items in your survey about as quickly as you can read them--so please take the 15-20 minutes to respond. With responses from all Missouri middle schools, we can carefully study responses and offer to state policy makers the insight that will help them appreciate the hard and effective work that middle level educators do on a daily basis.

Responses will be confidential and anonymous…

You will note that your school's name is requested on the survey. To be able to analyze programs and practices across schools and compare those practices with other factors such as student achievement by school, I must know the name of your school so I can group responses by school. However, schools will not be identified by name for any part of this study. Names are needed to compute the types of analyses that generate findings and recommendations that can eventually influence middle school policies and practices across the state.

As mentioned previously, all responses to this survey will be confidential and will become anonymous as soon as the responses are separated from the Consent Form. All individual responses will be grouped by school for analyses. The names of all schools will remain confidential, with results reported by groups, not by individual schools, and certainly not by individual teachers. The results of this study will be made available through publications in professional journals, presentations at state and national professional meetings and via the Middle Level Leadership Center's website. Sharing the results will allow you and other educators to compare Missouri statewide findings with what you see occurring in your own school. I realize these explanations about confidentiality can be confusing, so I want to reassure you that when I say "share results and recommendations" I am talking about aggregated group data, not individual school or individual respondent data. Every response you make will be confidential and the names of each school will remain confidential.

The University of Missouri-Columbia is always sensitive to protecting the privacy and rights of respondents. So if you have any questions about this email or the survey, please contact me at ValentineJ@missouri.edu or by phone at (593) 882-0944 or contact our University Institutional Review Board office for Human Subjects Research at umcresearchcirb@missouri.edu or by phone at (573) 882-9585. All data from this study are confidential and stored on a secure, password protected hard drive here in our Middle Level Leadership Center office. The University requires that we maintain data from studies such as this for three years after the completion of the research project to ensure protection of your rights as a respondent, even when the data have become anonymous by separation of the Consent form. I assure you that we go to great efforts in our Center and at MU to be sure that responses are confidential and anonymous.

Please complete the survey today and if you cannot do it today, please try to do it within the next two or three days. Use the envelope provided to return your completed Survey and Consent Form to the school secretary, who will then mail all responses to our Center in Columbia.

A final perspective…

This is the largest, most comprehensive study of middle level schools ever undertaken in the U. S. More importantly to us in Missouri, it has the potential to provide valuable insight for all educators and policy makers. To make this study successful for all Missouri educators, I am asking that you make an effort to find the 15-20 minutes to respond.

Thank you so much for your consideration and time on this important task for our state.

Jerry Valentine, Professor and Director
Middle Level Leadership Center
211 Hill Hall
University of Missouri
Columbia, MO 65211
Phone (573) 882-0944

Appendix L

Institutional Review Board Documentation

Campus Institutional Review Board

University of Missouri-Columbia
483 McReynolds Hall
Columbia, MO 65211-1150

PHONE: (573) 882-9585
FAX: (573) 884-0663

Project Number: **1055838**
Project Title: Missouri Middle School Programs and School-wide Student Achievement
Approval Date: 12-11-2006
Expiration Date: 11-07-2007
Investigator(s): Goodman, Matthew Donald
Klinginsmith, Elmo Nyle
Matthews, Kristin Weiser
Mees, Gregory William
Solomon, Cameron Bernard
Valentine, Jerry Wayne
Level Granted: Expedited

Your Amendment was reviewed and we have determined that you are APPROVED to continue to conduct human subject research on the above-referenced project.

Federal regulations and Campus IRB policies require continuing review of research projects involving human subjects. Campus IRB approval will expire one (1) year from the date of approval unless otherwise indicated. Before the one (1) year expiration date, you must submit a Campus IRB Continuing Review Report to the Campus IRB. Any unexpected events are to be reported at that time. The Campus IRB reserves the right to inspect your records to ensure compliance with federal regulations at any point during your project period and three (3) years from the date of completion of your research.

Any additional changes to your study must be promptly reported and subsequently approved. If you have any questions, please contact the Campus IRB office at (573) 882-9585.

Campus Institutional Review Board

University of Missouri-Columbia
483 McReynolds Hall
Columbia, MO 65211-1150

PHONE: (573) 882-9585
FAX: (573) 884-0663

Project Number: **1055838**
Project Title: Missouri Middle School Programs and School-wide Student Achievement
Approval Date: 11-08-2007
Expiration Date: 11-08-2008
Investigator(s): Goodman, Matthew Donald
Klinginsmith, Elmo Nyle
Matthews, Kristin Weiser
Mees, Gregory William
Solomon, Cameron Bernard
Valentine, Jerry Wayne
Level Granted: Exempt

Your Continuing Review Report was reviewed, and we have determined that you are APPROVED to continue to conduct human subject research on the above-referenced project. Federal regulations and Campus IRB policies require continuing review of research projects involving human subjects. Campus IRB approval will expire one (1) year from the date of approval unless otherwise indicated. Before the one (1) year expiration date, you must submit a Campus IRB Continuing Review Report to the Campus IRB. Any unexpected events are to be reported at that time. The Campus IRB reserves the right to inspect your records to ensure compliance with federal regulations at any point during your project period and three (3) years from the date of completion of your research.

If you have any questions regarding this matter or any other, please contact the Campus IRB Office at (573) 882-9585.

Appendix M

Partial Correlations (Controlling for Percent of Students Eligible for Free and Reduced Lunch) of Transformational Leadership Factors and School Culture Factors

Appendix M

Partial Correlations (controlling for Percent of Students Eligible for Free and Reduced Lunch) of Transformational Leadership Factor and School Culture Factors

		Vision Identification	Modeling	Goal Acceptance	Individualized Support	Intellectual Stimulation	High Performance Expectations
Collaborative Leadership	*r*	.786**	.733**	.826**	.803**	.780**	.729**
	sig.	.000	.000	.000	.000	.000	.000
Teacher Collaboration	*r*	.662**	.615**	.736**	.664**	.666**	.649**
	sig.	.000	.000	.000	.000	.000	.000
Professional Development	*r*	.659**	.595**	.688**	.663**	.694**	.665**
	sig.	.000	.000	.000	.000	.000	.000
Unity of Purpose	*r*	.666**	.589**	.699**	.676**	.732**	.664**
	sig.	.000	.000	.000	.000	.000	.000
Collegial Support	*r*	.574**	.535**	.621**	.558**	.603**	.584**
	sig.	.000	.000	.000	.000	.000	.000
Learning Partnership	*r*	.562**	.539**	.628**	.586**	.634**	.623**
	sig.	.000	.000	.000	.000	.000	.000

* p<.05, ** p<.01

Vita

Gregory William Mees was born on October 5, 1977 in Columbia, Missouri. He was raised in Columbia, Missouri where he attended public school and went on to graduate from David H. Hickman High School in 1996. Gregory received his Bachelor of Arts in History as well as his teaching certification from Indiana University-Bloomington in 2000, a Masters of Education from William Woods University in Fulton, Missouri in 2004, an Educational Specialist from the University of Missouri-Columbia in 2007, and a Doctorate of Philosophy from the University of Missouri-Columbia in 2008.

Gregory taught high school social studies for five years at David H. Hickman High School in Columbia, Missouri before returning to graduate school full time to pursue his doctorate in 2006. While a graduate student pursing his doctorate at the University of Missouri-Columbia, Gregory held a graduate assistantship in the Middle Level Leadership Center (MLLC) under the guidance of Dr. Jerry Valentine, director of the MLLC and Professor in the Department of Educational Leadership and Policy Analysis at the University of Missouri-Columbia.

Gregory is married to Julia, his lovely and supportive wife, and currently has no children.