

THE INFLUENCE OF THE PRINCIPAL'S STYLE ON ACADEMIC PRESS, COMMUNITY
AND STUDENT LEARNING

Michael John Sasscer

A dissertation submitted to the faculty of the University of North Carolina at Chapel Hill in
partial fulfillment of the requirements for the degree of Doctor of Educational Leadership in the
School of Education.

Chapel Hill
2016

Approved by:

Fenwick W. English

James Veitch

Stanley Schainker

Eric A. Houck

Kathleen M. Brown

© 2016
Michael John Sasscer
ALL RIGHTS RESERVED

ABSTRACT

Michael John Sasscer: The Influence Of The Principal's Style On Academic Press, Community
And Student Learning
(Under the direction of Fenwick W. English)

Worldwide, there is an increasing demand for developing and implementing innovations that will improve public education (Moolenaar, Daly, & Slegers, 2010). Improving school leadership ranks high on the list of priorities for school reform (The Wallace Foundation, 2013). The purpose of this study was to examine (a) self-described leadership behaviors of principals across all three school levels (i.e., elementary, middle, and high) and (b) the influence of transactional and transformational leadership behaviors of principals and the connections among these leadership behaviors and three school variables: schools' academic press, sense of community, and student achievement.

The intent of the current research was to propose a new, concise model of effective leadership in enhancing student-learning outcomes through cultivating a climate of academic press and sense of community. Press and community are key factors in establishing a school's climate and the conditions under which learning is likely to be enhanced. This study used a SEM methodology to propose a fixed theoretical model, fit it to observed data, and comment on whether or not it was the best theoretical model to explain a principal's influence on student learning outcomes through two intervening variables.

The sample of the study involved responses from 93,178 teachers representing 2,597 North Carolina schools on the North Carolina Teacher Working Conditions Survey. These data

were coupled with 107 participating school principals spanning elementary and secondary schools on the Multifactor Leadership Questionnaire. Measures of model fit indicated the measurement models for the latent variables academic press and sense of community poorly fit these empirical data. Additionally, measures of overall model fit indicated the hypothesized model poorly fits these empirical data. Additional results of this study found that transformational leadership predicted academic press; elementary schools have a significant impact on academic press, as compared to high schools; and free-and-reduced lunch rates predicted student learning outcomes. These data did not support the conclusions that principals' leadership behaviors had a direct or an indirect effect on student learning outcomes as mediated by school climate variables. Implications were discussed for policy, practice, and future research.

The spirit behind this work was to advance the knowledge and actions of the educational community to enhance the public schooling experience and outcome. With this in mind, I dedicate this work to my loving wife, Amy, who truly is the best teacher I have ever known, and my son and daughter, Luke and Molly, whose budding curiosity, imagination, and creativity inspire me to ensure children like them have a place to shine. Finally, to my beloved dog, Barnes, who left us in the final stages of this process but taught us the power of unconditional love and the true spirit of forgiveness – a gift all educators aspire to give.

ACKNOWLEDGEMENTS

I believe in the mantra it takes a village to raise a child – no matter the age. Well, it would be a gross understatement to assert this process is possible without the motivation, support, and encouragement of many people. In this regard, I want to acknowledge those who have had an impact on my passion for education, my studies, and have provided multitudes of supportive praise in completing my journey.

First and foremost, I would like to thank my parents. Each uniquely taught me the value of education and of hard work. All instilled in me a passion to make a difference in the lives of others. Most powerfully, they taught me to think, to question, and to take action with an open mind for what is and what may be, while recognizing that failure is not an option. Thank you for providing me a life of love amidst a sea of turmoil to ensure I have the support to pursue my dreams, achieve my goals, and grow in happiness.

My wife, Amy, has been on the front line and in the trenches with me throughout this journey – sometimes feeling like an enduring battle. Her selfless dedication to my goal is a testament to her love and support. Thank you for providing a space for me to freely express my passion.

The faculty within the School of Education (SOE) at the University of North Carolina-Chapel Hill has committed their efforts to collectively expose aspiring school leaders to the principles of social justice, while challenging them to expand academic excellence, instructional equity, and cultural awareness to new dimensions. It has been an honor and a privilege to learn and study under the guidance of notable international scholars and educational activists

including: Dr. Fenwick W. English, who also serves as my dissertation advisor; Dr. Catherine Marshall, who served as my university-based internship supervisor; Dr. Eric A. Houck; Dr. Stanley Schainker; Dr. Kathleen Brown; and Dr. James Veitch.

These individuals are significant for their efforts to nurture and transform my passion for education. In these efforts, they have consistently modeled effective leadership practices and have demonstrated individualized consideration by feeding my curiosity and spurring me to think through an inquisitive lens. I am grateful for the knowledge and practical guidance each has provided to make a difference in the lives of students. Additionally, I am appreciative of the invested time and energy they have given to make the art of leadership a tangible practice.

TABLE OF CONTENTS

LIST OF TABLES	xiii
LIST OF FIGURES	xv
LIST OF ABBREVIATIONS.....	xvii
CHAPTER 1: INTRODUCTION	1
Introduction.....	1
Statement of the Problem.....	6
Purpose of the Study	8
Research Question	14
Significance of Research.....	14
Theoretical Framework.....	15
Assumptions of the Research.....	20
Limitations of the Research	20
Definition of Terms.....	22
Summary	24
CHAPTER 2: LITERATURE REVIEW	26
Introduction.....	26
Theoretical Framework.....	27
Leadership and Style.....	28
Leadership.....	29
Leadership style defined	31

The progression of leadership style types	33
Personality and leadership style.....	36
Transactional and transformational leadership	36
Transactional style theory	39
Transformational style theory	40
An integrated theory	42
School Culture and Climate	44
Organizational culture.....	46
Academic emphasis	46
Collective trust	47
Collective efficacy	47
Organizational climate	48
Open climate	48
Closed climate.....	49
School health.....	49
School citizenship	49
Academic press	50
Sense of community.....	51
School climate, principal leadership, and student achievement	54
Principal leadership behaviors	55
Student achievement	56
Effectiveness and the Effects of a Leader's Style.....	57
Leader effectiveness defined.....	58

Practices that enhance the effects of leadership and operationalize press and community	61
Matching needs to be effective	65
Distinguishing the characteristics and practices of effective leaders.....	66
Transformational leadership, transactional leadership, the effects of leadership, and student achievement.....	67
Student achievement	67
Motivation.....	68
Satisfaction.....	69
Efficacy	70
Contradictions with the effects of transformational leadership	70
A rival hypothesis	71
Related Studies.....	74
Summary	79
CHAPTER 3: METHODS	81
Introduction.....	81
Research Methodology	81
Steps 1 and 2: Specification and identification.....	84
Basic multiple linear regression equation	86
Structural model one	86
Structural model two	88
Structural model three.....	89
Structural model four	91
Step 3: Estimation	94

Step 4: Re-specification	94
Step 5: Reporting	94
Description of sample	95
Definition of variables	97
Data	101
MLQ:Form5X description	101
Leadership style data.....	105
TWC:2014 description.....	106
Academic press and sense of community data	109
Student performance data	110
Summary	112
CHAPTER 4: RESULTS.....	113
Introduction.....	113
Content Validity for Academic Press and Sense of Community	113
Descriptive Statistics of Research Variables	126
A Structural Equation Modeling Analysis for Student Achievement.....	130
Steps 1 and 2: Specification and Identification.....	130
Step 3: Estimation	131
Step 4: Re-specification	142
Summary	150
CHAPTER 5: DISCUSSION.....	151
Introduction.....	151
The Study	151

Summary of Findings.....	153
Discussion	153
Reflections of the findings	154
Limitations of the present study.....	162
Success of TWC:2014 to measure academic press and sense of community	162
Leadership style, academic press and sense of community	168
Academic press, sense of community, and student outcomes	168
Leadership style, academic press, sense of community, and student outcomes.....	169
Implications.....	175
Future Research	180
Conclusions.....	181
APPENDIX A: IRB APPROVAL FORM.....	183
APPENDIX B: CONTENT VALIDITY EXPERT CERTIFICATION.....	201
APPENDIX C: CONTENT VALIDITY EXPERT CERTIFICATION SUMMARY	206
REFERENCES	211

LIST OF TABLES

Table 1 - TWC Questions Explored to Measure Academic Press	12
Table 2 - TWC Questions Explored to Measure Sense of Community	13
Table 3 - Academic Press and Sense of Community Operationalized by Practices of Successful School Leaders Reflected in other School-related Sources.....	62
Table 4 - Description of Sample	97
Table 5 - TWC Constructs and Items used to Define Academic Press	99
Table 6 - TWC Constructs and Items used to Define Sense of Community	100
Table 7 - TWC Questions Used to Measure Academic Press	114
Table 8 - TWC Questions Used to Measure Sense of Community	115
Table 9 - Indicator statistics for the Latent Variable Academic Press.....	117
Table 10 - Summary of the Goodness of Fit Statistics for the Latent Variable Academic Press.....	122
Table 11 - Indicator statistics for the Latent Variable Sense of Community.....	123
Table 12 - Summary of the Goodness of Fit Statistics for the Latent Variable Sense of Community.....	126
Table 13 - Descriptive Statistics of Research Variables.....	126
Table 14 - Summary of the Goodness of Fit Statistics for Overall Model	131
Table 15 - Structural Equation Modeling Results for Research Variables.....	134
Table 16 - Total, Total Indirect, and Specific Indirect Effects	142
Table 17 - SEM Results for Research Variables Including District Number	144
Table 18 - Summary of the Goodness of Fit Statistics for Model with District Effect (district number).....	145
Table 19 - SEM Results for Research Variables Including District Wealth.....	146

Table 20 - Summary of the Goodness of Fit Statistics for Model with District Effect (district wealth)	148
Table 21 - BIC Approximations and Differences	149
Table 22 - Examples of Indicators for Academic Press Where Time Imbalances May Exist.....	164
Table 23 - Description of Comparative Survey Measures	166

LIST OF FIGURES

Figure 1 - A path model of the influence a principal's leadership behavior has on academic press and sense of community that impacts student learning.....	19
Figure 2 - A path model of the direct effect between observed variables and latent variables and the indirect effect mediated via two intervening latent variables on student learning outcomes.....	85
Figure 3 - A path model of the direct effect between observed variables and a latent variable.....	87
Figure 4 - A path model of the direct effect between observed variables and a latent variable.....	89
Figure 5 - A path model of the direct effect between observed variables and a latent variable and the indirect effect mediated via an intervening latent variable on student learning outcomes	90
Figure 6 - A path model of the direct effect between observed variables and a latent variable and the indirect effect mediated via an intervening latent variable on student learning outcomes	92
Figure 7 - Reporting the unstandardized parameter estimates for the total indirect effects of the independent variables on student learning outcomes (SO ₁) mediated through the intervening variable academic press.....	135
Figure 8 - Reporting the unstandardized parameter estimates for the total indirect effects of the independent variables on student learning outcomes (SO ₁) mediated through the intervening variable sense of community	136
Figure 9 - Reporting the unstandardized parameters for the total indirect effect of transactional leadership on student learning outcomes through academic press and sense of community while holding constant all of the other predictors in the model	139
Figure 10 - Reporting the unstandardized parameters for the total indirect effect of transformational leadership on student learning outcomes through academic press and sense of community while holding constant all of the other predictors in the model.....	140

Figure 11 - An alternative model that offers changes to the measurement model but not the structural model	173
---	-----

LIST OF ABBREVIATIONS

TWC	North Carolina Teacher Working Conditions Survey
MLQ	Multifactor Leadership Questionnaire
SEM	Structural equation modeling
RMSEA	Root mean squared error of approximation
CFI	Comparative fit index
TLI	Tucker Lewis index
SRMR	Standardized root mean squared residual
BIC	Bayesian information criterion

Chapter 1

Introduction

Reforming schools as organizations, through shifting educational, political, and socio-economic challenges, requires principals to be orchestrators of change (Smith & Bell, 2011). An emphasis on results has moved school reform to a new level of accountability (Cotton, 2003), and in this context principals are responsible for enhancing progress on multiple measures of educational achievement with less time, fewer resources, and more external pressure (Grubb & Flessa, 2006). Public education's changed mission has prompted a paradigm shift in the area of leadership that dictates the need for school leaders to be executives instead of administrators (North Carolina Department of Public Instruction [NCDPI], 2007). This shift requires a need to move from bureaucratic to adaptive models of leadership. Bureaucratic models emphasize control and accountability through standardized procedures, which requires skills to provide for maintenance and continuity (i.e., management). Adaptive models emphasize shared decision making and collective problem solving, which requires skills to provide for constant learning and evolution (i.e., leadership) (Silins, 1994).

School executives' behaviors can help distinguish management from leadership. Cotton (2003) describes two types of principal leadership: transactional, which seeks ways to appeal to the self-interests of staff members as a strategy for inducing them to carry out his or her bidding, and transformational which seeks to influence staff members to transcend their self-interests and focus on the best interests of their students. Of importance, more than the difference between the two, is how a school executive blends transactional with transformational behaviors across

varying school contexts. Bolman and Deal (1991, as cited in Kelley, Thornton, & Daugherty, 2005) state that balance between leadership and management requires the objective perspective of the manager, as well as the brilliant flashes of vision and commitment that wise leadership provides. A leader's style and model of leadership affects his/her effectiveness and the school climate itself, which has important implications for student achievement.

The 21st century principal has added responsibilities in his/her role to meet the pressures for performance and provide the necessary resources for the academic success of students (Moolenaar, Daly, & Slegers, 2010). Principals continue to be tasked with demonstrating that good, effective programs have been implemented in their schools, but now need to show improved academic achievement for each student (Cotton, 2003). In today's schools, executives are asked to have a collegial attitude, be collaborative, embrace shared decision making, and utilize school improvement teams (Beckerman, 2005). Additionally, principals require the ability to respond to external demands for accountability and demonstrate more flexibility to lead schools facing a changing landscape (Smith & Bell, 2011). Overall, leadership has significant effects on the quality of the school organization and on pupil learning (Leithwood, Day, Sammons, Harris, & Hopkins, 2006). Some research shows that successful principals make significant personal contributions to student learning (Leithwood & Riehl, 2003). More research is needed on what principals do to implement effective teaching and learning practices that enable more students to reach high levels of academic achievement, regardless of background or economic conditions (Cotton, 2003). Thus, it is important to study the leadership behaviors of principals that affect the teaching and learning conditions of a school to further understand the significance of the principal's role in improving student outcomes.

Research on effective schools (e.g., Weber, 1971 and Edmonds, 1979) emerged in the 1970s to suggest that determinants of student achievement were related to school-level variables in addition to student demographics. According to Edmonds (1979), five factors contribute to a school's effectiveness: (a) strong leadership; (b) climate of high expectations for student achievement; (c) purposeful and orderly school atmosphere; (d) prioritizing the instructional program; and (e) frequently monitoring student improvement. These interrelated factors contribute to the make-up of a school's culture. Purkey and Smith (1983) contend that school culture is the mix of interrelated factors that provide each school with a unique climate. School climate can be described by the characteristics of the school environment that define one school from another and influence teacher behavior (Hoy, Tarter, & Kottkamp, 1991). Finding distinctions between culture and climate is subtle. The term climate is appropriate when the aim is to describe actual behaviors of school members through shared perceptions of behavior (Hoy et al., 1991). This study focused on climate as it sought to understand patterns of principal behavior in schools.

Decomposing school climate begins with identifying the openness of a school's climate as influenced by principal behavior. Forsyth, Adams, & Hoy (2011) contend that "open" climates exist where principal behavior with teachers is supportive, provides help, encourages teacher initiative to solve problems, and alleviates the pressure of administrative busy work. In contrast, principals in "closed" climates demonstrate behavior that is close, controlling, and non-supportive (Forsyth et al., 2011). Furthermore, Halawah (2005) suggests that "open" climate schools tend to have confident, cheerful, sociable, and resourceful principals, while principals in "closed" climate schools tend to be evasive, traditional, worried, and frustrated. Ultimately, the principal is the most responsible person for changing the climate of the school (Beckerman,

2005). According to Smith and Piele (2007, p. 340), “A principal’s spoken language, written language, and body language can serve as motivating forces that shape a positive school culture.”

The principal and school environment exist in an interactive relationship, so changes in instructional practices cause changes in the conditions of teaching and learning. The principal receives feedback that causes reciprocal effects in the leader’s behavior (Hallinger & Heck, 1998). Therefore, improvement in school climate enhances the principal’s effectiveness, teacher’s performance, and students’ achievement and behavior (Halawah, 2005).

Additionally, the principal is responsible for outcomes of productivity and satisfaction attained by students and staff members (Beckerman, 2005). To understand how a principal influences these outcomes, it is necessary to further dissect open and closed climate schools. The organizational health of a school is associated with the openness of a school’s climate (Forsyth et al., 2011). Healthy schools have a strong academic emphasis and high morale among students and teachers (Forsyth et al., 2011). Those essential variables define the constructs of academic press (the extent to which schools appear driven by academically oriented goals, values and activities) and sense of community (a sense of attachment, commitment, responsibility, and purpose within an increasingly diverse and diffuse social context) (Shouse, 1996). This connection allows for the use of academic press and sense of community to describe a school’s climate. Thus, academic press and sense of community were used in this study to reference climate. Next, it is important to understand the effects of these variables on student achievement.

Leadership behavior is important for developing and sustaining an innovative climate in which teachers take risks to find novel ideas and practices to improve performance (Moolenaar et al., 2010). A principal’s strong focus on academics (academic press) is a key determinant of student achievement outcomes (Cotton, 2003). Bartell (1990, as cited in Cotton, 2003) found

that principals who create a social climate where the entire staff works together to foster a caring attitude (sense of community) worked in high-achieving schools. Shouse (1996) has shown that when a school's sense of community is built around academic press, there is a significant effect on student achievement.

A principal plays an important role in contributing to a school's academic press and sense of community. They maintain academic press and sense of community through four core leadership practices: (1) setting directions; (2) developing people; (3) redesigning the organization; and (4) managing the instructional program (Leithwood, Patten, and Jantzi, 2010). How a leader chooses to emphasize his/her leadership style to influence press and community through these practices can impact teachers' motivation, efficacy, and satisfaction (Blase & Blase, 2000), though there are times when transformational leadership is heralded as a more effective model (Mahdinezhad, Suandi, Silong, & Omar, 2013).

School leadership matters. "Leadership serves as a catalyst for unleashing the potential capacities that already exist in the organization" (Leithwood et al., 2006, p. 15), such as instructional quality. A high quality teacher positively impacts student performance. "Great teachers are the key not only to closing our nation's achievement gaps, but also to providing advanced learning opportunities to every child" (Hassel & Hassel, 2010, p. 4). Similarly, highly effective principals raise the achievement of a typical student in their schools by between two and seven months of learning in a single school year (Branch, Hanushek, & Rivkin, 2013). A great teacher plus an effective principal would make a powerful duo aimed to close achievement gaps.

Specifying, more precisely, in what ways leadership matters to improved student achievement is a problem. Relationships keep the answer from being straightforward. A

principal directly influences teachers and teachers directly influence students, which means principals have an indirect effect on students' performance (Leithwood et al., 2010). For this reason, making the simple leap between leadership and student achievement would be ill-advised. Mapping out smaller steps between the two would capture more of the nuances involved in a principal's role and with the impact on improved student achievement. One such step would be to investigate the relationship between leadership behaviors and school conditions that are likely to enhance student achievement.

Statement of the Problem

Worldwide, there is an increasing demand for developing and implementing innovations that will improve public education (Moolenaar et al., 2010). Improving school leadership ranks high on the list of priorities for school reform (The Wallace Foundation, 2013). U.S. politicians have focused their political platforms around the contributions of principal leadership to the implementation of initiatives aimed at improving student learning (Leithwood & Seashore-Louis, 2012). New Leaders for New Schools and the George W. Bush Institute have made the principalship a focus of their activities (Branch et al., 2013). The point made consistently in each of these arenas is that there is great social justification for research about successful educational leadership because of its connection to student learning and school reform (Leithwood & Seashore-Louis, 2012).

Principal quality is important for student outcomes, yet determining the impact of principals on learning is a problem (Branch et al., 2013). It is difficult to separate the principal's contributions from the many other factors that drive student achievement. Furthermore, there has been little research that clarifies how leaders achieve the small but significant effects on schools and students (Leithwood & Seashore-Louis, 2012). Questions still need to be addressed,

such as how much a leader contributes to teaching and learning, what conditions enhance those contributions, and what forms of leadership are exercised in those conditions.

The so-called accountability era has dramatically changed the nature of work in schools (Avolio & Bass, 2004; The Wallace Foundation, 2013) and accentuated the gap that persists in effective leadership behavior because leaders are exercising their leadership more as a manager of tasks than a leader of teaching and learning. Consequently, teacher morale is low and teacher recruitment and retention suffer. The art of leadership must be enhanced to influence the conditions of teaching and learning that are likely to improve student learning outcomes. As researchers push to understand what leaders do to make a difference in student learning (Hattie, 2012; Sun & Leithwood, 2012), more attention on leaders' behaviors is needed to understand principals' roles in fostering improved conditions of teaching and learning.

Specifically, more work is needed to understand the relationship between leadership behaviors and the condition of a school's academic press and sense of community. A major barrier to improving effective leadership may be that a principal's leadership style is mismatched with the conditions of the school. Thus, an essential goal is to avoid obvious mismatches between the efforts of principals to create positive conditions of learning that negate the desired result. Hallinger and Heck (1998) suggest that more research is required to understand the interplay of contextual forces with the exercise of school leadership.

This study focused primarily on the relationship of a leader's use of style (i.e., transactional and transformational) and the need to positively impact a school's climate. Trends in education such as empowerment, shared leadership, and organizational learning (Hallinger & Heck, 1998) mirror elements of transformational leadership seen in principals of high-achieving schools: establishing a shared vision, providing individualized support, holding high

expectations, and engaging others in decision making (Cotton, 2003). Therefore, there is a need to further understand principals' use of transactional and transformational leadership behaviors (Antonakis, Avolio, & Sivasubramaniam, 2003) as it relates to principals' decisions over aspects of a school's academic press and sense of community. This will provide knowledge on how to better understand how much a leader contributes to teaching and learning, what conditions enhance those contributions, and what forms of leadership are exercised in those conditions.

Purpose of the Study

The purpose of this study was to examine (a) self-described leadership behaviors of principals across all three school levels (i.e., elementary, middle, and high) and (b) the influence of transactional and transformational leadership behaviors of principals and the connections among these leadership behaviors and three school variables: schools' academic press, sense of community, and student achievement. Press and community are key factors in establishing a school's climate and the conditions under which learning is likely to be enhanced. Furthermore, press and community are maintained by four core practices performed by principals that directly influence teaching and learning and affect a school's academic achievement. Investigating the relationship to a leader's style will move our understanding of the principal's role in improving students' academic achievement.

Murphy, Weil, Philip, & Mitman (1982) and Shouse (1996) define four indicators of a school's academic press: (1) collective responsibility for student learning; (2) high expectations for all students; (3) academic and instructional focus and (4) disciplinary climate. Additionally, Bryk & Driscoll (1988), Newmann, Rutter, & Smith (1989) and Shouse (1996) define three indicators of a school's sense of community: (1) shared values and understandings; (2) common agenda of activities and (3) ethic of caring. These indicators were used to sort questions from the

North Carolina Teacher Working Conditions survey (TWC) survey into press (see Table 1) and community (see Table 2) constructs. This study used perceptual data from teachers on the TWC from elementary, middle, and high schools across 57 North Carolina school districts to (1) measure the levels of academic press and sense of community in order to (2) conduct correlational analyses to explore the relationships with six leadership behaviors. Schools and school districts use the TWC survey instrument to provide school profiles based on eight constructs linked to the conditions of teaching and learning: (1) time; (2) facilities and resources; (3) community support and involvement; (4) managing student conduct; (5) teacher leadership; (6) school leadership; (7) professional development; (8) instructional practices and support.

Next, it is important to connect these constructs to the actual practices leaders perform to derive academic press and sense of community, and, ultimately, the conditions under which learning results are likely to be enhanced. A school's academic press and sense of community is maintained through four core leadership practices. Leithwood et al. (2010) offer that a leader's efforts to do these things have direct effects on teachers' motivation, capacities, and commitments, which should have indirect effects on student achievement. The core practices of setting directions, developing people, and redesigning the organization are conceptually aligned with a school's sense of community. Collectively, the objectives of these practices are to create group goals, provide individualized support/consideration, and foster collaborative cultures, which aides the ethic of caring and sense of commitment and purpose. Furthermore, these three practices are all sources of motivation in Bandura's (1986) theory of human motivation, and establish a "moral purpose" (Fullan, 2003; Hargreaves & Fink, 2006) as a basic stimulant for one's work (Leithwood et al., 2006). The core practice of managing the instructional (teaching and learning) program aligns with the purpose of academic press. The objective of this practice

is to establish high academic expectations while providing instructional support to create an “academic climate” where pupils and teachers place a strong emphasis on pupil achievement, which makes significant contributions to achievement (De Maeyer, Rymenans, Van Petegem, van der Bergh, & Rijlaarsdam, 2006; Leithwood et al., 2006).

Thus, it is important to unpack how a leader goes about the exercise of leading and improving those practices in order to improve the effects of leadership. Accordingly, this study surveyed principals in school districts across North Carolina. The principals were asked to complete a questionnaire providing their self-perception of their leadership behaviors. They completed the Multifactor Leadership Questionnaire (MLQ:Form5X), a 45-item Likert scale questionnaire designed by Bass and Avolio (2004) to measure principals’ transactional to transformational leadership behaviors. This instrument, used in previous studies, defines transformational leadership by four behavior types: (1) idealized influence; (2) inspirational motivation; (3) intellectual stimulation; and (4) individualized consideration. Two behavior types define transactional leadership: (1) contingent reward and (2) management-by-exception (active).

Further knowledge can be gleaned about the leadership qualities needed to improve student achievement by investigating the relationship between leadership style and a school’s teaching and learning conditions. A logical inference can be made as to what style of leadership is most effective at enhancing teachers’ motivation, efficacy, and satisfaction. Using the TWC and MLQ:Form5X, this study attempted to determine (a) self-described leadership behaviors of principals across all three school levels (i.e., elementary, middle, and high) and (b) the influence of transactional and transformational leadership behaviors of principals and the connections among these leadership behaviors and three school variables: the schools’ academic press, sense

of community, and student achievement. The independent variable was the principals' leadership behaviors; the dependent variables were academic press, sense of community, and student achievement.

This study measured positive student learning outcomes using test-based student academic achievement data. Grissom, Kalogrides, and Loeb (2015) contend a large number of studies in educational leadership have used student test score data to examine the impact of school leadership on schools. The use of school-level averages of student achievement scores has limited researchers from estimating leadership effects on student growth (Grissom, Kalogrides, & Loeb, 2015). For this reason, this study used a performance composite score that combines achievement scores with growth scores.

This was a quantitative study that aimed to explain the relationship among the aforementioned school level variables. A quantitative methodology allows for a researcher to gather numeric data from a large number of individuals and use statistical procedures to analyze the relationship between key variables (Creswell, 2005). The researcher's interest to determine whether one or more variables might influence another variable justifies the use of quantitative methods (Creswell, 2005). The researcher worked with the Odum Institute at the University of North Carolina at Chapel Hill, which provided guidance in the area of research design and survey methodology.

This study used a structural equation modeling (SEM) methodology to propose a fixed theoretical model, fit it to observed data, and comment on whether or not it was the best theoretical model to explain a principal's influence on student learning outcomes through two intervening variables (academic press and sense of community). Intervening variables produce an indirect effect, which means that one variable serves as a regressor in one equation and a

regressand in another equation. This system of equations is referred to as a model. SEM considers the equations simultaneously to describe the direct effect between two variables and the indirect effect mediated via an intervening variable.

Table 1

TWC Questions Explored to Measure Academic Press

Indicator of Academic Press as defined in the literature	Corresponding TWC Questions
Collective Responsibility for Student Learning (Hoy, 2012; Shouse, 1996; Murphy, Weil, Philip, & Mitman, 1982)	<ul style="list-style-type: none"> • Teachers collaborate to achieve consistency on how student work is assessed • Teachers have knowledge of the content covered and instructional methods used by other teachers at this school • Teachers work in professional learning communities to develop and align instructional practices
High Expectations for All Students (Hoy, 2012; Shouse, 1996; Murphy, Weil, Philip, & Mitman, 1982)	<ul style="list-style-type: none"> • Teachers believe almost every student has the potential to do well on assignments • Teachers believe what is taught will make a difference in students' lives • Teachers require students to work hard
Academic and Instructional Focus (Hoy, 2012; Shouse, 1996; Murphy, Weil, Philip, & Mitman, 1982)	<ul style="list-style-type: none"> • Class sizes are reasonable such that teachers have the time available to meet the needs of all students • Teachers have sufficient instructional time to meet the needs of all students • Teachers know what students learn in each of their classes • Teachers have time available to collaborate with colleagues • Teachers are protected from duties that interfere with their essential role of educating students • Teachers use assessment data to inform their instruction • Teachers are assigned classes that

	maximize their likelihood of success with students
Disciplinary Climate (Shouse, 1996)	<ul style="list-style-type: none"> • Students at this school follow rules of conduct • Teachers consistently enforce rules for student conduct

Note. The range of dates in the citations speaks to the amount of time researchers and educators have devoted to these concepts. A researcher may infer from this amount of time that these concepts are relevant and important to the areas of principal effectiveness and student outcomes. Furthermore, a researcher may infer that these concepts are continuously adapting to the changes seen in the school environment, and more work is needed to study how these concepts are defined and used in practice.

Table 2

TWC Questions Explored to Measure Sense of Community

Indicator of Sense of Community as defined in the literature	Corresponding TWC Questions
Shared values and understandings (Hoy, 2012; Shouse, 1996; Bryk & Driscoll, 1988; Newmann, Rutter, & Smith, 1989)	<ul style="list-style-type: none"> • Students at this school understand expectations for their conduct • Policies and procedures about student conduct are clearly understood by the faculty • The faculty and staff have a shared vision
Common agenda of activities (Hoy, 2012; Shouse, 1996; Bryk & Driscoll, 1988; Newmann, Rutter, & Smith, 1989)	<ul style="list-style-type: none"> • School administrators support teachers' efforts to maintain discipline in the classroom • Teachers are recognized as educational experts • Teachers are trusted to make sound professional decisions about instruction • Teachers are relied upon to make decisions about educational issues • Teachers are encouraged to try new things to improve instruction
Ethic of Caring (Hoy, 2012; Shouse, 1996; Bryk & Driscoll, 1988; Newmann, Rutter, & Smith, 1989)	<ul style="list-style-type: none"> • There is an atmosphere of trust and mutual respect in this school • The school leadership consistently supports teachers • The faculty are recognized for accomplishments

The Research Question

The major research question of this study was does the principal's leadership style (i.e., transactional and transformational) influence a school's academic press and sense of community and differentially impact student achievement? The main hypothesis was that a principal's style of leadership style correlates to positive changes in a school's academic press and sense of community. Moreover, there were measurable differences between schools' academic press and sense of community—and such differences varied in accordance with principals who employ varying combinations of transformational leadership behaviors and transactional leadership behaviors, which could affect student achievement differentially as a result.

Significance of This Research Study

This study aimed to expand existing understanding and knowledge of transactional and transformational leadership as it relates to how school principals decide to influence academic press and school community. This study offered style (transactional and transformational) as one significant dimension to the practice of effective educational leadership. The goal was to discern if leadership style impacts the effects of school leadership and contributes to the effectiveness of a school leader. This represents a core challenge for the health and longevity of the educational system to distinguish, retain and recruit high quality leaders capable of delivering academic excellence and instructional equity, while celebrating cultural diversity. According to Leithwood et al. (2006), those in a role to teach principals' leadership need to become more sophisticated in identifying and developing people with the potential to successfully meet the great expectations now held for school leadership.

Findings from this study should contribute to research on the effects principals' leadership behaviors have on the condition of a school's academic press and sense of

community. Furthermore, this study may clarify the importance of transactional and transformational leadership in educational settings. By understanding the influence a leader's style has on press and community, school district leaders may be better equipped with knowledge to place their principals in a position to succeed and offer them valuable support. Human resource departments may be better equipped to distinguish qualities in candidates that make them more effective in leading the technical challenges, as well as rising to meet the adaptive challenges of moving the school towards becoming a learning organization (Harvey, Cambron-McCabe, Cunningham, & Koff, 2013). For principals, these data should provide insights about the relationship between their choice in style and changes in press and community. Additionally, these data should provide principals a process to better understand the needs of their teachers and students in order to guide their behaviors and practices through school improvement. For institutions of higher education and professional development programs, the results from this study may offer new course or training material to prepare public school executives to lead with style.

Theoretical Framework

This study was defined by three theories combined to create a robust conceptual framework. Constructive/developmental personality theory (Kegan, 1982, as cited in Kuhnert & Lewis, 1987), builds a conceptual bridge to the more practical style theories of transactional and transformational leadership. This theory was used to explain how leaders understand, experience, and approach the enterprise of leading (Kuhnert & Lewis, 1987). The premise of this theory is that individuals develop an understanding of their personal and interpersonal worlds and then construct a subjective meaning of their world that shapes their experiences (Kuhnert & Lewis, 1987). Additionally, it serves to provide an antecedent that influences

principal leadership behavior (Trepanier, Fernet, & Austin, 2012). Therefore, this theory was most helpful, in this study, when used as a logical link to explain what lens, or value orientation, a principal brings to a school before observing any relationship between transactional and transformational leadership and press and community.

Avolio and Bass (2004) cite several studies that relate the five-factor model of personality (i.e., neuroticism, extraversion, openness to experience, conscientiousness, and agreeableness) to transformational leadership. Specifically, research found that openness to experience is positively correlated with transformational leadership (Avolio & Bass, 2004). Furthermore, research (e.g., Atwater & Yammarino, 1993; Bono & Judge, 2003; Pillai, Williams, Lowe, & Jung, 2003) has found correlations between transformational leadership and cognitive and personality traits, such as ascendancy, conscientiousness, moral reasoning, optimism, and idealism (Avolio & Bass, 2004). Therefore, it was important to consider that a principal has developed a set of personality traits that he/she bring with him/her, which assists in the process of constructing meaning of their experiences. In this study, it meant that a principal may be predisposed to see, interpret, and act on a situation based on their personality. Thus, there is a relationship between a principal's value orientation and leadership style.

Leadership style was explained by transactional and transformational leadership theories. Transactional leadership theory focuses on the exchange that takes place between leader and follower based on the leader offering followers valued outcomes (e.g., wages, prestige) for fulfilling specified requirements (Avolio & Bass, 1994; Burns, 1978; Chin, 2007; Den Hartog, Koopman, & Van Muijen, 1997; Moolenaar et al., 2010). Transformational leadership theory moves the follower beyond immediate self-interests by elevating concerns for achievement, self-actualization, and the well-being of others and the organization through developing a realistic

vision of the future with followers in mind (Avolio, Waldman, & Yammarino, 1991; Bass, 1985; Den Hartog, et al., 1997; Chin, 2007; Moolenaar et al., 2010; Yammarino & Bass, 1990). It was important to include transactional leadership behaviors because they provided the groundwork to move a school forward and may offer the linkage between transformational leadership and student learning outcomes (Silins, 1994; Smith & Bell, 2011). The main difference between the theories is the degree to which each style influences the effects of leadership (i.e., teachers' motivation, efficacy, and satisfaction) (Hater & Bass, 1988). Therefore, the relation between leadership style and positive student learning outcomes is mediated by improvements in teachers' motivation, efficacy, and satisfaction.

The aforementioned theories can be combined to create a mediated-effects model (see Figure 1), first proposed by Pitner (1988) and adapted by (Hallinger & Heck, 1998), which served as the conceptual framework. Leithwood (1994) states that leadership behaviors contribute to the outcomes desired by schools, but the contribution is almost always mediated by organizational factors such as teacher commitment and teacher perceptions of school climate. Most recently, Grissom et al. (2015) state that principals' effects on students is mediated by teachers because "principals affect student achievement via their effects on teachers' instructional capacity" (p. 8). Hallinger and Heck (1998) cite several studies that evidence a consistent pattern of indirect effects of principal leadership on school effectiveness. Hallinger and Heck's (1996) extensive review of empirical research about the principal's role in school effectiveness reveals evidence that leaders may affect student achievement through an intervening variable. Hallinger and Heck (1996) reviewed 19 studies that modeled an indirect relationship through a mediating variable between leaders and student outcomes, and 17 out of the 19 studies showed positive to mixed effects of the principal on student achievement.

Nonetheless, “a finding that principal effects are mediated by other in-school variables does nothing whatsoever to diminish the principal’s importance” (Hallinger & Heck, 1996, p. 39). The significance of this framework is that it enriches the understanding of how the phenomenon surrounding the interaction between a leader’s style and decisions concerning a school’s academic press and sense of community unfolds and explains the connection to improving student learning outcomes.

This study began with a conceptual model - a visual representation of theoretical variables of interest and expected relations among them (Kline, 2016). A path diagram should model the most parsimonious explanation of the phenomenon under consideration by connecting the smallest number of variables with the smallest number of arrows (Loehlin, 2004). The first part of the model (see Figure 1) looked at transactional and transformational leadership styles along with school level and principals’ years of experience as covariates and measured the direct impact with latent variables academic press and sense of community. The second part of the model looked at the latent variables academic press and sense of community and free-and-reduced lunch rate as a covariate and measured the direct impact with student outcomes. This 2-dimensional model aimed to assess the indirect and direct effects of transactional and transformational leadership on a school’s academic press, sense of community, and student learning outcomes and compare to tell if there was mediation. The model aimed to predict how they are related.

The major claim was that principals’ transactional”ness” and transformational”ness” would explain differences in schools’ academic press, sense of community, and student outcomes. Furthermore, the levels of academic press and sense of community would mediate the impact of principals’ leadership style on student learning outcomes.

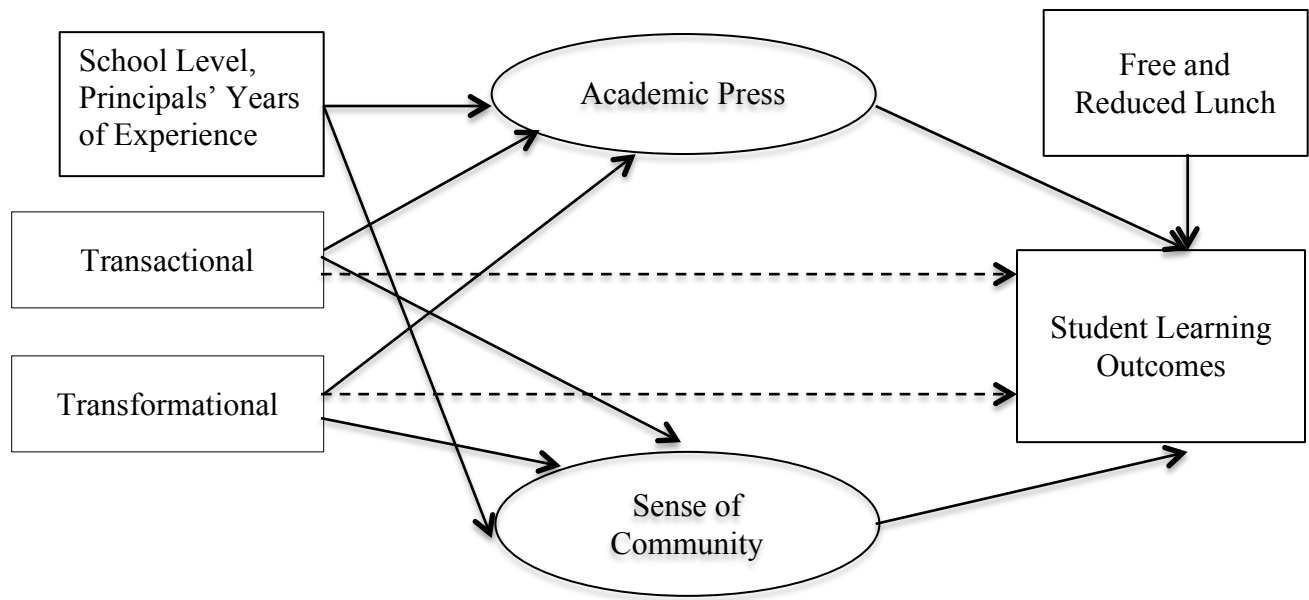


Figure 1. A path model of the influence a principal’s leadership behavior has on academic press and sense of community that impacts student learning. The relation between the principal and positive student learning outcomes is mediated by improvements in schools’ academic press and sense of community. In a reticular action modeling (RAM) – developed by J.J. McArdle – latent variables are designated by placing them in circles and observed variables by placing them in squares (Loehlin, 2004, p. 16). A straight, one-headed arrow represents a direct casual relationship between two variables, also known as a structural effect. This study will use regression coefficients to describe to what extent a change on the variable at the tail of the arrow is transmitted to the variable at the head of the arrow (Loehlin, 2004, p. 12).

Hallinger & Heck provide a rationale for the use of this model with the assertion that “well-designed studies must use theoretical models that allow for the likelihood that the relationship between principal actions and school outcomes is indirect rather than direct” (1996, p. 24). Furthermore, Hallinger and Heck conclude effective principals focus on influencing school processes that are directly linked to student learning such as the practice of professional learning communities. Studies based on this leadership model have revealed statistically significant indirect effects on principal leadership on student achievement via such variables (Hallinger & Heck, 1996).

Assumptions of This Research Study

As previously mentioned, today's principals are held accountable for the academic success of their students. The principal is responsible for outcomes of productivity and satisfaction attained by students and teachers, as well as the climate of the school (Beckerman, 2005; Chin, 2007). Multiple assumptions were made based upon this premise. First, it was assumed that the principal's leadership behavior (i.e., transactional and transformational) would affect the condition of a school's academic press and community (i.e., school climate), and through changes in press and community student achievement would be impacted differentially. Moreover, the principal has a direct impact on teachers, so it was assumed that styles (transactional and transformational) that correlate with high levels of press and community may strengthen the principal's influence on teachers and the principal's impact on student learning outcomes. Additionally, an assumption of this study – specific to principals' leadership behavior - was that the transactional and transformational continuum is inclusive, that is, it includes all of the relevant stylistic nuances to be significant.

The most powerful achievement effects are predicted when high levels of academic press work in tandem with a school's commonality of beliefs, activities, and traditions, and care for students (Shouse, 1995). An assumption was made that principals would want to choose leadership behaviors that would maximize effectiveness in improving teaching and learning conditions and student achievement.

Limitations of This Research Study

It is important to recognize that limitations exist when considering the significance of the results from this study. This study was limited to school district's that granted this researcher access to principals. A limitation of this study was that only two variables were used to define

school climate. The condition of each school's climate was defined by the constructs of academic press and sense of community. There are many additional variables that make-up a school's climate with some being easier to define than others (Hoy et al., 1991).

Academic press and sense of community were measured using data from the TWC. One limitation of using the TWC was that the eight available TWC constructs do not fully capture all of the relevant school conditions that support press and community identified in the literature. Another limitation of using the TWC for a school-level analysis was the assumption that every individual in the school holds the same perception about the condition of the school's press and community. Studies that do not account for within-school variation can run the risk of overemphasizing (or underemphasizing) differences in press and community between schools (Hallinger & Heck, 1998). The same risk of overemphasizing a principal's style is true when a study, such as this one, holds principals solely responsible for student learning. Finally, data from the TWC were only taken from one year, which limited the analyses to represent a mere snapshot of the phenomenon.

This study measured the influence of two leadership variables on schools' academic press and sense of community: (a) transactional and (b) transformational. Principals' leadership behaviors were identified using a questionnaire (MLQ:Form5X) designed to assess transactional and transformational leadership. Measures of the leadership behaviors of principals were based upon principals' self-ratings, which measured only the self-perception of leadership and not actual leadership behaviors. Further, the transactional and transformational continuum was a limitation. There are other leadership behaviors, including combinations of behaviors that integrate aspects of one another across varying situations. A limitation of this study was that it did not take into account those behaviors in relation to situational leadership.

One of the difficulties in predicting student achievement is that socio-economic status (SES) status generally overwhelms all other organizational variables in explaining the variance. Thus, it is important to find school properties that can explain student achievement controlling for SES. This study proposed academic press and sense of community as key candidates. Principals can affect student achievement indirectly using their leadership behaviors to enhance their organizational climate in which press and community are elements.

Another limitation was the conceptual model used for this study. An argument could be made for examining the reciprocal effects between the principal and features of the school. Hallinger and Heck (1998) propose that the principal and school environment exist in an interactive relationship. For example, principals may change the school's curriculum program or instructional practices, which causes changes in the conditions of teaching and learning. The principal receives feedback that causes reciprocal effects in the leader's behavior (Hallinger & Heck, 1998).

Definition of Terms

Some of these terms listed are widely used and variously interpreted. The terms are limited to these definitions for the purpose of this study.

Academic Press: The extent to which schools appear driven by academically oriented goals, values and activities (Shouse, 1996).

Contingent Reward: The leader clarifies expectations and offers recognition when goals are achieved. Followers achieve an expected level of performance (Avolio & Bass, 2004).

Idealized influence: The leader is admired, respected, and trusted. The leader considers followers' needs over his or her own needs. The leader is consistent in conduct with ethics. Followers want to emulate the leader (Avolio & Bass, 2004).

Individualized Consideration: The leader pays attention to each individual's need for achievement and growth by acting as a coach or mentor. The leader helps followers reach higher levels of potential, and recognizes individual differences, needs and desires (Avolio & Bass, 2004).

Inspirational motivation: The leader motivates others by providing meaning and challenge to followers' work. The leader builds enthusiasm and optimism and encourages individual and team spirit among followers (Avolio & Bass, 2004).

Intellectual stimulation: The leader stimulates followers to be innovative and creative by questioning assumptions, reframing problems, and approaching old situations in new ways. The leader solicits new ideas and creative solutions from followers and includes them in the process (Avolio & Bass, 2004).

Leader Effectiveness: How a leader performs in improving three areas: (1) the conditions of press and community through setting directions, developing people, redesigning the organization, and managing the instructional (teaching and learning) program (Leithwood et al., 2006); (2) teacher motivation, efficacy, satisfaction, productivity, and performance (Blase and Blase, 2000); and (3) student learning outcomes.

Leadership: "Leaders inducing followers to act for certain goals that represent the values and the motivations – the wants and needs, the aspiration and expectations – of both leaders and followers. And the genius of leadership lies in the manner in which leaders see and act on their own and their followers' values and motivations" (Burns, 1978, p. 19).

Leadership Style: The characteristic way in which a leader uses power, makes decisions, and interacts with others (Smith and Piele, 2007).

Management-by-exception (active): The leader specifies the standards for compliance and what constitutes ineffective performance. The leader closely monitors followers for deviance, mistakes and errors and then takes swift corrective action (Avolio & Bass, 2004).

Sense of Community: Builds among students and teachers a sense of attachment, commitment, responsibility, and purpose within an increasingly diverse and diffuse social context (Shouse, 1996).

Transactional Leadership: “Emphasizes the transaction or exchange that takes place among leaders, colleagues, and followers. This exchange is based on the leader discussing with others what is required and specifying the conditions and rewards these others will receive if they fulfill those requirements” (Avolio & Bass, 1994, p. 3).

Transformational Leadership: “Is seen when leaders stimulate interest among colleagues and followers to view their work from new perspectives, generate awareness of the mission or vision of the team and organization, develop colleagues and followers to higher levels of ability and potential, and motivate colleagues and followers to look beyond their own interests toward those that will benefit the group” (Avolio & Bass, 1994, p. 2).

Summary

This study investigated transactional and transformational leadership as they relate to school principals in various school climates. It investigated the relationship between school principals’ leadership behaviors and the condition of schools’ academic press and sense of community. Using the TWC and MLQ:Form5X, this study attempted to examine (a) self-described leadership behaviors of principals across all three school levels (i.e., elementary, middle, and high) and (b) the influence of transactional and transformational leadership behaviors of principals and the connections among these leadership behaviors and three school

variables: schools' academic press, sense of community, and student achievement. The independent variable was the principals' leadership behaviors; the dependent variables were academic press, sense of community, and student achievement.

Chapter 2

Introduction

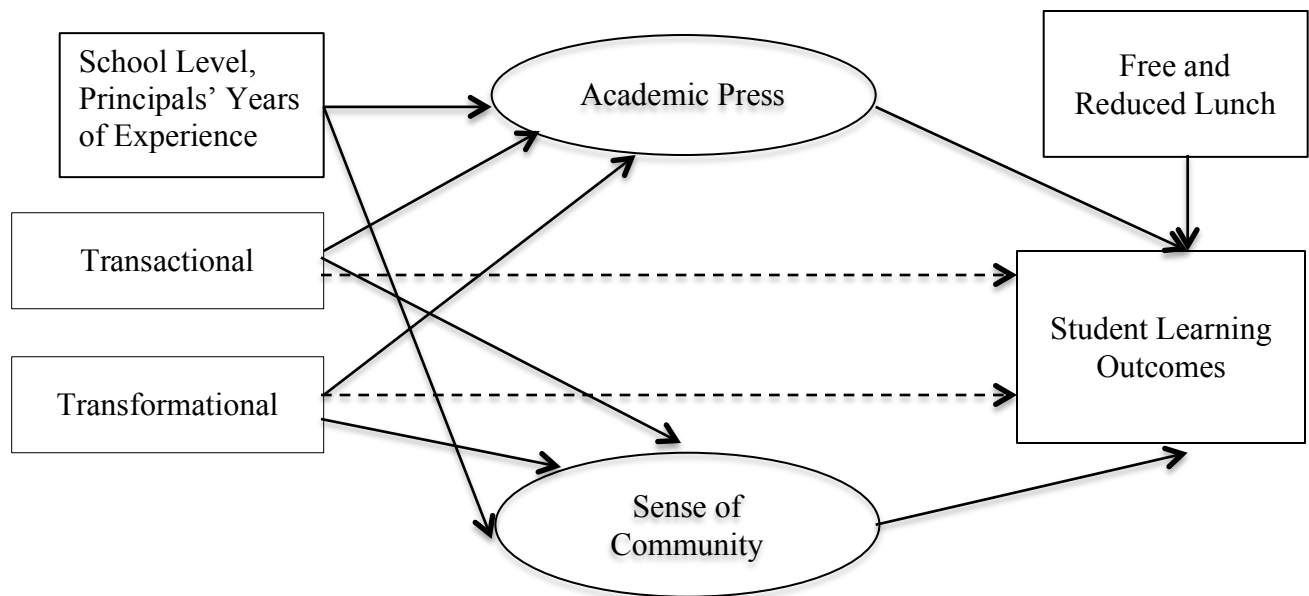
This summary of relevant literature examines general concepts such as: (a) leadership and style; (b) school culture and climate; and (c) leader effectiveness and the effects of leadership. Leadership is a performance about influencing people to attain a goal. In the case of school leadership, the goal is student achievement by the way of academic excellence and instructional equity. Exceptional principals may use their leadership style to elicit more motivation, efficacy, and satisfaction from their teachers by shaping the culture and climate of the school, which may improve student achievement. This literature review has been strategically arranged by theme in accordance with this line of argument to move the reader to understand the importance of this present study. Spanning four sections, this chapter will review empirical and conceptual readings that discuss the relationship between the three areas outlined above and expose remaining questions yet to be answered.

The first section reviews literature related to general leadership theories and leadership style. The evolution of a leader's style is best captured on a continuum between transactional and transformational leadership (Avolio & Bass, 2004). Therefore, this section will include a description of the characteristics and practices associated with transactional leadership and transformational leadership. The second section reviews literature related to school culture and climate. It will include a description of the indicators and components of a school's academic press and sense of community (Bryk & Driscoll, 1988; Shouse, 1996). After reviewing theory and research in these two sections, the review will converge on how leadership styles and school

climate influence teachers' motivation, efficacy, and satisfaction and student achievement. The last section will review related leadership studies using transformational measures to describe leadership behaviors and their relationship to varying aspects of school climate, including academic press and sense of community.

Theoretical Framework

As was discussed in chapter one, the major theoretical underpinnings of this study come from the research on transactional and transformational leadership (Bass, 1985; Avolio & Bass, 1991; Avolio & Bass, 2004). Figure 1 depicts a path model of the influence a principal's leadership behavior has on academic press and sense of community, which may, differentially, impact student achievement.



From this model, the study's independent variable is the principals' leadership behaviors; the dependent variables are academic press, sense of community, and student achievement. The SEM technique starts with the specification of a model to be estimated, which is a series of hypotheses about how the variables in the analysis are generated and related (Hu & Bentler,

1999). SEM requires *a priori* (deductions from theory) specifications reflected in the study's hypotheses and used to make up the model to be analyzed (Kline, 2016). A review of the literature was to provide scholarly opinion and empirical research in accordance with the relationships proposed in this path model and theoretical justification of the six hypotheses developed to explore the research question:

1. H_0 : There is no relationship between principals' self-perception of their leadership style, as measured by the MLQ:Form5X, and the school's academic press.
2. H_0 : There is no relationship between principals' self-perception of their leadership style, as measured by the MLQ:Form5X, and the school's sense of community.
3. H_0 : There is no relationship between principals' self-perception of their leadership style, as measured by the MLQ:Form5X, and student achievement.
4. H_0 : There is no relationship between a school's academic press and student achievement.
5. H_0 : There is no relationship between a school's sense of community and student achievement.
6. H_0 : There is no relationship between the principals' self-perceptions of their leadership style, a school's academic press, sense of community, and student achievement.

Leadership and Style

According to Bass and Bass (2008, p. 439), "leaders must balance the advantages of a more democratic approach, which ordinarily contributes to the commitment, loyalty, involvement, and satisfaction of followers, with a more autocratic approach, which contributes to order, consistency, and the resolution of conflict." The balance presented here establishes a nice, simple foundation for the nuanced narrative that follows regarding the interaction between leadership and style.

Leadership

Leadership is a strategic act, composed of practices aimed to influence followers to attain a goal (i.e., increase job performance, create positive student learning outcomes, or strive for social justice). Burns (1978) defines leadership as “leaders inducing followers to act for certain goals that represent the values and the motivations – the wants and needs, the aspiration and expectations – of both leaders and followers” (p. 19). It is essential to incorporate followers into the act for leaders to be successful. Strategically, leaders employ practices that will elicit a drive in followers to work for a greater good. Schwahn and Spady (2010) propose that motivation and productivity are significantly enhanced when leaders create and produce something that has intrinsic meaning and really engages followers. Burns (1978) builds an ideal form of leadership on the foundation of social justice and equity:

At the highest stage of moral development persons are guided by near universal ethical principles of justice such as equality of human rights and respect for individual dignity....What kind of leadership reaches into the need and value structures, mobilizing and directing support for such values as justice and empathy? 1. Leadership that operates at need and value levels higher than those of the potential followers.... 2. Leadership that can exploit conflict and tension within persons' value structures (arouse a sense of dissatisfaction...). Leaders can redefine aspirations and gratifications to help followers see their stake in...social movements. Most important, they can gratify lower needs so that higher motivations will arise to elevate the conscience of men and women. (pp. 42-43)

Leadership, by this definition, moves beyond managing simple outcomes and requires an artful competence of the human condition. “How far a leader models values and emotional behavior and influences them in faculty and students is the exercise of intelligence that distinguishes man from machine and is the charter mark of leadership” (Lumby & English, 2010, p. 22).

There are practices and characteristics that distinguish leadership from management and help a leader assert influence. Leadership is seen in the ability to establish a vision, set a direction and provide meaning and motivation for organizational goals (Schwahn & Spady,

2010). Furthermore, leaders should empower their followers. Through empowerment, Schwahn and Spady (2010) suggest leaders can create in followers a genuine sense that they “really matter” and can “make a difference” in the larger scheme of things. To aspire to Burn’s (1978) ideal form of leadership, a complete leader must be characterized by more than one quality. Schwahn and Spady (2010) offer five domains that embody the total leader: (a) *Visionary Leaders* frame creative and innovative visions; (b) *Relational Leaders* develop collaborative and collegial ownership; (c) *Quality Leaders* build skilled and expert capacity; (d) *Service Leaders* ensure compassionate and dedicated support; and (e) *Authentic Leaders* define ethical purpose. Energy for each domain is supplied by a state of consciousness, creativity, collaboration, and competence; being a total leader is an art form.

The Barber Model of Leadership (Barber, 1985) explains the factors that shape a leader’s act. According to English (2008), Barber’s leadership model contains three internal variables (i.e., character, worldview, and style) that impact a leader’s consciousness, creativity, collaboration, and competence, or the energy a leader is able to put towards their performance (English, 2008). Each variable is important to expand upon to build a practical understanding of leadership in conjunction with the previously mentioned characteristics that distinguish leadership from management. First, a leader’s character is the person’s stance as he/she experiences the events of life. Second, a leader’s worldview consists of the primary beliefs of a leader, particularly how he/she conceives of social causality, human nature, and the central moral conflicts of the time. Third, a leader’s style is the way a leader acts (i.e., the habitual way of performing) three political roles: (a) rhetoric – the manner of speaking to the media and various audiences; (b) personal relations – face to face relations with people and groups; and (c) homework – reading, writing and calculating in order to manage the flow of details confronting

him/her (English, 2008). It is the style variable that this study will examine and elaborate on in more detail.

The Barber model aligns with Burn's (1978) ideal form of leadership by requiring a leader's actions to represent the expectations of followers. These expectations can be sorted into three basic categories: (a) reassurances – a feeling that things will be all right; (b) a sense of progress and action – a take charge person, a doer, a turner of wheels, a producer of progress; and (c) a sense of legitimacy – a defender of the faith, someone who personifies the betterness we all want in an inspiring way (English, 2008). A leader needs to meet these expectations in order for their act to be effective in influencing followers. More importantly, Burns (1978) contends learning shapes a leader's act: learning from experiences, learning from followers, and learning from successes and failures.

Combining the work of these researchers provides a bridge from theory to practice. Practicing or aspiring leaders can see more clearly that in order to satisfy the function of leadership (i.e., improving the condition of teachers' motivation, teachers' abilities, knowledge and skills, and teachers' work settings) they must create a vision, build relationships aligned with the values and needs of their followers, and empower their followers. By doing these things, leaders can make their influence more tangible in the organization by improving teacher motivation, efficacy and satisfaction.

Leadership Style Defined

Leadership is a strategic performance: a cognitive and interpretive act. School leaders employ different behaviors to influence teachers (also referred to as followers). These differences in the ways leaders act are due to leaders' "psychological makeup (styles)" and the choices they make in pursuit of "organizational goals (strategies)" (Smith & Piele, 2007). Both

will be discussed in great detail throughout this review. It is important to study style because “when leaders use specific leadership behaviors consistent with their deeply-ingrained values, they can achieve great things” (Sarros & Santora, 2001, p. 384). There are different schools of thought as to how to categorize styles or behaviors of leaders. Smith and Piele (2007) define style as the characteristic way in which a leader uses power, makes decisions, and interacts with others. Shockley-Zalebak (1988) shares the following theory about leadership style:

Style theories for understanding leadership attempt to identify a range of general approaches leaders use to influence goal achievement. These approaches are theorized to be based on the leader’s assumptions about what motivates people to accomplish goals. Particular approaches also are thought to reflect complex relationships among the personal characteristics of the leader (i.e. communication competencies, communication apprehension, internal motivational forces), the requirements of the situation at hand, and the resources over which the leader and followers have control or influence. (p. 205)

Consequently, leadership style is the collective set of behaviors leaders employ to aid their performance to influence followers and attain a goal. Shockley-Zalebak (1988) suggests a leader’s influence stretches from the processes and procedures for how the task is accomplished to how people are supported. To enhance the effect of such influence, leaders and followers participate in complex tactical interactions influenced by individual preference and strategic objectives, as well as the needs of a particular situation. There are a myriad of options for style that a leader may choose from, so “the task now becomes one of identifying optimal combinations of style variables that can predict consequences like effectiveness, empathy, conflict resolvability, emotional comfortableness, and healthy personality” (Norton & Pettegrew, 1977, p. 280).

It is important to note a leader’s style is constructed, over time, from personal standards, values, experiences, and social and interpersonal environments. Kuhnert and Lewis (1987) postulate it is important to understand “the processes through which people construct meaning

out of their experiences to advance our knowledge of how leaders understand, experience, and approach the enterprise of leading” (p. 650). Additionally, a leader’s personality acts as a predictor of style, which includes communication. A communication style is an expression of a person’s personality, which gives both consistency and individuality to a person’s behavior (De Vries, Bakker-Pieper, Konings, & Schouten, 2011; Feist & Feist, 2006). Kuhnert and Lewis (1987, p. 650) conclude that “while the behaviors of leaders may change under different circumstances, the underlying personality structures that produce the behaviors are quite stable.”

The most widely discussed leadership styles are those positioned on a continuum between transactional and transformational. The operational definition of these styles began with Burns (1978), has been enhanced by Bass (1985), and continues to expand in recent literature.

According to Blase (1993):

In transactional leadership, Burns (1978) said, leaders and followers both work to achieve individual and separate goals. In contrast, transformational leadership, which is fundamentally moral, emerges from the needs, aspirations, and values of followers and results in mutuality of purposes between leaders and followers. (p. 157)

This literature review will unpack the significance of these two styles of leadership on the effects of leadership (i.e., teacher motivation, efficacy, and satisfaction).

The progression of leadership style types. It is important to have knowledge about style over time to fully understand its ability to impact student outcomes today. Historically, leadership theory and research have centered on such questions as autocratic versus democratic leadership, directive versus participative decision making, task versus relationship focus, and initiation versus consideration behavior (Bass, 1990, as cited in Avolio & Bass, 2004). The autocratic-to-democratic continuum is the main starting point for style theories (Shockley-Zalebak, 1988). Hackman and Johnson (2000) define the different styles on this continuum. An *authoritarian* style maintains strict control over followers by directly regulating policy,

procedures, and behavior. A *democratic* style engages followers in supportive communication that facilitates interaction between leaders and followers and encourages follower involvement and participation in the determination of goals and procedures. A *laissez-faire* style withdraws from followers and offers little guidance or support. Styles are chosen to have an impact on group outcomes. Groups with *laissez-faire* leaders are not as productive and satisfying as groups with *democratic* leaders. Groups led by *authoritarian* leaders are most efficient; however, they experience more hostility, aggression and discontent. Overall, groups led by *democratic* leaders are most effective and have a higher degree of commitment to group outcomes (Hackman & Johnson, 2000). These dynamics will be discussed in greater detail in Part II.

The *authoritarian, democratic, and laissez-faire styles* are simplified by Hackman and Johnson (2000) into two broader styles, task and interpersonal. A *task* leader demonstrates a much greater concern for getting work done than for the people doing the work. An *interpersonal* leader is concerned with relationships. Hackman and Johnson (2000) cite several studies that have aimed to provide more specific characteristics to these two broader styles, and, while doing so, have offered different terminology. The Michigan Leadership studies labeled the *task* style as *production-oriented* and characterized this style as a focus on accomplishing tasks by emphasizing technical procedures, planning, and organization. The Ohio State Leadership studies termed this style *initiating* and defined it as task-initiated behaviors involved in the initiation of actions, the organization and assignments of tasks, and the determination of clear-cut standards of performance. The Michigan Leadership studies labeled the *interpersonal* style as *employee-oriented*, which emphasized a focus on relationships between people with an interest in motivating and training followers. The Ohio State Leadership studies termed this style *consideration* and defined it as communication designed to express affection and liking for

followers (Hackman & Johnson, 2000). The breakdown between task production and concern for relationships with people is further discussed in the Blake and Mouton Managerial Grid, which charts leadership styles as impoverished management, middle-of-the-road management, country club management, task management, and team management. Leaders work to make balances among these dimensions (Shockley-Zalebak, 1988).

The most enduring theme in style research is the contrast between “task” orientation and “relationship” orientation. Research shows the distinction lies in the difference in the way leaders approach their work (Smith & Piele, 2007). “Some leaders are fascinated by the technical challenge of getting things done: setting goals, organizing meetings, and monitoring activities. Other leaders, are seemingly more attuned to the people around them, display great skill at communicating and motivating” (Smith & Piele, 2007, p. 78). The main difference is the process by which leaders motivate followers and the type of goals set (Den Hartog, Koopman, & Van Muijen, 1997; Hater & Bass, 1988).

The difference between task- and relationship-oriented leaders has been examined with effectiveness measures and performance outcomes. As cited in Bass and Bass (2008), Pandey (1976) reported that groups with relationship-oriented leaders generated more ideas than groups with task-oriented leaders. Katz, Maccoby, and Morse (1950) and Roberts, Miles, and Blankenship (1968) found that the performance of groups was higher under a relationship-oriented style than under a more disinterested style of supervision. Philipsen (1965a, 1965b) also found that relationship-oriented leadership correlated positively with group effectiveness. Group effectiveness was found to be influenced by the interaction between relationship-oriented leadership and employee satisfaction (Medalia and Miller, 1955, as cited in Bass & Bass, 2008).

However, the effectiveness of leaders is greatest when the leaders are both task-oriented and relationship-oriented in attitudes and behavior (Bass & Bass, 2008).

Personality and leadership style. A leader's personality orientation has been shown to be linked to which style of leadership is preferred. Based on the Orientation Inventory (ORI), Bass (1962c) found task-oriented leaders prefer feeling satisfied by a job well done, being surrounded by bright, interesting friends, and being a leader who gets things done. In contrast, relations-oriented leaders prefer working cooperatively, being surrounded by helpful friends, and being a leader who was easy to talk to (Bass & Bass, 2008). Similar distinctions can be made with employees and their preference for a type of leader. Ehrhart and Klein (2001, as cited in Bass & Bass, 2008) reported that employees who were more interested in extrinsic rewards for performance favored more relationship-oriented supervisors whereas employees who preferred more structure and security in their work favored more task-oriented supervisors.

Over time, the needs of organizations, leaders, and their followers have changed, which has necessitated an evolution of leadership style. In recent literature, the task/relationship distinction has been expanded on as theories of transactional and transformational leadership. These forms of leadership serve as the major theoretical pillars of this study.

Transactional and Transformational Leadership

Organizations are faced with having to adapt to a changing world to remain competitive (Avolio & Bass, 2004). Structured organizational hierarchies of the past are being remodeled in order to continually improve the potential of one's workforce (Avolio & Bass, 2004).

Leadership is paramount to the success of this transformation. Downton (1973, as cited in Avolio & Bass, 2004) was the first to distinguish transformational leadership from transactional leadership. Burns (1978) expanded Downton's conceptualization in his work on how both great

and ordinary political leaders motivate their associates. Bass (1985) extended Burns's ideas to the field of education, among others, and dedicated his work to defining and refining a broad continuum of leadership behaviors ranging from laissez-faire leadership to charismatic leadership. A more differentiated theory of leadership was warranted to account for the limitations associated with two-factor (task and relationship) models of leadership for the purpose of leadership research and training (Antonakis et al., 2003). The work of these researchers opened the door for others to navigate the varying relationships that exist between leadership behaviors and leader effectiveness, and how those relationships have changed over time.

The need for organizations to promote change and deal with resistance to it has shifted the emphasis from leading through contingent rewards to democratic, participative, relationship-oriented, and considerate leadership – a shift that has directed leadership away from maintaining quantity and/or quality of performance to leading transformations in beliefs, values, and needs of not just the individual but the organization as well (Avolio & Bass, 2004). Therefore, Avolio and Bass (2004) conclude that leadership requires the higher-order exchange process of transformational leadership in addition to the reward for effort exchange behavior and corrective orientation that typifies transactional leadership.

Bass's (1985) original theory of leadership included four transformational and two transactional leadership behaviors (Antonakis et al., 2003). Based on numerous studies, Bass and Avolio (1991) expanded the theory to what is currently coined the full range of leadership theory (FRLT) (Antonakis et al., 2003). This study will examine transactional and transformational leadership from the perspective of this theory for several reasons. According to Antonakis et al. (2003), a more differentiated theory of leadership will (a) provide methods for

developing leadership potential; (b) provide greater knowledge on what specific styles of leadership may impact follower motivation and performance; and (c) provide help on how to improve one's leadership style. The FRLT uses these nine factors to represent three constructs of leadership behavior: (a) transactional, (b) transformational and (c) passive/avoidant.

Transactional leadership is comprised of two leadership behaviors described by Avolio and Bass (2004) as follows:

1. *Contingent reward*. The leader clarifies expectations and offers recognition when goals are achieved. Followers achieve an expected level of performance.
2. *Management-by-exception: active*. The leader specifies the standards for compliance and what constitutes ineffective performance. The leader closely monitors followers for deviance, mistakes and errors and then takes swift corrective action.

On the other hand, transformational leadership is comprised of four leadership behaviors described by Avolio and Bass (2004) as follows:

1. *Idealized influence*. The leader is admired, respected, and trusted. The leader considers followers' needs over his or her own needs. The leader is consistent in conduct with ethics. Followers want to emulate the leader.
2. *Inspirational motivation*. The leader motivates others by providing meaning and challenge to followers' work. The leader builds enthusiasm and optimism and encourages individual and team spirit among followers.
3. *Intellectual stimulation*. The leader stimulates followers to be innovative and creative by questioning assumptions, reframing problems, and approaching old situations in new ways. The leader solicits new ideas and creative solutions from followers and includes them in the process.
4. *Individualized consideration*. The leader pays attention to each individual's need for

achievement and growth by acting as a coach or mentor. The leader helps followers reach higher levels of potential, and recognizes individual differences, needs and desires.

The present study will use the Multifactor Leadership Questionnaire (MLQ:Form5X), as developed by Avolio and Bass (2004), to adequately measure these nine factors in the FRLT with validity and reliability.

Transactional leadership style theory. Transactional leadership is a common form of effective leadership where followers achieve the expected standards of performance. The sole desire to get the job done justifies the use of task-oriented behavior. Yukl (1994, as cited in Bass & Bass, 2008) proposed five purposes of task-oriented leader behavior: (a) to manage the agenda, objectives, and focus attention to the task; (b) to stimulate communication and encourage new ideas; (c) to clarify components of the task and show how different ideas are related; (d) to summarize accomplishments; and (e) to test for consensus about decisions . Similar to task leaders, transactional leaders motivate followers by defining and communicating the “work that must be done by followers, how it will be done, and the rewards followers will receive for successfully completing the stated objectives” (Avolio, Waldman & Yammarino, 1991, p. 10). Ultimately, transactional leadership focuses on the exchange that takes place between leader and follower based on the leader offering followers valued outcomes (e.g., wages, prestige) for fulfilling specified requirements (Burns, 1978; Den Hartog, et al., 1997; Avolio & Bass, 1994).

Avolio and Bass (2004) cite several studies that evidence transactional leadership as a prescription for lower levels of performance or non-significant change. Contingent reward is used to accomplish the ordinary goals set by the leaders. Additionally, certain aspects of transactional leadership may be counter-productive to the aims of the leader and the

organization. Avolio and Bass list several examples as follows: (a) people may take shortcuts to complete the exchange of a reward for compliance to a task; (b) quality of work may suffer if not as closely monitored by the leader; (c) people may play games where rewards are tied to specific performance targets and forgo commitment; and (d) people do exactly what they are told. The outcome is not an effective foundation for continuous improvement. Furthermore, a purely transactional approach will fall short of significant organizational change due to the lack of resources available to the leader (Avolio & Bass, 2004).

Transformational leadership style theory. The concept of transformational leadership began by characterizing a “relationship” orientation leader. Schwahn and Spady (2010) provide the following description:

Relational leaders are skilled at interpersonal communications, problem solving, and conflict management. They are caring but also candid. They prefer catching people doing something right and rewarding them, rather than finding them doing something wrong and delivering a reprimand. They want people to like them, but not if it means ignoring poor performance. (p. 73)

A key characteristic of transformational leadership is charisma. Charismatic leaders possess command of rhetoric and persuasion, they create a self-confident, competent image, and they serve as the link between symbolic myths and goals (Hackman & Johnson, 2000). Smith and Piele (2000) state that charismatic leaders inspire excitement and loyalty. Bass and Bass (2008) describe charismatic leaders as highly expressive, articulate, self-confident, energetic, and emotionally appealing. These qualities move followers to want to identify with them, and hold them in awe.

Contrary to transactional leaders, relational or transformational leaders stimulate followers to view their work from new perspectives, develop followers to higher levels of ability, and motivate followers to look beyond their own interests and focus on group outcomes (Avolio

& Bass, 1994). Mahdinezhad, Suandi, Silong, and Omar (2013) proclaim transformational leaders encourage followers through an “identification and internalization process,” whereas transactional leaders seek “instrumental compliance.”

Transformational leaders encourage workers to perform beyond standard expectations through a process of personal identification (Avolio & Bass, 2004). Workers identify with the mission being pursued and appreciate the support they receive to achieve the mission, which, in turn, raises their level of motivation, enhances their self-efficacy, and increases their willingness to accept extraordinary challenges (Shamir, 1990, as cited in Avolio & Bass, 2004). Ultimately, transformational leadership elicits a fundamental shift in a worker’s perception of the meaning in their jobs. Kuhnert and Lewis (1987) refer to this as a change in the “mean making” system, or how a worker interprets the challenges set before them in their jobs. This means that transformational leaders change workers’ orientation from self preservation to doing what is good for the group (Avolio & Bass, 2004). This process of transforming workers empowers them to develop the capability to determine their own course of action and assume some of the leader’s responsibilities (Avolio & Bass, 2004). Avolio and Bass (2004) suggest that transformational leaders that are willing to inhibit their use of power and empower workers to gain greater levels of performance from workers. Avolio and Bass describe this as the cascading effect, and is the principal characteristic of transformational leadership. Successful transformational leaders develop workers into effective transformational leaders.

According to Avolio and Bass (1994), effective transformational leaders envision goals and develop an appropriate culture to accomplish those goals. Furthermore, transformational leadership looks beyond the task and seeks dramatic organizational changes by developing a realistic vision of the future with followers in mind (Avolio et al., 1991; Den Hartog, et al., 1997;

Yammarino & Bass, 1990). Avolio et al. (1991) state cooperation, innovation, and a committed workforce are outcomes of transformational leadership. To bring these outcomes to fruition, researchers (Leithwood & Sun, 2012; Smith & Piele, 2007) have identified eleven basic behaviors school leaders can perform that are considered transformational leadership:

1. Take a leading role in identifying and articulating a shared organizational vision (shared vision that is appealing, inspiring, motivating, challenging and communicating optimism) and building consensus;
2. Foster the acceptance of group goals;
3. Convey high performance expectations (expect staff to be effective innovators);
4. Provide appropriate models (instilling pride, respect and trust in staff);
5. Provide intellectual stimulation (challenging assumptions and encouraging their creativity);
6. Develop a strong school culture by reinforcing values that emphasize service to students, continuous professional learning, and collaborative problem solving (promote caring and trust);
7. Provide individualized support (attending to individual opinions and needs);
8. Provide contingent rewards (reward for completing agreed upon work);
9. Manage by exception (intervene only when followers' performance deviates from the norm);
10. Engage communities (be sensitive to community aspirations and requests); and
11. Improve the instructional program (supervise and support instruction).

An integrated theory. Similar to task and relational leadership styles, transactional and transformational leadership exist on either ends of a style continuum. Leaders may be compelled to lead from one extreme or the other; however, a blend of behaviors may prove more beneficial to a leader's influence. Avolio, Bass, and Dong (1999) argue effective leaders display varying amounts of both transactional and transformational leadership. Den Hartog et al. (1997) divided

transactional leadership into two categories. The first category was transactional contingent reward leadership. By honoring contracts over time, leaders build trust, dependability, and respect in their followers, thus transactional contingent reward leadership correlates with transformational leadership (Avolio et al., 1999). However, Avolio et al. (1999) argue that “transactional models of leadership simply do not go far enough in building the trust and developing the motivation to achieve the full potential of one’s workforce” (p. 460). As work environments change, so does the style of leadership. Avolio et al. argue for leadership that “goes beyond the more basic transactional style to styles that are more intellectually stimulating, inspirational and charismatic” (p. 460).

Furthermore, Avolio et al. (1999) contend that transactional and transformational leadership represent constructive forms of leadership; however, transformational leadership builds on transactional leadership but not vice versa (Bass, 1985). In order to blend the two theories, Avolio et al. suggest coupling transactional leadership with individualized consideration to provide a base “for higher levels of transformational leadership to have a positive impact on motivation and performance” (p. 460). Therefore, integrating aspects of both transactional and transformational leadership styles may be the best solution to deliver effective results in today’s marketplace.

Integrating transactional and transformational leadership may be best described by the augmentation effect. Transformational leadership does not replace transactional leadership but augments transactional leadership in achieving the goals of the leader and group (Avolio & Bass, 2004; Avolio, Bass, & Yammarino, 1988; Bass, 1985a; Howell & Avolio, 1993; Seltzer & Bass, 1990). This means transformational leaders can be transactional when appropriate and should exhibit both styles in varying degree over time (Avolio & Bass, 2004). Avolio and Bass (2004)

state that the outcome of augmenting transactional with transformational leadership is a greater amount of extra effort, effectiveness and satisfaction from employees.

School Culture and Climate

The next major concepts of this literature review are school culture and climate. Research on effective schools (e.g., Edmonds, 1979; Weber, 1971) emerged in the 1970s to suggest that determinants of student achievement were related to school-level variables in addition to student demographics. According to Hallinger and Murphy (1986), effective schools are characterized by a clear mission, a tightly coupled curriculum, an opportunity to learn, instructional leadership, parental support, student rewards, and high expectations for student achievement. Edmonds (1979) offers five factors that contribute to a school's effectiveness: (a) strong leadership; (b) climate of high expectations for student achievement; (c) purposeful and orderly school atmosphere; (d) prioritizing the instructional program; and (e) frequently monitoring student improvement. These interrelated factors contribute to the make-up of a school's culture. Purkey and Smith (1983) contend that school culture is a mix of interrelated factors that provide each school with a unique climate. School climate can be described by the characteristics of the school environment that define one school from another and influence teacher behavior (Hoy, Tarter, & Kottkamp, 1991). Finding distinctions between culture and climate is subtle. The term climate is appropriate when the aim is to describe actual behaviors of school members through shared perceptions of behavior (Hoy et al., 1991). Additionally, Hoy et al. (1991) contend that researchers of climate deal with perceptions of behavior, use survey research techniques, employ multivariate statistics, and use this knowledge to improve organizations. Thus, this study will focus mainly on climate as it seeks to understand patterns of principal behavior in schools.

Purkey and Smith (1983) share that school climate can have a strong bearing on the learning environment and be a determining factor in the achievement of students. Purkey and Smith cite Brookover and Lezotte's (1979) case study of eight elementary schools in Michigan where student achievement was strongly affected by the social climate of a school. An academically effective school can be distinguished by its climate of values and norms that emphasize successful teaching and learning (Purkey & Smith, 1983). Schools that press in the direction of academic achievement have (a) clear goals related to student achievement, (b) teachers and parents with high expectations, and (c) a structure designed to maximize opportunities for students to learn (Purkey & Smith, 1983).

Drawing from research on effective schools, Purkey and Smith (1983) state four sustaining characteristics of a productive school climate: (a) collaborative planning and collegial relationships, (b) sense of community, (c) clear goals and high expectations commonly shared, and (d) order and discipline. In other words, an atmosphere that leads to increased student achievement is created when a staff works together, reduces alienation, creates goals by consensus, and reduces behavior problems that interfere with learning. In addition to academic achievement goals, a school's climate may improve interpersonal relations of staff members (Purkey & Smith, 1983).

School climate is drastically affected by the morale of teachers in the school. Lumsden (1998) agrees that morale has an impact on school climate and lists four factors that may affect teacher morale: (a) school environment, (b) parent support, (c) student responsiveness and enthusiasm, and d) stress. Clough (1989) identifies five leadership behaviors that enhance teacher morale: (a) showing interest in teachers' work and offering assistance; (b) supporting the actions and decisions of teachers and staff members; (c) allowing self-directed work; (d)

showing confidence teachers' abilities; and (e) allowing staff to participate in the decision making process.

Organizational Culture

Hoy & Miskel (2008) define organizational culture as a system held together by shared orientations that give it a distinctive identity. These orientations occur on three levels of abstraction: (a) organizational norms; (b) shared values and (c) tacit assumptions (Hoy & Miskel, 2008). Each organization's distinctive culture serves to guide and shape the attitudes and beliefs of members in order to promote cohesiveness, loyalty and commitment (Hoy & Miskel, 2008). According to Smith and Piele (2007, p. 340), "A principal's spoken language, written language, and body language can serve as motivating forces that shape a positive school culture." Hoy and Miskel contend that culture can be viewed through a school's academic emphasis, collective trust, and collective efficacy. These three components of culture are significant because they provide a link to student achievement. However, it has been difficult to identify school conditions that enhance student achievement while controlling for the effects of socioeconomic status (SES). Hoy (2012) cites several studies that have shown socioeconomic status accounts for most of the variance in student achievement. However, Hoy found three school variables that significantly contribute to student achievement after controlling for SES: academic emphasis, collective trust and collective efficacy.

Academic emphasis. Hoy (2012) found a new climate perspective, inside of a school's health, that looked at a school's academic emphasis. Academic emphasis is the degree to which a school is driven for academic excellence; it is the first school characteristic outside of SES to foster student achievement (Hoy, 2012). Academic emphasis "leads teachers and students to set and embrace specific, challenging goals that are attainable, which in turn enhances student

motivation” (Hoy, 2012, p. 88).

Collective trust. Hoy (2012) defines collective trust as “a state in which groups are willing to make themselves vulnerable to others and take risks with full confidence that others will respond in positive ways, that is, with benevolence, reliability, competence, honesty, and openness” (p. 81). Hoy found that collective faculty trust in students and parents is related to student achievement. Collective trust “fosters a learning environment in which students and teachers accept responsibility for learning, are motivated to exert strong effort, persist in difficult tasks, and are resilient in the face of problems and failures” (Hoy, 2012, p. 88), which enhances student motivation.

Collective efficacy. In a school context, collective efficacy represents beliefs about the capability of the school as a whole to exercise the actions required to have positive effects on student achievement (Hoy, 2012). Hoy (2012) found that collective efficacy had a strong relationship with student achievement. Collective efficacy beliefs are a way of describing the normative and behavioral influence of a school’s culture, which, in turn, impacts teachers’ professional work and student achievement (Goddard, Hoy, & Hoy, 2004). “A faculty’s sense of collective efficacy helps to explain the differential effect that school cultures have on teachers and students” (Goddard et al., 2004, p. 8). Thus, it is important to examine how school leaders can exert control and influence over their circumstances to aid school improvement and help student achievement (Goddard et al., 2004).

Furthermore, due to the high correlation among these variables, Hoy (2012) combined these elements to form a school’s academic optimism; “a collective set of beliefs that view teachers as capable, students as willing, parents as supportive, and academic success as achievable” (Hoy & Miskel, 2008, p. 195). Thus, academic optimism is composed of collective

trust, efficacy and academic emphasis. To build academic optimism and improve student learning, Hoy suggests school leaders should (a) model success and persuade teachers to believe in themselves, (b) create useful interchanges and cooperative projects between parents and teachers, and (c) recognize academic achievements.

Organizational Climate

School climate describes the internal characteristics that distinguish one school environment from another and influence the behavior of each school's members (Hoy & Miskel, 2008). Climate can be viewed as a school's "personality" and as a school's "health" (Hoy & Miskel, 2008). Using a personality metaphor, the openness of the school climate is analyzed, whereas a health metaphor examines the well-being of the interpersonal relationships in the school (Hoy et al., 1991). In addition to openness and health, Hoy and Miskel (2008) offer citizenship as a third lens to view school climate.

Open climate. There are six variables that describe the openness of a school's climate. Supportive principal behavior, directive principal behavior, and restrictive principal behavior describe the openness in interactions between the principal and teachers. Collegial teacher behavior, intimate teacher behavior, and disengaged teacher behavior describe the openness of interactions among colleagues. Thus, a school's openness falls on a continuum between being open and closed. Open climate schools are marked by high supportiveness, low directiveness and low restrictiveness by principals, as well as high collegial relations, high intimacy, and low disengagement among teachers (Hoy & Miskel, 2008). Schools with climates that are open see teachers take risks to continuously learn to improve school practices and implement actual innovations (Moolenaar et al., 2010). Forsyth, Adams, & Hoy (2011) contend that "open" climates exist where principal behavior with teachers is supportive, provides help, encourages

teacher initiative to solve problems, and alleviates the pressure of administrative busy work. Furthermore, Halawah (2005) suggests that “open” climate schools tend to have confident, cheerful, sociable, and resourceful principals.

Closed climate. Closed climate schools are the antithesis of open climate schools. Principals in “closed” climates demonstrate behavior that is close, controlling, and non-supportive (Forsyth et al., 2011). Additionally, principals in “closed” climate schools tend to be evasive, traditional, worried, and frustrated (Halawah, 2005). Overall, Hoy and Miskel (2008) cite research that shows principals in open schools generate more organizational commitment to school than those in closed climates.

School health. Another frame for viewing climate is through a school’s health. Healthy schools are meeting their needs and successfully coping with disruptive outside forces (i.e., community and parental pressures) while focusing on their mission (Hoy & Miskel, 2008). Forsyth et al. (2011) provide a collective set of variables that determine the health of interactions in schools: institutional integrity, initiating structure, consideration, principal influence, resource support, academic emphasis, and morale. In healthy schools, principals provide leadership that is both task- and relationship-oriented, teachers maintain high standards of performance while liking each other, and students are motivated to work hard on academic matters (Hoy & Miskel, 2008). In sum, healthy schools are committed to teaching and learning (Forsyth et al., 2011).

School citizenship. The final lens to view the climate of a school is in terms of the citizenship behaviors of its members. Hoy and Miskel (2008) define organizational citizenship as any behavior that goes beyond the formal responsibilities of the role. Such behaviors include teachers helping one another on their own time and believing it is their duty to promote the best interests of the school by serving on committees. Hoy and Miskel offer that all three

perspectives of climate are related to organizational effectiveness, including higher levels of student achievement.

An open and healthy school climate is characterized by a strong academic emphasis, a commitment to high academic goals, high morale among students and teachers, and faculty trust in the principal and in colleagues (Forsyth et al., 2011). Those essential characteristics define the constructs of academic press and sense of community, which will be used in this study to reference climate.

Academic press. Academic press refers to the extent to which schools appear driven by academically oriented goals, values and activities (Shouse, 1996). Hoy et al. (1991) hypothesize that one way a principal influences student learning is by nurturing a climate of academic achievement – that is, by developing strong academic press. Academic press is asserted through school policies, practices, expectations, and norms for both teachers and students (Murphy, Weil, Philip, & Mitman, 1982). Together, these forces create the academic environment for students and press for student achievement. Schools with high academic press promote a rigorous academic climate, effective disciplinary policies, and establish objective and challenging knowledge-based standards for student performance (Shouse, 1996). Murphy, Weil, Philip, and Mitman (1982) specify five practices that convey academic press: (a) establishing an academically demanding climate; (b) conducting an orderly, well-managed classroom; (c) ensuring student academic success; (d) implementing instructional practices that promote student achievement; and (e) providing opportunities for student responsibility and leadership. More specific examples of these practices include assigning regular homework, devoting a high percentage of class time to learning tasks, establishing and enforcing clear rules consistently, selecting instructional objectives that are appropriate for the students' level, closely monitoring

students' work, and holding students responsible for their own work (Murphy et al., 1982). The idea of academic press provides a sense of intellectual purpose that distinguishes schooling from other socializing institutions (e.g., the family or the church). According to Shouse (1995), it should be thought of as a form of social capital: "Educational equity is advanced as low-SES schools marshal their human and social capital in more academically focused ways" (p. 19).

The school effectiveness research shows evidence that schools with high academic press have positive effects on student achievement (Weber, 1971; Edmonds, 1979; Purkey & Smith, 1983). School environments that are characterized by safe, orderly atmospheres, high, attainable goals, high expectations for staff and students, and an emphasis on academics have higher levels of academic press (Hoy & Sabo, 1998; Hoy & Hannum, 1997; Hoy & Tarter, 1997 & Hoy et al., 1991). A school's academic press helps create a learning climate that promotes success of all students.

A school climate characterized by high levels of academic press has been associated with increases in student achievement (Goddard, Sweetland, & Hoy, 2000; Hoy & Hannum, 1997; Hoy & Sabo, 1998; Hoy & Tarter, 1997 & Hoy et al., 1991). Specifically, Goddard et al. (2000) demonstrated through a multilevel analysis that a 1-unit increase in an urban elementary school's academic press score was associated with a 16.53 point average gain in student mathematics achievement and an 11.39 point average gain in reading achievement on standardized measures of student achievement.

Sense of community. A sense of community builds among students and teachers a sense of attachment, commitment, responsibility, and purpose within a diverse and extended social context (Shouse, 1996). Schools as communities is an idea in which shared values, common activities, and caring relationships among students and educators help produce a more effective

brand of schooling (Bryk & Driscoll, 1988). Community is marked by three core components: (a) a set of shared understandings about values and purposes, behavior, and students' potential as learners and citizens; (b) a common agenda of activities that links members to school traditions; and (c) an ethic of caring in both collegial and student-teacher relationships (Shouse, 1995). The first component is important because it establishes beliefs about how teachers and students should behave and what students should learn. The second component is important because it fosters relationships among school members by providing opportunities for interaction. The third component is important because it establishes among teachers a personal interest in students beyond classroom performance (Bryk & Driscoll, 1988). Bryk and Driscoll (1988) contend that these components collectively reinforce one another to have powerful effects on teachers and students alike.

Bryk and Driscoll (1988) had two important hypotheses about the influence of a school's sense of community on teachers and students. First, they hypothesized that teachers would express positive attitudes about their work and exhibit this outlook in their work behaviors. Second, they hypothesized that positive effects would be seen on student interests in school and academic achievement (Bryk & Driscoll, 1988). To test their hypotheses, Bryk and Driscoll used high school teacher and principal data about attitudes, expectations for students, and working conditions to examine the effects of community on select school variables. Bryk and Driscoll found that a school's sense of community significantly enhanced teacher efficacy, teacher enjoyment of work, and staff morale. In regards to student outcomes, Bryk and Driscoll found that a school's sense of community positively impacted students' interest in academics and, specifically, made a substantial difference in mathematics achievement. Thus, academic purposes and social aims are intertwined. Overall, schools with a sense of community are an

important alternative to the overly bureaucratic public schools that frustrate teachers, diminish their commitment and sense of efficacy, and impede student achievement (Bryk & Driscoll, 1988). Additionally, a school's sense of community affords teachers collegial interactions and opportunities for relationships with personal value, which leads to teacher satisfaction and a cooperative work ethic (Bryk & Driscoll, 1988).

In addition to academic press, Newmann, Rutter, & Smith (1989) assert that sense of community is an aspect of school climate. Community is defined as a relationship of unity, belonging, and cooperative interdependence among peers that is indicated by perceptions of shared values and goals (Newmann, Rutter, & Smith, 1989). Press and community are factors that are likely to affect students' level of achievement by how they interact (Newmann et al., 1989). However, due to increased standardized testing, community is often neglected, which may lead to increased alienation of teachers and decreased achievement of students (Newmann et al., 1989). To combat this issue, Newmann et al. suggest establishing four organizational features to be closely associated with a strong sense of community among teachers: (a) orderly behavior of students; (b) innovation and experimentation in teaching; (c) teachers' coordination of curriculum; and (d) administrators who are responsive to teachers. The actions of a school principal shape the academic and social environment of a school and play a major role in a school's sense of community (Bryk & Driscoll, 1988). Particular characteristics of a leader's style that are consistent with the idea of a sense of community vary by school context. Bryk & Driscoll (1988) contend that leading to improve community may require a leader to be charismatic, nurturing, and able to build consensus. Furthermore, they offer that good school leadership in the area of community balances the nature of current school problems and school strengths with the history and traditions of the school.

School climate, principal leadership, and student achievement. Hoy et al. (1991) compared health and climate variables by sampling 872 teachers in 58 secondary schools on their response to the Organizational Health Inventory (OHI), the Organizational Climate Description Questionnaire (OCDQ-RS), and the Organizational Commitment Questionnaire (OCQ) to student achievement data on a statewide test of verbal and quantitative skills. Hoy et al. found that healthy schools and open schools have committed teachers and faculty trust in the principal and in colleagues. In predicting student achievement, Hoy et al. found that three of the health variables (institutional integrity, resource allocation, and academic emphasis) were correlated with academic achievement, but only one of the climate variables (teacher frustration) was correlated to achievement.

Kelley, Thornton, and Daugherty (2005) cite several studies that show a positive school climate is an important ingredient needed to enhance staff performance and improve student achievement. Furthermore, principal behavior can shape the climate of a school, thus presenting a need for effective leadership (Kelley, Thornton, and Daugherty, 2005). Kelley et al. conducted a study that examined the relationships between principals' preferred leadership style, teachers' perceptions of their principal's leadership style, and teachers' perceptions of school climate. 31 elementary principals and 155 teachers were involved. School climate was assessed using the School Climate Assessment Questionnaire (SDSCAQ), which provides six scale scores: (a) communications, (b) innovativeness, (c) advocacy, (d) decision making, (e) evaluation, and (f) attitudes toward staff development. Leadership styles were assessed using the Leader Behavior Analysis II (LBAIL), which was developed by Blanchard, Hambleton, Zigarmi, and Forsyth (1991a, 1991b, as cited in Kelley et al., 2005). This instrument measures the degree to which a leader will select varying styles over a range of situations and whether the leader uses

the most appropriate response for each situation. Overall, statistically significant positive relationships were established between teachers' perceptions of their principal's leadership style and all six climate scores on the SDSCAQ (Kelley et al., 2005). In contrast, Kelley et al. found that principals' self-ratings of their leadership style were not related to teachers' ratings of school climate or to teachers' perceptions of their principal's leadership style. This finding suggests that principals do not "walk the talk" and raises questions about the authenticity of their leadership (Kelley et al., 2005).

Principal leadership behaviors. School leadership is contextually bound. Public schools must respond to the norms, beliefs, and social structures of the students, families, and neighborhoods they serve (Hallinger & Murphy 1986; Shouse, 1995). Thus, effective schools balance their academic mission and communality. To foster the teaching and learning program of their school, principals serve as instructional leaders. Hallinger and Murphy (1986) found that strong instructional leadership is a correlate of effective schools. Instructional leaders coordinate the school-wide educational program to ensure consistency in policies and practices within classrooms (Hallinger & Murphy, 1986). Specifically, instructional leaders develop a clear school mission, systematically monitor student progress, coordinate a tightly coupled curriculum with teachers, maintain high standards for teachers, and protect instructional time from interruptions (Hallinger & Murphy, 1986).

Hallinger and Murphy (1986) found that principals in effective low-SES schools tended to be more task oriented; their goal of improved student achievement was more important than staff satisfaction. In contrast, principals in the high-SES effective schools tended to be more relationship oriented; they were concerned with maintaining faculty and community relationships. One reason for this difference in style may be attributed to the needs of the school

across school improvement cycles. Hallinger and Murphy reported that both low- and high-SES school principals reduced their task orientation as the school improved.

Edmonds (1979) cited a study that showed a difference between principals' leadership behavior in improving and in declining schools. Principals in improving schools were more assertive, more of a disciplinarian, and more likely to be an instructional leader. In contrast, principals in the declining schools were more permissive and placed larger emphasis on informal and collegial relationships with teachers and the public (Edmonds, 1979). The significance of these findings is they reveal a connection between a leader's style and school conditions.

Student achievement. Many schools find ways to combine academic press and sense of community into a powerful force for increasing student learning. Shouse (1996) conducted a quantitative study of the direct and interactive achievement effects of academic press and communality through a series of hierarchical linear models. He used data from the National Education Longitudinal Study of 1988 (NELS:88) to construct measures for press and community. Based on the work of Bryk and Driscoll (1988), Shouse included an academic, a disciplinary, and a behavioral component to the academic press index. Also patterned after Bryk and Driscoll's research, his community index incorporated three core components: (a) shared values, (b) a common agenda of activities, and (c) an ethic of caring. The achievement effects were based on mathematics test scores from NELS:88.

Shouse (1996) concluded that the most powerful impact on student achievement should occur when a school's sense of community is built around a solid structure of academic press. More specifically, the most powerful achievement effects are predicted when high levels of academic press work in tandem with a school's commonality of beliefs, activities, and traditions, and care for students (Shouse, 1995). Shouse found that academic press is significantly linked to

achievement across all school socioeconomic (SES) levels. Additionally, Shouse (1995) found that the achievement effects of sense of community in schools is highly contextual and varies significantly across levels of school SES and academic press. The strongest achievement effects are predicted for schools with high levels of both press and community (Shouse, 1996). In regards to the interaction between press and community, it is interesting to consider whether they exist in a hierarchical structure where one is necessary before the other can occur. According to Shouse, student achievement benefits when schools place academic press at center stage and allow sense of community to play a supporting role.

This combination can have particularly strong effects within schools serving socioeconomically disadvantaged students (Shouse, 1996). However, Shouse (1995) proclaims that low-SES schools will put more effort towards building attractive, supportive, and cohesive communities, which will divert attention from academic goals. Shouse (1996) uses social capital to explain why the negative effects of the weak academic press and high community combination are confined to low-SES schools. He explains that the social capital available to low-SES students may underemphasize the value of academic effort due to circumstances that make a parent's task of persuading their children to spend time on academic endeavors more daunting.

Effectiveness and the Effects of Leaders' Style

The following research solidifies the importance and relevance of a leader's style in enhancing leader effectiveness and the effects of leadership. "The general notion is that, when the job and the environment of the follower fail to provide the necessary motivation, direction and satisfaction, the leader, through his or her behavior, will be effective by compensating for the deficiencies" (Den Hartog et al., 1997, p. 20). Hackman and Johnson (2000) explain the Pygmalian Effect as a process for leaders to effectively compensate for these deficiencies:

The chain starts with the manager's expectancy, which causes him/her to allocate more effective leadership behavior. These leadership behaviors then positively influence the expectations that followers have of themselves. This increases motivation, leading to more effort, greater performance, and higher achievement. Finally, the employee's behavior raises or lowers the supervisor's expectations for future assignments. (p. 256)

What follows is an examination, which adheres to the above process, of how a leader can effectively influence teaching and learning through the practices embedded within the conditions of press and community. Leadership has significant effects on the quality of the school organization (community) and on pupil learning (press) (Leithwood, Day, Sammons, Harris, & Hopkins, 2006). These conditions will frame the definition of leader effectiveness.

Leader Effectiveness Defined

Effectiveness concerns judgments about a leader's impact on an organization's bottom line (Hogan & Hogan, 1994). For school leaders the bottom line is simple: student achievement. Operationalizing the means to ensure positive student learning outcomes for all is more complicated. According to Hage (1980), organizational priorities frame a leader's course of action. Furthermore, Hage theorizes that leadership effectiveness lies in the balance of choosing the correct course of action in a given situation. A teacher's motivation, efficacy, and satisfaction serve as mediating variables between a leader's actions and student achievement. These three variables will be used to define the effects of leadership, and are crucial for a leader to influence and enhance to be effective (Blase & Blase, 2000).

For a leader to successfully influence a teacher's motivation and efficacy, they must possess knowledge of what these terms mean. Bandura (1977) provides definitions for these terms through his social learning theory. First, "motivation is primarily concerned with how behavior is activated and maintained" (Bandura, 1977, p. 160). Efficacy is split into two differentiated concepts, outcome expectancy and efficacy expectation:

An outcome expectancy is defined here as a person's estimate that a given behavior will lead to certain outcomes. An efficacy expectation is the conviction that one can successfully execute the behavior required to produce the outcomes. Outcome and efficacy expectations are differentiated because individuals can come to believe that a particular course of action will produce certain outcomes, but question whether they can perform those actions. (Bandura, 1977, p. 79)

Equipped with a thorough understanding of these effects of leadership, a leader can then shape their behaviors into meaningful practices that activate and maintain teacher productivity, and also instill confidence and belief that positive student learning outcomes will be attained.

It is necessary to analyze a leader's contributions to motivation, efficacy, and satisfaction. Blase and Blase (2000) specify five practices an effective leader performs to influence these variables: (a) using inquiry and soliciting advice/opinions; (b) giving praise; (c) emphasizing the study of teaching and learning; (d) supporting collaboration among educators; and (e) developing coaching relationships among educators. Principals are responsible for the climate of the school and for the outcomes of teacher productivity and satisfaction (Beckerman, 2005). Improvements in motivation and efficacy translate to a healthier school culture and better productivity and performance: "A strong culture contributes to managing the organization by spelling out in general forms how people are to behave while helping people feel better about what they do, enabling hard work and excellent productivity" (Shockley-Zalebak, 1988, p. 107). Leaders need to ensure their practices improve teacher productivity and performance, because those "who effectively communicate high expectations enhance follower self-efficacy and motivation, ultimately leading to improved effort and productivity" (Masi, 2000, as cited in Humphreys & Einstein, 2004, p. 64). The next step is to show a connection to positive student learning outcomes. Sun & Leithwood (2012) found teacher efficacy and teacher commitment were significantly related to student achievement.

If leaders are to have a substantial and positive impact on their schools, they must improve the condition of teachers' motivation (i.e., the effort to engage in a high level of performance and demonstration of a high degree of personal responsibility and commitment to the organization's goals), teachers' abilities, professional knowledge and skills, and teachers' work settings (i.e., features of their school and classroom) (Leithwood et al., 2006). Therefore, the function of leadership will be defined by the practices that improve these three conditions. Furthermore, the influence of style on a leader's practices will be an integral part of the discourse concerning leader effectiveness. Leithwood et al. (2006) proclaim that in order "to be successful requires leaders to be in possession of a range of cognitive and affective qualities, strategies and skills" (p. 33), of which style is a part.

A conversation on leader effectiveness would be moot without identifying the largest goal of leadership: influence. Leithwood et al., (2006) provide the following chain of events in order for leaders to gain influence on student learning:

To effect student outcomes they must exercise some form of positive influence on the work of other colleagues, especially teachers, as well as on the status of key conditions or characteristics of the organization (school culture, for example) that have a direct influence on pupils. These people and conditions are the moderating and mediating influences or variables that leaders have a direct relationship or influence on, which, in turn, have a direct influence on pupil learning. (p. 85)

The significance of this sequence, for this study, is that it clearly establishes a path to get from style to student learning through a school's academic press and sense of community. However, an important consideration is that the "variations in school effectiveness and student performance owe in part to differences in the social capital that educators and students can access to meet educational and developmental goals" (Smith & Piele, 2007, p. 340).

Hallinger and Heck (1998) concluded that effective principals influence students' academic achievement by manipulating internal processes and contextual factors, including those

associated with school climate. Thus, press and community will be used as linking mechanisms to connect style to leader efficacy as measured by student learning. Embedded within the constructs of press and community are specific practices leaders may follow to influence student achievement. Thus, leader effectiveness may be defined and measured by how a leader performs in improving three areas: (a) the condition of a school's academic press and sense of community; (b) teacher motivation, efficacy, satisfaction, productivity, and performance; and (c) student learning outcomes.

Practices that Enhance the Effects of Leadership and Operationalize Press and Community

According to Leithwood et al. (2006), the condition of teachers' motivation, teachers' efficacy, and teachers' satisfaction are positively influenced when leaders perform four core practices: (a) set directions, (b) develop people, (c) redesign the organization, and (d) manage the instructional (teaching and learning) program. Waters, Marzano, and McNulty (2004) identified 21 leadership "responsibilities" (p. 49) that contribute significantly to student achievement. Leithwood et al. contend that the four core leadership practices encompass the 21 leadership behaviors. Collectively, these practices capture what effective leaders do. As shown in Table 3, the constructs of academic press and sense of community embody all of these practices.

Table 3

*Academic Press and Sense of Community Operationalized by Practices of Successful School**Leaders Reflected in other School-related Sources*

Academic Press		Sense of Community	
Core practices Leithwood et al. (2006)	21 Leadership responsibilities Waters et al. (2004)	Core practices Leithwood et al. (2006)	21 Leadership responsibilities Waters et al. (2004)
Managing the instructional program		Setting directions	
Staffing		Vision	Optimizer
Providing teaching support	Order/ Resources/ Curriculum, instruction, and assessment	Goals	
Monitoring	Monitoring and evaluation	High performance expectations	
Buffering staff from distractions to their core work	Discipline	Developing people	
		Individualized support/consideration Emotional understanding and support	Contingent rewards/ Relationship
		Intellectual stimulation	Change agent role/ Intellectual stimulation
		Modeling	Visibility
		Redesigning the organization	
		Building a collaborative culture	Culture/ Affirmation/ Input
		Structuring the organization to facilitate work	
		Creating productive relations with families & communities	Outreach
		Connecting the school to its wider environment	

Note. Adapted from “Successful school leadership: What it is and how it influences pupil learning,” by K. Leithwood, C. Day, P. Sammons, A. Harris, and D. Hopkins, (2006), *National College for School Leadership*.

The four core practices, proposed by Leithwood et al. (2006), are divided into a subset of practices. The first core practice is “setting directions” (pp. 34-36) and is divided into three practices: (a) building a shared vision; (b) fostering the acceptance of group goals; and (c) high performance expectations. The second core practice is “developing people” (pp. 36-38) and is divided into three practices: (a) providing individualized support/consideration; (b) intellection stimulation; and (c) providing an appropriate model. The third core practice is “redesigning the organization” (pp. 38-41) and is divided into four practices: (a) building collaborative cultures; (b) restructuring; (c) building productive relationships with families and communities; and (d) connecting the school to its’ wider environment. The final core practice is “managing the instructional (teaching and learning) program” (pp. 42-43) and is divided into four practices: (a) staffing the program; (b) providing instructional support; (c) monitoring school activity; and (d) buffering staff from distractions to their work.

Next, these leadership practices operationalize the constructs of academic press and sense of community, and, ultimately, the conditions under which learning results are likely to be enhanced. Bryk & Driscoll (1988), Newmann et al. (1989) and Shouse (1996) define three indicators of a school’s sense of community: (a) shared values and understandings; (b) common agenda of activities; and (c) ethic of caring. The core practices of setting directions, developing people, and redesigning the organization are conceptually aligned with the indicators of a school’s sense of community. Collectively, the objectives of these practices are to create group goals, provide individualized support/consideration, and foster collaborative cultures, which aides the ethic of caring and sense of commitment and purpose. Furthermore, these three practices are all sources of motivation in Bandura’s (1986) theory of human motivation, and

establish a “moral purpose” (Fullan, 2003; Hargreaves & Fink, 2006) as a basic stimulant for one’s work (Leithwood et al., 2006).

Murphy et al. (1982) and Shouse (1996) define four indicators of a school’s academic press: (a) collective responsibility for student learning; (b) high expectations for all students; (c) academic and instructional focus; and (d) disciplinary climate. The core practice of managing the instructional (teaching and learning) program aligns with the purpose of academic press. The objective of this practice is to establish high academic expectations while providing instructional support to create an academic climate where pupils and teachers place a strong emphasis on pupil achievement, which makes significant contributions to achievement (De Maeyer, Rymenans, Van Petegem, van der Bergh, & Rijlaarsdam, 2006; Leithwood et al., 2006). Together, these practices operationalize the constructs of press and community and serve as mediating variables between style and student achievement. Therefore, leadership style may influence positive student learning outcomes through its effects on these practices.

Leithwood, Patten, and Jantzi (2010) show a theoretical linkage to how the practices of leaders serve to improve teachers’ motivation, efficacy, and satisfaction and meet the goal of student achievement. They theorize that goal-setting practices should have indirect effects on students through the direct effects they have on teacher motivation. Next, building collaborative cultures should have indirect effects on students through their direct effects on teacher collective capacity. Finally, providing individualized support should have indirect effects on students through the direct effects of individual teacher capacities and commitments. Hence, style plays a critical role in eliciting discretionary effort and should be strategically matched to enhance the motivational qualities and performance outcomes of teachers.

Matching Needs to be Effective

Human behavior is driven by the quest to satisfy needs. A leader's style may be viewed as a strategically designed set of behaviors based on needs defined by followers. It is important to examine leadership from the perspective of the follower's motives and values. Burns (1978) argues "the genius of leadership lies in the manner in which leaders see and act on their own and their followers' values and motivations" (p. 19). Humphreys and Einstein (2004) maintain that effective leaders are aware of the motive patterns of followers and align their practices to match those patterns. Successful leaders understand the symbiotic relationship between leaders and followers, and enact leadership practices dealing with creation, vision, and transformation (Sarros & Santora, 2001). The role of transforming leadership is to comprehend not only the needs of followers but to mobilize within them newer motivations and aspirations (Burns, 1978). Effective leaders employ goals consistent with followers' professional norms and values (Blase, 1993), and very effective leaders match their behaviors, communication, and rewards with needs and desires of individual followers (Humphreys & Einstein, 2004).

In addition to understanding the needs of followers, it is also essential to recognize the needs of the situation. Leadership styles are dependent on who is being led and the situational context of the leadership. Transformational leadership is most likely seen in emerging times of growth, change, and crisis (Avolio & Bass, 2004). Burns (1978) labels leaders who arise in these circumstances as heroic leaders and credits their favor among followers to the relationship they form with them. According to Avolio and Bass (2004), transactional leaders work within the existing organizational culture, whereas transformational leaders change it. Transformational leadership thrives in less mechanistic and bureaucratic organizations and in more team oriented, learning organizations where a sense of purpose must be developed (Avolio & Bass, 2004).

When a leader matches their style to the needs of followers and the prevailing situation, the organization becomes effective (Wadesango, 2012). Leadership does not occur in a vacuum, so it is dependent upon the context. When the context changes so does leadership and whether leadership practices are considered effective (Osborn, Hunt, & Jauch, 2002). Similarly, followers' needs can change as they go throughout life (Humphreys & Einstein, 2004). Humphreys and Einstein (2004) cite several studies that show transformational leadership to be more effective in certain situations because some followers are more susceptible (i.e., have needs for achievement and autonomy) to the practices of a transformational leader than others. The ultimate desire is for leaders and followers to exist in congruent interactions. Effective leaders alter their practices to be congruent with individual followers "in a manner the follower would most readily understand, respond to, and appreciate" (Humphreys & Einstein, 2004, p. 71).

Distinguishing the Characteristics and Practices of Effective Leaders

It is important to differentiate between average and superior leadership to understand the factors that impact leader effectiveness. Superior leaders maximize leadership effectiveness by integrating the human and task requirements of the job (Bass & Bass, 2008). To accomplish this feat, Bass and Bass (2008) propose four characteristics effective leaders must possess: (1) competence in achieving tasks; (2) skillful use of influence; (3) management control; and (4) competent advising and counseling. Goleman (1999) argues that all effective leaders have a high degree of emotional intelligence, and provides the following five components of emotional intelligence:

1. *Self-Awareness* – the ability to recognize and understand your moods, emotions, and drives, as well as their effect on others;
2. *Self-Regulation* – the ability to control or redirect disruptive impulses and moods (think before acting);

3. *Motivation* – a passion to work for reasons that go beyond money or status (pursue goals with energy and persistence);
4. *Empathy* – the ability to understand the emotional makeup of other people (skill in treating people according to their emotional reactions; and
5. *Social Skill* – proficiency in managing relationships and building networks. (p. 95)

Understanding these characteristics and practices offers greater clarity in what leaders do to effectively influence followers.

Transformational Leadership, Transactional Leadership, the Effects of Leadership, and Student achievement

Leadership has positive effects on significant organizational results, including human resource outcomes and performance (Luthans, 2005; Peterson & Luthans, 2003). In fact, Howell and Avolio (1993) found that styles of leadership are main predictors of human resources performance. Performance can be conceptualized as effectiveness that links outcomes with the anticipated outcomes or goals (Mahdinezhad et al., 2013). Therefore, it is important to compare how transactional and transformational leadership may predict positive student learning outcomes and to understand the impact they have on the effects of leadership (teachers' motivation, efficacy, and satisfaction). Throughout the literature, a consistent message is that "transformational behaviors improve the leader's effectiveness in addition to what he/she could gain only through transactional leadership" (Mahdinezhad et al., 2013, p. 31).

Student achievement. Waters et al. (2004) concluded that a relationship exists between principals' leadership style and students' academic achievement. Their work is based on a summary of more than 25 years of research on the effective practices, responsibilities, knowledge, strategies, tools, and resources of effective schools. A total of 70 studies involving 2,894 schools, 1.1 million students, and 14,000 teachers were used. The researchers identified 21 key leadership factors that positively affect students' academic achievement and suggested that principals focus only on leadership responsibilities and practices that positively affect

students' academic achievement (Waters et al., 2004). Additionally, Waters et al. state that effective leadership shows attributes that are likely to improve students' academic achievement: (a) appropriate leadership; (b) high expectations for students' academic achievement; (c) collegiality and professionalism; (d) effective instructional strategies; (e) a safe and orderly environment; (f) closely monitored student progress; and (g) parent and community involvement. Findings from their meta-analysis show that as leadership improves, so does student achievement. According to their study, improving principals' leadership abilities by one standard deviation would lead to an increase in average student achievement from the 50th to the 60th percentile. However, effective principals must know when, why, and how to do what is necessary to improve their school (Cooper, 2011).

Even though a relationship has been established between principals' behaviors and effective leadership, research has not clearly identified the specific relationships between their behaviors and students' academic success. Research on effective schools acknowledges the difficulty of linking specific leadership practices directly to students' academic achievement. Hoy, Tarter and Bliss (1990) found indirect links between leadership and student achievement through teacher influence, since teachers have a direct impact on students. There is research that highlights the indirect effects of principals' leadership style on teacher motivation, efficacy, and satisfaction. Sergiovanni (1990a) found a number of value-added leadership dimensions that contribute to teachers' sense of efficacy, motivation and satisfaction which, in turn, are qualities in teachers that are linked to gains in student achievement.

Motivation. A main difference between transactional and transformational leadership is the degree to which the style motivates followers. Transactional leaders motivate subordinates to perform as expected, whereas transformational leaders inspire followers to do more than

expected (House, Woycke, & Fodor, 1988). Smith and Piele (2007) state that transformational leaders use persuasion, idealism, and intellectual excitement to elicit more from their followers. In contrast to offering transactional rewards, these tactics convince followers that their own interests and values could be fulfilled through the organization's agenda (Smith & Piele, 2007). Ultimately, transformational leaders set more challenging expectations and achieve greater motivation and higher performances from followers (Avolio & Bass, 1994). Finally, a consequence of a transformational leader's behavior is the ability to predict the emotional and motivational arousal of followers due to their strong personal identification with the leader opposed to identification with the task (Hater & Bass, 1988; House et al., 1988).

Satisfaction. Another difference between transactional and transformational leadership is how well the style satisfies followers. "Job satisfaction can be considered as an important variable that can strategically be changed in order to enhance teachers' organizational commitment and organizational citizenship behavior" (Nguni, Slegers, & Denessen, 2007, p. 173). Hater and Bass (1988) show that transformational leadership has been positively correlated with how satisfied the followers are with their leader. In comparison to transactional leaders, Den Hartog et al. (1997) found that transformational leaders have followers who report greater satisfaction and exert extra effort. The reason for the difference was found by Nguni, Slegers, & Denessen (2007) to be the influence of charismatic leadership. This dimension of transformational leadership had "significant add-on effects to transactional leadership in prediction of job satisfaction, organizational commitment, and organizational citizenship behavior" (Nguni et al., 2007, p. 145). Nguni et al. cite several studies that have shown transformational leadership behaviors, such as initiating structure and consideration, have a profound and consistent influence on employees' job satisfaction. Improvement in satisfaction is

thought to lead to higher levels of follower commitment to organizational goals, resulting in increased productivity (Nguni et al., 2007). The importance of that linkage between follower commitment, involvement, and loyalty and productivity is it is fundamental to organizational improvement and reform (Avolio & Bass, 1994).

Layton (2003) studied the relationship between transformational leadership behaviors of 125 middle school principals and improved student learning. The study's secondary purpose was to determine if transformational leadership led to increased levels of teacher satisfaction, subordinate perception of principal effectiveness, and increased willingness on the part of teachers to give extra effort. Layton (2003) found that principals' transformational leadership was positively related to increased teacher satisfaction, a greater perception of principal effectiveness, and their increased willingness to give extra effort.

Efficacy. Leaders are charged with influencing followers to attain a goal by instilling a belief that their actions will produce a desired result. Leaders must create engaging work and develop teachers' abilities and skills. Hater and Bass (1988) cite studies that showed today's workers are better educated and more concerned about interesting work. The importance of this fact is that transformational leadership seems to be congruent with a better-educated work force (Hater & Bass, 1988). Transformational leaders transmit a sense of mission, stimulate learning experiences, and arouse new ways of thinking, which instills a belief in a better educated work force that if they develop and apply their abilities on a job their performance will produce a desired outcome (Hater & Bass, 1988).

Contradictions with the Effects of Transformational Leadership

The literature seems to favor transformational leadership as an effective style in enhancing teacher motivation, satisfaction, and efficacy; however, there are drawbacks and

counter arguments. Podsakoff, MacKenzie, Moorman, & Fetter (1990) found that the intellectual stimulation dimension of transformational leadership may produce desirable effects in the long run, but “leaders who continually urge or exhort followers to search for new and better methods of doing things create ambiguity, conflicts, or other forms of stress in the minds of the followers” (Nguni et al., 2007, p. 168). Geijsel, Sleegers, Leithwood, & Jantzi (2003) concluded that the individualized consideration dimension of transformational leadership, specifically the supporting part (i.e., respect, consideration, and appreciation), has weak effects on teachers’ motivation. Transformational leadership can be considered insufficient because it neglects the context in which leaders work: “In the case of school leaders, accountability demands at the core of their policy contexts sometimes makes ‘transactional’ practices unavoidable” (Sun & Leithwood, 2012, p. 440). However, conflicting research by Singer and Singer (2001) suggests that preference for transformational leadership is common and not sensitive to situational constraints. Furthermore, Singer and Singer suggest that cultural differences could influence followers’ preference for transactional leadership style. Finally, it is difficult to reach definitive conclusions about effects of transformational leadership on learning because teachers and administrators continue to rethink what it means to teach and learn effectively; thus, definitions of success will change (Smith & Piele, 2007). These contradictions are important for creating rival hypotheses that may help shape future research to explore the usefulness and true impact of transformational leadership.

A rival hypothesis. Leaders should choose a style that matches their beliefs and values and those of their followers. Bandura (1977) argues that “people possess traits or dispositions which lead them to behave consistently under changing circumstances” (p. 6). It makes sense that a leader’s values and dispositions are enduring commodities that cement a leader’s choice

between transactional and transformational leadership. However, instead of examining the impact of transactional and transformational styles as all-or-nothing choices, what if an alternative hypothesis explored the notion that a leader's behavior is specific to the situation at hand. Thus, as the context changes so does leadership. This contradicts the idea that leadership style is fixed by a leader's values and dispositions, thus remaining consistent across varying situations.

Leadership and style may best be captured through the contingency model (Fiedler, 1967). Singer & Singer (2001) summarize that "under various situational constraints (i.e. task structure, leader-follower relations, and leader-position power) the different leadership styles of task versus relationship orientation are called for" (p. 386). Further situational contingencies include the makeup of the followers and organizational constraints, tasks, and goals (Bass & Bass, 2008). The most important contingencies affecting a leader's choice to be task-oriented or relations-oriented, according to the Hersey-Blanchard model, are followers' psychological maturity and job experience (Bass & Bass, 2008). Bass and Bass (2008) suggest that these situational contingencies have moderating effects on followers' satisfaction and efficacy.

The idea of situational contingencies begs the question of whether or not leadership style matters, or if it is doomed from the start because of these outside factors. Robinson, Lloyd, & Rowe (2008) try to refocus the conversation on the practices that integrate an interpersonal and task focus into improving teaching and learning, thus shifting attention away from transformational leadership. Transformational leadership is more focused on relationships than on the educational work of school leadership; thus, is not predictive of the quality of student outcomes (Robinson, Lloyd, & Rowe, 2008). Robinson et al. argue for educational leadership that focuses on core pedagogical practices, specifically related to teaching and learning.

Through a meta-analysis, different types of leadership practices have been condensed to five dimensions of leadership: (a) establishing goals and expectations; (b) strategic resourcing; (c) planning, coordinating, and evaluating teaching and the curriculum; (d) promoting and participating in teacher learning and development; and (e) ensuring an orderly and supportive environment (Robinson et al., 2008). This list does not include the distinction between leading through tasks and leading through relationships because relationship skills are embedded in every dimension. Each of these dimensions provides more detailed guidance about the types of leadership that make a difference to student outcomes (Robinson et al., 2008). The main idea of this argument is that effective leaders incorporate relationships and educational challenges into their problem solving. Robinson et al. provided the following counter argument to proponents of transformational leadership:

If transformational leadership measures are capturing subordinates' liking of their leader rather than actual leadership practices, then...it is this affective response rather than particular leadership practices that links leadership to student outcomes. Given the technical complexity of adding value to student outcomes, this explanation of leadership influence seems far less plausible than one, which specifies the leadership practices that create the conditions for enhanced teaching and learning. (p. 666)

Even if educational leadership and its assigned practices were a panacea to ineffective leadership and poor student outcomes, there is still a twist. Schools operate as loosely coupled systems, which means the mechanisms to control teachers are limited. School leaders experience difficulties exerting influence on teachers due to classroom factors (e.g., spatial isolation and work overload) as well as administrative factors (e.g., conflicting nature of principals' role demands and scarcity of external rewards) (Blase, 1993). Situational contingencies, educational leadership, and loosely coupled systems are components that compose a convincing rival hypothesis against the style theories presented in this review.

Related Studies

What follows is a synopsis of related studies that have contributed to the present study's theoretical model and quantitative methodology. The researcher examined studies that: (1) used the Multifactor Leadership Questionnaire to determine leaders' behaviors, (2) used an instrument to develop constructs for academic press and sense of community; and (3) explored the relationship between principals' leadership behaviors and school factors, such as culture or climate, that may impact student achievement. There are multiple reasons for why these studies contribute to the present study. First, each offers a thorough examination of different school conditions or factors that may impact student achievement. Second, each provides different perspectives on how principal leadership is related to school conditions thought to impact student achievement. Third, several studies provide a foundational basis for defining and constructing the dependent variables of the present study: academic press and sense of community. Finally, several studies clarify the theoretical path for how a leader influences student achievement.

There are many factors that contribute to the culture and climate of a school. The following studies provide evidence for which factors relate to principal leadership behavior and student achievement. This knowledge contributes to the present study's definition of culture and climate and helps focus what additional aspects need to be pulled out and further explored.

Schimmoeller (2007) examined which leadership styles work best in different organizational cultures to provide knowledge on how an organization could improve performance and maximize the leader's effectiveness. He argued the importance for an organization to understand its culture and best match the appropriate type of leadership style. The study used the Competing Values Framework (Cameron & Quinn, 1999) model and the Organizational Culture Assessment Instrument (OCAI) to describe and measure organizational

culture. Leadership style was measured using the Multifactor Leadership Questionnaire (MLQ:Form5X). Participants included MBA students or members of companies associated with the Lynchburg College Business Forum. Schimmoeller found a significant relationship between specific types of organizational cultures and leadership styles: transactional and transformational leadership styles were found in clan and adhocracy cultures, transformational leadership is negatively related with rule-based hierarchy culture, and laissez-faire leadership is negatively related to friendly clan cultures.

Le Clear (2005) explored the relationship among perceived school climate, principal leadership behaviors, and student achievement. Her study aimed to expand knowledge on how leadership behaviors may enhance a positive school culture and improve student achievement. Participants included 22 elementary schools and 320 elementary classroom teachers from a north central Florida school district. Leadership behavior was measured using the Multifactor Leadership Questionnaire. School climate was measured using the School Improvement Questionnaire (SIQ-II) (Webb & Pajares, 1996). The six school climate factors observed were collegiality, collective efficacy, personal efficacy, job satisfaction, policy-say so, and teaming. A components analysis with a varimax rotation was used for school climate data to reduce these data to five underlying dimensions: (a) parent/student satisfaction, (b) personal teacher efficacy, (c) school-wide performance of students with disabilities, (d) professional learning community, and (e) belonging to the school community. Le Clear found that higher levels of transactional and transformational leadership were associated with higher levels of personal teacher efficacy. Transactional leadership was significantly related to perceptions of parent/student satisfaction, while transformational leadership was significantly related to higher levels of professional learning communities. No significance was found between principal leadership styles and

belonging to the school community. Lastly, Le Clear found that transactional leadership had a significant link to student achievement through the relationships between perception of parent/student satisfaction, teacher efficacy, and professional learning community. These findings led Le Clear to conclude that principals who know what leadership behaviors match the needs of the school's stakeholders are more able to foster a positive school climate.

Cooper (2011) explored the influence of school factors (school's racial make-up, SES, composition, and academic achievement), teacher factors (age and years of experience), and principal factors (age and years as a principal) on the transformational leadership behaviors of elementary school principals. This study sought to expand knowledge on how complex and changing school demographics (Coles, 2005, as cited in Cooper, 2011) coupled with the challenges of managing new collaborations with child welfare agencies (Leithwood & Riehl, 2003, as cited in Cooper, 2011) impacted principals' leadership behaviors and student achievement. Cooper chose these factors because they contribute to school culture and affect a school's student achievement. Data were collected from 101 elementary teachers in an urban North Carolina school district about the leadership behaviors of their principals. Leadership behavior was measured using the Multifactor Leadership Questionnaire (MLQ:Form5X). Cooper found that principals in schools with low-SES exhibited less positive transformational leadership behaviors compared to principals in schools with high-SES. Additionally, findings indicated that high-SES schools had a significant correlation with the sub-transformational leadership behaviors of individualized consideration, intellectual stimulation, and inspirational motivation.

Fisher (2003) explored the relationship between principal leadership style, climate, and student achievement in a sample of Idaho elementary schools. The significance of the study was

to contribute to the research base on principal leadership effectiveness and to clarify the importance of transformational leadership in educational settings (Fisher, 2003). 36 schools, with a total of 640 teachers, participated in this study. Leadership style was measured using the Multifactor Leadership Questionnaire (MLQ:Form5X). School climate (principal openness and teacher openness) was measured using the Organizational Climate Description Questionnaire-Revised Elementary (OCDQ-RE) (Hoy & Clover, 1986). Fisher found that principal leadership had a limited relationship with school climate; transformational leadership was weakly related to principal openness and transactional leadership had a weak, negative relationship with teacher openness. Additionally, there was no significant relationship between leadership styles and student achievement (Fisher, 2003). Teacher openness was the only climate measure related to student achievement (Fisher, 2003).

The next set of studies is useful for how they developed and measured a school's academic press. Knowledge from these studies contributed to the present study's criteria for developing academic press and a theoretical model that includes academic press and sense of community as intervening variables between principal leadership behavior and student achievement.

Alig-Mielcarek (2003) explored the relationships between instructional leadership and student achievement, academic press and student achievement, and instructional leadership and academic press. Her study sought to expand knowledge on how the social dynamics within the school influence student achievement. Specifically, this study adds to the understanding of how principals can affect student achievement by using their leadership to develop an organizational climate in which academic and intellectual pursuits are the main focus of the school (Alig-Mielcarek, 2003). Data were collected from 146 elementary schools in Ohio. The instructional

leadership instrument used in this study represented three dimensions of instructional leadership as defined by the literature: defining and communicating school goals; monitoring and providing feedback on the teaching and learning process; and promoting school-wide professional development. A pilot study was conducted with 27 items, and three subsequent factor analyses found that 22 of the 27 items loaded on the three dimensions previously listed with alpha reliability coefficients of 0.50 or higher. The academic press variable was constructed using three subtests of the reliable and valid Organizational Health Inventory (OHI) (Hoy, Tarter, Kottkamp, 1991; Hoy & Tarter, 1997): (a) resource support, (b) principal influence, and (c) academic emphasis. Alig-Mielcarek found that the instructional leadership of the principal was not directly related to student achievement. She also found that a school's academic press did have a direct effect on student achievement in both math and reading when controlling for SES. The importance of these findings is they reveal that the principal's behavior has an indirect positive effect on achievement through the academic press of the school.

Eubanks (2012) examined the extent to which academic press correlates with two school conditions: (a) effectiveness and supportiveness of leadership; and (b) frequency and focus of professional development. The study aimed to create a measure for academic press and to provide knowledge on what conditions within schools are conducive to high academic press. Data from schools in 39 participating states were collected using the National Education Association's (NEA) Keys to Excellence in Your Schools (KEYS) survey. Questions from the KEYS survey were used to develop two dimensions of academic press (school academic ethos and teacher press). Eubanks selected questions based on three criteria: (1) face validity; (2) the relationship of the questions to features of academic press defined in the research literature; and (3) the results of an exploratory factor analysis. Overall, a quantitative, correlational research

methodology was used in this study. Eubanks found that effectiveness and supportiveness of leadership had a statistically significant relationship with school academic ethos and teacher press.

Summary

In this chapter, relevant literature was discussed in the areas of leadership, school climate, and leader effectiveness. A conceptual line of argument was presented using research results from empirical studies to provide a rationale for the relationships among the above areas. The first section reviewed literature related to general leadership theories and leadership style. The main premise discussed was how effective leadership maintains a balance between styles of leading. The specific focus was a comparison of transactional and transformational leadership. The prevailing thought was that transformational leadership influences followers beyond the effects of transactional leadership.

The second section reviewed literature and studies related to school culture and climate. The literature and findings from research studies were used to provide a description of the indicators and components of a school's academic press and sense of community. After reviewing theory and research on these climate constructs, the review converged on how leadership styles and a school's academic press and sense of community influence teachers' motivation, efficacy, and satisfaction and student achievement. Research studies show a relationship between principals' leadership behavior, school climate, and student achievement.

The last section reviewed related leadership studies that used transformational measures to describe leadership behaviors and the relationship to varying aspects of school climate, including academic press. This section provided insight to the present study's research methodology, theoretical framework, and instrument selection. The next chapter provides

detailed descriptions of the research methods, study design, sampling and data collection methods, and tested hypotheses.

Chapter 3

Introduction

This chapter reviews the data and research strategies used to address the research question:

1. Does the principal's leadership style (i.e., transactional and transformational) influence a school's academic press and sense of community and differentially impact student achievement?

This chapter is divided into sections that review the research methodology, research hypotheses, description of sample, and research design and rationale.

Research Methodology

This was a quantitative study that aimed to explain the relationship among school level variables. A quantitative methodology allows for a researcher to gather numeric data from a large number of individuals and use statistical procedures to analyze the relationship between key variables (Creswell, 2005). This study attempted to determine (a) self-described leadership behaviors of principals across all three school levels (i.e., elementary, middle, and high) and (b) the influence of transactional and transformational leadership behaviors of principals and the connections among these leadership behaviors and three school variables: schools' academic press, sense of community, and student achievement. The researcher's interest to determine whether one or more variables might influence another variable justifies the use of quantitative methods (Creswell, 2005).

The analytic procedures of this research were mainly built on the Multifactor Leadership Questionnaire (MLQ:Form5X) and the North Carolina Teacher Working Conditions Survey of 2014 (TWC:2014) acquired from the North Carolina Department of Public Instruction (NCDPI). Both are reliable and valid instruments. A SEM analysis using a path model was the most appropriate research technique for this study.

The present study was built on the theoretical assumption that school principals have an indirect effect on student outcomes through the direct effect principals have on teacher behavior (Grissom et al., 2015; Hallinger & Heck, 1998). Loehlin (2004) offers that the simplest explanation of an interesting behavioral phenomenon involves causal relationships among a number of variables. The methodology used to study the phenomenon of a principal's influence on student learning outcomes was structural equation modeling (SEM). The term SEM does not designate a single statistical technique; instead, it refers to a family of related procedures (e.g., path model analysis and confirmatory factor analysis) (Kline, 2016).

The use of SEM is to test a theory by specifying a model that represents explanations of that theory (Kline, 2016). SEM contains a measurement model and a structural model. The measurement model uses different observable measurements to index a latent variable. The structural model provides a way to empirically estimate the relationships between observed and latent variables in the modeled theory; thus, SEM is a path model analysis with latent variables (McDonald & Ho, 2002). A path model analysis can be described as a covariance structure analysis, which represents a set of techniques for theory testing with correlational data (Bentler & Bonett, 1980). Hu and Bentler (1999) contend that SEM is a standard tool for investigating the interrelations among a set of variables.

The purpose of using a SEM methodology for this study was to propose a fixed theoretical model, fit it to observed data, and comment on whether or not it was the best theoretical model to explain a principal's influence on student learning outcomes through two intervening variables. Intervening variables produce an indirect effect, which means that one variable serves as a regressor in one equation and a regressand in another equation. This system of equations is referred to as a model. SEM considers the equations simultaneously to describe the direct effect between two variables and the indirect effect mediated via an intervening variable.

This researcher considered sequential modeling as an alternative methodology for this study. In sequential regression, independent variables are entered in casual order based on theory (Reynolds & Keith, 2013). A disadvantage to this methodology is the importance of the variable changes depending on the order in which it was entered (Keith, 2015). In contrast, an advantage of a simultaneous approach is the estimate of the direct effect of each independent variable on the outcome variable takes into account the other independent variables – order does not matter (Keith, 2015). Furthermore, a benefit to the researcher is he/she may estimate all parameters and test all hypotheses, including the mediation effect, simultaneously within the context of the proposed model. Therefore, the researcher may make a decision about the whole model; thus, giving precedence to the entire model over that of specific effects represented in the model (Kline, 2016).

Kline (2016) proposes six steps for a SEM analysis: specification, identification, collection, estimation, respecification, and reporting.

Steps 1 and 2: Specification and Identification

Specification. The SEM technique starts with the specification of a model to be estimated, which is a series of hypotheses about how the variables in the analysis are generated and related (Hu & Bentler, 1999). SEM requires *a priori* (deductions from theory) specifications reflected in the study's hypotheses and used to make up the model to be analyzed (Kline, 2016). A review of the literature was to provide theoretical justification of the six hypotheses developed to explore the research question.

Research hypotheses. The main hypothesis was that a principal's use of leadership style would explain positive changes in a school's academic press and sense of community. Moreover, there were measurable differences between schools' academic press and sense of community—and such differences varied in accordance with principals who employ varying combinations of transformational leadership behaviors and transactional leadership behaviors, which could affect student achievement differentially as a result. The six hypotheses, more explicitly stated, developed to explore the research question were:

1. H_0 : There is no relationship between principals' self-perception of their leadership style, as measured by the MLQ:Form5X, and the school's academic press.
2. H_0 : There is no relationship between principals' self-perception of their leadership style, as measured by the MLQ:Form5X, and the school's sense of community.
3. H_0 : There is no relationship between principals' self-perception of their leadership style, as measured by the MLQ:Form5X, and student achievement.
4. H_0 : There is no relationship between a school's academic press and student achievement.
5. H_0 : There is no relationship between a school's sense of community and student achievement.
6. H_0 : There is no relationship between the principals' self-perceptions of their leadership style, a

school's academic press, sense of community, and student achievement.

Identification. A model must be identified to use a SEM computing tool such as MPLUS 7.3. A model is identified if there is sufficient information to estimate all the parameters. So, a researcher must consider the number of parameters and the number of observations in the study. Due to practical concerns for the study's sample size, a single observed value (the average score of the two subscale scores for transactional leadership and the average score for the four subscale scores for transformational leadership) was used for each principal's transactional and transformational leadership behaviors. The first part of the model (see Figure 2) looked at transactional and transformational leadership styles along with school level and principals' years of experience as covariates and measured the direct effect with latent variables academic press and sense of community (regressors). The second part of the model looked at latent variables academic press and sense of community (regressands) and free-and-reduced lunch rate as a covariate and measured the direct effect with student outcomes.

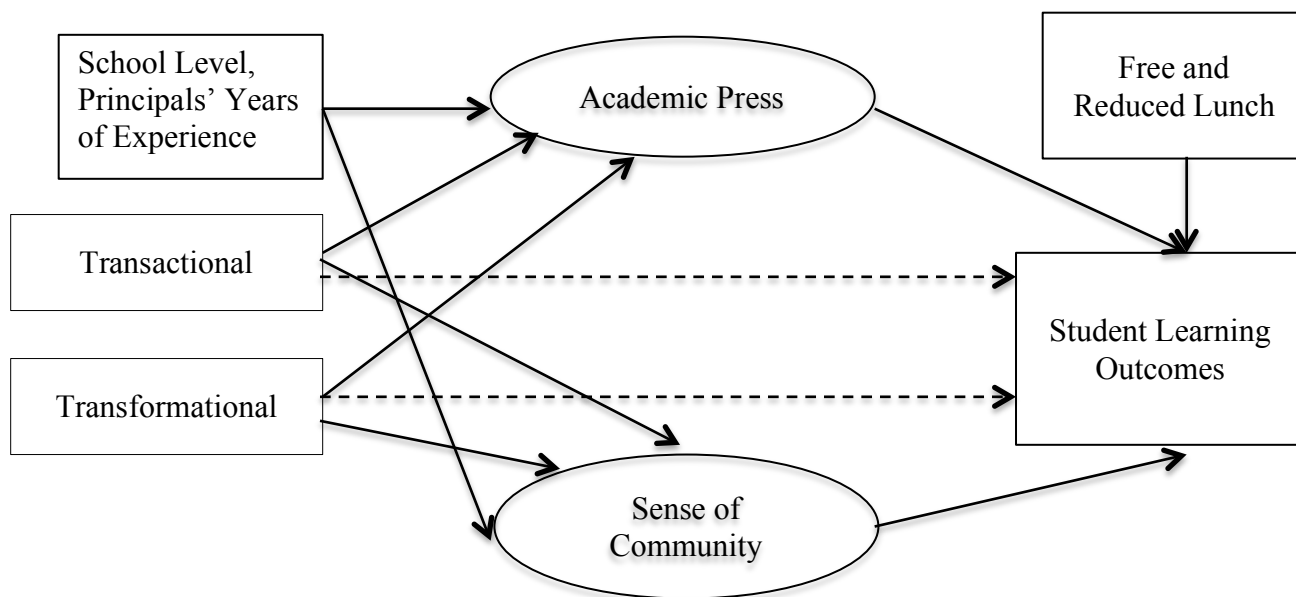


Figure 2. A path model of the direct effect between observed variables and latent variables and the indirect effect mediated via two intervening latent variables on student learning outcomes.

Step two of a SEM analysis is to write a statistical model described by a series of equations that define the model parameters (Kline, 2016). Path models in SEM are parametric, so the direct effect is assumed to be linear if both X and Y are continuous (Kline, 2016). Contained in the path model are a series of linear regression models that are estimated simultaneously to examine associations that measure the strength of the relationship on school level variables.

Basic Multiple Linear Regression Equation

$$Y_n = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n + \varepsilon \quad (1)$$

Equation one is a structural equation used to measure a causal relationship (Wooldridge, 2013), and serves as the template for the subsequent equations in this study's statistical model. The intercept β_0 is the expected value of Y when the starting point of the independent variable X is zero. X_1 through X_n represent relevant independent variables; β_1 through β_n is the parameter estimate of the independent variable X at the school level and describe the direction and strength of the relationship; ε is an independent error term. Presumably, the outcomes have been measured correctly; however, the independent variables do not explain all the variance in the dependent variables due to error in the model. The structural equation describes the direct effect and tells the researcher how a 1-unit change in X will affect Y, holding all other variables constant.

Structural Model One

To help the reader follow the path analysis, the theoretical path model (see Figure 2) was divided into four parts. The first model (see Figure 3) looks at how the means of an intermediate latent variable (academic press) may vary as a function of the principal's leadership style (transactional and transformational), principals' years of experience, and school level. The

independent variables (exogenous) for the regression model are principals' transactional leadership behavior (T) and transformational leadership behavior (TF), principals' years of experience (PE7 = 7-11 years of experience and PE12 = 12-20 years of experience), and school level (SLE = school level elementary, SLM = school level middle, and SLA = school level alternative). These variables are allowed to have nonzero correlation. The principals' years of experience (20+ years) and the school level variable for high school (SLH) are the reference groups. Therefore the model will look like:

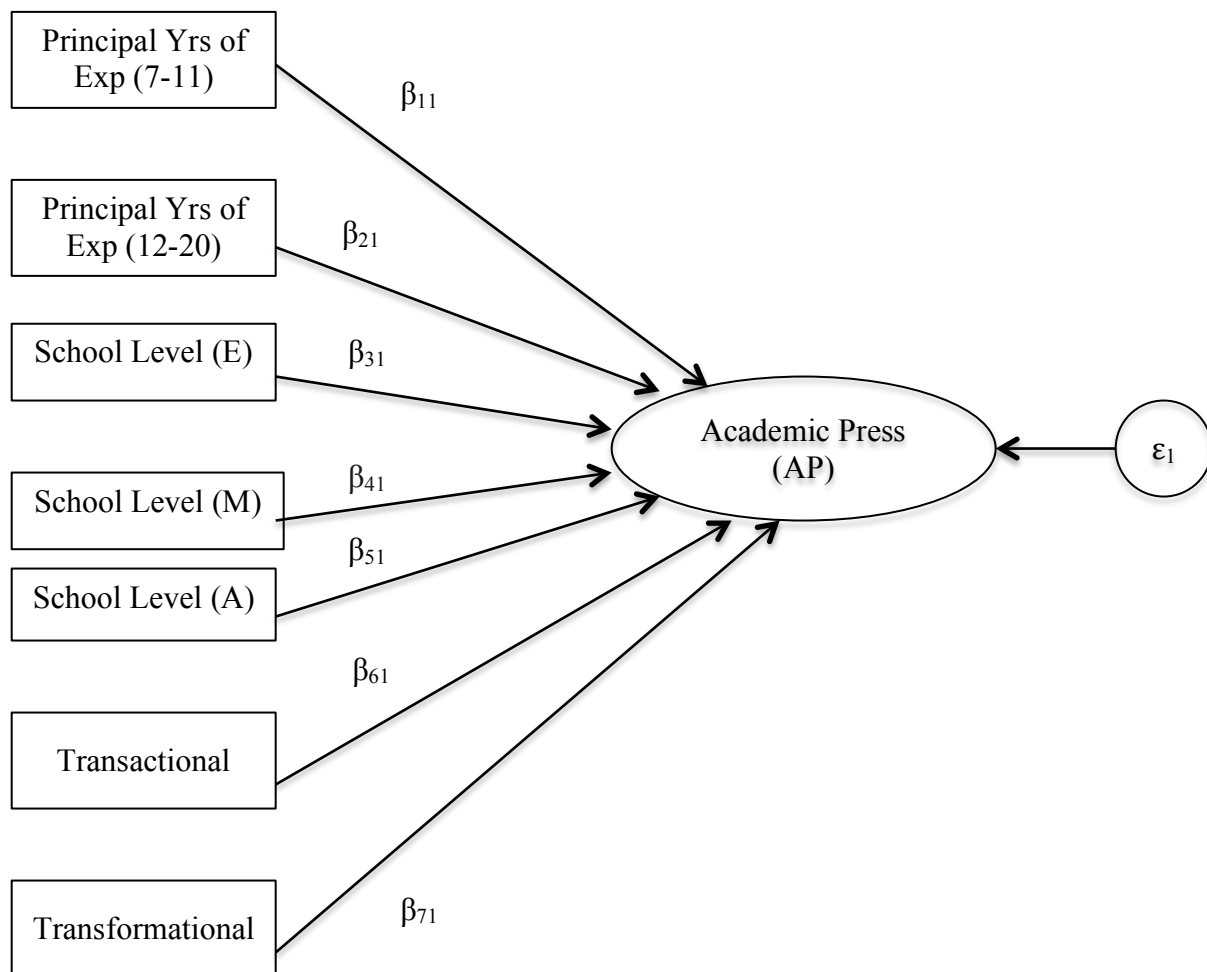


Figure 3. A path model of the direct effect between observed variables and a latent variable

$$\begin{aligned}
 AP &= \beta_{01} + \beta_{11}(PE7) + \beta_{21}(PE12) + \beta_{31}(SLE) \\
 &+ \beta_{41}(SLM) + \beta_{51}(SLA) + \beta_{61}(T) + \beta_{71}(TF) \\
 &+ \varepsilon_1
 \end{aligned}
 \tag{2}$$

where the dependent variable (endogenous) AP = a school's mean academic press.

Structural Model Two

The second model (see Figure 4) looks at how the means of an intermediate latent variable (sense of community) may vary as a function of the principal's leadership style (transactional and transformational), principals' years of experience, and school level. The independent variables (exogenous) for the regression model are principals' transactional leadership behavior (T) and transformational leadership behavior (TF), principals' years of experience (PE7 = 7-11 years of experience and PE12 = 12-20 years of experience), and school level (SLE = school level elementary, SLM = school level middle, and SLA = school level alternative). These variables are allowed to have nonzero correlation. The principals' years of experience (20+ years) and the school level variable for high school (SLH) are the reference groups. Therefore the model will look like:

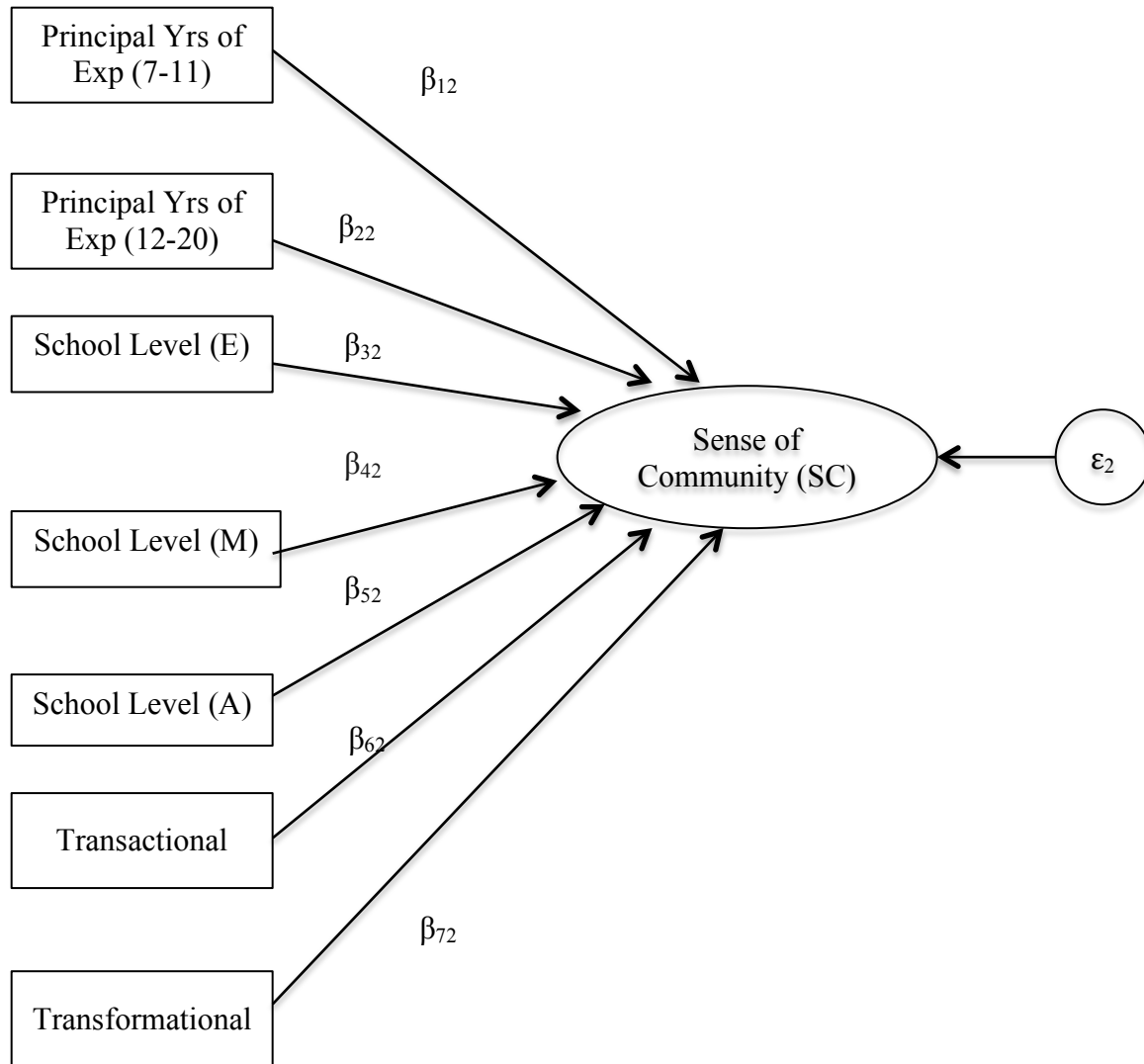


Figure 4. A path model of the direct effect between observed variables and a latent variable

$$\begin{aligned}
 SC &= \beta_{02} + \beta_{12}(PE7) + \beta_{22}(PE12) + \beta_{32}(SLE) \\
 &+ \beta_{42}(SLM) + \beta_{52}(SLA) + \beta_{62}(T) + \beta_{72}(TF) \\
 &+ \varepsilon_2
 \end{aligned}
 \tag{3}$$

where the dependent variable (endogenous) SC = a school's mean sense of community.

Structural Model Three

The third model (see Figure 5) looks at the total indirect effects of the independent variables: principals' transactional leadership behavior (T); transformational leadership behavior (TF); principals' years of experience (PE7 = 7-11 years of experience and PE12 = 12-20 years of

experience); and school level (SLE = school level elementary, SLM = school level middle, and SLA = school level alternative) on student learning outcomes (SO_1) mediated through the intervening latent variable academic press.

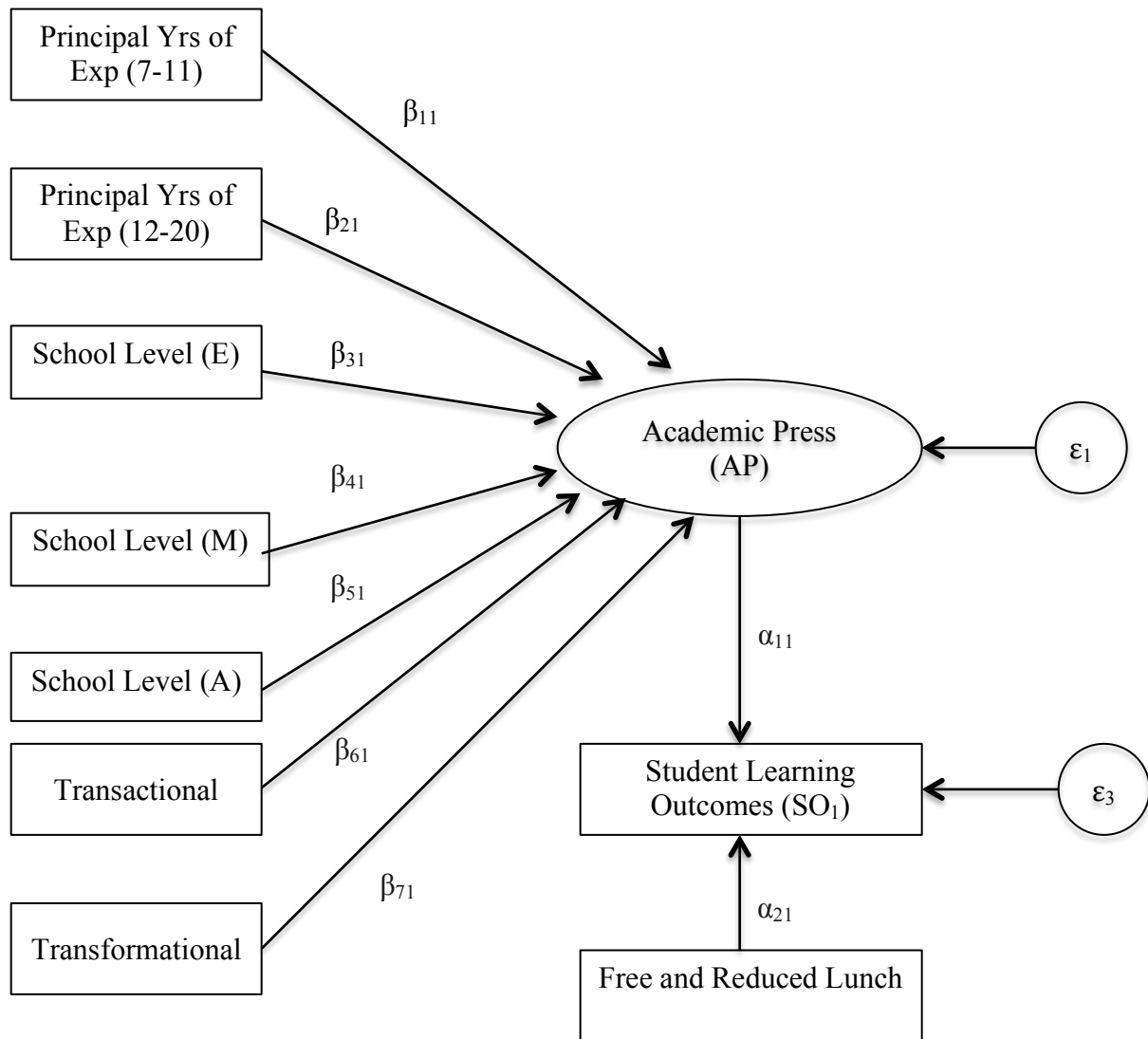


Figure 5. A path model of the direct effect between observed variables and a latent variable and the indirect effect mediated via an intervening latent variable on student learning outcomes.

Equation four looks at the direct effect of how the means of student outcomes may vary as a function of a school's academic press and schools' free-and-reduced lunch rate. The

independent variables (exogenous) for the regression model are academic press (AP) and schools' free-and-reduced lunch rate (FR). Therefore, the model will look like:

$$SO_1 = \alpha_{01} + \alpha_{11}(AP) + \alpha_{21}(FR) + \varepsilon_1 + \varepsilon_3 \quad (4)$$

where the dependent variable (endogenous) SO_1 = a school's mean student learning outcome.

Equation two and four form the system of equations for the simultaneous model of the indirect effects on student learning outcomes. Based on substitution, the model for student outcomes will look like:

$$\begin{aligned} SO_1 = & \alpha_{01} + \alpha_{11}\beta_0 + \alpha_{11}\beta_{11}(PE7) + \alpha_{11}\beta_{21}(PE12) + \alpha_{11}\beta_{31}(SLE) \\ & + \alpha_{11}\beta_{41}(SLM) + \alpha_{11}\beta_{51}(SLA) + \alpha_{11}\beta_{61}(T) + \alpha_{11}\beta_{71}(TF) + \alpha_{11}\varepsilon_1 \\ & + \alpha_{21}(FR) + \varepsilon_1 + \varepsilon_3 \end{aligned} \quad (5)$$

By combining constant terms into one intercept (θ_{01}) and error terms into one error (ξ_1), the equation may be written as:

$$\begin{aligned} SO_1 = & \theta_{01} + \alpha_{11}\beta_{11}(PE7) + \alpha_{11}\beta_{21}(PE12) + \alpha_{11}\beta_{31}(SLE) \\ & + \alpha_{11}\beta_{41}(SLM) + \alpha_{11}\beta_{51}(SLA) + \alpha_{11}\beta_{61}(T) + \alpha_{11}\beta_{71}(TF) \\ & + \alpha_{21}(FR) + \xi_1 \end{aligned} \quad (5)$$

The total indirect effect through academic press is estimated as the product of the individual coefficients for each direct effect that makes up the indirect causal pathway (Kline, 2016). This means the total indirect effect through academic press equals $\alpha_{11}\beta_{11} + \alpha_{11}\beta_{21} + \alpha_{11}\beta_{31} + \alpha_{11}\beta_{41} + \alpha_{11}\beta_{51} + \alpha_{11}\beta_{61} + \alpha_{11}\beta_{71}$.

Structural Model Four

The fourth model (see Figure 6) looks at the total indirect effects of the independent variables: principals' transactional leadership behavior (T); transformational leadership behavior (TF); principals' years of experience (PE7 = 7-11 years of experience and PE12 = 12-20 years of experience); and school level (SLE = school level elementary, SLM = school level middle, and SLA = school level alternative) on student learning outcomes (SO) mediated through the

intervening latent variable sense of community.

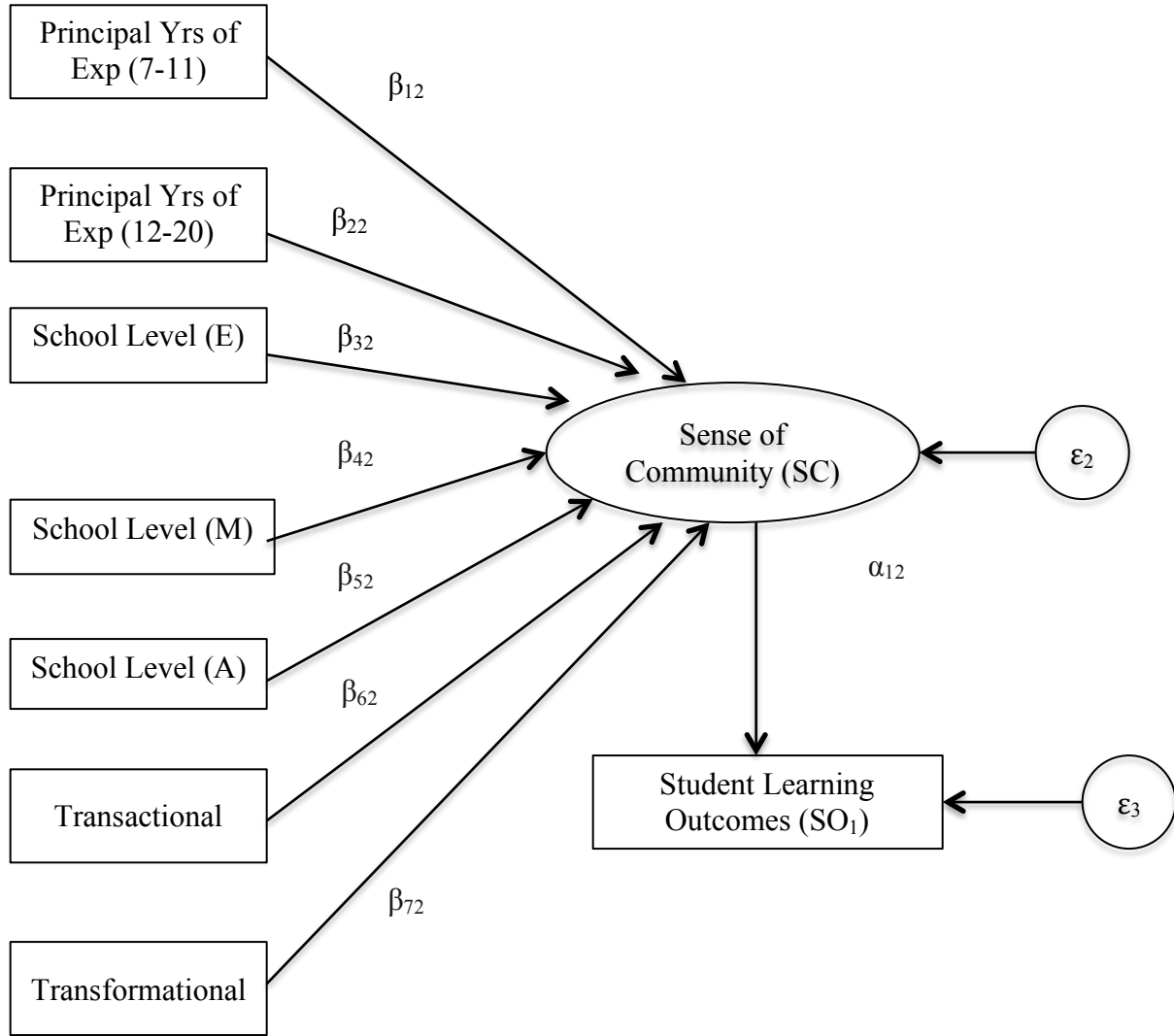


Figure 6. A path model of the direct effect between observed variables and a latent variable and the indirect effect mediated via an intervening latent variable on student learning outcomes.

Equation six looks at the direct effect of how the means of student outcomes may vary as a function of a school's sense of community. The independent variable (exogenous) for the regression model is sense of community (SC). Therefore, the model will look like:

$$SO_2 = \alpha_{02} + \alpha_{12}(SC) + \epsilon_2 + \epsilon_3 \quad (6)$$

where the dependent variable (endogenous) SO_2 = a school's mean student learning outcome.

Equation three and six form the system of equations for the simultaneous model of the indirect

effects on student learning outcomes. Based on substitution, the model for student outcomes will look like:

$$\begin{aligned} SO_2 = & \alpha_{02} + \alpha_{12} \beta_{02} + \alpha_{12} \beta_{12}(PE7) + \alpha_{12} \beta_{22}(PE12) + \alpha_{12} \beta_{32}(SLE) \\ & + \alpha_{12} \beta_{42}(SLM) + \alpha_{12} \beta_{52}(SLA) + \alpha_{12} \beta_{62}(T) + \alpha_{12} \beta_{72}(TF) \\ & + \alpha_{12} \epsilon_2 + \epsilon_2 + \epsilon_3 \end{aligned} \quad (7)$$

By combining constant terms into one intercept (θ_{02}) and error terms into one error (ξ_2), the equation may be written as:

$$\begin{aligned} SO_2 = & \theta_{02} + \alpha_{12} \beta_{12}(PE7) + \alpha_{12} \beta_{22}(PE12) + \alpha_{12} \beta_{32}(SLE) \\ & + \alpha_{12} \beta_{42}(SLM) + \alpha_{12} \beta_{52}(SLA) + \alpha_{12} \beta_{62}(T) + \alpha_{12} \beta_{72}(TF) \\ & + \xi_2 \end{aligned} \quad (7)$$

The total indirect effect through sense of community is estimated as the product of the individual coefficients for each direct effect that makes up the indirect causal pathway (Kline, 2016). This means the total indirect effect through sense of community equals $\alpha_{12} \beta_{12} + \alpha_{12} \beta_{22} + \alpha_{12} \beta_{32} + \alpha_{12} \beta_{42} + \alpha_{12} \beta_{52} + \alpha_{12} \beta_{62} + \alpha_{12} \beta_{72}$. The total indirect effect on student learning outcomes equals the sum of the indirect effects through academic press and sense of community: $SO_1 + SO_2$.

Furthermore, the total indirect effect is estimated as the sum of the coefficients for each individual indirect effect (Kline, 2016). Adding equation five and seven (with one constant term for the intercept, θ_{03} , and one error term, ξ_3) yields the single equation modeling the indirect effects on student learning outcomes:

$$\begin{aligned} SO = & \theta_{03} + \alpha_{11} \beta_{11}(PE7) + \alpha_{12} \beta_{12}(PE7) + \alpha_{11} \beta_{21}(PE12) + \alpha_{12} \beta_{22}(PE12) \\ & + \alpha_{11} \beta_{31}(SLE) + \alpha_{12} \beta_{32}(SLE) + \alpha_{11} \beta_{41}(SLM) + \alpha_{12} \beta_{42}(SLM) \\ & + \alpha_{11} \beta_{51}(SLA) + \alpha_{12} \beta_{52}(SLA) + \alpha_{11} \beta_{61}(T) + \alpha_{12} \beta_{62}(T) \\ & + \alpha_{11} \beta_{71}(TF) + \alpha_{12} \beta_{72}(TF) + \alpha_{21}(FR) + \xi_3 \end{aligned} \quad (8)$$

A limitation of simultaneous models to describe total indirect effects is found in how the model deals with specification error. Simultaneous models estimate all the free parameters at once and spread specification error throughout the entire model (Kline, 2016). Single-equation models (i.e., multiple linear regression) may outperform simultaneous methods when

misspecification occurs because they isolate the effect of errors to misspecified parts of the model (Kline, 2016).

Step 3: Estimation

Step three of a SEM analysis is to use a computer tool to conduct the analysis (Kline, 2016). This researcher used MPLUS 7.3. There are three parts of the analysis: (a) evaluate fit; (b) interpret the parameter estimates; and (c) consider equivalent or near-equivalent models (Kline, 2016).

Step 4: Re-specification

If a specified model is shown to be of poor fit then step four of a SEM analysis looks for theoretically justifiable possible changes (Kline, 2016). These changes are driven by rational considerations more than statistical ones (Kline, 2016; McDonald & Ho, 2002). Statistically, Loehlin (2004) contends that researchers need to be wary of uncritical acceptance of any solution a computer program happens to produce. Loehlin suggests leaving theoretically justified paths in the model until cross-validation confirms they can be safely dropped. Therefore, it behooves a researcher to try solutions with two or three different criteria and see if all converge (Loehlin, 2004).

There are several options a researcher may choose from to modify a path model. Loehlin (2004) contends a researcher may maintain the same structural model of relationships among latent variables but change the measurement model by using different measurements to index the latent variables. The main source of measurement model misfit is that indicators may reflect constructs other than the one they are intended to measure (Loehlin, 2004).

Step 5: Reporting

Step five of a SEM analysis is to report the results. It is acceptable in SEM to retain no

model (Kline, 2016). Furthermore, it is healthy for a researcher to consider that “basically all statistical models are wrong to some degree” (Kline, 2016, p. 263). With that in mind, statistical models become “imperfect approximations that help researchers to structure their thinking about the target phenomenon” (Kline, 2016, p. 263).

Description of Sample

This study surveyed principals from elementary, middle, and high schools across North Carolina. These data were coupled with responses from 93,178 teachers representing 2,597 North Carolina schools on the North Carolina Teacher Working Conditions Survey. The criteria for selecting schools was principals’ years of experience at the same school. This study only considered principals with three or more years of experience up to and including the 2013-2014 academic year in the school reported on the TWC:2014 in order to attribute the condition of a school’s academic press and sense of community to the participating principal. Grissom et al. (2015) state studies that have found that principals improve with experience, and “restricted their research model to principals working in a school at least 3 years so that estimating a time trend in performance is meaningful” (p. 14). Furthermore, Grissom et al. (2015) state the effects of a principal on school improvement, which includes student achievement, may be different in their initial years than it is after they have served in the same school for a longer period of time.

North Carolina’s public education system supports 2,597 principals across 115 local educational agencies, also known as districts. Districts are comprised of elementary, secondary, and alternative schools. Each district has unique policies that govern how to gain permission to conduct external research in their schools. This researcher was granted access to principals in 112 out of the 115 districts. The survey instrument was sent to each principal at each school level in those 112 districts. In total, 330 principals responded (12.7% response rate) from 76 out

of the 115 North Carolina districts (66% of the population). Out of those 330 principals, 107 met the criteria of having led the same school for the academic years 2011-12, 2012-13, and 2013-14. The 107 principals used to make up this study's sample represented 57 out of the 115 North Carolina school districts (49.5% of the population). The number of schools used to represent each of the 57 districts ranged from one to twelve. This means that data were collected from only one school in one district to twelve schools in another district. The districts used to make up this study's sample did not have equal participation among schools or school levels.

It is difficult to define the boundary between small and large samples. "One would probably be modest in one's statistical claims if N is less than 100 – 200 is better" (Loehlin, 2004, p. 55). This researcher calculated a power index for the study's sample size. Regarding power, the question is: "if the fit is actually good in the population ($RMSEA < .05$), do we have a high probability with our sample size of being able to reject the hypothesis that it is bad ($RMSEA > .10$)?" (Loehlin, 2004, p. 70). For this study, the power was set at the conventional threshold of 80%, which represents the probability of correctly rejecting a null hypothesis. For each hypothesis, the population correlation was calculated to be .26 with 107 observations. This means if the population correlation has a value of .26 or higher with 107 observations in the sample the power will be at least 80%. Based on Cohen, the sample used for this study is interpreted to have a small to median effect size, and is considered an adequate sample size.

Table 4

Description of Sample

Descriptors	Sample frequency (N = 107)	Sample percent	North Carolina frequency (N = 2597)	North Carolina percent
Elementary Schools	66	61.68	1254	48.29
Middle Schools	21	19.63	484	18.64
High Schools	15	14.02	457	17.60
Alternative Schools	5	4.67	402*	15.48
Principal's Years of Experience 3-6yrs	0	0	18**	1.22
Principal's Years of Experience 7-11yrs	2	1.87	73**	4.94
Principal's Years of Experience 12-20yrs	37	34.58	651**	44.02
Principal's Years of Experience 20+yrs	67	62.62	729**	49.29

Note. *This study excluded charter and magnet schools, which makes up a large portion of the total number of alternative schools. **These statistic are derived from the 1471 out of 2597 North Carolina principals that responded to the North Carolina Teacher Working Conditions Survey – representing 56.64% of the population.

Table 4 further highlights whether this study's respondents are representative of the characteristics of all the districts and principals in the state of North Carolina. This study looked at district number and local district per pupil expenditure to describe district characteristics. For the 115 North Carolina districts, the average local district per expenditure amount is \$2,104.24. The average local district per pupil expenditure amount, for this study's sample, is \$2,260.53. These data suggest the sample is over-represented in districts with greater wealth, principals serving elementary schools, and principals with more than twenty years of experience.

Definition of Variables

A school's academic press, sense of community, and student achievement were the dependent variables; factors thought to influence press, community, and achievement are the independent variables. The independent variables were the principals' leadership behaviors

(transactional and transformational). Transformational leadership behavior is composed of four sub-transformational variables: (a) idealized influence, (b) inspirational motivation, (c) intellectual stimulation, and (d) individualized consideration. Transactional leadership behavior is composed of two sub-transactional variables: (a) contingent reward and (b) management by exception: active.

Independent Variables: Factors thought to influence a school's academic press, sense of community, and student achievement

1. Transformational leadership behavior: defined by 20-items on the MLQ:Form5X (Nos. 2, 6, 8, 9, 10, 13, 14, 15, 18, 19, 21, 23, 25, 26, 29, 30, 31, 32, 34, and 36 (See Appendix A)).

a) Subscale: Idealized influence: defined by 8-items on the MLQ:Form5X (Nos. 6, 10, 14, 18, 21, 23, 25, and 34)

b) Subscale: Inspirational motivation: defined by 4-items on the MLQ:Form5X (Nos. 9, 13, 26, and 36)

c) Subscale: Intellectual stimulation: defined by 4-items on the MLQ:Form5X (Nos. 2, 8, 30, and 32)

d) Subscale: Individualized consideration: defined by 4-items on the MLQ:Form5X (Nos. 15, 19, 29, and 31)

2. Transactional leadership behavior: defined by 8-items on the MLQ:Form5X (Nos. 1, 4, 11, 16, 22, 24, 27, 35 (See Appendix A))

a) Subscale: Contingent reward: defined by 4-items on the MLQ:Form5X (Nos. 1, 11, 16, and 35)

b) Subscale: Management by exception (active): defined by 4-items on the MLQ:Form5X (Nos. 4, 22, 24, and 27)

Dependent Variables

1. Academic press: defined by 15-items on the TWC:2014 (See Table 5)
2. Sense of community: defined by 11-items on the TWC 2014 (See Table 6)

Table 5

TWC Constructs and Items used to Define Academic Press

TWC:2014 Construct	TWC:2014 Item Code	TWC:2014 Questions
Time	tml021clsize	<ul style="list-style-type: none"> Class sizes are reasonable such that teachers have the time available to meet the needs of all students
	tml021meetneeds	<ul style="list-style-type: none"> Teachers have sufficient instructional time to meet the needs of all students
	tml021collab	<ul style="list-style-type: none"> Teachers have time available to collaborate with colleagues
	tml021role	<ul style="list-style-type: none"> Teachers are protected from duties that interfere with their essential
Managing Student Conduct	scl021stufollow	<ul style="list-style-type: none"> Students at this school follow rules of conduct
	scl021tchconsist	<ul style="list-style-type: none"> Teachers consistently enforce rules for student conduct
Instructional Practices and Support	ipl021conassess	<ul style="list-style-type: none"> Teachers collaborate to achieve consistency on how student work is assessed
	ipl021knowother	<ul style="list-style-type: none"> Teachers have knowledge of the content covered and instructional methods used by other teachers at this school
	ipl021plcinstr	<ul style="list-style-type: none"> Teachers work in professional learning communities to develop and align instructional practices
	ipl021potential	<ul style="list-style-type: none"> Teachers believe almost every student has the potential to do well on assignments
	ipl021differen	<ul style="list-style-type: none"> Teachers believe what is taught will make a difference in students' lives
	ipl021hardwk	<ul style="list-style-type: none"> Teachers require students to work hard
	ipl021whatlearn	

	ipl021datainform	<ul style="list-style-type: none"> Teachers know what students learn in each of their classes
	ipl021maxsuccess	<ul style="list-style-type: none"> Teachers use assessment data to inform their instruction Teachers are assigned classes that maximize their likelihood of success with students

Table 6

TWC Constructs and Items used to Define Sense of Community

TWC:2014 Construct	TWC:2014 Item Code	TWC:2014 Questions
Managing Student Conduct	scl021expconduct	<ul style="list-style-type: none"> Students at this school understand expectations for their conduct
	scl021policyproc	<ul style="list-style-type: none"> Policies and procedures about student conduct are clearly understood by the faculty
	scl021efforts	<ul style="list-style-type: none"> School administrators support teachers' efforts to maintain discipline in the classroom
Teacher Leadership	eml021experts	<ul style="list-style-type: none"> Teachers are recognized as educational experts
	eml021trustsound	<ul style="list-style-type: none"> Teachers are trusted to make sound professional decisions about instruction
	eml021decmake	<ul style="list-style-type: none"> Teachers are relied upon to make decisions about educational issues
School Leadership	eml021trustresp	<ul style="list-style-type: none"> There is an atmosphere of trust and mutual respect in this school
	ldl021tchr supp	<ul style="list-style-type: none"> The school leadership consistently supports teachers
	ldl021recogaccom	<ul style="list-style-type: none"> The faculty are recognized for accomplishments
	ldl021sharedvis	<ul style="list-style-type: none"> The faculty and staff have a shared vision
Instructional Support and Practices	Ipl021trynew	<ul style="list-style-type: none"> Teachers are encouraged to try new things to improve instruction

Data

Two survey instruments and student performance data were used to compile a rich data source: the Multifactor Leadership Questionnaire (MLQ:Form 5X), the 2013-14 North Carolina Teacher Working Conditions Survey (TWC:2014), and student performance data. The MLQ:Form5X produced the independent variables representing principals' leadership style. The TWC:2014 produced the dependent variables representing schools' academic press and sense of community. The final dependent variable was derived from student performance data. Each of these datasets contributes to a more complete understanding of the impact leadership style has on leader effectiveness as measured by student achievement.

MLQ:Form5X Description

There are several existing surveys to choose from that measure leadership style: (a) Leithwood, Aitken, and Jantzi's (2001) Nature of School Leadership Survey (NSL); (b) Kouzes and Posner's (1995) Leadership Practices Inventory (LPI); (c) Sashkin's (1990) Leadership Behavior Questionnaire (LBQ); and (d) Leithwood and Jantzi's (1999) Principal Leadership Questionnaire (PLQ). These useful instruments seemed less of a match for this study. For instance, the PLQ does not address enough transformational leadership behaviors, nor does the LPI address all components of this study. Therefore, the Multifactor Leadership Questionnaire (MLQ:Form5X) developed by Bass and Avolio (2004) was used for this study.

The MLQ:Form5X has been the principle means by which researchers have differentiated highly effective from ineffective leaders in the fields of military, government, education, manufacturing, high technology, church, correctional, hospital, and volunteer organizations (Avolio & Bass, 2004). The latest version of the MLQ:Form5X has been used in nearly 300 research programs, doctoral dissertations and masters theses around the world. The full range of

ineffective and effective leadership behaviors in the MLQ:Form5X is typically much broader than other leadership surveys (Avolio & Bass, 2004).

The MLQ:Form5X is a 45-item questionnaire that uses a four-point Likert scale (0 = not at all; 1 = once in a while; 2 = sometimes; 3 = fairly often; and 4 = frequently, if not always).

The questionnaire takes approximately 15-minutes to complete. The questionnaire may be used for colleagues rating leaders or leaders self-reporting. The psychometric properties of the MLQ:Form5X are comparable for colleagues or peers rating leaders and self-reported ratings by leaders (Avolio & Bass, 2004). The MLQ:Form5X was developed in response to criticisms of the high correlations among the transformational scales and the mixing of behaviors, impact and outcomes within a single leadership scale (Avolio & Bass, 2004). In response, Avolio and Bass (1991) proposed the full-range leadership theory (FRLT) comprising three typologies of leadership behavior: transformational, transactional, and laissez-faire (passive/avoidant) leadership (Antonakis, 2003). The current version of the MLQ:Form5X measures the nine factors in the FRLT: five transformational leadership factors, three transactional leadership factors, and one nontransactional laissez-faire leadership factor (Antonakis, 2003). Out of the 45 items, 36 items represent the nine leadership factors described above and nine items assess three leadership outcome scales (extra effort, effectiveness, and satisfaction).

Transformational leadership is comprised of four leadership behaviors: (a) idealized influence; (b) inspirational motivation; (c) intellectual stimulation and (d) individualized consideration. Avolio and Bass (2004) describe these behaviors and effects as follows:

1. *Idealized influence.* The leader is admired, respected, and trusted. The leader considers followers' needs over his or her own needs. The leader is consistent in conduct with ethics. Followers want to emulate the leader.

2. *Inspirational motivation.* The leader motivates others by providing meaning and challenge to followers' work. The leader builds enthusiasm and optimism and encourages individual and team spirit among followers.

3. *Intellectual stimulation.* The leader stimulates followers to be innovative and creative by questioning assumptions, reframing problems, and approaching old situations in new ways. The leader solicits new ideas and creative solutions from followers and includes them in the process.

4. *Individualized consideration.* The leader pays attention to each individual's need for achievement and growth by acting as a coach or mentor. The leader helps followers reach higher levels of potential, and recognizes individual differences, needs and desires.

Transactional leadership is comprised of two leadership behaviors: (a) contingent reward and (b) management-by-exception: active. Avolio and Bass (2004) describe these behaviors and effects as follows:

1. *Contingent reward.* The leader clarifies expectations and offers recognition when goals are achieved. Followers achieve an expected level of performance.

2. *Management-by-exception: active.* The leader specifies the standards for compliance and what constitutes ineffective performance. The leader closely monitors followers for deviance, mistakes and errors and then takes swift corrective action.

Passive/Avoidant leadership is comprised of two leadership behaviors: (1) management-by-exception: passive and (2) laissez-faire. Both behavior types have negative impacts on followers and desired outcomes. Avolio and Bass (2004) describe these behaviors and effects as follows:

1. *Management-by-exception: passive.* The leader waits for problems to become serious before taking action. The leader does not respond to problems systematically and avoids clarifying

expectations. The leader does not provide goals and standards to be achieved.

2. *Laissez-faire*. The leader is absent when needed, avoids getting involved when important issues arise and delays responding to important questions.

In addition to measuring leadership behaviors, the MLQ:Form5X measures three leadership outcomes: (1) extra effort, (2) effectiveness, and (3) satisfaction. Transformational and transactional leadership are related to the success of a group (Avolio & Bass, 2004). Success is measured by (a) how a leader motivates others to try harder and do more than they expected to do, (b) how leaders instill a belief that their work is effective and (c) how a leader's work is satisfying to others.

The reliabilities for the total items and each leadership factor scale ranged from 0.74 to 0.94. The factor structure of the MLQ:Form5X has been validated by both discriminatory and confirmatory factor analyses (Avolio & Bass, 2004). In regards to external validity, the MLQ has been used in over 30 countries (it is offered in as many as 13 languages), in businesses, schools, military settings, and in numerous meta-analyses. Avolio and Bass (2004) report that in each of these instances the hierarchical ordering of leadership constructs with respect to their relationship with performance, organizational commitment and satisfaction is confirmed. Generally speaking, this means that transformational leadership would be most highly correlated to these variables followed by transactional and passive styles of leadership (Avolio & Bass, 2004). In regards to construct validity, six scholars in the field of leadership have evaluated and made recommendations for the final version, as well as 14 studies have been used to validate and cross-validate the MLQ:Form5X. Evidence was provided for low discriminant validity among the transformational and transactional contingent reward leadership, yet the higher end of transformational leadership can be distinguished from its lower-end connections to

individualized consideration and transactional contingent reward leadership (Avolio & Bass, 2004).

Avolio et al. (1999) examined the factor structure of the MLQ:Form5X to determine if the survey measured the factors it was developed to assess. Overall, the evidence supports the use of MLQ:Form5X to measure these six leadership factors, however, there were limitations. There were positive correlations between the transformational and transactional leadership, due to both styles representing active and constructive forms of leadership. “When the fit of a model is adequate, and the scales comprising the model lack discriminant validity, there may be hierarchical factor(s) that can account for the high correlations among the factor scales (Marsh & Hocevar, 1985)” (Avolio et al., 1999, p. 452).

MLQ:Form5X scores can help account for the varying impact that different types of leadership styles have on organizations and associates’ satisfaction, team effectiveness, and organizational success (Avolio & Bass, 2004). MLQ:Form5X leadership factor scale scores make it possible to identify leaders suited to a particular kind of organizational culture or situation that ensures followers’ self-interests and development are fully accommodated (Avolio & Bass, 2004). In a Canadian financial organization, MLQ:Form5X ratings were correlated with key aspects of the organization’s culture (i.e., innovation, risk-taking, bureaucratic) (Avolio & Bass, 2004). Furthermore, matching a leader to the appropriate situation can be more cost effective by requiring less training for the leader than making changes in the situation (Avolio & Bass, 2004).

Leadership style data. Transformational leadership scores were derived by averaging the scores from the items in the four subscales: (a) idealized influence, (b) inspirational motivation, (c) intellectual stimulation, and (d) individualized consideration. Transactional leadership scores

were derived by averaging the scores from the items in the two subscales: (a) contingent reward and (b) management-by-exception: active. The possible score range for each of the independent variables was based on a four-point Likert scale (0–4) and the number of items. Therefore, the possible range for the overall transformational leadership is 0–80. The score range for the sub-transformational variables are idealized influence (0–32), individualized consideration (0–16), intellectual stimulation (0–16), and inspirational motivation (0–16). The possible range for the overall transactional leadership is 0–32. The score range for the sub-transactional variables are contingent reward (0–16), and management by exception: active (0–16). Averages for each scale are compared to norm tables in order to identify leaders, for instance, as more or less transformational than the norm (Avolio & Bass, 2004).

TWC:2014 Description

The North Carolina Teacher Working Conditions Survey of 2014 (TWC:2014) seeks to identify the conditions under which teachers best contribute to student learning. The intent is to inform policy and practice. Teaching and learning conditions impact two significant areas: teacher retention and student learning. Johnson, Kraft and Papay (2012) demonstrate that the conditions that matter most in deciding to stay include the school’s culture, the principal’s leadership and relationships among peers. Their research further indicates that positive conditions contribute to improved student achievement.

Data for TWC:2014 were gathered in early 2014. The New Teacher Center (NTC) administered the anonymous survey to all the reported 105,136 school-based licensed educators in North Carolina. Over 93,000 educators (89 percent) in the state responded. Of those, 89 percent are teachers, four percent are administrators and seven percent are other licensed educators, such as librarians and school psychologists (NCDPI, 2014).

There are eight core constructs of the TWC:2014: time, facilities and resources, community support and involvement, managing student conduct, teacher leadership, school leadership, professional development, and instructional practices and support. NCDPI (2014) defines these eight core constructs as follows:

1. *Time*. Available time to plan, collaborate, provide instruction, and eliminate barriers to maximize instructional time during the school day.
2. *Facilities and resources*. Availability of instructional, technology, office, communication, and school resources to teachers.
3. *Community support and involvement*. Community and parent/guardian communication and influence in the school.
4. *Managing student conduct*. Policies and practices to address student conduct issues and ensure a safe school environment.
5. *Teacher leadership*. Teacher involvement in decisions that impact classroom and school practices.
6. *School leadership*. Ability of school leadership to create trusting, supporting environments and address teacher concerns.
7. *Professional development*. Availability and quality of learning opportunities for educators to enhance their teaching.
8. *Instructional practices and support*. Data and support available to teachers to improve instruction and student learning.

Overall, these eight constructs originate from standards put in place in 2002 from the Governor's Teacher Working Conditions Initiative in North Carolina (2002-2009). NTC adds questions about general demographic information, beginning teacher support and client-specific

information. Survey responses are scored using Likert-type ratings ranging from strongly disagree (1) to strongly agree (4), with a “Don’t Know” option (NCDPI, 2014).

These eight constructs are empirically linked to student achievement and teacher retention. Ferguson and Hirsch (2013) find that four of these constructs – student conduct management, demands on time, professional autonomy and professional development – are significant predictors of student learning gains and student perceptions of rigor and support. The NTC created statistical models to better understand the connections between working conditions and student performance for elementary, middle, and high school levels (NCDPI, 2010). Managing student conduct was most predictive of student performance in elementary school. Managing student conduct and instructional practices and support were statistically significant in explaining student performance in middle schools. At the high school level, managing student conduct, time, and community support and involvement were statistically significant predictors of student performance (NCDPI, 2010). Overall, student performance is highest in schools where teachers are supported by the community and empowered by administrators to create positive learning environments (NCDPI, 2010).

As this researcher moved towards incorporating the TWC:2014 into a unique measure of academic press and sense of community, it was important to pay attention to construct validity. External analyses confirmed that TWC:2014 offers a statistically sound approach for measuring teaching and learning conditions. Furthermore, TWC:2014 produced Cronbach’s alpha coefficients ranging from 0.86 to 0.96. The closer the alpha coefficient is to 1.00, the greater the internal consistency of the items in the scale. In social science research, a reliability of $p = 0.70$ or higher for the Cronbach alpha is generally acceptable (Simon, 2007). The TWC:2014 is generalizable and will produce similar results with similar populations (NCDPI, 2014).

Academic press and sense of community data. Selected questions from the TWC:2014 were used to create two unique dependent variables representative of a school's academic press and sense of community. It was the researcher's position that the questions embedded in each of the eight constructs, as measured by the TWC:2014, can be further reduced to satisfy the conceptual underpinnings of academic press and sense of community. The researcher believed there was a strong relationship between the theoretical constructs of press and community and the teaching and learning conditions the TWC:2014 intended to measure. Thus, the TWC:2014 made for a viable data source.

The process of selecting questions was vetted through the process of content validation. The content approach to research model validation examines the degree to which the items that comprise the model are representative of the entire theoretical content the model is intended to measure (Zeller & Carmines, 1980). A content-valid measure of the concept of school climate should include items representing academic press and sense of community. It is necessary to construct items that reflect the meaning associated with each dimension and each subdivision of press and community (Zeller & Carmines, 1980). Therefore, press and community must be concretely described and defined. This researcher did this through a thorough search and examination of the literature. A standard method for assessing content validity involves judgments by subject matter experts (SMEs) with expertise in the content of the researched domain. Good items have high means and low standard deviations, indicating high agreement among SMEs (Shultz & Whitney, 2005; Markus & Smith, 2010). In addition to collecting data from subject matter experts, confirmatory factor analysis was used to strengthen each latent variable's content validity.

Student Performance Data Description

The final dependent variable was derived from student performance data, specifically schools' performance composite score. In an executive summary from the NCDPI (2012), the North Carolina State Board of Education (SBE) developed the ABCs of Public Education in response to the School-Based Management and Accountability Program enacted by the General Assembly in June 1996. The program focuses on strong accountability, teaching the basics with an emphasis on high educational standards, and maximum local control. Metrics for the ABCs include end-of-grade (EOG) and end-of-course (EOC) test results, annual measurable objectives (AMOs), and a designated growth status.

The North Carolina General Assembly's legislative requirement (G.S. §115C-83.15) directs the State Board of Education to "award school achievement, growth, and performance scores and an associated performance grade" to all North Carolina public schools. A school's performance composite score is calculated by combining the school's achievement score and the growth score. To calculate a school's achievement score, the following 10 different indicators are used:

1. Students that score at or above proficient on annual mathematics end-of-grade (EOG) assessments in grades 3-8
2. Students that score at or above proficient on annual reading EOG assessments in grades 3-8
3. Students that score at or above proficient on annual science EOG assessment in grades 3-8
4. Students that score at or above proficient on Math I end of course (EOC) Assessment
5. Students that score at or above proficient on English II EOC Assessment
6. Students that score at or above proficient on Biology EOC Assessment

7. Students who complete Algebra II, Integrated Math III or Math III with a passing grade (Passing Math III)
8. Students who achieve the minimum score required for admission into a constituent institution of the University of North Carolina on a nationally normed test of college readiness (The ACT assessment)
9. Students enrolled in Career and Technical Education Courses who meet the standard when scoring Silver, Gold or Platinum levels on a nationally normed test of workplace readiness (ACT WorkKeys assessment)
10. Students who graduate within four years of entering high school (4-year Cohort Graduation Rate)¹

The total number of students meeting the standards established by each indicator (e.g., above achievement level III on EOG and EOC tests) is divided by the total number of valid scores on the tests (NCDPI, 2012).

North Carolina has partnered with SAS Institute Inc. to produce a School-wide Accountability Growth measure. All EOG (math, English language arts, and science) and EOC (Math I, English II, and Biology) scores are included in the EVAAS School-wide Accountability Growth measure. A school's ABC growth status is determined by its growth calculation and its change ratio (a measure of the percent of students meeting their individual growth targets). Schools with total growth equal to or exceeding the growth expectation (shown by a difference of 0.00 or better) met expected growth criteria (NCDPI, 2012). In order to calculate the final performance composite score, the school achievement score is combined with the growth score; achievement is worth 80% of the grade and growth is worth 20%.

¹ <http://www.dpi.state.nc.us/src/guide/performance/>

Summary

This chapter provided information about methodology, participants, hypotheses, independent and dependent variables, and data collection and analyses. This quantitative study used the MLQ:Form5X to survey principals from elementary, middle, and high schools across school districts in North Carolina on their leadership behaviors. The independent variable was the principals' leadership behaviors; the dependent variables were academic press, sense of community, and student achievement. Data from the TWC:2014 produced the dependent variables representing schools' academic press and sense of community. The final dependent variable was derived from student performance data. This study used a SEM methodology to propose a fixed theoretical model, fit it to observed data, and comment on whether or not it was the best theoretical model to explain a principal's influence on student learning outcomes through two intervening variables. Contained in the structural model are a series of linear regression models that are estimated simultaneously to examine associations that measure the strength of the relationship on school level variables.

Chapter 4

Introduction

This chapter presents these data results for the current study. First, the measurement models for the latent variables academic press and sense of community are assessed using subject matter experts and confirmatory factor analysis. Next, goodness of fit statistics are presented for the theoretical model and the research hypotheses are tested using a six step SEM analysis.

Content Validity for Academic Press and Sense of Community

The content validity for the twenty-six questions – fifteen for academic press and eleven for sense of community - used from the TWC:2014 was measured using subject matter experts (see Appendix B). Results from those data led to additions to and omissions from the twenty-six questions. This researcher concluded that forty questions – twenty for academic press and twenty for sense of community – should be used to measure the latent variables. Confirmatory factor analysis, a SEM procedure, was used on the forty-question model (see Tables 9 and 11).

Table 1 and 2, in chapter one, stated the initial thinking around the alignment between the TWC:2014 questions and indicators of academic press and sense of community as defined in the literature. Revisions to these tables were made after completing the process of content validity using subject matter experts (see Appendix C). Table 7 and 8 state the final questions used to measure schools' academic press and sense of community.

Table 7

TWC Questions Used to Measure Academic Press

Indicator of Academic Press as defined in the literature	Corresponding TWC Questions
Collective Responsibility for Student Learning (Hoy, 2012; Shouse, 1996; Murphy, Weil, Philip, & Mitman, 1982)	<ul style="list-style-type: none"> • Teachers collaborate to achieve consistency on how student work is assessed • Teachers have knowledge of the content covered and instructional methods used by other teachers at this school • Teachers know what students learn in each of their classes • The school leadership facilitates using data to improve student learning • Teachers provide parents/guardians with useful information about student learning
High Expectations for All Students (Hoy, 2012; Shouse, 1996; Murphy, Weil, Philip, & Mitman, 1982)	<ul style="list-style-type: none"> • Teachers believe almost every student has the potential to do well on assignments • Teachers believe what is taught will make a difference in students' lives • Teachers require students to work hard
Academic and Instructional Focus (Hoy, 2012; Shouse, 1996; Murphy, Weil, Philip, & Mitman, 1982)	<ul style="list-style-type: none"> • Teachers use assessment data to inform their instruction • Teachers are assigned classes that maximize their likelihood of success with students • Teachers are allowed to focus on educating students with minimal interruptions • Teacher performance is assessed objectively • Teachers receive feedback that can help them improve teaching • Teachers are encouraged to reflect on their own practice • Professional development enhances teachers' ability to implement instructional strategies that meet

	<div>diverse student learning needs</div> <ul style="list-style-type: none"> • Professional development is differentiated to meet the individual needs of teachers • Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices • Professional development deepens teachers' content knowledge
Disciplinary Climate (Shouse, 1996)	<ul style="list-style-type: none"> • Students at this school follow rules of conduct • Teachers consistently enforce rules for student conduct

Table 8

TWC Questions Used to Measure Sense of Community

Indicator of Sense of Community as defined in the literature	Corresponding TWC Questions
Shared values and understandings (Hoy, 2012; Shouse, 1996; Bryk & Driscoll, 1988; Newmann, Rutter, & Smith, 1989)	<ul style="list-style-type: none"> • Students at this school understand expectations for their conduct • Policies and procedures about student conduct are clearly understood by the faculty • The faculty and staff have a shared vision • This school maintains clear, two-way communication with the community • Teachers are effective leaders in this school • The school improvement team provides effective leadership at this school
Common agenda of activities (Hoy, 2012; Shouse, 1996; Bryk & Driscoll, 1988; Newmann, Rutter, & Smith, 1989)	<ul style="list-style-type: none"> • School administrators support teachers' efforts to maintain discipline in the classroom • Teachers are recognized as educational experts • Teachers are trusted to make sound professional decisions about instruction • Teachers are relied upon to make

	<p>decisions about educational issues</p> <ul style="list-style-type: none"> • Teachers are encouraged to try new things to improve instruction • Teachers have an appropriate level of influence on decision making in this school • Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices • The faculty has an effective process for making group decisions to solve problems
<p>Ethic of Caring (Hoy, 2012; Shouse, 1996; Bryk & Driscoll, 1988; Newmann, Rutter, & Smith, 1989)</p>	<ul style="list-style-type: none"> • There is an atmosphere of trust and mutual respect in this school • The school leadership consistently supports teachers • The faculty are recognized for accomplishments • The faculty work in a school environment that is safe • Teachers feel comfortable raising issues and concerns that are important to them • Teachers receive feedback that can help them improve teaching

Schools and school districts use the TWC:2014 survey instrument to provide school profiles based on eight constructs linked to the conditions of teaching and learning: (1) time; (2) facilities and resources; (3) community support and involvement; (4) managing student conduct; (5) teacher leadership; (6) school leadership; (7) professional development; (8) instructional practices and support. Table 4 and 5, in chapter three, stated the TWC:2014 constructs covered by the preliminary items explored to define academic press and sense of community. Using construct validity data from the subject matter experts, this researcher revisited the TWC:2014 constructs covered by each latent variable. The final TWC:2014 constructs covered by the items used for academic press now include (1) time; (2) managing student conduct; (3) school

leadership; (4) professional development; and (5) instructional practices and support. The final TWC:2014 constructs covered by the items used for sense of community now include (1) community support and involvement; (2) managing student conduct; (3) teacher leadership; (4) school leadership; (5) professional development; (6) and instructional practices and support.

An important result of this study was the analysis of the measurement model for the latent variables academic press and sense of community separate of the structural model. In addition to collecting data from subject matter experts, this study used a confirmatory factor analysis to interpret the content validity and fit of the twenty indicators used to measure academic press and the twenty indicators used to measure sense of community. What follows are the results of that analysis.

Table 9

Indicator statistics for the Latent Variable Academic Press

Indicator (Questions from TWC:2014)	Coefficient (factor loadings)	Standard Error	Residual Variances	R-squared
Teachers collaborate to achieve consistency on how student work is assessed:NC14_ip1021consassess	.742	.009	.449	.551
Teachers have knowledge of the content covered and instructional methods used by other teachers at this school: NC14_ip1021knowother	.770	.008	.407	.593
Teachers provide parents/guardians with useful information about student learning: NC14_csl021infolearn	.698	.011	.513	.487
Teachers believe almost every student has the potential to do well on assignments: NC14_ip1021potential	.741	.009	.451	.549

Teachers believe what is taught will make a difference in students' lives:NC14_ip1021differen	.727	.010	.471	.529
Teachers require students to work hard:NC14_ip1021hardwk	.724	.010	.476	.524
Teachers know what students learn in each of their classes: NC14_ip1021whatlearn	.773	.008	.403	.597
Teachers use assessment data to inform their instruction: NC14_ip1021datainform	.674	.011	.546	.454
Teachers are assigned classes that maximize their likelihood of success with students: NC14_ip1021maxsuccess	.737	.009	.458	.542
Students at this school follow rules ofconduct:NC14_scl021stufollow	.635	.012	.597	.403
Teachers consistently enforce rules for student conduct: NC14_scl021tchconsist	.745	.009	.446	.554
Teachers are allowed to focus on educating students with minimal interruptions: NC14_tml021focus	.685	.011	.531	.469
The school leadership facilitates using data to improve student learning:NC14_ldl021usedata	.748	.009	.441	.559
Teacher performance is assessed objectively: NC14_ldltchrperf	.747	.009	.442	.558
Teachers receive feedback that can help them improve teaching: NC14_ldlfdbkimpr	.796	.008	.367	.633
Professional development is differentiated to meet the individual needs of teachers: NC14_pdl021different	.723	.010	.477	.523
Professional development deepens	.769	.009	.409	.591

teachers' content knowledge:
NC14_pdl021deepeffect

Teachers are encouraged to reflect
on their own practice:
NC14_pdl01reflect

.781 .008 .389 .611

Professional development provides
ongoing opportunities for teachers
to work with colleagues to refine
teaching practices:
NC14_pdl021colleague

.799 .008 .362 .638

Professional development enhances
teachers' ability to implement
instructional strategies that meet
diverse student learning needs:
NC14_pdl021implement

.813 .007 .339 .661

Note. All indicators for the latent variable academic press had significant p -values ($p = .000$) at $\alpha = .05$. A factor loading indicates the correlation between a variable and a factor. A factor loading close to 1 indicates a strong relationship between the respective factor and item; hence, a factor loading is analogous to a correlation coefficient (Zeller & Carmines, 1980). If a large correlation indicates a strong relationship then a large factor loading means that the variable is a strong definer of the factor (Zeller & Carmines, 1980).

Table 9 highlights data from the confirmatory factor analysis of the twenty items that were all conceptualized as indicators of a school's academic press. "In confirmatory factor analysis, one takes a specific hypothesized structure and sees how well it accounts for the observed relationships in the data" (Loehlin, 2004, p. 17). Zeller and Carmines (1980) state that results from a factor analysis are useful in determining whether indicants supposedly measuring the same concept define the same factor. The factor loadings range from .635 to .813. These strong loadings, the conceptualization of the questions based on school climate theory, and input from subject matter experts supports construct validity of the items comprising the latent variable academic press. Furthermore, the overall r -squared was calculated and the full academic press model explains 96% of the variance. The residual variance is what is left unexplained by the model and r -squared is the variance explained by the model

In addition to the calculated statistics in Table 9, a Chi-Square test was calculated to assess the model fit for the latent variable academic press. “Measures of overall model fit indicate to which extent a structural equation model (SEM) corresponds to the empirical data” (Schermelele-Engel, Moosbrugger, & Muller, 2003, p. 36). The Chi-square goodness of fit test in a SEM model is a statistical test to determine differences between the hypothesized model and observed data. The null hypothesis of the chi-square test is that the hypothesized model structure perfectly reproduces the data in the sample. For this reason, it is preferred to have a non-significant chi-square ($p > .05$) because it suggests that the null hypothesis can be accepted and that the hypothesized model is specified correctly and matches these data perfectly. The alternative hypothesis is that the hypothesized model structure does not perfectly reproduce the sample data and this suggests something is specified incorrectly. Rejecting the null hypothesis does not mean that the relationships modeled that are not significant are in fact significant; it means that the hypothesized model does not fit the data perfectly. Loehlin (2004) states that upon receiving a chi-square less than the cutoff value the conclusion is not that the model is correct but that the test did not show the model is incorrect. Reasons behind this may include omitted paths, omitted variables, and poorly specified latent variables.

Schermelele-Engel, Moosbrugger and Muller (2003) contend there is no single statistical significance test that identifies a correct model given the sample data; therefore, it is necessary to evaluate model fit on the basis of various measures simultaneously. Chi-square has limitations as a descriptive index of model fit (Loehlin, 2004). Mainly, chi-square is sensitive to sample size. Bentler and Bonett (1980) note chi-square is a direct function of sample size; therefore, not too much emphasis should be placed on the significance of chi-squared. Chi-square can be nonsignificant – implying satisfactory fit - even in the face of gross misfits with small enough

samples (Loehlin, 2004). Thus, there is a need for using different fit indices with less sensitivity to sample size even if the chi-square test is significant. For this study, the results of the Chi-square test for the latent variable academic press ($\chi^2 = 11872.861$, $p = 0.000$, $\alpha = .05$) are significant and indicate poor fit. Therefore, Table 10 summarizes the additional fit indices recommended to use less sensitivity to sample sizes to assess fit for the latent variable academic press model.

This study used four indices less affected by sample size to assess fit for the latent variable academic press and sense of community: (1) the Root mean squared error of approximation (RMSEA); (2) the Comparative fit index (CFI); (3) the Tucker-Lewis index (TLI); and (3) the Standardized root mean squared residual (SRMR) (Loehlin, 2004; Marsh et. al, 1988; Schermelleh-Engel et. al, 2003).

RMSEA is a population-based fit index; an estimate of how well the model can account for variation in the population. Population-based fit indices recognize that no model should be expected to fit exactly in the population – “all models represent simplifications of reality” (Loehlin, 2004, p. 68). The lack of fit of any model to sample data can conceptually be broken down into two parts: (1) that due to the error of approximation of the population data by the model and (2) that due to the error of estimation in sampling (Loehlin, 2004). RMSEA is based on estimates of the error of approximation and is relatively insensitive to sample size. Loehlin (2004) states that the RMSEA allows a researcher to conclude at the specified level of confidence that the present model fits in the population. This is a more meaningful conclusion than the one from the usual chi-square test of fit, which is that an exact fit can’t be ruled out (Loehlin, 2004).

Researchers generally couple the RMSEA and SRMR as criterion to evaluate goodness of

fit (Loehlin, 2004). The SRMR supplies an overall average of the size of residuals. Loehlin (2004) states that the size of the residuals gives a sense of the goodness of fit; large residuals suggest which aspects of these data are poorly captured by the model. Examining the residuals is helpful to avoid claiming a satisfactory overall fit when unimportant parts of the model offset a serious misfit at one or more theoretically crucial points (Loehlin, 2004).

The CFI and TLI are descriptive measures based on comparisons between the fit of a model of interest and the fit of some baseline model (e.g., the null model) (Loehlin, 2004). The null model has no factor loadings or regression paths - it only estimates means and variances of the observed variables and assumes all other parameters are equal to zero. Loehlin (2004) offers that the comparison benefit is seen when investigating whether the model of interest is an improvement relative to the baseline model. Both the CFI and TLI, in MPLUS 7.3, use the null model as the comparison model and both are less affected by sample size.

Table 10

Summary of the Goodness of Fit Statistics for the Latent Variable Academic Press

Measures of Model Fit	Value
RMSEA (Root mean squared error of approximation)	0.163
CFI (comparative fit index)	0.740
TLI (Tucker-Lewis index)	0.710
SRMR (Standardized root mean squared residual)	0.074

Note. A cutoff value close to .06 for RMSEA; a cutoff value close to .95 for TLI and CFI; a cutoff value close to .08 for SRMR are needed before one can conclude that there is a relatively good fit between the hypothesized model and the observed data (Hu & Bentler, 1999).

Table 11

Indicator statistics for the Latent Variable Sense of Community

Indicator (Questions from TWC:2014)	Coefficient (factor loadings)	Standard Error	Residual Variances	R-squared
Students at this school understand expectations for their conduct: NC14_scl021expconduct	.709	.009	.497	.503
Policies and procedures about student conduct are clearly understood by the faculty: NC14_scl021policyproc	.740	.009	.453	.547
The faculty and staff have a shared vision: NC14_ldl021sharedvis	.903	.004	.185	.815
School administrators support teachers' efforts to maintain discipline in the classroom: NC14_scl021efforts	.834	.006	.305	.695
Teachers are recognized as educational experts: NC14_emi021experts	.912	.004	.169	.831
Teachers are trusted to make sound professional decisions about instruction: NC14_emi021trustsound	.893	.004	.203	.797
Teachers are relied upon to make decisions about educational issues:NC14_emi021decmake	.897	.004	.195	.805
Teachers are encouraged to try new things to improve instruction: NC14_ipi021trynew	.757	.009	.426	.574
There is an atmosphere of trust and mutual respect in this school: NC14_ldl021trustresp	.913	.003	.167	.833
The school leadership consistently supports teachers:	.935	.003	.125	.875

NC14_ldl021tchrsupp

The faculty are recognized for accomplishments:

NC14_ldl021recogaccom	.824	.003	.322	.678
-----------------------	------	------	------	------

This school maintains clear, two-way communication with the community:NC14_csl021communic

.735	.007	.460	.540
------	------	------	------

The faculty work in a school environment that is safe:

NC14_scl021safe	.709	.009	.497	.503
-----------------	------	------	------	------

The faculty has an effective process for making group decisions to solve problems:NC14_eml021process

.895	.010	.200	.800
------	------	------	------

Teachers are effective leaders in this school: NC14_eml021effleader

.902	.004	.186	.814
------	------	------	------

Teachers have an appropriate level of influence on decision making in this school: NC14_eml021schinflu

.748	.009	.440	.560
------	------	------	------

Teachers feel comfortable raising issues and concerns that are important to them:NC14_ldl021raiseconc

.912	.004	.167	.833
------	------	------	------

Teachers receive feedback that can help them improve teaching:

NC14_ldl021fdbkimpr	.840	.005	.294	.706
---------------------	------	------	------	------

The school improvement team provides effective leadership at this school:NC14_ldl021sipeffect

.788	.008	.378	.622
------	------	------	------

Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices:

NC14_pdl021colleague	.704	.010	.505	.495
----------------------	------	------	------	------

Note. All indicators for the latent variable sense of community had significant p -values ($p = .000$) at $\alpha = .05$. A factor loading indicates the correlation between a variable and a factor. A factor loading close to 1 indicates a strong relationship between the respective factor and item; hence, a factor loading is analogous to a correlation coefficient (Zeller & Carmines, 1980). If a large correlation indicates a strong relationship then a large factor loading means that the variable is a strong definer of the factor (Zeller & Carmines, 1980).

Table 11 highlights data from the confirmatory factor analysis of the twenty items that were all conceptualized as indicators of a school's sense of community. "In confirmatory factor analysis, one takes a specific hypothesized structure and sees how well it accounts for the observed relationships in the data" (Loehlin, 2004, p. 17). Zeller and Carmines (1980) state that results from a factor analysis are useful in determining whether indicants supposedly measuring the same concept define the same factor. The factor loadings range from .704 to .935. These strong loadings, the conceptualization of the questions based on school climate theory, and input from subject matter experts supports construct validity of the items comprising the latent variable sense of community. Furthermore, the overall r -squared was calculated and the full sense of community model explains 98% of the variance.

In addition to the calculated statistics in Table 11, a Chi-Square test was calculated to assess fit for the latent variable sense of community ($\chi^2 = 12358.330, p = 0.000, \alpha = .05$). These data are significant and indicate poor fit; however, this can be an unreliable measure to detect a difference between the implied model and the estimated model due to sensitivity to sample size. . Therefore, Table 12 summarizes the additional fit indices recommended to use with less sensitivity to sample sizes to assess fit for the latent variable sense of community model.

Table 12

Summary of the Goodness of Fit Statistics for the Latent Variable Sense of Community

Measures of Model Fit	Value
RMSEA (Root mean squared error of approximation)	0.167
CFI (comparative fit index)	0.819
TLI (Tucker-Lewis index)	0.798
SRMR (Standardized root mean squared residual)	0.050

Note. A cutoff value close to .06 for RMSEA; a cutoff value close to .95 for TLI and CFI; a cutoff value close to .08 for SRMR are needed before one can conclude that there is a relatively good fit between the hypothesized model and the observed data (Hu & Bentler, 1999).

Descriptive Statistics of Research Variables

Means, minimums, maximums, and standard deviations were calculated for each of the research variables. Descriptive statistics are summarized in Table 13.

Table 13

Descriptive Statistics of Research Variables

Variable	N	Mean	Standard Deviation	Minimum	Maximum
EVAAS score	104	80.578	11.557	50	100
Free and Reduced Lunch Rate	106	.600	.248	.044	1
Transactional	107	2.253	.473	1	3.375
Transformational	107	3.237	.357	2.2	3.95
Measurements for Latent Variable Academic Press					
Teachers collaborate to achieve consistency on how student work is assessed: NC14_ip1021consassess	107	3.245	.212	2.622	3.795
Teachers have knowledge of the content covered and instructional methods used by other teachers at this school: NC14_ip1021knowother	107	3.215	.198	2.727	3.755
Teachers provide parents/guardians with useful information about student learning: NC14_csl021infolearn	107	3.422	.202	3	3.878
Teachers believe almost every student has the potential to do well on assignments: NC14_ip1021potential	107	3.291	.193	2.8	3.875

Teachers believe what is taught will make a difference in students' lives: NC14_ip1021differen	107	3.358	.188	2.65	4
Teachers require students to work hard: NC14_ip1021hardwk	107	3.421	.193	2.923	3.898
Teachers know what students learn in each of their classes: NC14_ip1021whatlearn	107	3.257	.204	2.75	3.735
Teachers use assessment data to inform their instruction: NC14_ip1021datainform	107	3.290	.176	2.9	3.773
Teachers are assigned classes that maximize their likelihood of success with students: NC14_ip1021maxsuccess	107	3.099	.261	2.457	3.636
Students at this school follow rules of conduct: NC14_scl021stufollow	107	2.966	.358	1.556	3.833
Teachers consistently enforce rules for student conduct: NC14_scl021tchconsist	107	3.176	.272	2.415	3.833
Teachers are allowed to focus on educating students with minimal interruptions: NC14_tml021focus	107	2.912	.304	2.2	3.8
The school leadership facilitates using data to improve student learning: NC14_ldl021usedata	107	3.441	.184	3	3.860
Teacher performance is assessed objectively: NC14_ldl021tchrperf	107	3.310	.245	2.571	3.841
Teachers receive feedback that can help them improve teaching: NC14_ldl021fdbkimpr	107	3.265	.233	2.652	3.818
Professional development is differentiated to meet the individual needs of teachers: NC14_pdl021different	107	2.938	.303	2.083	3.571
Professional development deepens teachers' content knowledge: NC14_pdl021deepeffect	107	3.043	.254	2.354	3.694
Teachers are encouraged to reflect on their	107	3.289	.176	2.783	3.8

own practice: NC14_pdl01reflect

Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices: NC14_pdl021colleague	107	3.062	.254	2.444	3.735
---	-----	-------	------	-------	-------

Professional development enhances teachers' ability to implement instructional strategies that meet diverse student learning needs: NC14_pdl021implement	107	3.103	.233	2.489	4
--	-----	-------	------	-------	---

Measurements for Latent Variable Sense of Community

Students at this school understand expectations for their conduct: NC14_scl021expconduct	107	3.241	.296	1.833	3.875
--	-----	-------	------	-------	-------

Policies and procedures about student conduct are clearly understood by the faculty: NC14_scl021policyproc	107	3.237	.278	2	3.854
--	-----	-------	------	---	-------

The faculty and staff have a shared vision: NC14_ldl021sharedvis	107	3.205	.250	2.478	3.841
--	-----	-------	------	-------	-------

School administrators support teachers' efforts to maintain discipline in the classroom: NC14_scl021efforts	107	3.236	.316	1.861	4
---	-----	-------	------	-------	---

Teachers are recognized as educational experts: NC14_eml021experts	107	3.164	.286	2.391	3.870
--	-----	-------	------	-------	-------

Teachers are trusted to make sound professional decisions about instruction: NC14_eml021trustsound	107	3.212	.310	2.194	4
--	-----	-------	------	-------	---

Teachers are relied upon to make decisions about educational issues: NC14_eml021decmake	107	3.178	.292	2.194	4
---	-----	-------	------	-------	---

Teachers are encouraged to try new things to improve instruction: NC14_ipl021trynew	107	3.345	.163	2.889	3.755
---	-----	-------	------	-------	-------

There is an atmosphere of trust and mutual respect in this school: NC14_ldl021trustresp	107	3.057	.341	1.833	4
---	-----	-------	------	-------	---

The school leadership consistently supports teachers: NC14_ldl021tchrsupp	107	3.221	.282	2.461	4
---	-----	-------	------	-------	---

The faculty are recognized for accomplishments: NC14_ldl021recogaccom	107	3.243	.263	2	3.818
This school maintains clear, two-way communication with the community: NC14_csl021communic	107	3.274	.227	2.457	3.818
The faculty work in a school environment that is safe: NC14_scl021safe	107	3.427	.227	2.852	4
The faculty has an effective process for making group decisions to solve problems: NC14_emi021process	107	3.157	.253	2.540	3.684
Teachers are effective leaders in this school: NC14_emi021effleader	107	3.297	.247	2.611	3.909
Teachers have an appropriate level of influence on decision making in this school: NC14_emi021schinflu	107	2.939	.255	2.056	3.632
Teachers feel comfortable raising issues and concerns that are important to them: NC14_ldl021raiseconc	107	3.043	.340	2.028	3.818
Teachers receive feedback that can help them improve teaching: NC14_ldl021fdbkimpr	107	3.265	.233	2.652	3.818
The school improvement team provides effective leadership at this school: NC14_ldl021sipeffect	107	3.271	.219	2.654	3.818
Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices: NC14_pdl021colleague	107	3.062	.254	2.444	3.735

Note. The 2014 North Carolina Teacher's Working Condition Survey responses are scored using Likert-type ratings 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree, 5 = don't know. The minimum is the lowest average Likert scale rating for each item. The maximum is the highest average Likert scale rating for each item. Reporting the minimum and maximum values provides a range for all ratings to fall between. For example, a reported minimum value of 2 (disagree) and a maximum reported value of 3.854 (agree-strongly agree) means responses ranged from respondents disagreeing to strongly agreeing with an item.

A Structural Equation Modeling Analysis for Student Achievement

This study began with a conceptual model - a visual representation of theoretical variables of interest and expected relations among them (Kline, 2016). Loehlin (2004) offers that the simplest explanation of an interesting behavioral phenomenon involves causal relationships among a number of variables, and a path diagram provides a clear way of representing what is assumed to be going on in such a case. The purpose of using a SEM methodology for this study was to propose a fixed theoretical model, fit it to observed data, and comment on whether or not it was the best theoretical model to explain a principal's influence on student learning outcomes through two intervening variables. The primary goals of SEM are to assess the fit and estimate the parameters of the hypothesized model. Kline (2016) proposes six steps for a SEM analysis: specification, identification, collection, estimation, respecification, and reporting.

Steps 1 and 2: Specification and Identification

The SEM technique starts with the specification of a model to be estimated, which is a series of hypotheses about how the variables in the analysis are generated and related (Hu & Bentler, 1999). SEM requires *a priori* (deductions from theory) specifications reflected in the study's hypotheses and used to make up the model to be analyzed (Kline, 2016). A review of the literature was to provide theoretical justification of the six hypotheses developed to explore the research question. The first part of the model (see Figure 2) looks at transactional and transformational leadership styles along with school level and principals' years of experience as covariates and measures the direct impact with latent variables academic press and sense of community. The second part of the model looks at the latent variables academic press and sense of community and free-and-reduced lunch rate as a covariate and measures the direct impact with

student outcomes. This 2-dimensional model aims to assess the indirect and direct effects of transactional and transformational leadership on a school's academic press, sense of community, and student learning outcomes and compare to tell if there is mediation. The model aims to predict how they are related.

A model must be identified to use a SEM computing tool such as MPLUS 7.3. A model is identified if there is sufficient information to estimate all the parameters. So, a researcher must consider the number of parameters and the number of observations in the study. Due to practical concerns for the study's sample size, a single observed value (the average score of the two subscale scores for transactional leadership and the average score for the four subscale scores for transformational leadership) was used for each principal's transformational and transactional leadership behaviors.

Step 3: Estimation

Step three of a SEM analysis is to use a computer tool to conduct the analysis (Kline, 2016).

This researcher used MPLUS 7.3. There are three parts of the analysis: (a) evaluate fit; (b) interpret the parameter estimates; and (c) consider equivalent or near-equivalent models (Kline, 2016).

Table 14

Summary of the Goodness of Fit Statistics for Overall Model

Measures of Model Fit		Value	
Chi-Square Test of Model Fit	Value	Degrees of Freedom	p-value
	4546.356	1089	.000
RMSEA (Root mean squared error of approximation)		.172	
CFI (comparative fit index)		.512	
TLI (Tucker-Lewis index)		.485	
SRMR (Standardized root mean squared residual)		.295	

Evaluate fit. Path models are simplified approximations to reality, so fit indices measure the goodness or badness of the approximation to the distribution from which the sample was drawn (McDonald & Ho, 2002). “Measures of overall model fit indicate to which extent a structural equation model (SEM) corresponds to the empirical data” (Schermmelleh-Engel et al., 2003, p. 36). The Chi-square goodness of fit test in a SEM model is a statistical test to determine differences between the hypothesized model and observed data. The null hypothesis of the chi-square test is that the hypothesized model structure perfectly reproduces the data in the sample. For this reason, it is preferred to have a non-significant chi-square ($p > .05$) because it suggests that the null hypothesis can be accepted and that the hypothesized model is specified correctly and matches these data perfectly. The alternative hypothesis is that the hypothesized model structure does not perfectly reproduce the sample data and this suggests something is specified incorrectly. Rejecting the null hypothesis does not mean that the relationships modeled that are not significant are in fact significant; it means that the hypothesized model does not fit the data perfectly.

Based on the Chi-Square test ($\chi^2 = 4546.356, p = 0.000, \alpha = .05$), these data are significant and indicate poor fit. Kline (2016) argues that it is important to not focus solely on global fit due to the danger of overlooking parameter estimates that may make sense.

A limitation of using goodness of fit statistics is that it becomes challenging for a researcher to determine with aspects of the structural model are misspecified (McDonald & Ho, 2002). For this study, it behooves the researcher to examine the measurement model theorized for the latent variables academic press and sense of community (McDonald & Ho, 2002).

Interpret the parameter estimates. The second part of the analysis is to interpret the parameter estimates. Parameter estimation is the procedure used to find the parameter values of

a model that best fit these data (Myung, 2003). The method of parameter estimation used for this study is maximum likelihood estimation (MLE) (the default method for the computing tool MPLUS 7.3). The goal of data analysis is to identify the population that is most likely to have generated the sample (Myung, 2003). A population is identified by a corresponding probability distribution, and each probability distribution is associated with a unique value of the model's parameter (Myung, 2003). As the parameter changes in value, different probability distributions are generated (Myung, 2003). A model is defined as the family of probability distributions indexed by the model's parameter; therefore, MLE is a method to seek the probability distribution that makes the observed data most likely (Myung, 2003).

Mathematically, the MLE estimate is obtained by following the optimization algorithm that maximizes the log-likelihood function. The optimization algorithm tries to improve upon an initial set of parameters by adding small changes in such a way that the new parameters are likely to lead to an optimum parameter (Myung, 2003).

There are benefits to using the MLE method as compared to least-squares estimation (OLS). Optimal properties of MLE include: complete information about the parameter of interest; lowest possible variance of parameter estimates; and parameterization invariance (Myung, 2003). MLE and OLS do have points of intersection. The specified models from step two are identified as recursive structural models. Recursive models have no closed cycles formed by directed paths (McDonald & Ho, 2002). MLE and OLS estimation produce basically identical path coefficients for recursive path models (Kline, 2016).

Table 15

SEM Analysis Results for Research Variables

Path Models	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
Student Outcomes				
Transactional	-3.367	2.343	-1.437	.151
Transformational	.901	3.250	.277	.782
Academic Press	1.115	13.027	.086	.932
Sense of Community	5.976	10.308	.580	.562
Free and Reduced Lunch	-12.639	4.305	-2.936	.003*
Academic Press				
Transactional	.004	.033	.122	.903
Transformational	.098	.045	2.201	.028*
Elementary	.157	.046	3.386	.001*
Middle	.016	.052	.307	.759
Alternative	.018	.079	.235	.814
7-11 Years of Exp	-.026	.113	-.230	.818
12-20 Years of Exp	.026	.032	.819	.413
Sense of Community				
Transactional	-.007	.044	-.165	.869
Transformational	.093	.059	1.563	.118
Elementary	.067	.059	1.128	.259
Middle	-.024	.069	-.347	.729
Alternative	.044	.104	.425	.671
7-11 Years of Exp	-.137	.150	-.913	.361
12-20 Years of Exp	.016	.043	.379	.705

Note. *Statistically significant at $p < .05$ level. Two-tailed tests should be used when a researcher is willing to accept any of the following: one mean being greater, lower or similar to the other. In other words, a two-tailed test will take into account the possibility of both a positive and a negative effect. MPLUS 7.3 outputs the unstandardized coefficients (Estimates in the output), the standard errors (abbreviated S.E. in the output), and the estimates divided by their respective standard errors (Est./S.E.) – an unstandardized estimate divided by its standard error may be evaluated as a Z statistic, so values that exceed +1.96 or fall below -1.96 are significant below $p = .05$. Each unstandardized estimate represents the amount of change in the outcome variable as a function of a single unit change in the variable causing it. For instance, controlling for transactional leadership behaviors, a one-point increase in transformational leadership behaviors results in a .901 increase in student outcomes, on average.

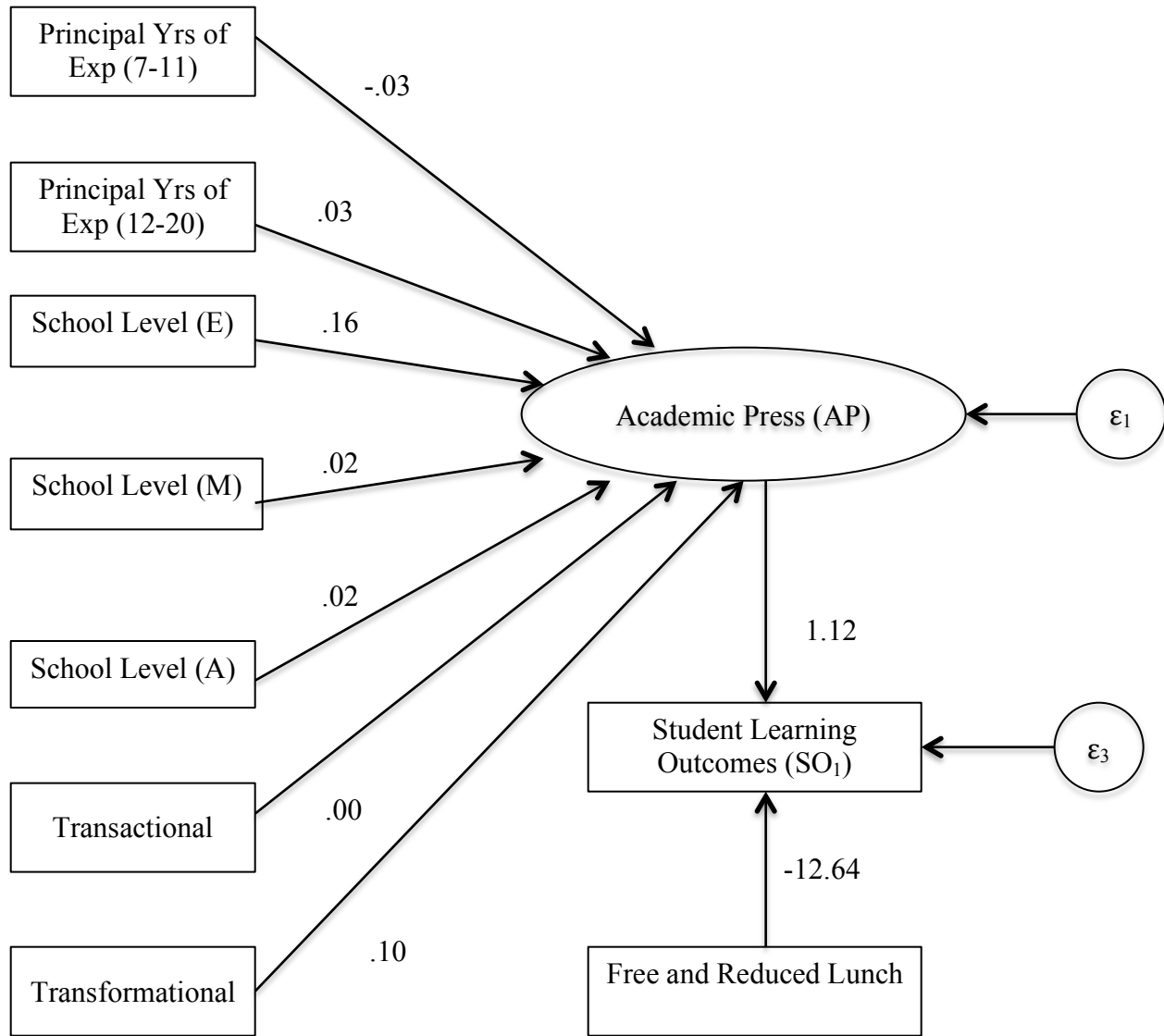


Figure 7. Reporting the unstandardized parameter estimates for the total indirect effects of the independent variables: principals' transactional leadership behavior (T); transformational leadership behavior (TF); principals' years of experience (PE7 = 7-11 years of experience and PE12 = 12-20 years of experience); and school level (SLE = school level elementary, SLM = school level middle, and SLA = school level alternative) on student learning outcomes (SO₁) mediated through the intervening variable academic press. This figure also presents the unstandardized parameter estimate for the direct effect of the independent variable free and reduced lunch (FR) on SO₁. A Chi-Square test, $\chi^2 = 4546.356$, $p = 0.000$, $\alpha = .05$, indicates poor model fit.

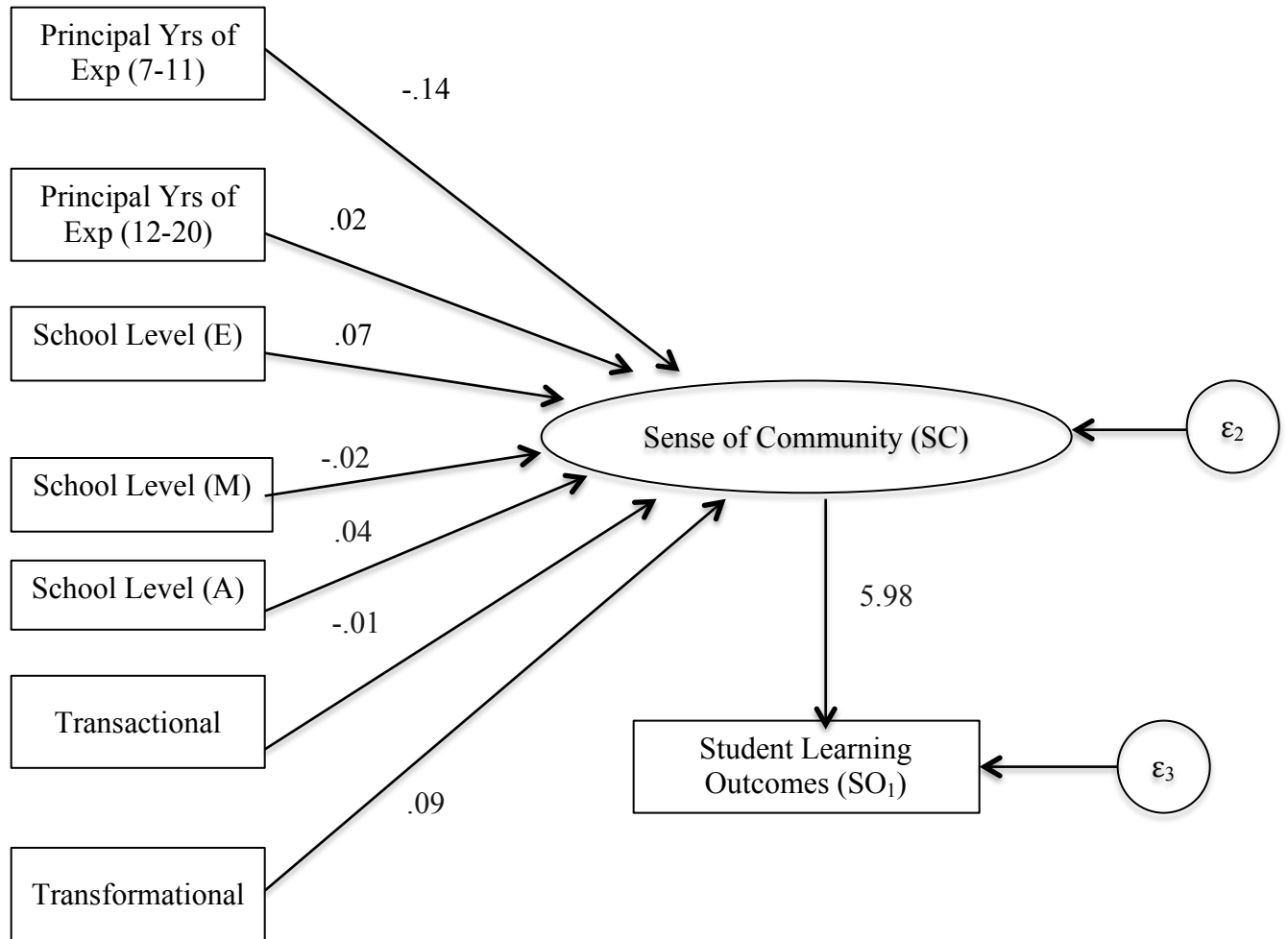


Figure 8. Reporting the unstandardized parameter estimates for the total indirect effects of the independent variables: principals' transactional leadership behavior (T); transformational leadership behavior (TF); principals' years of experience (PE7 = 7-11 years of experience and PE12 = 12-20 years of experience); and school level (SLE = school level elementary, SLM = school level middle, and SLA = school level alternative) on student learning outcomes (SO₁) mediated through the intervening variable sense of community. A Chi-Square test, $\chi^2 = 4546.356$, $p = 0.000$, $\alpha = .05$, indicates poor model fit.

Kline (2016) argues that significance tests may create a general inability for researchers to understand their results due to the inherent limitations of significance tests (i.e., p values are calculated under implausible assumptions). However, Kline (2016) does suggest for a researcher to comment on whether the signs and magnitudes of the parameter estimates make theoretical sense and whether there are unexpected results. Based on the results presented in Table 15, the

following conclusions can be made about the tested hypotheses:

Hypothesis 1

H₀: There is no relationship between principals' self-perception of their leadership style, as measured by the MLQ:Form5X, and the school's academic press. Academic press was regressed with each leadership behavior. Transformational leadership significantly predicted the variable of academic press ($r = .098$, $p = .028$). Transactional leadership was not a significant variable in predicting academic press ($r = .004$, $p = .903$). Additionally, several indicator variables representing school type and principals' years of experience were used as predictors in the regression equation. For school type, high school was the reference group. For principals' years of experience, greater than 20 years was the reference group. The results suggested that compared to high schools elementary schools have a significant impact on the variable of academic press while high schools do not ($r = .157$, $p = .001$). Principals' years of experience did not significantly predict academic press.

Hypothesis 2

H₀: There is no relationship between principals' self-perception of their leadership style, as measured by the MLQ:Form5X, and the school's sense of community. Sense of community was regressed with each leadership behavior. Transformational leadership was not a significant variable in predicting the variable of sense of community. Transactional leadership was not a significant variable in predicting sense of community. Similar to the first hypothesis, several indicator variables representing school type and principals' years of experience were used as predictors in the regression equation. The results suggested that compared to high schools elementary schools do not have a significant impact on the variable of sense of community. Principals' years of experience did not significantly predict sense of community.

Hypotheses three, four, and five propose that there are direct effects on student outcomes.

Hypothesis 3

H₀: There is no relationship between principals' self-perception of their leadership style, as measured by the MLQ:Form5X, and student outcomes. Student learning outcomes was regressed with each leadership behavior. Transformational leadership was not a significant variable in predicting student outcomes. Transactional leadership was not a significant variable in predicting student outcomes.

Hypothesis 4

H₀: There is no relationship between a school's academic press and student outcomes. Academic press was regressed with student outcomes. Academic press was not a significant variable in predicting student outcomes.

Hypothesis 5

H₀: There is no relationship between a school's sense of community and student outcomes. Sense of community was regressed with student outcomes. Sense of community was not a significant variable in predicting student outcomes.

In addition to academic press and sense of community, the indicator variable representing free-and-reduced lunch was used as a predictor in the regression equation. The results suggested that a school's free-and-reduced lunch rate has a significant impact on student outcomes ($r = -12.639$, $p = .003$).

Hypothesis six proposes that there are indirect effects on student outcomes.

Hypothesis 6

H₀: There is no relationship between the principal's self-perceptions of his/her leadership style, a school's academic press, sense of community, and student outcomes. These

data failed to reject the null hypothesis that transactional or transformational leadership has an indirect effect on student outcomes through academic press and sense of community.

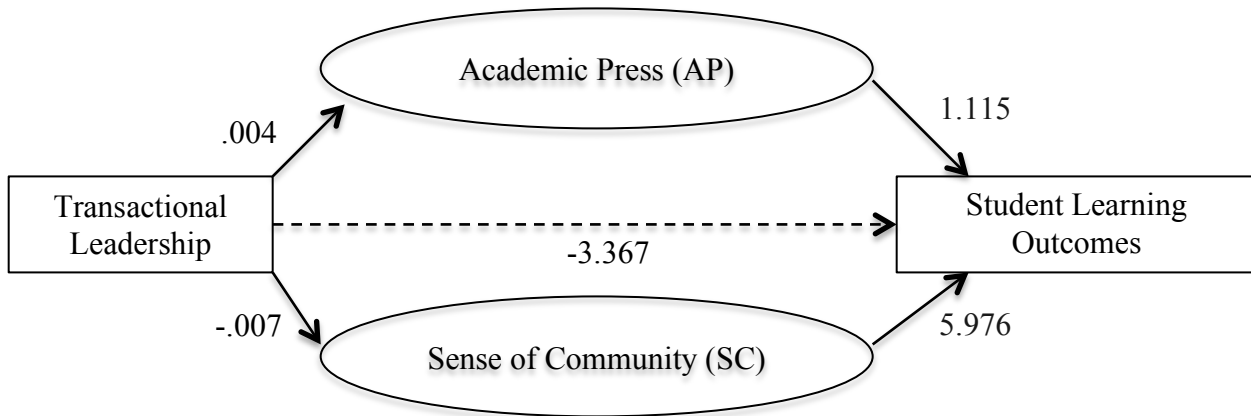


Figure 9. Reporting the unstandardized parameters for the total indirect effect of transactional leadership on student learning outcomes through academic press and sense of community while holding constant all of the other predictors in the model. This figure also presents the unstandardized parameter estimate for the direct effect of transactional leadership on student learning outcomes.

The indirect effect of a principal's transactional leadership on student learning outcomes through academic press is estimated as the product of the individual coefficients for each direct effect that makes up the indirect causal pathway (Kline, 2016). This means the indirect effect of transactional leadership on student learning through academic press may be calculated by $\alpha_{11}\beta_{61}$ or $(.004)(1.115)$. Table 16 presents the value of this product (.005) and a two-tailed p-value significance test ($p = .944$). So, the indirect effect of a one-unit increase in transactional leadership through academic press on student learning outcomes is a 0.005 increase in student learning outcomes.

The indirect effect of a principal's transactional leadership on student learning outcomes through sense of community is estimated as the product of the individual coefficients for each direct effect that makes up the indirect causal pathway (Kline, 2016). This means the indirect effect of transactional leadership on student learning through sense of community may be

calculated by $\alpha_{12}\beta_{62}$ or $(-.007)(5.976)$. Table 16 presents the value of this product $(-.044)$ and a two-tailed p-value significance test ($p = .874$). So, the indirect effect of a one-unit increase in transactional leadership through sense of community on student learning outcomes is a $-.044$ increase in student learning outcomes.

The total indirect effect is estimated as the sum of the coefficients for each individual indirect effect. Two indirect effects were calculated for a principal's transactional leadership on student learning outcomes. The first was through the intervening variable academic press ($\alpha_{11}\beta_{61} = .005$) and the second was through the intervening variable sense of community ($\alpha_{12}\beta_{62} = -.044$). This means the total indirect effect may be estimated by $\alpha_{11}\beta_{71} + \alpha_{12}\beta_{72}$, and yields a result of $-.039$ ($p = .895$). The total indirect effect was non-significant. The total effect is the sum of the direct and indirect effects (Kline, 2016). The total effect was non-significant ($r = -3.406$, $p = .149$).

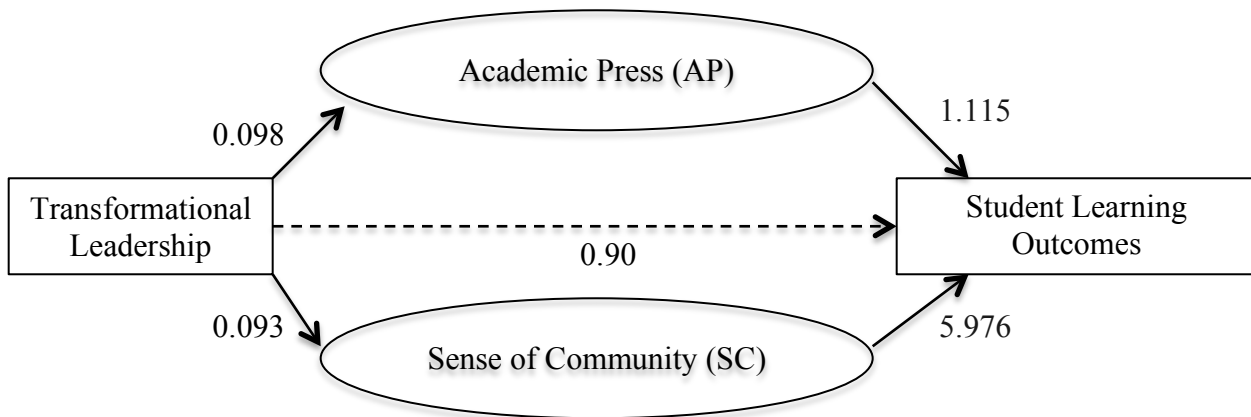


Figure 10. Reporting the unstandardized parameters for the total indirect effect of transformational leadership on student learning outcomes through academic press and sense of community while holding constant all of the other predictors in the model. This figure also presents the unstandardized parameter estimate for the direct effect of transformational leadership on student learning outcomes.

The indirect effect of a principal's transformational leadership on student learning outcomes through academic press is estimated as the product of the individual coefficients for

each direct effect that makes up the indirect causal pathway (Kline, 2016). This means the indirect effect of transformational leadership on student learning through academic press may be calculated by $\alpha_{11}\beta_{71}$ or $(.098)(1.115)$. Table 16 presents the value of this product (.110) and a two-tailed p-value significance test ($p = .932$). So, the indirect effect of a one-unit increase in transformational leadership through academic press on student learning outcomes is a 0.110 increase in student learning outcomes.

The indirect effect of a principal's transformational leadership on student learning outcomes through sense of community is estimated as the product of the individual coefficients for each direct effect that makes up the indirect causal pathway (Kline, 2016). This means the indirect effect of transformational leadership on student learning through sense of community may be calculated by $\alpha_{12}\beta_{72}$ or $(.093)(5.976)$. Table 16 presents the value of this product (.553) and a two-tailed p-value significance test ($p = .586$). So, the indirect effect of a one-unit increase in transformational leadership through sense of community on student learning outcomes is a 0.553 increase in student learning outcomes.

The total indirect effect is estimated as the sum of the coefficients for each individual indirect effect. Two indirect effects were calculated for a principal's transformational leadership on student learning outcomes. The first was through the intervening variable academic press ($\alpha_{11}\beta_{71} = .110$) and the second was through the intervening variable sense of community ($\alpha_{12}\beta_{72} = .553$). This means the total indirect effect may be estimated by $\alpha_{11}\beta_{71} + \alpha_{12}\beta_{72}$, and yields a result of 0.663 ($p = .385$). The total indirect effect is non-significant. The total effect is the sum of the direct and indirect effects (Kline, 2016). The total effect was non-significant ($r = 1.563, p = .620$).

Table 16

Total, Total Indirect, and Specific Indirect Effects

Effects	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
Transactional to Student Outcomes				
Total	-3.406	2.361	-1.442	0.149
Total Indirect	-0.039	0.295	-0.133	0.895
Specific Indirect				
Student Outcomes Academic Press Transactional				
	0.005	0.065	0.070	0.944
Student Outcomes Sense of Community Transactional				
	-0.044	0.275	-0.159	0.874
Transformational to Student Outcomes				
Total	1.563	3.157	0.495	0.620
Total Indirect	0.663	0.762	0.869	0.385
Specific Indirect				
Student Outcomes Academic Press Transformational				
	0.110	1.282	0.086	0.932
Student Outcomes Sense of Community Transformational				
	0.553	1.015	0.545	0.586

Consider equivalent or near-equivalent models. The third part of the analysis is to consider equivalent or near-equivalent models. This step is important because it helps the researcher avoid confirmation bias. Confirmation bias occurs when a researcher retains a model without considering other explanations of these data (Kline, 2016). It is important to note that success in SEM is determined by whether the analysis deals with substantive theoretical issues regardless of whether or not a model is retained (Kline, 2016). This leads to step four.

Step 4: Re-specification

If a specified model is shown to be of poor fit then step four of a SEM analysis looks for

theoretically justifiable possible changes (Kline, 2016). These changes are driven by rational considerations more than statistical ones (Kline, 2016; McDonald & Ho, 2002). Statistically, Loehlin (2004) contends that researchers need to be wary of uncritical acceptance of any solution a computer program happens to produce. Loehlin suggests leaving theoretically justified paths in the model until cross-validation confirms they can be safely dropped. Therefore, it behooves a researcher to try solutions with two or three different criteria and see if all converge (Loehlin, 2004).

This researcher respecified the model by adding a covariate to control for district fixed effects. Theoretically, there may be a difference in schools' academic press and sense of community depending on district characteristics, such as district wealth. District wealth may affect the resources allotted to individual schools (e.g., quality teachers, technology, professional development opportunities, and facilities), which may influence school climate and further explain the phenomenon tested by the proposed theoretical model. For these reasons, this researcher was justified to include two covariates in the model to measure time-invariant characteristics in the district: district number and district wealth (i.e., local district per pupil expenditure). Each covariate was separately added to the model, since these measures are collinear. An additional hypothesis was developed to explore the research question:

H₀: There is no relationship between district characteristics and schools' academic press and sense of community.

Adding these covariates created three non-nested models to calculate and compare fit statistics: (a) model without district effect; (b) model with district effect as measured by district number; and (c) model with district effect as measured by district wealth.

Model with district effect (district number). To account for district fixed effects, a district identification number was included as a variable. This variable may contribute to a better fitting model because it controls for the unobservable time-invariant characteristics in the district. Although it controls for district effects, this variable will not yield an interpretable coefficient.

Table 17

SEM Results for Research Variables Including District Number

Structural Models	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
Student Outcomes				
Transactional	-3.367	2.343	-1.437	.151
Transformational	.906	3.249	.279	.780
Academic Press	1.008	13.022	.077	.938
Sense of Community	6.048	10.303	.587	.557
Free and Reduced Lunch	-12.638	4.305	-2.936	.003*
Academic Press				
Transactional	.005	.033	.163	.871
Transformational	.102	.045	2.269	.023*
Elementary	.157	.046	3.402	.001*
Middle	.016	.052	.307	.759
Alternative	.014	.078	.174	.862
7-11 Years of Exp	-.036	.113	-.322	.747
12-20 Years of Exp	.027	.032	.839	.401
District Number	-.001	.001	-.831	.406
Sense of Community				
Transactional	-.007	.044	-.160	.873
Transformational	.093	.059	1.565	.118
Elementary	.067	.059	1.129	.259
Middle	-.024	.069	-.347	.728
Alternative	.044	.104	.417	.677
7-11 Years of Exp	-.138	.151	-.917	.359
12-20 Years of Exp	.016	.043	.380	.704
District Number	.000	.001	-.088	.930

Note. *Statistically significant at $p < .05$ level.

District number was not a significant variable in predicting the variable of academic press ($r = -.001, p = .406$). District number was not a significant variable in predicting the variable of sense

of community ($r = .000, p = .930$). Adding a covariate to control for district characteristics did not drastically change parameter estimates (see Table 17 as compared to Table 15), the significance of individual pathways, or model fit. The respecified model (with district number) led to the same significant findings as the proposed theoretical model (without accounting for district fixed effects):

1. Transformational leadership significantly predicted the latent variable of academic press ($r = .102, p = .023$).
2. The results suggested that elementary schools have a significant impact on the latent variable of academic press, while high schools do not ($r = .157, p = .001$).
3. The results suggested that a school's free-and-reduced lunch rate has a significant impact on student outcomes ($r = -.12638, p = .003$).

Fit indices measure the goodness or badness of the approximation to the distribution from which the sample was drawn (McDonald & Ho, 2002). Based on the Chi-Square test ($\chi^2 = 4602.073, p = .000, \alpha = .05$), these data are significant and indicate poor fit.

Table 18

Summary of the Goodness of Fit Statistics for Model with District Effect (district number)

Measures of Model Fit		Value	
Chi-Square Test of Model Fit	Value	Degrees of Freedom	p -value
	4602.073	1128	.000
RMSEA (Root mean squared error of approximation)		.170	
CFI (comparative fit index)		.510	
TLI (Tucker-Lewis index)		.484	
SRMR (Standardized root mean squared residual)		.289	

Model with district effect (district wealth). This researcher considered a second variable

– a local district per pupil expenditure amount - to control for district effects that would yield an interpretable coefficient. Total per pupil expenditure is typically not used as a proxy for time-invariant characteristics in the district since levels of funding change over time. Furthermore, total per pupil expenditure is an aggregate of funding from three sources: local, state, and federal. Therefore, total per pupil expenditure measures things other than local district time-invariant characteristics. In response to these concerns, this researcher used a local district per pupil expenditure amount to distinguish one district from another. This was justified because the study collected data only from one year, which represents a cross-section of time.

Local district per pupil expenditure amounts are large numbers (in the thousands) compared to data used to measure the other research variables, and have too much variation. MPLUS 7.3 uses variation in its covariance matrices, so if one variable has a lot of variation and other variables do not then the MPLUS 7.3 program will not converge. In order to meet the software requirement, the variable that is too large may be rescaled. This researcher rescaled the district wealth variable by dividing each per pupil expenditure amount by 1000. This is important to note because it changes the interpretation of how a 1-unit change in X will affect Y, holding all other variables constant.

Table 19

SEM Results for Research Variables Including District Wealth

Structural Models	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
Student Outcomes				
Transactional	-3.366	2.343	-1.437	.151
Transformational	.896	3.250	.276	.783
Academic Press	1.197	13.018	.092	.927
Sense of Community	5.927	10.299	.575	.565
Free and Reduced Lunch	-12.636	4.304	-2.936	.003*
Academic Press				

Transactional	.009	.034	.267	.789
Transformational	.101	.045	2.254	.024*
Elementary	.156	.046	3.371	.001*
Middle	.016	.052	.312	.755
Alternative	.010	.079	.132	.895
7-11 Years of Exp	-.024	.112	-.209	.834
12-20 Years of Exp	.027	.032	.855	.393
District Wealth	.012	.017	.711	.477
Sense of Community				
Transactional	-.002	.045	-.048	.962
Transformational	.095	.059	1.603	.109
Elementary	.066	.059	1.109	.267
Middle	-.024	.069	-.344	.731
Alternative	.036	.105	.343	.732
7-11 Years of Exp	-.134	.150	-.897	.370
12-20 Years of Exp	.017	.043	.407	.684
District Wealth	.012	.022	.547	.584

Note. *Statistically significant at $p < .05$ level.

District wealth was not a significant variable in predicting the variable of academic press ($r = .012, p = .477$). District number was not a significant variable in predicting the variable of sense of community ($r = .012, p = .584$). Adding a covariate to measure district characteristics did not drastically change parameter estimates (see Table 19 as compared to Table 15), the significance of individual pathways, or model fit. The respecified model (with district number) led to the same significant findings as the proposed theoretical model (without accounting for district fixed effects):

1. Transformational leadership significantly predicted the latent variable of academic press ($r = .101, p = .024$).
2. The results suggested that elementary schools have a significant impact on the latent variable of academic press, while high schools do not ($r = .156, p = .001$).
3. The results suggested that a school's free-and-reduced lunch rate has a significant impact on student outcomes ($r = -12.636, p = .003$).

Fit indices measure the goodness or badness of the approximation to the distribution from

which the sample was drawn (McDonald & Ho, 2002). Based on the Chi-Square test ($\chi^2 = 4605.235, p = .000, \alpha = .05$), these data are significant and indicate poor fit.

Table 20

Summary of the Goodness of Fit Statistics for Model with District Effect (district wealth)

Measures of Model Fit		Value	
Chi-Square Test of Model Fit	Value	Degrees of Freedom	p-value
	4605.235	1128	.000
RMSEA (Root mean squared error of approximation)		.170	
CFI (comparative fit index)		.510	
TLI (Tucker-Lewis index)		.484	
SRMR (Standardized root mean squared residual)		.289	

Selecting a model. A Bayesian hypothesis test uses the Bayesian Information Criterion (BIC) approximation and may be used to select a model (Raftery, 1995). Raftery (1995) states that BIC provides an accurate approximation to Bayes factors, which allow the direct comparison of non-nested models. Model selection can be made by comparing the difference of each model's BIC value (Raftery, 1995). The model having the smaller (i.e., the more negative) BIC value is preferred (Raftery, 1995). The BIC approximation is calculated with the following equation:

$$\text{BIC} = \chi^2 - df \ln(N) \quad (9)$$

where χ^2 is the deviance for the model and df is the corresponding number of degrees of freedom.

Table 21 shows the BIC approximations and differences for the three hypothesized models.

Table 21

BIC Approximations and Differences

Values	Model without district effect (A)	Model with district number (B)	Model with district wealth (C)
BIC approximation	-542.355	-668.878	-665.716
	Model A – Model B	Model A – Model C	Model B – Model C
BIC difference	126.523	123.361	3.162

Note. Based on modifications to the rules of thumb of Jeffreys (1961), Raftery (1995) offers posterior odds as a scheme to interpret BIC differences. A BIC difference value 0-2 corresponds to weak evidence one model is better than another. A BIC difference value 2-6 corresponds to positive evidence one model is better than another. A BIC difference value 6-10 corresponds to strong evidence one model is better than another. A BIC difference value >10 corresponds to very strong evidence one model is better than another (Raftery, 1995).

The model controlling for district fixed effects (as measured by district number) has the smaller BIC value; thus, is preferred. As compared to the model without a district effect, there is very strong evidence that either model controlling for district fixed effects (as measured by district number or district wealth) is a better model. There is positive evidence that the model controlling for district fixed effects with district number is better than the model measuring district characteristics with district wealth.

It is healthy for a researcher to consider that “basically all statistical models are wrong to some degree” (Kline, 2016, p. 263). With that in mind, statistical models become “imperfect approximations that help researchers to structure their thinking about the target phenomenon” (Kline, 2016, p. 263). This researcher concludes that controlling for the characteristics of the district did improve the study’s hypothesized model albeit without finding a non-significant Chi-Square result. A reasonable course of action is to search for a further model. Raftery (1995) suggests examining the reasons for why a model fits these data poorly and build a model that has one parameter for each mechanism given. Thus, BIC can be used to guide an “iterative model-building process” (Raftery, 1995, p. 153). The finding of poor model fit has done more to

expand this researcher's thinking than narrow the opinion about leadership behavior.

Summary

This chapter has presented the statistical data derived from the study. A structural equation modeling analysis was used to assess model fit and test the six hypotheses. Measures of model fit indicate the measurement models for the latent variables academic press and sense of community poorly fit these empirical data. Additionally, measures of overall model fit indicate the hypothesized model poorly fits these empirical data. Several elements within each hypothesis were supported by these data. These data supported the conclusions that transformational leadership predicted academic press; as compared to high schools, elementary schools have a significant impact on academic press; and free-and-reduced lunch rates predicted student outcomes. These data did not support the conclusions that principals' leadership behaviors had a direct or an indirect effect on student outcomes as mediated by school climate variables.

Chapter 5

Introduction

The purpose of this chapter is to present the conclusions and recommendations drawn from this study. The first section reviews the study and summarizes the findings. The second section provides a discussion of the findings based on relationships that form the model of student achievement proposed in this study, and limitations of the present study. The next section discusses conclusions and questions raised as a result of the study's findings. The chapter concludes with implications of the research and presents recommendations for further research.

The Study

This study examined (a) self-described leadership behaviors of principals across all three school levels (i.e., elementary, middle, and high) and (b) the influence of transactional and transformational leadership behaviors of principals and the connections among these leadership behaviors and three school variables: schools' academic press, sense of community, and student achievement. The major research question of this study was does the principal's leadership style (i.e., transactional and transformational) influence a school's academic press and sense of community and differentially impact student achievement. The main hypothesis was that a principal's style of leadership correlates to positive changes in a school's academic press and sense of community. Moreover, there were measurable differences between schools' academic press and sense of community—and such differences varied in accordance with principals who employ varying combinations of transformational leadership behaviors and transactional

leadership behaviors, which could affect student achievement differentially as a result. The six hypotheses, more explicitly stated, developed to explore the research question were:

1. H_0 : There is no relationship between principals' self-perception of their leadership style, as measured by the MLQ:Form5X, and the school's academic press.
2. H_0 : There is no relationship between principals' self-perception of their leadership style, as measured by the MLQ:Form5X, and the school's sense of community.
3. H_0 : There is no relationship between principals' self-perception of their leadership style, as measured by the MLQ:Form5X, and student achievement.
4. H_0 : There is no relationship between a school's academic press and student achievement.
5. H_0 : There is no relationship between a school's sense of community and student achievement.
6. H_0 : There is no relationship between the principals' self-perceptions of their leadership style, a school's academic press, sense of community, and student achievement.

This was a quantitative study that employed a SEM methodology to propose a fixed theoretical model, fit it to observed data, and comment on whether or not it was the best theoretical model to explain a principal's influence on student learning outcomes through two intervening variables. Contained in the structural model were a series of linear regression models that were estimated simultaneously to examine associations that measure the strength of the relationship on school level variables. The first regression model looked at how the means of two intermediate latent variables (academic press and sense of community) may vary as a function of the principal's leadership style (transactional and transformational). Additionally, several indicator variables representing school type and principals' years of experience were used as predictors in the regression equation. The second regression model looked at how the means of student outcomes may vary as a function of a school's academic press and sense of

community. In addition to academic press and sense of community, the indicator variable representing free-and-reduced lunch was used as a predictor in the regression equation. Furthermore, any association between academic press, sense of community, and student outcomes may differ by the principal's combination of transactional and transformational leadership style.

Summary of Findings

A SEM analysis was used to assess model fit and test the six hypotheses. Measures of model fit indicated the measurement models for the latent variables academic press and sense of community poorly fit these empirical data. Additionally, measures of overall model fit indicated the hypothesized model poorly fits these empirical data. The research of this study led to several significant findings that are summarized below and will be discussed, along with non-significant results, in the next section.

1. Transformational leadership significantly predicted the latent variable of academic press ($r = .098$, $p = .028$).
2. The results suggested that elementary schools have a significant impact on the latent variable of academic press, while high schools do not ($r = .157$, $p = .001$).
3. The results suggested that a school's free-and-reduced lunch rate has a significant impact on student outcomes ($r = -.12639$, $p = .003$).

Discussion

This section provides a reflection of the findings followed by an in-depth examination of the interrelationships among the variables of the study: (1) leadership style, academic press and sense of community; (2) academic press, sense of community, and student outcomes; and (3) leadership style, academic press, sense of community, and student outcomes. This section

concludes with a discussion of the limitations of the present study and a probe of rival hypotheses.

Reflections of the Findings

With poor model fit and more non-significant than significant results, this study may have proved the challenge that exists in determining precisely the impact principals have on their school's performance. This discussion will begin by reflecting on the many factors and conditions that play a role in the success of school leadership and contributed to the results of this study. This discussion concludes by examining the details that limit the present study.

The present study investigated the influence principals have on school climate variables and student achievement. It may be argued there are degrees of influence and certain factors may limit or enhance a principal's influence. One such factor is the strength of the existing school culture a principal inherits. Under this circumstance it may prove beneficial to apply institutional theory to explain the effects of a principal. Coburn (2001) states that institutional theory emphasizes how messages in the environment shape patterns of action and construct norms within schools. Thus, a school's culture is defined by the learned patterns of behavior teachers exhibit to be accepted and to be successful in the organization. Unless there is a significant event necessitating change – the school is going to be reorganized because performance standards have not been met – there may be little motivation for stakeholders to change their behavior per the principal's actions. Moolenaar et al. (2010) suggest schools with an urgent need for innovation have teachers who seek more advice from principals, which in turn may increase certain principal behaviors (i.e., goal setting, individualized consideration, and intellectual stimulation). Jacob, Goddard, R., Kim, Miller, and Goddard, Y. (2015) state that changes in leadership practice alone may not result in impacts on student achievement; instead,

changes must be coupled with whole school reform that directly targets the instructional climate and involves the school's teachers. Ultimately, the behavioral habits built over time and embedded in each facet of the organization are a greater force than any leadership style a principal employs.

A factor that may limit or enhance a principal's influence is the outgoing principal's characteristics and success. Comparisons to the previous principal influence how teachers interpret the present principal's effectiveness to directly influence teacher behavior. For instance, if the preceding principal is egocentric and the incoming principal embraces shared leadership then teachers may respond more favorably to the new principal. The end result may be a larger effect on student achievement, which can be attributed more to the difference between leaders than a particular style of leadership.

District level influences may place pressure on and alter a principal's behavior. Trepanier, Fernet, and Austin (2012) suggest there are internal antecedents for what motivates a principal's behavior. These may be identified within the principal's personal experiences or connected to school level factors. This researcher suggests that an external key player in influencing principals' responses is the central office (i.e., district leadership). It is important to consider the directives imposed on the school level from above that may persuade a principals' course of action. This third party plays a role in the trust principals and teachers share with one another. Teachers may question whether a principal's actions are motivated by the principal or an outside agency (e.g., superintendent). Principals may alter the truth regarding the origin to deflect the negativity of an unpopular decision or response away from them. This creates a slippery-slope for a principal's attempts to establish trusting relationship and gain influence over the vision for the school.

Additional factors to consider are the key players at the school level – teachers and principals. Each enters a school with a mental model – a preexisting cognitive framework (Coburn, 2001) – for how school should work. Teachers’ and principals’ pattern of thought shapes their beliefs and drives their behaviors. Coburn (2001) argues that teachers often find themselves confronted with multiple belief systems about teaching and learning. A powerful consideration to scrutinize is whether or not teachers’ and principals’ mental models for teaching and learning are aligned. A teacher is likely to view school as a de-centralized structure where teacher leadership directly drives school and student achievement. In this scenario, teachers would reject a principal’s efforts to impose a centralized structure. This study’s non-significant results are meaningful because they emphasize a potential belief that teachers work in silos and the principal is only a figurehead. If teachers believe the principal is a roadblock to the teaching and learning program then the principal’s efforts will be thwarted and their influence diminished. Moreover, the effects of a principal’s style may be overshadowed by the amount of trust the principal has established with teachers. Teachers may be more forgiving and tolerant of a principal’s style given they trust the principal has accounted for what is in their best interests.

A school culture where isolated teaching in insulated classrooms is the norm makes it difficult for principals to have an impact on the professional practices of teachers because principals struggle to fulfill their responsibilities to each teacher in his or her isolated classroom (Dufour & Marzano, 2011). Dufour and Marzano (2011) state that the consequence to leadership is principals resign themselves to managing rather than leading their schools in hopes of influencing teacher behavior. This scenario highlights the challenge researchers face in identifying the appropriate paths principals follow to directly influence teachers and indirectly affect student achievement. Dufour and Marzano argue for changing the traditional practices of

schooling through redesigning team structures to be more collaborative. This researcher offers that teacher isolation is a poor habit triggering poor choices from principals in terms of their leadership behaviors.

Therefore, leaders must shape the environment to reconstruct how teachers make sense of teaching and learning (Coburn, 2001). Teachers' sensemaking is affected by social interactions and teachers' contexts. To reach collective sensemaking in schools that promotes learning and growth, leaders must encourage conditions for collaborative cultures (Coburn, 2001). To achieve this feat, school leaders must structure collaboration in the following ways: (1) create authentic activities that make connections to the classroom; (2) support teachers to challenge existing ways of doing things; and (3) provide time to revisit and rethink new practices (Coburn, 2001). Fostering "in-facing collaboration" (Coburn, 2001) influences the will for teachers to change their mental models. Ultimately, action steps necessary for moving toward continuous improvement include two-way communication between teachers and leaders to form shared beliefs, goals, and visions (Fullan, 2010). Schwahn and Spady (2010) contend it is a leader's role to create and produce something that has intrinsic meaning and really engages followers. This study's non-significant results could mean there is gross misalignment and/or disengagement between principals' behaviors, efforts towards total school reform, and teachers' responses to those actions. This may result in principals' having a general inability to influence improvements or produce consistent results across schools.

Leadership style, academic press and sense of community. The results of this study suggested that compared to high schools, elementary schools have a significant impact on the latent variable of academic press along with transformational leadership. What follows is a reflection of these results.

Chin (2007) found that transformational leadership in elementary schools has a significant impact on teacher job satisfaction and school effectiveness. According to Robinson et al. (2008), leaders' supervision of teaching and the curriculum has more impact on positive student outcomes in elementary schools than in high schools. A possible explanation for the distinction between elementary school principals and high school principals is the amount of time elementary school principals have to balance instructional and managerial activities. This is due, in large part, to the size and scope of the teaching community and covered content areas. In general, these elements allow elementary principals to work closely with six grade level teams rather than the thirty individuals comprising those teams (Dufour & Marzano, 2011). This structure affords elementary schools flexibility to implement the instructional strategy of differentiation with fewer barriers, and influences professional learning communities (i.e., grade levels) to function more readily as a collaborative team. For these reasons, elementary school principals may concentrate their efforts on generating more press for academic initiatives without the competition of a broad, varied curriculum and extra-curricular demands as seen in the high school.

Furthermore, elementary school principals may foster a climate that presses for academic rigor once caring relationships are established. It is plausible that elementary principals spend more time employing transformational leadership behaviors to shape the instructional program because elementary teachers inherently have a sense of community. An interesting consideration for why transformational leadership may influence elementary schools' academic press is the use of praise to nurture established relationships. Elementary teachers may believe a large portion of their role is to develop and sustain a student's self-concept and confidence, which is a consequence of praise. Therefore, elementary teachers are more likely to use praise – a form of

individualized consideration - to nurture relationships in order to build the whole student.

Elementary school principals may recognize this common practice among teachers and align their efforts to shape the instructional climate (academic press) by employing transformational leadership, which focuses on the quality of their relationship with teachers (Robinson et al., 2008). In comparison, high school teachers may believe their primary role is to focus solely on strengthening students' conceptual knowledge within content areas, which is a consequence of testing. High school teachers operate under a stricter model of accountability in order to teach students the level of responsibility required by colleges and society. For this reason, high school teachers may appear more cynical about the impact of relationships on student achievement and place less value on a principal's transformational leadership. The disconnect between teachers at each of these respective educational levels is the understanding that students grow on a continuum. In theory, all teachers should be pressed to nurture and grow every aspect of a student – there should not be boundaries that clearly separate where one teacher's role ends and another teacher's role begins, which mirrors the sentiments about principals' style of leadership.

Since teacher input is a major component of this study, more time should have been given to understanding the characteristics of teachers – for they are the followers toward which principals are tuning their leadership. Knowledge of teacher characteristics at each school level may help answer where there are differences in personality and talent between elementary and high school teachers, which may explain discrepancies among principals and what they influence.

Academic press, sense of community, and student outcomes. The results suggested that a school's free-and-reduced lunch rate has a significant impact on student learning outcomes. The present study used schools' composite scores to measure student learning

outcomes. The North Carolina Department of Public Instruction uses these same scores to assign schools letter grades. Fiske and Ladd (2015) observed a near-perfect correlation between letter grades and economic disadvantage; 80 percent of schools where at least four-fifths of students qualify for free or reduced lunch received a D or F, whereas 90 percent of schools with fewer than one in five students qualify for free and reduced lunch received A's or B's.

Although economic disadvantage generally overpowers a school's climate and school effectiveness, academic press and sense of community are still climate variables that are both under control of the school and may be accentuated by principals' behaviors to play a significant role in enhancing student achievement. How a school and principal individualize the instructional program – through formal and informal structures – to address specific student needs may alter the achievement trend seen in schools with a majority economically disadvantaged to one that is able to sustain a climate that presses for academic rigor.

Leadership style, academic press, sense of community, and student outcomes. The intent of this reflection is to draw attention to the shortcomings associated with relating principal effectiveness to test-based student outcomes. Arguably, academic measures are necessary to measure student outcomes for the purposes of accountability; however, there are drawbacks to using achievement tests to generate composite scores. Using a composite score for student outcomes does not adequately differentiate the outcomes principals' behaviors may influence. Furthermore, Grissom et al. (2015) reveal another drawback of using test-based student outcomes as a measure of principal effectiveness; principals who take over high performing schools see less improvement in their students' test score gains during their tenure at a school. How does this translate to modeling principal effectiveness with student outcomes? Dividing achievement into math and reading may be a step in the right direction. Grissom et al. (2015)

cite studies that reveal an association between principal leadership and higher math achievement gains. Another possibility is to model principal effectiveness with non-test based measures such as chronic student absenteeism, teacher retention, declining drop out rates, high student and faculty morale, and improved school climate (Chin, 2007; Grissom et al., 2015). Overall, Grissom et al. contend that student test performance is a product of the school system and should not be used as a clear indicator of principals' specific impact on student test score growth. School-level average scores may limit researchers from estimating leadership effects on student growth; thus, it is important to separate school effects from principal effects (Grissom et al., 2015).

A current application of this issue can be seen in North Carolina General Assembly's legislative requirement to assign public school performance grades. G.S. §115C-83.15 directs the State Board of Education to "award school achievement, growth, and performance scores and an associated performance grade" to all North Carolina public schools. The school achievement score is calculated using a composite approach; the total number of students meeting the standards, set in up to 10 different indicators, is divided by the total number of students included. Additionally, North Carolina has partnered with SAS Institute Inc. to produce a school-wide accountability growth measure. All end-of-grade (math, English language arts, and science) and end-of-course (Math I, English II, and Biology) scores are included in the EVAAS school-wide accountability growth measure. In order to calculate the final performance grade, the school achievement score is weighted 80% and the growth score is weighted 20%. This reality may impact future definitions of academic press and sense of community. Grissom et al. (2015) warn policymakers and district personnel to think carefully about what the measures are or are not revealing about each principal's contributions. This serves as a cautionary tale to district

personnel that evaluating principal effectiveness on test-based measures may be counterproductive.

Limitations of the Present Study

This section begins with a discussion of the limitations of the instrument used to measure the latent variables academic press and sense of community followed by limitations within the findings based on relationships that form the path model of student achievement proposed in this study.

Success of TWC:2014 to measure academic press and sense of community. The constructs of academic press and sense of community were conceptually developed by following a funneling approach to simplify the practices and responsibilities of a school leader. These two constructs (as shown in Table 3) embody the four goals outlined by Leithwood et al. (2006), which, in turn, categorize the 21 research-based leadership behaviors identified by Waters et al. (2004). In essence, this study aimed to envelop the major underpinnings from Leithwood et al. and Waters et al. and narrow the activities of school leaders to two main areas - cultivating a climate of academic press and sense of community – to directly influence teachers and indirectly influence student achievement. The majority of non-significant results suggest this study oversimplified the hypothesized phenomenon for many reasons, which will be discussed throughout this discussion on limitations. One reason may be that the design of the TWC:2014 items were not explicitly defined to measure the principals' effect on teaching and learning; instead, the items were generally defined to assess the condition of teaching and learning across schools.

Instrument design. The TWC:2014 lacked adequate control over how teachers referenced work experiences to determine their rating for each question. Specifically, teachers

may or may not have thought about the principals' course of action as it pertained to specific activities reflected in the survey questions. It is plausible that teachers referenced other influential factors in the school to determine their rating, such as how much they like their leader (Robinson et al., 2008). A future measure should narrow the context more explicitly to the actions of the principal to reduce any ambiguity over who and/or what is influencing schools' academic press and sense of community. An instrument designed in this manner would maintain the focus on the actions and behaviors of the principal, thus ensuring the instrument is producing intended outcomes.

Another limitation of the TWC:2014 to measure schools' academic press and sense of community is it does not account for time spent on school needs. The survey assumes schools' activities and efforts focus equally on each item of the survey; however, in practice, schools and principals are more equitable in their efforts – they often spend the greatest time with the greatest need. Robinson et al. (2008) argue that “schools at different stages of development will need different leadership emphases” (p. 668). In the sample of schools used for this study, there was no measure to account for how schools prioritized their needs. For instance, there is an imbalance between the time leaders spend on transforming instructional activities and managing discipline across schools. It would be beneficial to know if the schools being studied needed improvements in safety, civility, or teaching and learning, because these factors may impact leaders' behaviors. Future use of the TWC:2014 will require researchers to measure how much time schools spend addressing each item used to construct academic press and sense of community and how that relates to various leadership practices.

Table 22 provides additional examples of time imbalances between the indicators used for academic press (the same could be done for sense of community). All of these indicators

represent elements of a principal's professional responsibilities; however, discrepancies may exist in the time allocated to each one as well as how and why a principal chooses to address each one. The questions principals may spend less time on are those which indicate collective responsibility for student learning and high expectations for all students. The questions principals may spend more time on are those which indicate an academic and instructional focus. It is necessary to differentiate these examples across school levels (i.e., elementary and high school).

Table 22

Examples of Indicators for Academic Press Where Time Imbalances May Exist

TWC indicators principals may spend more time on or have a greater influence over (direct)
The school leadership facilitates using data to improve student learning
Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices
Professional development enhances teachers' ability to implement instructional strategies that meet diverse student learning needs
Teachers are assigned classes that maximize their likelihood of success with students
TWC indicators principals may spend less time on or have a lesser influence over (indirect)
Teachers collaborate to achieve consistency on how student work is assessed
Teachers have knowledge of the content covered and instructional methods used by other teachers at this school
Teachers provide parents/guardians with useful information about student learning
Teachers believe almost every student has the potential to do well on assignments

Data. Table 23 provides a comparison between items from the TWC:2014 and a survey used by Jacob et al. (2015). In this small sample, survey items are strikingly similar, which provides support for using the TWC:2014. Researchers may use a contrast analysis to quantify

the extent to which a measure's association with other measures matches their theoretical understanding of the construct (Weston & Rosenthal, 2003). The greatest difference between the survey used by Jacob et al. (2015) and the TWC:2014 is the specificity of what the items were intended to measure. This supports the assertion that the present study constructed the latent variables academic press and sense of community too broadly.

In theory, this researcher was purposeful in identifying questions targeted to measure principals' responsiveness to the 21 research-based leadership behaviors (Waters et al., 2004) categorized by four factors (setting directions, managing the instructional program, developing people, and redesigning the organization) shown to enhance teaching and learning. Similar to the study conducted by Jacob et al. (2015) but not as explicitly, the present study incorporated the 21 leadership responsibilities into schools' academic press and sense of community. From a statistical point of view, the study may have benefited from a confirmatory factor analysis of how well the questions selected for each of the four aforementioned factors loaded to that factor; however, no simple metric can be used to quantify the extent to which a measure can be described as construct valid (Weston & Rosenthal, 2003). Furthermore, Weston and Rosenthal (2003) note that no approach has yet gained widespread acceptance or been widely used to index construct validity. A later section will discuss how creating additional *a priori* (deductions from theory) specifications may strengthen a model's ability to pick up nuances in the phenomenon.

Table 23

Description of Comparative Survey Measures

TWC:2014 (present study)			Comparative Survey ^a		
Measure	Description	Sample items	Measure	Description	Sample Items
School climate	Measure of schools' academic press – collective responsibility for student learning	Teachers use assessment data to inform their instruction	Differentiated instruction	The degree to which teachers design instruction to meet the various needs, and learning strengths of their students	Teachers in this school frequently use assessments to help them decide what their students need next
		Teachers have knowledge of the content covered and instructional methods used by other teachers at this school	Collaboration	The frequency with which school staff collaborates, formally and informally and around topics related to instructional practice	Teachers in this school work collectively to select instructional methods and activities
School climate	Measure of schools' sense of community – common agenda of activities	Teachers are recognized as educational experts	School climate	Measure of trust and sense of collective responsibility around achieving the school's academic goals	I have confidence in the expertise of the teachers

Note. Adapted from “Exploring the Causal Impact of the McREL Balanced Leadership Program on Leadership, Principal Efficacy, Instructional Climate, Educator Turnover, and Student Achievement,” by R. Jacob, R. Goddard, M. Kim, R. Miller, and Y. Goddard. Copyright 2014 by American Educational Research Association.

^a The survey was designed using existing psychometrically sound survey items and created items to address the constructs of interest: (1) principal leadership; (2) principal efficacy; (3) collaboration; (4) differentiated instruction; and (5) school climate.

A critical analysis. In addition to the described limitations of the TWC:2014, this researcher offers a critical analysis of whether or not the instrument measures what it is intended to measure – the conditions of teaching and learning. Although the TWC:2014 boasts meeting the necessary psychometric properties of a survey, it's perception among educators has dissuaded users from meaningfully putting the results into action. There are many possible explanations for why the TWC:2014 is, simply put, not trusted.

For most surveys it is important to define the context of the questions, so respondents know what experiences or actions to reference when answering. This researcher questions if teachers relate the principal's work with what the questions are asking. Arguably, the TWC:2014 has become more about customer service than school improvement. Teachers potentially use the instrument to hastily judge the principal's efforts based on the morale of the school or teaching in that moment. It is a means to attack the treatment of teachers, which include factors beyond the scope of a principal (i.e., salaries).

Additionally, the context of the questions is too broad. The TWC:2014 created questions to measure the generalized conditions of teaching and learning across North Carolina's public schools, but falls short in addressing present issues in specific schools. For this reason, the survey is not relevant enough for school leaders to make an accurate assessment of school improvement areas in their setting. Furthermore, it would be difficult to take stock in results to make meaningful school improvement decisions while knowing respondents may not take the survey seriously (as evidenced by varied response rates across schools and districts). Teachers may argue they have little time or energy to give the TWC:2014 thoughtful consideration.

Moving forward, efforts need to be made to ensure these data collected by the TWC:2014 can be used by researchers to confidently test educational theories and make trusted comments on school reform.

Leadership style, academic press and sense of community. A limitation with measuring leadership style using the MLQ:Form5X is the data were gathered from principals' self-ratings. Smith and Bell (2011) found that principals with fewer years of experience tended to use transactional rather than transformational leadership, yet reported they were transformational in their approach. This finding should caution future researchers to measure actual leadership behaviors by gathering teachers' ratings of their principals.

A more powerful demonstration of a principals' effect on the latent variables academic press and sense of community would have been to explore the relationship with the individual indicators used to comprise the two latent variables and principal behaviors. For instance, the indicator for academic press (the school leadership facilitates using data to improve student learning) aligns more directly with principals' daily responsibilities and practices. For practitioners, it may be a more meaningful result to know which behaviors influence the implementation of data-driven decision making.

Academic press, sense of community, and student outcomes. Academic press and sense of community were used in this study to describe a school's climate as measured by teacher perception. As mentioned earlier, it is conceivable teachers view themselves as more influential over a school's climate and student achievement than other individuals. This study was limited by only soliciting teacher response, thus only incorporating teachers' point of view. A key player in determining a school's success to press for academic rigor and establish a nurturing community is the influence of students' parents. The argument is that parents have

significant influence over students' willingness to participate in academic and school endeavors, and, consequently, students' drive to perform well on achievement tests.

This study examined parents' economic influence on these school level variables, but did not account for family backgrounds, including beliefs, which play an enormous role in shaping students' behaviors. Arguably, family backgrounds contribute more to defining school culture than the actions and behaviors of principals and teachers. Grissom et al. (2015) cite student chronic absenteeism as a factor outside the control of the principal that significantly impacts school effectiveness, as measured by student test scores. Students learn more in schools with lower chronic absenteeism (Grissom et al., 2015). It is plausible that parents enable student apathy and endorse a culture that does not prioritize an academic focus in a traditional school setting, as evidenced by high absenteeism rates. Future studies should consider the role parenting plays in student outcomes.

Leadership style, academic press, sense of community, and student outcomes. The results of this study suggest poor model fit for the hypothesized relationships between leadership style, academic press, sense of community and student outcomes. Statistically, Loehlin (2004) contends that researchers need to be wary of uncritical acceptance of any solution a computer program happens to produce. For instance, this researcher suggests a limitation of the present study was the sample was over-represented by districts with greater wealth and principals serving elementary schools. Although the overall model controls for these characteristics, it is difficult to tease out whether an individual pathway may be interpreted as having an actual effect or if the effect is a result of the sample having a lot of elementary schools. Under these circumstances, future research may consider including a weighting scheme to account for over-represented areas.

This researcher recognizes an additional concern for this study's results pertaining to the sample size. The present study had an adequate sample size with a small to medium effect size. This researcher could have increased the sample size by removing the eligibility criteria that stated participating principals needed 3 or more years of experience leading the same school. This researcher suggests future studies consider that any amount of time principals spend at a school may produce marginal effects on school level variables.

When working with such a small sample, a path that is numerically appreciable may not exceed twice its standard error (Loehlin, 2004). In such circumstances, Loehlin suggests leaving theoretically justified paths in the model until cross-validation confirms they can be safely dropped. Therefore, it behooves a researcher to try solutions with two or three different criteria and see if all converge (Loehlin, 2004). The following discussion focuses on creating alternate paths and different criteria as a critical response to this study's findings.

Improvements to the present study's model should begin by being more intentional about revealing significant relationships between principals and student outcomes – both academic and non-academic. First, principal leadership behaviors should be measured with a fully integrated scale. This study used the MLQ to obtain average scores of the four characteristics that define transformational leadership and the two characteristics that define transactional leadership. Even though the study's model accounted for a principal's transformational and transactional leadership behaviors by acknowledging principals exercise both in their leadership, the results of the study still pitted the two styles against one another because, quantitatively, there is no way to determine when one style stops and the other begins. While an integrated scale is a task for future research, the results of this study may have improved with a model that explores the associations between each of the individual characteristics and schools' academic press and

sense of community. This method would increase the number of measured parameters in the model, necessitating a larger sample size.

Gaining access to school leaders is becoming more of a challenge for researchers. This researcher was denied access to school leaders in one of the largest school districts in North Carolina because district officials limit the time principals spend on research to internal studies. Other districts only provide a particular window of time in which to conduct research, which may or may not match the time constraints of a study. Finally, this researcher found it challenging, due to retirement and turnover, to find principals who met the study criteria of three or more years serving as principal of the same school.

Second, a model should establish pathways that tightly couple specific leadership behaviors with characteristics of high performing schools. Robinson et al. (2008) identify six characteristics of leader behavior in high performing schools: (1) leaders are actively involved in discussing how instruction impacts student achievement; (2) leaders actively review and coordinate the instructional program to improve teaching; (3) leaders make regular classroom observations and adhere to clear performance standards for teaching; (4) leaders emphasize data driven decision-making for the purpose of improving the instructional program; (5) leaders actively model learning for teacher development; and (6) leaders establish a safe and supportive environment. The present study consolidated these characteristics and others into the broad constructs of academic press and sense of community. This form of consolidation helps with comprehending complex theoretical concepts in the spirit of simplifying a leader's focus; yet, the results suggest this approach is too broad to be meaningful for the practitioner. Practical application of the theory requires an investigation of the many associations between principals' behaviors and student learning outcomes through nuanced pathways. Although this approach

would generate a bigger model, it may do more to simplify how principals' influence the things that matter most to improving teaching and learning.

The present study defined school climate with academic press and sense of community, which theoretically categorized principals' responsibilities as setting goals, redesigning the organization, managing the instructional program, and developing people (see Table 3). The instrument used to measure academic press and sense of community may not have given enough attention to one or all of these responsibilities; in essence, it was too broad. For example, if collaborative team structures – professional learning communities (PLC) – provide a vehicle for focused interactions between principals and teachers (Dufour & Marzano, 2011), then it may benefit future studies to narrow the definition of school climate through academic press and sense of community to include actions and responsibilities associated with the PLC process.

There are several options a researcher may choose from to modify a path model. Loehlin (2004) contends a researcher may maintain the same structural model of relationships among latent variables but change the measurement model by using different measurements to index the latent variables. The main source of measurement model misfit is that indicators may reflect constructs other than the one they are intended to measure (Loehlin, 2004). An important result of this study was the poor fit of the measurement models for the latent variables academic press and sense of community. Loehlin suggests for a researcher to inspect the results of the confirmatory factor analysis for clues as to where problems may be found. For the present study, this researcher suggests the latent constructs academic press and sense of community were measured too broadly. It may benefit the study to limit the factors and more precisely specify the indicators defining that factor.

This researcher acknowledges the proposed model in this study is not the only possible

model, and that there are many possibilities. The model below was theorized from empirical research (Dufour & Marzano, 2011) and serves as one of many plausible alternative models.

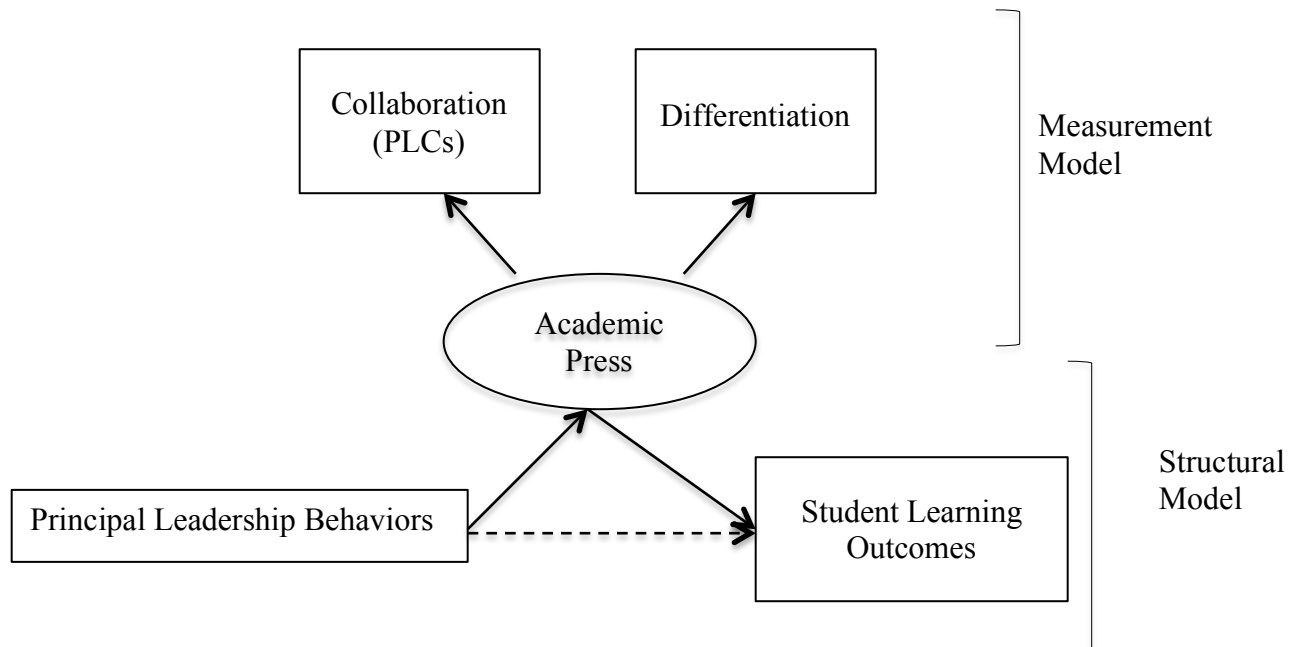


Figure 11. An alternative model that offers changes to the measurement model but not the structural model. Adapted from “Leaders of Learning: How District, school, and Classroom Leaders Improve Student Achievement,” by R. Dufour and R.J. Marzano. Copyright 2011 by Solution Tree Press.

Instead of one general pathway between principal leadership behaviors and academic press, future research may benefit by isolating specific pathways embedded within the academic press construct to explore the phenomenon more broadly. By redefining a pathway between principal leadership and the PLC process (see Figure 11), future researchers may obtain a truer understanding of a principal’s influence on student learning outcomes.

Investigating Rival Hypotheses

A rival hypothesis to the ones tested in this study is that educational leadership creates the conditions for enhanced teaching and learning and significantly impacts student outcomes (Chin, 2007; Robinson et al., 2008). Each conceptual twist to leadership style proposes a more

tightly coupled way of leading the practices that matter most to teaching and learning (i.e., instructional leadership) and student outcomes. This researcher believes it is imperative to debunk the misconceptions that define the labels imprinted on leadership (i.e., transactional, transformational, instructional, educational, etc.). Leadership is more than a stylistic way of expressing ideas, rewarding work, forming relationships, soliciting action, or facilitating change. What follows these labels, and many more, is often judgment about whether something is better or more appropriately tailored to a situation than something else, which means the value of what was replaced is diminished. This way of thinking limits a leader's ability because it shortens the list of resources to draw from. Transformational leadership should not be meant to replace the benefits associated with transactional leadership or other styles of leadership; instead, it should be thought of as enhancing the overall affect of leadership given principals have the autonomy to lead as needed to influence student outcomes.

The principal can directly influence student outcomes once stakeholders (i.e., researchers, educational leadership programs, and practitioners) drop the labels and concentrate on the educational content of the activities principals lead and whether or not that content aligns with intended student outcomes (Robinson et al., 2008). Leaders' motivational and goal-setting activities may be innovative, but they are meaningless if the fit isn't right with the school they lead. A significant takeaway that resonates loudly when exploring leadership is the lesson that some things work for some people some of the time. This paves the way for future studies to consider an additional rival hypothesis - tight alignment between leadership behaviors and school needs (i.e., situational leadership) significantly impacts student outcomes.

Implications

This section presents the implications of the study. Policy, practical, and research implications will be discussed.

This researcher is more convinced upon analyzing the results of this study that additional work is needed to fully understand the interplay between leadership style and principal effectiveness. Prospective principals need an array of skills or behaviors to manage change through the pressures for accountability and the demand for innovation in order to realize the great potential of leadership. Overall, the reason for bringing style to the forefront of leaders' minds is to fully grasp and actualize the enhancing effects style has on a leader's ability to influence student achievement and school reform. Style should be not viewed as merely a set of behaviors or traits of an individual; instead, style should be seen as a process used to transform the functions of public education to be less situated in silos and more collaborative in practice (Chin, 2007). This has implications on policy, practice, and research.

Policy Implications

Policy makers need to look at more than student achievement to determine principal effectiveness. School leaders are asked to build relationships, create systems for change, and foster an innovative climate driven by shared beliefs to positively impact student achievement. Moreover, principals are asked to build collaborative teams and shared ownership over the school community. Of course, these responsibilities may look different between elementary and secondary schools. There is a stark contrast between elementary and high schools and the number of assistant principals allotted at each level. An interesting question to consider is how much of a school's success or failure can be attributed to the principal due to the delegation of responsibilities to assistant principals, which means policy makers should consider that it may be

more feasible to attribute outcomes to principals of elementary schools than high schools.

Principal effectiveness should be measured by how well a principal and his/her team negotiates these responsibilities; thus, it is not enough to evaluate a principal solely on final student learning outcomes.

Chin (2007) suggests that exhibiting transformational leadership behaviors will help principals establish constant and sustained reform in their schools. Policy makers may be tempted to reduce the externally imposed accountability measures that result in transactional leadership to enable more transformational activities in an effort to enhance school improvement (Smith & Bell, 2011). However, Moolenaar et al. (2010) suggest that school improvement policies focus on technical elements of reform (i.e., program fidelity, rigid curriculum, and prescriptive practices). In response to these technical elements, principals gravitate towards transactional behaviors and engage less in shared vision building and innovation (Moolenaar et al., 2010). Policy makers should be cautioned that decisions based upon binary styles of leadership (transactional/transformational) may evoke a seesaw effect where initiatives are tried and then replaced by the next fad, which undermines any attempt for constant and sustained reform. This approach to decision making may maintain the status quo by restricting a principal's autonomy and limiting innovation. Furthermore, a one-model approach to leadership may detract from continuous improvement cycles and, ultimately, minimize results. Additionally, Moolenaar et al. (2010) contend that one system's novel idea may be another's common practice. It is important to understand the situational factors that define the context of a leader's leadership before making policy that may handcuff a principal's flexibility to develop appropriate localized initiatives.

Practical Implications

Principals need a method for generating awareness of the internal (one's self) and external (one's environment) factors that influence the fit between the principal and school. In addition to teaching how to identify school norms, leadership programs should consider assessing students' personalities to match the context of leadership to the person of the individual to increase the success of the principal (NCDPI, 2007). Aligning course concepts with future principals' value-orientations may create opportunities for principals to internally develop a brand of leadership that is marketable to a variety of schools and enhances principal effectiveness. Furthermore, college leadership programs should spend more time considering the factors that motivate principals' behaviors (Trepanier et al., 2012). Trepanier, et al. (2012) contend that improvements in leaders' self-efficacy are a result of leaders believing they influence meaningful relationships, efficiently manage the organization, and possess personal worth to the job. Under these conditions, principals are more likely to translate their belief into action and inspire and impart a sense of mission to others (Trepanier et al., 2012). This has the potential to increase principals' confidence to create schools as organizations that can learn and change quickly to improve performance.

Externally, principal effectiveness is tethered to the social condition of the community a principal serves. A significant goal of a college leadership program is to teach prospective principals how to identify the social conditions and situations that will define the context of their leadership. Interpreting a principal's style and effectiveness, without context, is complex. Certain conditions are prone to elicit specific styles of leadership. Smith and Bell (2011) describe environments that push towards transactional leadership as focused on underperformance and external accountability pressures to improve test results. Principals

operating in these conditions lack autonomy to follow their own path for school improvement (Smith & Bell, 2011). Environments that focus on personal development of people and achieving school improvement through the collaboration and involvement of others push towards transformational leadership (Smith & Bell, 2011). Recognizing these conditions offers prospective principals knowledge of which set of behaviors to engage under certain conditions to meet and/or exceed expectations to transform school communities. Furthermore, with this state of awareness, prospective principals may better exercise processes to enhance the social conditions that define the context of their leadership.

After careful consideration of this study's non-significant results, a powerful practical implication of this research is that leadership may no longer be a singular phenomenon. The North Carolina standards for school executives describe leadership as a social act that seeks to create processes and systems with the goal of "transforming schools so that large-scale, sustainable, continuous improvement becomes built in to their mode of operation" (NCDPI, 2007). Dufour and Marzano (2011) argue that it is nearly "impossible for a single person to fulfill all of the responsibilities of the principalship" (p. 60). To help principals meet this standard, districts and college leadership programs should no longer teach principal leadership as a singular (stand alone) act; instead, programs should coach how to be effective within a social network.

This potentially new era of shared leadership requires a team of educators possessing the knowledge, skills, and expertise to tackle the issues most critical to student learning (Dufour & Marzano, 2011). The new type of school leader needs assistance in understanding shared leadership and what is required to build and maintain a team. A practical consideration for district leaders and professors teaching future school leaders is how to build capacity for

selecting a team and being a team leader. Principals, assistant principals, and teachers are developing a culture of collaboration wherein collective ownership over improving teaching and learning is becoming the norm. An interesting question is how well do assistant principals' style complement the principal's style to create an overall perception of school leadership from teachers? Thus, it may be more beneficial to examine the cumulative behaviors of the leadership team (principals and assistant principals) than each principal's leadership style.

Moolenaar et al. (2010) argues for principal effectiveness to be measured in terms of a leader's position or centrality in a social network. Principals who are sought out for advice, information, expertise, and friendship ("popular") and who can quickly dispense information ("reachable") are seen as valuable in the network (Moolenaar et al., 2010). Furthermore, Moolenaar et al. (2010) found that transformational principals are more connected to others in the social network, which offers a strategic advantage to foster and support an innovative climate. Principal leadership programs should provide guidance on how principals' behaviors may better influence their position in a social network to improve climate and student achievement.

Research Implications

Leadership is an art (English, 2008) and qualitative research is an artful representation of what one has learned (Luttrell, 2010), so it follows to use a qualitative lens. Incorporating a qualitative perspective will enable future researchers to explore the settings that may be more or less prone to elicit transactional and transformational leadership. Observation offers a rich data source for analyzing human behavior because it allows a skillful observer to capture how an action and reaction play out between principals and teachers while maintaining an awareness of underlying philosophical assumptions and ethical concerns that shape the relationship between

what the observer sees and knows (Luttrell, 2010). Finally, interviews may be coupled with observations to provide deeper insight on the emerging themes from the observed moments to gain greater understanding, for example, of whether or not a leader's style is shaped by the environment or predetermined. Smith and Bell (2011) suggest that leaders' style can be attributed to external pressures rather than a preferred choice of style. Ultimately, it is challenging to quantify all the nuances of school leadership, so qualitative research may offer a brighter spotlight on when principals act as tacticians and how they deploy their style to achieve a desired effect.

Future Research

Throughout this discussion, this researcher offered suggestions for future research on educational leadership. What follows is a concise summary of those ideas into three questions for future research:

1. Does the degree of alignment between principals' leadership behaviors and school needs impact student outcomes?
2. Does the leadership style of assistant principals complement the principal's style to create an overall teacher perception of school leadership that enhances school climate variables?
3. Does defining student outcomes with non-academic measures change the result of a principal's influence?

These are only a few of the questions generated by this research. The current study is a modest step in trying to connect the leadership behavior of the principal with the achievement of students.

Conclusions

Theory may be able to distinguish transactional from transformational leadership, but, in practice, it is difficult to separate the two and quantify how and when principals enact elements of each behavior. Effective leaders do not get the relationship between themselves and their staff right (i.e., transformational leadership) and then tackle the daily educational challenges (i.e., transactional leadership and/or instructional leadership); they incorporate all sets of leadership styles into their problem-solving (Robinson et al., 2008). Practitioners are interested in how to integrate an interpersonal and task focus into improving teaching and learning. In my career as a school leader, I have experienced the inner turmoil over finding the right balance between transformational and transactional leadership. I am led towards developing relationships by using motivational tactics with the intent to foster an ethos of caring for each teacher. In doing so, I am conflicted when teachers do not exhibit the desire to accomplish a task because they see its importance and want to make it happen. As a high school leader, I have been pushed to command action over inspiring action.

In this study, I expected the results to show a significant relationship between transformational leadership and sense of community because of the personalized care and attention spent on building collaborative relationships – an emphasis among today’s leaders. Although this relationship was not established, the results of this study did show a significant relationship between transformational leadership and academic press. The concern surrounding test scores may do a lot to maintain focus on the instructional program and press for academic rigor at all school levels. Principals may clarify expectations, specify the standards for compliance and offer recognition when goals are achieved (all elements of transactional leadership); however, principals need to do more for the conditions of teaching and learning to

achieve total school improvement. Transformational leaders may influence academic press by inspiring innovation through collaboration; coaching individual teachers as well as PLCs; challenging teachers to think outside the box; empowering teacher leadership; and aligning efforts with shared beliefs. Consequences shape what schools value, so it follows that leaders would concentrate on pressing for academic reform and rigor through the means of transformational leadership to enhance current student learning outcomes and produce a more favorable consequence.

Ultimately, the appropriate blend of any style boils down to what functions of a school teachers value and to what degree. For instance, teachers may value protection of instructional time more than a school vision. How things are done within any given school is a testament to what is valued by teachers within that school culture. Therefore, leadership may best be thought of in terms of weighted averages driven by the culture of individual schools. Principals concentrate their efforts on specific needs and exercise their style to accommodate the desired outcome. One may argue that the right way of leading is that which gets the job done – transactional, transformational, or a blend of both.

APPENDIX A: IRB APPROVAL FORM

IRB Number: 15-0825

Modification

Principal Investigator: Michael Sasscer

Post Approval Submissions

Modification Information

To modify an approved study, edit the individual answers that make up the application. The questions below are intended solely for the IRB to have a summary statement of your requested action. The modifications cannot be processed until the actual changes have been made throughout the application.

1. Provide a brief non-technical summary of any changes you will be making to the study. The text you enter here will be reproduced in the IRB approval document, and should contain the details that you and/or your sponsor find relevant (e.g., master protocol/amendment version number and date). Typical summaries are 50-100 words. Include a list of any documents that have been modified or added.
PLEASE NOTE: THIS SECTION MAY BE EDITED BY THE IRB FOR CLARITY OR LENGTH.

I want to add an incentive for respondents participating in my study. I am revising my consent letter, paragraph three, to include: "As a token of my appreciation, you will be eligible to enter a drawing to receive a \$50 Amazon gift card upon completion of the survey."

2. Is this modification being submitted in response to an unanticipated problem/adverse event or new findings?

No

3. Do any of the proposed changes increase risk?

No

Please explain:

This is an inducement for participation only and does not increase the risk to participants. All previous measures to protect participants remain the same.

4. Does this modification involve new information that requires reconsent of CURRENT subjects?

No

5. Is this study permanently closed to enrollment of subjects, all interventions and follow-up complete, and open for DATA ANALYSIS ONLY?

No

Continuing with Modifications

*Click the "save and continue" button to access your existing application.
You may make any changes to the application that you are requesting at this time.*

General Information

1. General Information

1. Project Title

THE INFLUENCE OF THE PRINCIPAL'S STYLE ON ACADEMIC PRESS, COMMUNITY AND STUDENT LEARNING

2. **Brief Summary.** Provide a **brief non-technical description** of the study, which will be used in IRB documentation as a description of the study. Typical summaries are 50-100 words. Please reply to each item below, retaining the subheading labels already in place, so that reviewers can readily identify the content. PLEASE NOTE: THIS SECTION MAY BE EDITED BY THE IRB FOR CLARITY OR LENGTH.

Reference ID: 153754

Date Received: 05/08/2015 03:00:30 PM

Page: 1 of 18

Purpose:

The purpose of this study is to examine (a) self-described leadership behaviors of principals across all three school levels (i.e., elementary, middle, and high) and (b) the connection and influence of the choice of style between transactional and transformational leadership behaviors of principals and three school variables: the schools' academic press, sense of community, and student achievement.

Participants:

The participants will be elementary, middle, and high school principals in North Carolina.

Procedures (methods):

This will be a quantitative study using two existing, reliable, and valid survey instruments. The principals will be asked to complete an online survey. No information that can identify participants will be recorded.

2. Project Personnel

1. Will this project be led by a STUDENT (undergraduate, graduate) or TRAINEE (resident, fellow, postdoc), working in fulfillment of requirements for a University course, program or fellowship?

Yes

This study will require the identification of a single faculty advisor, who should be added in Project Personnel on this page. This should be the faculty member who will mentor this research, who may or may not be your academic faculty advisor.

The faculty advisor will be required to co-certify with the student/trainee PI. You should also make sure this person has a chance to review and edit the submission before you submit.

Choose the status of the student/trainee:

graduate or professional

2. List all project personnel beginning with principal investigator, followed by faculty advisor, co-investigators, study coordinators, and anyone else who has contact with subjects or identifiable data from subjects.

- List ONLY those personnel for whom this IRB will be responsible; do NOT include collaborators who will remain under the oversight of another IRB **for this study**.
- If this is Community Based Participatory Research (CBPR) or you are otherwise working with community partners (who are not functioning as researchers), you may not be required to list them here as project personnel; consult with your IRB.
- If your extended research team includes multiple individuals with limited roles, you may not be required to list them here as project personnel; consult with your IRB.

The table below will access campus directory information; if you do not find your name, your directory listing may need to be updated.

Last Name	First Name	Department Name	Role	Detail
Sasscer	Michael	School of Education Deans Office	Principal Investigator	view
English	Fen	School of Education Deans Office	Faculty Advisor	view

NOTE: The IRB database will link automatically to [UNC Human Research Ethics Training database](#) and the UNC Conflict of Interest (COI) database. Once the study is certified by the PI, all personnel listed (for whom we have email addresses) will receive separate instructions about COI disclosures. The IRB will communicate with the personnel listed above or the PI if further documentation is required.

3. If this research is based in a center, institute, or department (Administering Department) other than the one listed above for the PI, select here. Be aware that if you do not enter anything here, the PI's home department will be AUTOMATICALLY inserted when you save this page.

Department

School of Education Deans Office

3. Funding Sources

1. Is this project funded (or proposed to be funded) by a contract or grant from an organization EXTERNAL to UNC-Chapel Hill?

No

2. Is this study funded by UNC-CH (e.g., department funds, internal pilot grants, trust accounts)?

No

3. Is this research classified (e.g. requires governmental security clearance)?

No

4. Is there a master protocol, grant application, or other proposal supporting this submission (check all that apply)?

☒ Grant Application☒ Industry/Federal Sponsor Master Protocol☒ Student Dissertation or Thesis Proposal☒ Investigator Initiated Master Protocol☒ Other Study Protocol

4. Screening Questions

The following questions will help you determine if your project will require IRB review and approval.

[The first question is whether this is RESEARCH](#) 

1. Does your project involve a systematic investigation, including research development, testing and evaluation, which is designed to develop or contribute to generalizable knowledge? PLEASE NOTE: You should only answer yes if your activity meets all the above.

Yes

[The next questions will determine if there are HUMAN SUBJECTS](#) 

2. Will you be obtaining information about a living individual through direct intervention or interaction with that individual? This would include any contact with people using questionnaires/surveys, interviews, focus groups, observations, treatment interventions, etc. PLEASE NOTE: Merely obtaining information FROM an individual does not mean you should answer 'Yes,' unless the information is also ABOUT them.

Yes

3. Will you be obtaining identifiable private information about a living individual collected through means other than direct interaction? This would include data, records or biological specimens that are currently existing or will be collected in the future for purposes other than this proposed research (e.g., medical records, ongoing collection of specimens for a tissue repository).

No

The following questions will help build the remainder of your application.

4. Will subjects be studied in the Clinical and Translational Research Center (CTRC, previously known as the GCRC) or is the CTRC involved in any other way with the study? (If yes, this application will be reviewed by the CTRC and additional data will be collected.)

No

5. Does this study directly recruit participants through the UNC Health Care clinical settings for cancer patients **or** does this study have a focus on cancer or a focus on a risk factor for cancer (e.g. increased physical activity to reduce colon cancer incidence) **or** does this study receive funding from a cancer agency, foundation, or other cancer related group? (If yes, this application may require additional review by the Oncology Protocol Review Committee.)

No

6. Are any personnel, organizations, entities, facilities or locations in addition to UNC-Chapel Hill involved in this research (e.g., is this a multi-site study or does it otherwise involve locations outside UNC-CH, including foreign locations)? You should also click "Yes" if you are requesting reliance on an external IRB, or that UNC's IRB cover another site or individual. [See guidance.](#)

No

Exemptions

Request Exemption

Some research involving human subjects may be [eligible for an exemption](#) which would result in fewer application and review requirements. This would not apply in a study that involves drugs or devices, involves greater than minimal risk, or involves medical procedures or deception or minors, except in limited circumstances.

Additional guidance is available at the [OHRE website](#). Exemptions can be confusing; if you have not completed this page before, please [review this table with definitions and examples](#) before you begin.

1. Would you like your application evaluated for a possible exemption?

Yes

Will your study either involve prisoners as participants or be FDA-regulated?

No

Category 1 ([click here for guidance and examples](#))

✓ The research is to be conducted in established or commonly accepted educational settings. Note: This applies to the location where education research will actually be conducted (e.g., public schools) and NOT to your location at a university.

And the research will involve normal educational practices, such as:

✗ Research on regular and special education instructional strategies.

✓ Research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

Explain

School principals will self-report on their leadership behaviors through a survey.

Category 2: ([click here for guidance and examples](#))

Does your study involve minors under the age of 18?

No

The research involves the use of one or more of the following

✗ Educational tests (cognitive, diagnostic, aptitude, achievement).

✓ Survey procedures.

✗ Interview procedures

✗ Observation of public behavior.

And either or both of the following is true:

✓ The information to be obtained will be recorded in such a manner that participants cannot be identified, directly or indirectly through identifiers linked to the participants.

✓ Any disclosure of the participants' responses outside the research would not reasonably place the participants at risk of criminal or civil liability or be damaging to the participants' financial standing, employability, or reputation.

Explain

School principals will self-report on their leadership behaviors through a survey. This researcher will remove all identifying variables keeping readers from being able to deduce the identity of any and all individual responses.

Category 3 ([click here for guidance and examples](#))

Research involves the use of one or more of the following:

✗ Educational tests (cognitive, diagnostic, aptitude, achievement)

✗ Survey procedures

✗ Interview procedures.

✗ Observation of public behavior.

And

✗ The participants are elected or appointed public officials or candidates for public office.

✗ Federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.

Category 4 ([click here for guidance and examples](#))

✓ The research involves the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens.

And either of the following is true:

✓ The sources of data are publicly available.

✓ The investigator records information in such a manner that participants cannot be identified, directly or indirectly through identifiers linked to the participants.

Explain

This study will use the 2014 North Carolina Teacher Working Conditions survey results made publicly available on the North Carolina Department of Public Instruction's webpage. This researcher will remove all identifying variables keeping readers from being able to deduce the identity of any and all individual responses.

Category 5 ([click here for guidance and examples](#))

✗ The project is a research or demonstration project.

Additionally the following must also be true.

✗ The program under study delivers a public benefit (e.g., financial or medical benefits as provided under the Social Security Act) or service (e.g., social, supportive, or nutrition services as provided under the Older Americans Act).

✗ The research is conducted pursuant to specific federal statutory authority.

✗ There is no statutory requirement that an IRB review the research.

✗ The research does not involve significant physical invasions or intrusions upon the privacy of participants.

The research is designed to study, evaluate, or otherwise examine one or more of the following:

✗ Public benefit or service programs.

✗ Procedures for obtaining benefits or services under those programs.

✗ Possible changes in or alternatives to those programs or procedures.

✗ Possible changes in methods or levels of payment for benefits or services under those programs.

Category 6 ([click here for guidance and examples](#))

✗ The research involves taste and food quality evaluation or is a consumer acceptance study.

Either of the following is true:

✗ Wholesome foods without additives are consumed.

✗ If a food is consumed that contains a food ingredient or an agricultural chemical or environmental contaminant, the food ingredient or agricultural chemical or environmental contaminant is at or below the level and for a use found to be safe by one of the following agencies:

Please check which of following

✗ The Food and Drug Administration.

✗ The Environmental Protection Agency.

✗ The Food Safety and Inspection Service of the U.S. Department of Agriculture.

Consent Process for Exemptions

1. While the full regulatory requirements for consent do not apply, some exempt research does involve talking to or interacting with human participants. Under these circumstances, there is still the expectation that you will tell people what you are doing and why, and invite their voluntary participation. If this describes your study, then describe the process for obtaining consent from the subjects. This may or may not include a written consent document or script; if you plan to use a written document, please upload as an attachment as the end of this application process.

To obtain consent from principals, this researcher will describe the study and invite principals' voluntary participation as follows:

Dear Principal:

I am a doctoral student at the University of North Carolina at Chapel Hill in the Department of Educational Leadership. I am writing to request your participation in my dissertation study, which will explore the relationship between leadership behaviors of the principal, academic press, sense of community, and student achievement.

There has been little research that clarifies how leaders achieve the small but significant effects on schools and students. Evolving trends in education such as empowerment, shared leadership, and organizational learning mirror elements of transformational leadership seen in principals of high-achieving schools: establishing a shared vision, providing individualized support, holding high expectations, and engaging others in decision making. Therefore, there is a need to further differentiate the transactional/transformational binary as it relates to principals' decisions over aspects of a school's academic press and sense of community. This study aims to expand existing understanding and knowledge of transactional and transformational leadership as it relates to how school principals decide to influence academic press, sense of community, and student achievement.

If you agree to participate in this study, you will be asked to complete the Multifactor Leadership Questionnaire published by www.mindgarden.com. This survey will be administered online from Qualtrics. This process should take approximately 15 minutes.

Your leadership behavior data from this survey will be matched with data from your school's North Carolina Teacher Working Conditions Survey of 2014. Select questions were chosen from the Teacher Working Conditions Survey to form two school climate variables: academic press and sense of community. It is important to inform you that I will remove all identifying variables keeping readers from being able to deduce the identity of any and all individual responses. Quantitative data for the analysis will be summary data and will not focus on individual principals.

This study has been reviewed and approved by the Behavioral Institutional Review Board (Behavioral IRB) of the University of North Carolina at Chapel Hill. You may contact the Behavioral IRB if you have any questions or concerns about your rights as a research participant in this study at (919) 962-7761 or at IRB_subjects@unc.edu

If you have any comments or questions about this study, please contact me or Dr. Fenwick English, my advisor, with the information provided below. Thank you for your support.

Sincerely,

Michael Sasscer

Principal Investigator

School of Education, UNC-CH

Chapel Hill, NC

Dr. Fenwick English

Professor & Research Advisor
 School of Education
 University of North Carolina at Chapel Hill
 121 C Peabody Hall, CB #3500
 Chapel Hill, NC 27599

Part A. Questions Common to All Studies

A.1. Background and Rationale

A.1.1. Provide a summary of the background and rationale for this study (i.e., why is the study needed?). If a complete background and literature review are in an accompanying grant application or other type of proposal, only provide a brief summary here. If there is no proposal, provide a more extensive background and literature review, including references.

A complete background and literature review are in my accompanying proposal.

In summary, principal quality is important for student outcomes, yet determining the impact of principals on learning is a problem (Branch et al., 2013). It is difficult to separate the principal's contributions from the many other factors that drive student achievement. Furthermore, there has been little research that clarifies how leaders achieve the small but significant effects on schools and students (Leithwood & Seashore-Louis, 2012).

Evolving trends in education such as empowerment, shared leadership, and organizational learning (Hallinger & Heck, 1998) mirror elements of transformational leadership seen in principals of high-achieving schools: establishing a shared vision, providing individualized support, holding high expectations, and engaging others in decision making (Cotton, 2003). Therefore, there is a need to further differentiate the transactional/transformational binary as it relates to principals' decisions over aspects of a school's academic press and sense of community.

This study aims to expand existing understanding and knowledge of transactional and transformational leadership as it relates to how school principals decide to influence academic press and school community. This study may clarify the importance of transactional and transformational leadership in educational settings. By understanding the impact a leader's choice in style has on press and community, school district leaders may be better equipped with knowledge to place their principals in a position to succeed and offer them valuable support. Human resource departments may be better equipped to distinguish qualities in candidates that make them more effective in leading the technical challenges, as well as rising to meet the adaptive challenges of moving the school towards becoming a learning organization. For principals, these data should provide insights about the relationship between their choice in style and changes in press and community. Additionally, these data should provide principals a process to better understand the needs of their teachers and students in order to guide their behaviors and practices through school improvement.

A.2. Subjects

A.2.1. Total number of subjects proposed across all sites by all investigators (provide exact number; if unlimited, enter 9999):

60

A.2.2. Total number of subjects to be studied by the UNC-CH investigator(s) (provide exact number; if unlimited, enter 9999):

60

A.2.3. If the above numbers include multiple groups, cohorts, or ranges or are dependent on unknown factors, or need any explanation, describe here:

No Answer Provided

A.2.4. Do you have specific plans to enroll subjects from these vulnerable or select populations:

Do not check if status in that group is purely coincidental and has no bearing on the research. For example, do not check 'UNC-CH Employees' for a cancer treatment study or survey of the general public that is not aimed at employees.

☒ Children (under the age of majority for their location)

Note that you will be asked to provide age ranges for children in the Consent Process section. Any minor subject who attains the age of majority during the course of the research study must provide consent as an adult, unless consent has been waived, which is requested in section D.3.1.

☒ Non-English-speaking

☒ Prisoners, others involuntarily detained or incarcerated (this includes parolees held in treatment centers as a condition of their parole)

☒ Decisionally impaired

☒ Pregnant women

☒ HIV positive individuals

☒ UNC-CH Students

Some research involving students may be eligible for waiver of parental permission (e.g., using departmental participant pools). [See SOP 32.9.1](#)

☒ UNC-CH Employees

☒ UNC-CH Student athletes, athletic teams, or coaches

☒ People, including children, who are likely to be involved in abusive relationships, either as perpetrator or victim.

This would include studies that might uncover or expose child, elder or domestic abuse/neglect. ([See SOP Appendix H](#))

A.2.5. If any of the above populations are checked, describe how you plan to confirm status in one or more of those groups (e.g., pregnancy, psychological or HIV testing)

No Answer Provided

A.2.6. If any of the above populations are checked, please describe your plans to provide additional protections for these subjects

No Answer Provided

A.2.7. Age range of subjects:

Minimum age of subject enrolled	21
	years
Maximum age of subject enrolled	99
» If no maximum age limit, indicate 99	
	years

A.4. Study design, methods and procedures

Your response to the next question will help determine what further questions you will be asked in the following sections.

A.4.1. Will you be using any **methods or procedures commonly used in biomedical or clinical research** (this would include but not be limited to drawing blood, performing lab tests or biological monitoring, conducting physical exams, administering drugs, or conducting a clinical trial)?

No

A.4.2. Describe the study design. List and describe study procedures, including a sequential description of what subjects will be asked to do, when relevant.

Using the 2014 North Carolina Teacher Working Conditions survey (TWC:2014) and the Multifactor Leadership Questionnaire (MLQ:Form5X), this study will attempt to determine (a) self-described leadership behaviors of principals across all three school levels (i.e., elementary, middle, and high) and (b) the connection and influence of the choice of style between transactional and transformational leadership behaviors of principals and three school variables: the schools' academic press, sense of community, and student achievement. The independent variable is the principals' leadership behaviors; the dependent variables are academic press, sense of community, and student achievement. The principals will be asked to complete the MLQ:Form5X providing their self-perception of their leadership behaviors.

This is a quantitative study that will aim to explain the relationship among the aforementioned school level variables. This researcher worked with the Odum Institute at the University of North Carolina at Chapel Hill, which provided guidance in the area of research design and survey methodology. This study will employ a series of regression models to examine appropriate measures of association that measure the strength of the relationship on these school level variables. The first regression model looks at how the means of two intermediate variables (academic press and sense of community) may vary as a function of the principal's leadership style (transactional or transformational). The second regression model looks at how the means of student outcomes may vary as a function of a school's academic press and sense of community. There is an association between academic press, sense of community, and student outcomes and the nature of those relationships may differ by the principal's leadership style (transactional or transformational).

Principals will be selected based on having 3 years of experience up to and including the 2013-2014 academic year in the school reported on the TWC:2014. Principals will be asked to voluntarily complete the MLQ:Form5X to measure their leadership behaviors. Select questions were chosen from the TWC:2014 to form two school climate variables: academic press and sense of community.

Content validity of the questions comprising academic press and sense of community was established through expert consultation. Experts from the field were consulted to ensure that the questions were selected in accordance to the indicators and definitions offered in the literature. Data from the MLQ:Form5X will be matched with each school's climate variables in order to perform the statistical analysis. Pseudonyms or codes will be used for schools and this researcher will remove all identifying variables keeping readers from being able to deduce the identity of any and all individual responses. Quantitative data for the analysis will be summary data and will not focus on individual principals.

A.4.3. Will this study use any of the following methods?

- ☒ Audiotaping
- ☒ Videotaping or filming
- ☒ Behavioral observation - (e.g., Participant, naturalistic, experimental, and other observational methods typically used in social science research)

- ☒ Pencil and paper questionnaires or surveys
- ☒ Electronic questionnaires or surveys
- ☒ Telephone questionnaires or surveys
- ☒ Interview questionnaires or surveys
- ☒ Other questionnaires or surveys
- ☒ Focus groups
- ☒ Diaries or journals
- ☒ Photovoice
- ☒ Still photography

A.4.4. If there are procedures or methods that require specialized training, describe who (role/qualifications) will be involved and how they will be trained.

No Answer Provided

A.4.5. Are there cultural issues, concerns or implications for the methods to be used with this study population?

No

A.6. Risks and measures to minimize risks

For each of the following categories of risk you will be asked to describe any items checked and what will be done to minimize the risks.

A.6.1. Psychological

- ☒ Emotional distress
- ☒ Embarrassment
- ☒ Consequences of breach of confidentiality (Check and describe only once on this page)
- ☒ Other

A.6.2. Describe any items checked above and what will be done to minimize these risks

No Answer Provided

A.6.3. Social

- ☒ Loss of reputation or standing within the community
- ☒ Harms to a larger group or community beyond the subjects of the study (e.g., stigmatization)
- ☒ Consequences of breach of confidentiality (Check and describe only once on this page)
- ☒ Other

A.6.4. Describe any items checked above and what will be done to minimize these risks

There are no more than minimal risks associated with participation in this study. The principal surveys are the principals' self-perceptions of their leadership behavior. Procedures are in place to protect the privacy of the participants and the confidentiality of their information they provide. This

researcher will remove all identifying variables keeping readers from being able to deduce the identity of any and all individual responses. Pseudonyms and/or codes and/or organization ID numbers will be used for schools. Leader ID numbers will be used for principals. The only demographic information being recorded is the number of years in the school reported on the TWC:2014. Quantitative data for the analysis will be summary data and will not focus on individual principals.

A.6.5. Economic

- ☒ Loss of income
- ☒ Loss of employment or insurability
- ☒ Loss of professional standing or reputation
- ☒ Loss of standing within the community
- ☒ Consequences of breach of confidentiality (Check and describe only once on this page)
- ☒ Other

A.6.6. Describe any items checked above and what will be done to minimize these risks.

No Answer Provided

A.6.7. Legal

- ☒ Disclosure of illegal activity
- ☒ Disclosure of negligence
- ☒ Consequences of breach of confidentiality (Check and describe only once on this page)
- ☒ Other

A.6.8. Describe any items checked above and what will be done to minimize these risks

No Answer Provided

A.6.9. Physical

- ☒ Medication side effects
- ☒ Pain
- ☒ Discomfort
- ☒ Injury
- ☒ To a nursing child or a fetus (either through mother or father)

A.6.10. Describe any items checked above, including the category of likelihood and what will be done to minimize these risks. Where possible, describe the likelihood of the risks occurring, using the following terms:

- Very Common (approximate incidence > 50%)
- Common (approximate incidence > 25%)
- Likely (approximate incidence of 10-25%)
- Infrequent (approximate incidence of 1-10%)
- Rare (approximate incidence < 1%)

No Answer Provided

A.6.11. Unless already addressed above, describe procedures for referring subjects who are found, during the course of this study, to be in need of medical follow-up or psychological counseling

No Answer Provided

A.6.12. Are there plans to withdraw or follow subjects (or partners of subjects) who become pregnant while enrolled in this study?

No

A.9. Identifiers

A.9.1. Check which of the following identifiers you already have or will be receiving, or select "None of the above."

- ☒ Names (this would include names/signatures on consent forms)
- ☒ Telephone numbers
- ☒ Any elements of dates (other than year) for dates directly related to an individual, including birth date, admission date, discharge date, date of death. For ages over 89: all elements of dates (including year) indicative of such age, except that such ages and elements may be aggregated into a single category of age 90 and older
- ☒ Any geographic subdivisions smaller than a State, including street address, city, county, precinct, zip code and their equivalent geocodes (e.g. GPS coordinates), except for the initial three digits of a zip code
- ☒ Fax numbers
- ☒ Electronic mail addresses
- ☒ Social Security numbers
- ☒ Medical record numbers
- ☒ Health plan beneficiary numbers
- ☒ Account numbers
- ☒ Certificate/license numbers
- ☒ Vehicle identifiers and serial numbers (VIN), including license plate numbers
- ☒ Device identifiers and serial numbers (e.g., implanted medical device)
- ☒ Web universal resource locators (URLs)
- ☒ Internet protocol (IP) address numbers
- ☒ Biometric identifiers, including finger and voice prints
- ☒ Full face photographic images and any comparable images
- ☒ Any other unique identifying number, code, or characteristic, other than dummy identifiers that are not derived from actual identifiers and for which the re-identification key is maintained by the health care provider and not disclosed to the researcher
- ☒ None of the above

A.9.2. For any identifiers checked, how will these identifiers be stored in relationship to the research data?

- ☒ with the research data (i.e., in the same data set and/or physical location)
- ☒ separate from the research data (i.e., coded with a linkage file stored in a different physical location)

Provide details about the option you selected above:

Data collected from the Multifactor Leadership Questionnaire and the North Carolina Teacher Working Conditions Survey will be kept on a computer at the residence of the researcher, which is only accessible with a secure password. Only this researcher will have access to the password. Within the same research data set, leader ID numbers will be used for principal names and codes and/or organization ID numbers will be used for school names. A separate codebook linking the ID numbers to principal names and school names will be stored in a different file also protected with a secure password and only accessible to this researcher.

A.9.3. Are you collecting Social Security Numbers to be used as a unique identifier for study tracking purposes for national registry or database? (Do not check yes if collecting SSN *only* for payment purposes; this will be addressed later.)

No

A.10. Confidentiality of the data

A.10.1. Describe procedures for maintaining confidentiality of the data you will collect or will receive (e.g., coding, anonymous responses, use of pseudonyms, etc.).

Procedures are in place to protect the privacy of the participants and the confidentiality of their information they provide. This researcher will remove all identifying variables keeping readers from being able to deduce the identity of any and all individual responses. Pseudonyms and/or codes and/or organization ID numbers will be used for school names. Leader ID numbers will be used for principal names. The only demographic information being recorded is the number of years in the school reported on the TWC:2014. Quantitative data for the analysis will be summary data and will not focus on individual principals.

A.10.2. Will any of the groupings or subgroupings used in analysis be small enough to allow individuals to be identified?

No

Part B. Direct Interaction**B.1. Methods of recruiting**

B.1.1. Check all the following means/methods of subject recruitment to be used:*

- ☒ In person
- ☐ Participant pools
- ☐ Presentation to classes or other groups
- ☐ Letters
- ☐ Flyers
- ☐ Radio, TV recruitment ads
- ☐ Newspaper recruitment ads
- ☐ Website recruitment ads
- ☐ Telephone script
- ☒ Email or listserv announcements

- ☒ Follow up to initial contact (e.g., email, script, letter)
- ☒ Other

B.1.2. Describe how subjects will be identified

Principals across elementary, middle, and high schools will be selected based on having 3 years of experience up to and including the 2013-2014 academic year in the school reported on the TWC:2014.

B.1.3. Describe how and where subjects will be recruited and address the likelihood that you will have access to the projected number of subjects identified in A.2.

Principals will be recruited from school districts across central North Carolina. Personal communication and email will be the primary tactics for recruiting principals. As a teacher and school leader in various schools across central North Carolina for the past 13 years, there is a likelihood that this researcher will have access to some, but not all, principals identified in this study.

Part C. Existing Data, Records, Specimens

C.1. Data Sources

C.1.1. What existing records, data or human biological specimens will you be using? (Indicate all that apply or select 'None of the above'):

- ☒ Medical records in any format.

If you access the records of fewer than 50 patients under a full or limited waiver of HIPAA, submit a copy of your IRB approval letter and a completed [Research Disclosure Form](#) to Health Information Management (HIM). Do not submit this information to the IRB. For additional information about this process, you should contact HIM directly at 919-595-5691 or 919-966-1255.

- ☒ Data already collected from another research study

Were the investigators for the current application involved in the original collection? --

- ☒ Patient specimens (tissues, blood, serum, surgical discards, etc.)

Has the clinical purpose for which they were collected been met before removal of any excess? --

- ☒ Data already collected for administrative purposes

- ☒ Student records ([You will need to satisfy FERPA requirements: see SOP 24.6.2 for guidance](#))

- ☒ UNC Dental Records

- ☒ Data coming directly from a [health plan, health care clearinghouse, or health care provider](#)?

- ☒ Publicly available data

- ☒ Other

- ☒ None of the above

For EACH data source checked above, provide a description of the data, proposed use, how data were collected (including consent procedures), and where data currently reside.

The North Carolina Teacher Working Conditions Survey of 2014 (TWC:2014) seeks to identify the conditions under which teachers best contribute to student learning. Data for TWC:2014 was gathered in early 2014. The New Teacher Center (NTC) administered the anonymous survey to all the reported 105,136 school-based licensed educators in North Carolina. Over 93,000 educators (89 percent) in the state responded. Of those, 89 percent are teachers, four percent are administrators and seven percent are other licensed educators, such as librarians and school psychologists (North Carolina Department of Public Instruction [NCDPI], 2014). This researcher will selected questions from the TWC:2014 to create two unique dependent variables representative of a school's academic press and sense of community.

C.1.2. Describe your plans for obtaining permission from the custodians of the data, records or specimens (e.g., pathology dept, tissue bank, original researcher):

This researcher first contacted the Assistant Director of the Educator Effectiveness Division at the North Carolina Department of Public Instruction to seek permission to obtain the data set. This researcher was then directed to the Associate Director of the Teaching and Learning Conditions Initiative at the **New Teacher Center** to obtain and complete the standard request form. This researcher was given an access code to the data set on October 13, 2014. The email stated:

You now have access to the 2014 NC TWC survey database with demographics. Once you are logged in, you will be redirected to the files page. There you will find a zip file for download. Click the blue download link to open or save the folder. In the folder are three files: the .csv database, the .xlsx codebook, and the .xlsx response file (which will allow you to

C.1.3. Do the custodians of the data, records or specimens require a data use agreement?

Yes

C.2. Coding and Data Use Agreements

C.2.1. When you receive these data, records or human biological specimens will they be coded? Coded means identifying information that would enable the research team to readily ascertain the individual's identity has been replaced with a number, letter, symbol, or combination thereof (i.e., a code). If you will not be using existing materials, check "No."

Yes

Will any of the personnel involved in this study (this includes collaborators providing data or specimens, personnel listed on grants, co-authors, and faculty advisors) have access to a key that deciphers the code, enabling linkage of identifying information to private information or samples?

Yes

Please identify the mechanism which precludes your access to the codes and include a copy of any agreements or documents that explain these protections:

Data use agreement with custodian of data (agreement prohibiting the release of the key to decipher the code to the applicant under any circumstances)?	Yes
Data are publicly available?	Yes
Honest broker (centralized custodian who controls data and will not release codes or IDs)?	No

IRB Number: 15-0825	Modification	Principal Investigator: Michael Sasscer
---------------------	--------------	---

Other	No
-------	----

Do ALL of these data, records or specimens exist at the time of this application?

Yes

Attachments

This submission requires the following attachments

Document Type

Student Dissertation or Thesis Proposal

Electronic Questionnaire Survey

Email or Listserv Recruitment

Data Use Agreement

Data Use Agreement

This submission includes the following attachments

File Name

Document Type

M. Sasscer Dissertation Proposal.pdf

Student Dissertation or Thesis Proposal

IRB Principal Recruitment-Consent Letter.pdf

Email or Listserv Recruitment

MLQ Form5X.pdf

Electronic Questionnaire Survey

NC_Data_Request - M. Sasscer.pdf

Data Use Agreement

[view attachments](#)

Addenda



Data Security Requirements

[view addenda](#)

By certifying below, the Principal Investigator affirms the following:

I will personally conduct or supervise this research study. I will ensure that this study is performed in compliance with all applicable laws, regulations and University policies regarding human subjects research. I will obtain IRB approval before making any changes or additions to the project. I will notify the IRB of any other changes in the information provided in this application. I will provide progress reports to the IRB at least annually, or as requested. I will report promptly to the IRB all unanticipated problems or serious adverse events involving risk to human subjects. I will follow the IRB approved consent process for all subjects. I will ensure that all collaborators, students and employees assisting in this research study are informed about these obligations. All information given in this form is accurate and complete.

This study proposes research that has been determined to include Security Level 2 data security requirements. I agree to accept responsibility for managing these risks appropriately in consultation with departmental and/or campus security personnel. The Data Security Requirements addendum can be reviewed [here](#).

If PI is a Student or Trainee Investigator, the Faculty Advisor also certifies the following:

I accept ultimate responsibility for ensuring that this study complies with all the obligations listed above for the PI.

Certifying Signatures:

Signature: Electronic Signature Received
Michael Sasscer

Date: 5/08/2015 01:03:23 PM

Signature: Electronic Signature Received
Fen English

Date: 5/08/2015 03:00:30 PM

APPENDIX B: CONTENT VALIDITY EXPERT CERTIFICATION

Dear Subject Matter Expert,

Thank you for agreeing to review how I constructed the variables academic press and sense of community from the North Carolina Teacher Working Conditions Survey (TWC). The TWC is a valid and reliable instrument that measures conditions under which teachers best contribute to student learning. The purpose of your collaboration is to determine if each item I selected from the TWC best represents the aspects – as defined in the literature – of academic press and sense of community, respectively.

I have synthesized from the literature academic press to mean the extent to which schools appear driven by academically oriented goals, values and activities as indicated by schools' (Eubanks, 2012; Goddard, Sweetland, & Hoy, 2000; Goddard, Tschammen-Moran, & Hoy, 2001; Hoy, Tarter, & Kottkamp, 1991; Murphy, Weil, Philip, & Mitman, 1982; Shouse, 1996):

- A. Collective Responsibility for Student Learning
- B. High Expectations for All Students
- C. Rigorous Academic and Instructional Focus
- D. Positive Disciplinary Climate

I have synthesized from the literature sense of community to mean the extent to which schools appear to operate with shared values, common activities, and caring relationships among students and educators to help build a sense of attachment, commitment, responsibility, and purpose as indicated by schools' (Bryk & Driscoll, 1988; Newmann, Rutter, & Smith, 1989; Shouse, 1996):

- A. Shared values and understandings
- B. Common agenda of activities
- C. Ethic of Caring

Part I – Please complete the following.

Name:

Address:

Office Phone:

Email:

Part II - Please mark your level of agreement on how well each TWC question represents the assigned indicator for academic press in the grid below.

Indicators of Academic Press as defined in the literature					
A. Collective Responsibility for Student Learning					
Corresponding TWC Questions	Strongly Disagree 0	Disagree 1	Neutral 2	Agree 3	Strongly Agree 4
1. Teachers collaborate to achieve consistency on how student work is assessed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Teachers have knowledge of the content covered and instructional methods used by other teachers at this school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Teachers work in professional learning communities to develop and align instructional practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Teachers provide parents/guardians with useful information about student learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Parents/guardians support teachers, contributing to their success with students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Community members support teachers, contributing to their success with students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. High Expectations for All Students					
Corresponding TWC Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
4. Teachers believe almost every student has the potential to do well on assignments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Teachers believe what is taught will make a difference in students' lives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Teachers require students to work hard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. Academic and Instructional Focus					
Corresponding TWC Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7. Class sizes are reasonable such that teachers have time available to meet the needs of all students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Teachers have sufficient instructional time to meet the needs of all students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Teachers know what students learn in each of their classes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Teachers have time to collaborate with colleagues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Teachers are protected from duties that interfere with their essential role of educating students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Teachers use assessment data to inform their instruction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Teachers are assigned classes that maximize their likelihood of success with students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. Disciplinary Climate					
Corresponding TWC Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
14. Students at this school follow rules of conduct	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Teachers consistently enforce rules for student conduct	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Part III - Please mark your level of agreement on how well each TWC question represents the assigned indicator for sense of community in the grid below.

Indicators of Sense of Community as defined in the literature					
A. Shared values and understandings					
Corresponding TWC Questions	Strongly Disagree 0	Disagree 1	Neutral 2	Agree 3	Strongly Agree 4
1. Students at this school understand expectations for their conduct	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Policies and procedures about student conduct are clearly understood by the faculty	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. The faculty and staff have a shared vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Common agenda of activities					
Corresponding TWC Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. School administrators support teachers' efforts to maintain discipline in the classroom	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Teachers are recognized as educational experts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Teachers are trusted to make sound professional decisions about instruction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Teachers are relied upon to make decisions about educational issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Teachers are encouraged to try new things to improve instruction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. Ethic of Caring					
Corresponding TWC Questions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
9. There is an atmosphere of trust and mutual respect in this school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. The school leadership consistently supports teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. The faculty are recognized for accomplishments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Are there statements about academic press and sense of community that have not been included?

☐ No, none that are necessary for this purpose.

☐ Yes, you should include these items (Below are additional questions from the TWC. Please place "AP" or "SC" in the box of the question you feel should be included):

Teachers are allowed to focus on educating students with minimal interruptions.

The non-instructional time provided for teachers in my school is sufficient.

Efforts are made to minimize the amount of routine paperwork teachers are required to do.

Teachers have sufficient access to appropriate instructional materials.

Teachers have sufficient access to instructional technology, including computers, printers, software and internet access.

Teachers have access to reliable communication technology, including phones, faxes and email.

Teachers have sufficient access to office equipment and supplies such as copy machines, paper, pens, etc.

Teachers have sufficient access to a broad range of professional support personnel.

The school environment is clean and well maintained.

Teachers have adequate space to work productively.

The physical environment of classrooms in this school supports teaching and learning.

The reliability and speed of Internet connections in this school are sufficient to support instructional practices.

Parents/guardians are influential decision makers in this school.
 This school maintains clear, two-way communication with the community.
 This school does a good job of encouraging parent/guardian involvement.
 Parents/guardians know what is going on in this school.
 The community we serve is supportive of this school.
 School administrators consistently enforce rules for student conduct.
 The faculty work in a school environment that is safe.
 Teachers are encouraged to participate in school leadership roles.
 The faculty has an effective process for making group decisions to solve problems.
 In this school we take steps to solve problems.
 Teachers are effective leaders in this school.
 Teachers have an appropriate level of influence on decision making in this school.
 Teachers feel comfortable raising issues and concerns that are important to them.
 Teachers are held to high professional standards for delivering instruction.
 The school leadership facilitates using data to improve student learning.
 Teacher performance is assessed objectively.
 Teachers receive feedback that can help them improve teaching.
 The procedures for teacher evaluation are consistent.
 The school improvement team provides effective leadership at this school.
 Sufficient resources are available for professional development in my school.
 An appropriate amount of time is provided for professional development.
 Professional development offerings are data driven.
 Professional learning opportunities are aligned with the school's improvement plan.
 Professional development is differentiated to meet the individual needs of teachers.
 Professional development deepens teachers' content knowledge.
 Teachers have sufficient training to fully utilize instructional technology.
 Teachers are encouraged to reflect on their own practice.
 In this school, follow up is provided from professional development.
 Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices.
 Professional development is evaluated and results are communicated to teachers.
 Professional development enhances teachers' ability to implement instructional strategies that meet diverse student learning needs.
 Professional development enhances teachers' abilities to improve student learning.
 State assessment data are available in time to impact instructional practices.
 Local assessment data are available in time to impact instructional practices.
 The curriculum taught in this school is aligned with Common Core Standards
 Provided supports (i.e. instructional coaching, professional learning communities, etc.) translate to improvements in instructional practices by teachers.
 Teachers have autonomy to make decisions about instructional delivery (i.e. pacing, materials and pedagogy).
 State assessments provide schools with data that can help improve teaching
 State assessments accurately gauge students' understanding of standards

APPENDIX C: CONTENT VALIDITY EXPERT CERTIFICATION SUMMARY

Part I – Summary of subject matter experts’ level of agreement on how well each TWC question represents the assigned indicator for academic press.

Likert Scale:

0 – “Strongly Disagree”

1 – “Disagree”

2 – “Neutral”

3 – “Agree”

4 – “Strongly Agree”

Expert 1 – Dr. Jason Van Heukelum

Expert 2 – Dr. Ira Bogotch

Expert 3 – Dr. John Hardman

Expert 4 – Dr. Tara Nattrass

Indicators of Academic Press as defined in the literature					
A. Collective Responsibility for Student Learning					
Corresponding TWC Questions	Expert 1	Expert 2	Expert 3	Expert 4	Mean
1. Teachers collaborate to achieve consistency on how student work is assessed	4	3	4	2	3.25
2. Teachers have knowledge of the content covered and instructional methods used by other teachers at this school	3	4	4	3	3.5
3. Teachers work in professional learning communities to develop and align instructional practices	4	3	4	3	3.5
4. Teachers provide parents/guardians with useful information about student learning	4	4	4	3	3.75
5. Parents/guardians support teachers, contributing to their success with students	4	2	4	3	3.25
6. Community members support teachers, contributing to their success with students	4	2	3	3	3
B. High Expectations for All Students					
Corresponding TWC Questions	Expert 1	Expert 2	Expert 3	Expert 4	Mean

4. Teachers believe almost every student has the potential to do well on assignments	4	3	4	4	3.75
5. Teachers believe what is taught will make a difference in students' lives	4	2	4	3	3.25
6. Teachers require students to work hard	4	4	4	3	3.75
C. Academic and Instructional Focus					
Corresponding TWC Questions	Expert 1	Expert 2	Expert 3	Expert 4	Mean
7. Class sizes are reasonable such that teachers have time available to meet the needs of all students	2	4	4	3	3.25
8. Teachers have sufficient instructional time to meet the needs of all students	2	4	4	4	3.5
9. Teachers know what students learn in each of their classes	3	3	4	4	3.5
10. Teachers have time to collaborate with colleagues	3	4	4	3	3.5
11. Teachers are protected from duties that interfere with their essential role of educating students	3	3	4	3	3.25
12. Teachers use assessment data to inform their instruction	4	3	4	4	3.75
13. Teachers are assigned classes that maximize their likelihood of success with students	4	4	4	3	3.75
D. Disciplinary Climate					
Corresponding TWC Questions	Expert 1	Expert 2	Expert 3	Expert 4	Mean
14. Students at this school follow rules of conduct	4	3	3	4	3.5
15. Teachers consistently enforce rules for student conduct	4	3	3	4	3.5

Comments:

Expert 2 - What was difficult for me in supporting these items was the fact that teachers do not work in ideal environments and that many of the top level administrators impose rules and policies which run counter to the literature. So I don't really know how valid my answers are. Hopefully, your sample will be able to discriminate separating "agree" from "strongly agree" which are the two critical categories. Where I individual a neutral response, it doesn't mean that parent or community support is not important, it is just that the meaning of "support" is controversial.

Expert 3 - The discipline items don't appear to reflect a positive perspective on student behavior, including developing their ability to reflect on their behaviors, just their compliance with whatever rules have been set.

Part II - Summary of subject matter experts' agreement on how well each TWC question represents the assigned indicator for sense of community.

Indicators of Sense of Community as defined in the literature					
A. Shared values and understandings					
Corresponding TWC Questions	Expert 1	Expert 2	Expert 3	Expert 4	Mean
1. Students at this school understand expectations for their conduct	3	3	1	3	2.5
2. Policies and procedures about student conduct are clearly understood by the faculty	3	4	1	3	2.75
3. The faculty and staff have a shared vision	4	3	4	4	3.75
B. Common agenda of activities					
Corresponding TWC Questions	Expert 1	Expert 2	Expert 3	Expert 4	Mean
4. School administrators support teachers' efforts to maintain discipline in the classroom	3	4	1	3	2.75
5. Teachers are recognized as educational experts	3	4	4	2	3.25
6. Teachers are trusted to make sound professional decisions about instruction	2	4	4	2	3
7. Teachers are relied upon to make decisions about educational issues	3	4	4	2	3.25
8. Teachers are encouraged to try new things to improve instruction	4	4	4	2	3.5
C. Ethic of Caring					
Corresponding TWC Questions	Expert 1	Expert 2	Expert 3	Expert 4	Mean
9. There is an atmosphere of trust and mutual respect in this school	4	4	4	4	4
10. The school leadership consistently supports teachers	4	4	4	2	3.5
11. The faculty are recognized for accomplishments	4	4	3	3	3.5

Comments:

Expert 2 - The questions in these sections represent normative values that I support. As a result, marking strongly agree was almost predetermined. I hope that is not the case with other "experts"

Expert 3 - Q4. Again, not a positive statement. Could be rephrased: School administration and faculty work closely together to ensure a positive learning environment. People may not find it easy to distinguish between Q6 and Q7

Q8. A more specific term for 'new things'? teaching/learning/assessment strategies?

Part III - Statements about academic press and sense of community from the TWC that subject matter experts think should be included.

AP – “Academic Press”

SC – “Sense of Community”

Numbers in () correspond to the SMEs

AP (2) Teachers are allowed to focus on educating students with minimal interruptions.

AP (2) Efforts are made to minimize the amount of routine paperwork teachers are required to do.

AP (2) Teachers have sufficient access to appropriate instructional materials.

AP (2) Teachers have sufficient access to instructional technology, including computers, printers, software and internet access.

SC (3) The school environment is clean and well maintained.

SC (2) Teachers have adequate space to work productively.

SC (2) (3) This school maintains clear, two-way communication with the community.

SC (2) (3) This school does a good job of encouraging parent/guardian involvement.

SC (2) Parents/guardians know what is going on in this school.

SC (1) The community we serve is supportive of this school.

SC (2) (3) The faculty work in a school environment that is safe.

SC (2) The faculty has an effective process for making group decisions to solve problems.

SC (3) Teachers are effective leaders in this school.

SC (1) (2) Teachers have an appropriate level of influence on decision making in this school.

SC (1) (2) Teachers feel comfortable raising issues and concerns that are important to them.

AP (1) The school leadership facilitates using data to improve student learning.

AP (1) Teacher performance is assessed objectively.

AP (1) (2) SC (3) Teachers receive feedback that can help them improve teaching.

SC (3) The school improvement team provides effective leadership at this school.

AP (3) Sufficient resources are available for professional development in my school.

AP (1) Professional development offerings are data driven.

AP (2) (3) SC (2) Professional development is differentiated to meet the individual needs of teachers.

AP (1) (2) Professional development deepens teachers' content knowledge.

AP (3) Teachers are encouraged to reflect on their own practice.

AP (2) (3) SC (2) Professional development provides ongoing opportunities for teachers to work with colleagues to refine teaching practices.

AP (2) Professional development enhances teachers' ability to implement instructional strategies that meet diverse student learning needs.

AP (3) Professional development enhances teachers' abilities to improve student learning.

AP (4) Provided supports (i.e. instructional coaching, professional learning communities, etc.) translate to improvements in instructional practices by teachers.

AP (2) (3) Teachers have autonomy to make decisions about instructional delivery (i.e. pacing, materials and pedagogy).

REFERENCES

- Alig-Mielcarek, J.M. (2003). *A model of school success: Instructional leadership, academic press, and student achievement* (Doctoral Dissertation). Available from Pro Quest Dissertations and Theses database. (UMI No. 3093620)
- American Psychological Association. (2011). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: American Psychological Association.
- Anderson, J., & Gerbing, D.W. (1988). Structural equations modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103, 411-423.
- Antonakis, J., Avolio, B.J., & Sivasubramaniam, N. (2003). Context and leadership: An examination of the nine-factor full-range leadership theory using the Multifactor Leadership Questionnaire. *The Leadership Quarterly*, 14, 261-295. Doi: 10.1016/S1048-9843(03)00030-4
- Avolio, B.J., & Bass, B.M. (1994). *Improving organizational effectiveness through transformational leadership*. Thousand Oaks, CA: Sage Publications.
- Avolio, B.J., & Bass, B.M. (2004). *Multifactor Leadership Questionnaire: Manual and sample set*. (3rd ed.). Lincoln, NE: Mind Garden.
- Avolio, B.J., Bass, B.M., & Dong J.I. (1999). Re-examining the components of transformational and transactional leadership using the Multifactor Leadership Questionnaire. *Journal of Occupational and Organizational Psychology*, 72, 441-462.
- Avolio, B.J., Waldman, D.A., & Yammarino, F.J. (1991). Leading in the 1990s: The four I's of transformational leadership. *Journal of European Industrial Training*, 15(4), 9-16.
- Bagozzi, R.P., Yi, Y., & Phillips, L.W. (1991). Assessing construct validity in organizational research. *Administrative Science Quarterly*, 36, 421-458.
- Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice Hall.
- Bass, B.M. (1985). *Leadership and performance beyond expectations*. New York, NY: Free Press.
- Bass, B.M., & Bass, R. (2008). *The Bass handbook of leadership: Theory, research, and managerial applications* (4th ed.). New York, NY: Free Press.
- Beckerman, L. (2005, Jan.). Building blocks for the new principal. *Principal leadership*, 5, 43.

- Bentler, P.M. & Bonett, D.G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88 (3), 588-606.
- Blake, R.R., & Mouton, J.S. (1964). *The managerial grid*. Houston, TX: Gulf.
- Blase, J., & Blase, J. (2000). Effective instructional leadership: Teachers' perspectives on how principals promote teaching and learning in schools. *Journal of Educational Administration*, 38(2), 130-141.
- Blase, J. (1993). The micropolitics of effective school-based leadership: Teachers' perspectives. *Educational Administration Quarterly*, 29(2), 142-163.
- Bobko, P. (1990). Multivariate correlational analysis. In M.D. Dunnette & L.M. Hough (Eds.), *Handbook of industrial and organizational psychology*, 1, 637-686. Palo Alto, CA: Consulting Psychologists Press.
- Bollen, K.A. (1989). *Structural equations with latent variables*. New York, NY: Wiley.
- Branch, G.F., Hanushek, E.A., & Rivkin, S.G. (2013). School leaders matter: Measuring the impact of effective principals. *Education Next*, 13(1), 63-69.
- Bryk, A.S., & Driscoll, M.E. (1988). *The high school as community: Contextual influences and consequences for students and teachers* (Report No. 143). Madison, WI: National Center on Effective Secondary Schools.
- Burns, J.M. (1978). *Leadership*. New York, New York: Harper and Row.
- Chin, J. (2007). Meta-analysis of transformational school leadership effects on school outcomes in Taiwan and the USA. *Asia Pacific Education Review*, 8(2), 166-177.
- Clough, D.B. (1989). *Yes, we can improve staff morale*. An address before the annual meeting of the American Association of School Personnel Administrators, Cleveland, OH.
- Coburn, C.E. (2001). Collective sensemaking about reading: How teachers mediate reading policy. *Educational Evaluation and Policy Analysis*, 23(2), 145-170.
- Cooper, G.J. (2011). *The influences of school variables on the principals' instructional leadership style in elementary schools in an urban setting* (Doctoral Dissertation). Available from Pro Quest Dissertations and Theses database. (UMI No. 3465188)
- Cotton, K. (2003). *Principals and student achievement: What the research says*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Crewell, J.W. (2005). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (2nd ed.). Upper Saddle River, NJ: Pearson Education.

- De Maeyer, S., Rymenans, R., Van Petegem, P., van der Bergh, H., & Rijlaarsdam, G. (2006). Educational leadership and pupil achievement: The choice of a valid conceptual model to test effects in school effectiveness research. Unpublished paper: University of Antwerp.
- Den Hartog, D.N., Koopman, P.L., & Van Muijen, J.J. (1997). Transactional versus transformational leadership: An analysis of the MLQ. *Journal of Occupational and Organizational Psychology*, 70, 19-34.
- De Vries, R.E., Bakker-Pieper, A., Konings, F.E., & Schouten, B. (2011). The Communication Styles Inventory (CSI): A Six-Dimensional Behavior Model of Communication Styles and Its Relation With Personality. *Communication Research*, 40(4), 506-532. doi: 10.1177/0093650211413571
- Edmonds, R. (1979, October). Effective schools for the urban poor. *Educational Leadership*, 15-24.
- Ehrhart, M.G., & Klein, K.J. (2001). Predicting followers' preferences for charismatic leadership: The influence of follower values and personality. *Leadership Quarterly*, 12, 153-179.
- English, F.W. (2008). *The art of educational leadership: Balancing performance and accountability*. Thousand Oaks, CA: Sage Publications.
- Eubanks, S.N. (2012). *Advancing a culture of high expectations: Academic press, school conditions and student achievement* (Doctoral Dissertation). Available from Pro Quest Dissertations and Theses database. (UMI No. 3517529)
- Feist, J., & Feist, G.J. (2006). *Theories of personality*. New York, NY: McGraw-Hill.
- Ferguson, R., & Hirsch, E. (2013). *Using teacher and student surveys to link school context, classroom learning conditions and achievement*. Forthcoming.
- Fiedler, F.E. (1967). *A theory of leadership effectiveness*. New York, NY: McGraw-Hill.
- Fisher, M.W. (2003). *Effects of principal leadership style on school climate and student achievement in select Idaho schools* (Doctoral Dissertation). Available from Pro Quest Dissertations and Theses database. (UMI No. 3091403)
- Fiske, E.B. & Ladd, H.F. (2015, February). Addressing the impact of poverty on student achievement. Retrieved from <https://www.ednc.org/2015/02/11/addressing-impact-poverty-student-achievement/>
- Fullan, M. (2003). *The moral imperative of school leadership*. Thousand Oaks, CA: Corwin Press.

- Fullan, M. (2010). The role of the district in tri level reform. In P. Peterson, E. Baker, & B. McGaw (Eds.). *International Encyclopedia of Education* (Vol. 6, pp. 295-302). Oxford: Elsevier.
- Geijsel, F., Slegers, P., Leithwood, K., & Jantzi, D. (2003). Transformational leadership effects on teachers' commitment and effort toward school reform. *Journal of Educational Administration*, 41(3), 228-256.
- Goddard, R.D., Hoy, W., & Hoy, A.W. (2004). Collective efficacy beliefs: Theoretical developments, empirical evidence, and future directions. *Educational Researcher*, 33(3), 3-13.
- Goleman, D. (1999). What Makes a Leader? *Harvard Business Review*, 93-102.
- Griffin, R.W., & Bateman, T.S. (1986). Job satisfaction and organizational commitment. In C.L. Cooper & I. Robertson (Eds.), *International review of industrial and organizational psychology* (157-188). New York, NY: Wiley.
- Grissom, J.A., Kalogrides, D., & Loeb, S. (2015). Using student test scores to measure principal performance. *Educational Evaluation and Policy Analysis*, 37(1), 3-28. Doi: 10.3102/0162373714523831
- Grubb, W.N., & Flessa, J.J. (2006). A job too big for one: Multiple principals and other nontraditional approaches to school leadership. *Educational Administration Quarterly*, 42(4), 518-530.
- Hackman, M.Z. & Johnson, C.E. (2000). *Leadership: A communication perspective* (3rd ed.). Prospect Heights, IL: Waveland Press Inc.
- Hage, J. (1980). *Theories of Organizations: Form, Process, and Transformation*. New York, NY: John Wiley & Sons, Inc.
- Halawah, I. (2005). The relationship between effective communication of high school principal and school climate. *Effective communication in Education*, 126(2), 334-345. Retrieved from <http://www.projectinnovation.biz/education.html>
- Hallinger, P., & Murphy, J.M. (1986). The social context of effective schools. *American Journal of Education*, 94(3), 328-355.
- Hallinger, P. & Heck, R. (1996). Reassessing the principal's role in school effectiveness: A review of the empirical research, 1980-1995. *Educational Administration Quarterly*, 32(1), 5-44.
- Hallinger, P., & Heck, R.H. (1998). Exploring the principal's contribution to school effectiveness: 1980-1995. *School Effectiveness and School Improvement*, 9(2), 157-191.

- Hargreaves, A., & Fink, D. (2006). *Sustainable leadership*. San Francisco, CA: Jossey-Bass.
- Harvey, J., Cambron-McCabe, N., Cunningham, L.L., & Koff, R.H. (2013). *The superintendents fieldbook: A guide for leaders of learning* (2nd ed.). Thousand Oaks, CA: Corwin.
- Hassel, B.C., & Hassel, E.A. (2010). Opportunity at the top: How America's best teachers could close the gaps, raise the bar, and keep our nation great. Chapel Hill, NC: Public Impact.
- Hater, J.J., & Bass, B.M. (1988). Superiors' evaluations and subordinates' perceptions of transformational and transactional leadership. *Journal of Applied Psychology*, 73(4), 695-702.
- Hattie, J. (2012). *Visible learning for teachers: Maximizing impact on learning*. New York, NY: Routledge.
- Heise, D.R., & Bohrnstedt, G.W. (1970). Validity, invalidity, and reliability. In E.F. Borgatta & G.W. Bohrnstedt (Eds.), *Sociological methodology 1970*, 104-129. San Francisco, CA: Jossey-Bass.
- Hogan, R., Curphy, G.J., & Hogan, J. (1994). What we know about leadership: Effectiveness and personality. *American Psychologist*, 49(6), 493-504.
- House, R.J., Woycke, J., & Fodor, E.M. (1988). Charismatic and noncharismatic leaders: Differences in behavior and effectiveness. In J.A. Conger & R.N. Kanungo (Eds.), *Charismatic leadership: The elusive factor in organizational effectiveness*. San Francisco, CA: Jossey-Bass.
- Howell, J., & Avolio, B. (1993). Transformational leadership, transactional leadership, locus of control and support for innovation: Key predictors of consolidated-business-unit performance. *Journal of Applied Psychology*, 78, 891-902. Retrieved from <http://dx.doi.org/10.1037/0021-9010.78.6.891>
- Hoy, W. (2012). School characteristics that make a difference for the achievement of all students: A 40-year odyssey. *Journal of Educational Administration*, 50(1), 76-97. Doi: 10.1108/09578230710778196
- Hoy, W.K., & Miskel, C.G. (2008). *Educational administration: Theory, research, and practice* (8th ed.). New York, NY: McGraw-Hill.
- Hoy, W. K., Tarter, C. J., & Bliss, J. B. (1990). Organizational climate, school health, and effectiveness: A comparative analysis. *Educational Administration Quarterly*, 26(3), 260-279.
- Hoy, W.K., Tarter, C.J., & Kottkamp, R.B. (1991). *Open schools/healthy schools: Measuring organizational climate*. Newbury Park, CA: Sage.

- Hu, L. & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. Doi: 10.1080/10705519909540118.
- Humphreys, J.H., & Einstein, W.O. (2004). Leadership and temperament congruence: Extending the expectancy model of work motivation. *Journal of Leadership and Organizational Studies*, 10(4), 58-79.
- Jacob, R., Goddard, R., Kim, M., Miller, R., & Goddard, Y. (2015). Exploring the causal impact of McRel Balanced Leadership Program on leadership, principal efficacy, instructional climate, educator turnover, and student achievement. *Educational Evaluation and Policy Analysis*, 37(3), 314-332. Doi: 10.3102/0162373714549620
- Johnson, S., Kraft, M., & Papay, J. (2012). How context matters in high-need schools: The effects of teachers' working conditions on their personal satisfaction and their students' achievement. *Teachers College Record*, 114(10), 1-39.
- Keith, T. (2015). *Multiple regression and beyond: An introduction to multiple regression and structural equation modeling* (2nd ed.). New York, NY: Routledge, Taylor & Francis Group.
- Kelley, R.C., Thornton, B., & Daugherty, R. (2005). Relationships between measures of leadership and school climate. *Education*, 126(1), 17-25.
- Kline, R.B. (2016). *Principles and practice of structural equation modeling* (4th ed.). New York, NY: The Guilford Press
- Kuhnert, K.W., & Lewis, P. (1987). Transactional and transformational Leadership: A constructive/developmental analysis. *The Academy of Management Review*, 12(4), 648-657.
- Layton, J. (2003). *Transformational leadership and the middle school principal* (Doctoral Dissertation). Available from Pro Quest Dissertations and Theses database. (AAT3108364)
- Le Clear, E.A. (2005). *Relationships among leadership styles, school culture, and student achievement* (Doctoral Dissertation). Available from Pro Quest Dissertations and Theses database. (UMI No. 3204426)
- Leithwood, K. (1994). Leadership for school restructuring. *Educational Administration Quarterly*, 30(4), 498-518.
- Leithwood, K., Day, C., Sammons, P., Harris, A., & Hopkins, D. (2006). *Successful school leadership: What it is and how it influences pupil learning* (Report No. 800). Retrieved from National College for School Leadership: <http://dera.ioe.ac.uk/6617/2/media-3f6-2b-what-we-know-about-school-leadership-full-report.pdf>

- Leithwood, K., & Jantzi, D. (2007). A review of transformational school leadership research. *Leadership and Policy in Schools, 4*, 177-199.
doi:10.1080/15700760500244769.
- Leithwood, K., Jantzi, D., & Steinbach, R. (1999). *Changing leadership for changing times*. London: Open University Press.
- Leithwood, K., & Riehl, C. (2003). *What do we already know about successful school leadership?* Retrieved from National College for School Leadership, Division A of the American Educational Research Association:
<http://dcbsimpson.com/randd-leithwood-successful-leadership.pdf>
- Leithwood, K., Seashore-Louis, K. (with Anderson, S.E., Wahlstrom, K., Mascal, B., Gordon, M.F., Thomas, E., and Jantzi, D.). (2012). *Linking leadership to student learning*. San Francisco, CA: Jossey-Bass.
- Loehlin, J.C. (2004). *Latent variable models: An introduction to factor, path, and structural equation analysis* (4th ed.). Mahwah, NJ: Lawrence Erlbaum.
- Lumby, J., & English, F.W. (2010). *Leadership as lunacy: And other metaphors for educational leadership*. Thousand Oaks, CA: Corwin.
- Lumsden, L. (1998). *Teacher morale*. Eugene, OR: ERIC Clearinghouse on Educational Management. (Eric Document Reproduction Service ED 422601).
- Luthans, F., Avolio, B., Walumbwa, F., & Li, W. (2005). The psychological capital of Chinese workers: Exploring the relationship with performance. *Management and Organization Review, 1*, 247-269.
- Luttrell, W. (2010). *Qualitative Educational Research*. New York, NY: Routledge.
- Mahdinezhad, M., Suandi, T., Silong, A.D., & Omar, Z.B. (2013). Transformational, transactional leadership styles and job performance of academic leaders. *International Education Studies, 6*(11), 29-34.
- Markus, K., & Smith, K. (2010). Content validity. In N. Salkind (Ed.), *Encyclopedia of research design*, 239-244. Thousand Oaks, CA: Sage. Retrieved from
<http://dx.doi.org.libproxy.lib.unc.edu/10.4135/9781412961288.n74>
- Marsh, H.W., Balla, J.R., & McDonald, R.P. (1988). Goodness-of-fit indexes in confirmatory factor analysis: The effect of sample size. *Psychological Bulletin, 103* (3), 391-410.
- Martin, J. (2002). *Organizational culture: Pieces of the puzzle*. In J.M. Shafritz, J.S. Ott, & Y.S. Jang (Eds.). *Classics of organization theory* (7th ed.) (361-382). Boston, MA: Wadsworth.

- Masi, R.J. (2000). Effects of transformational leadership on subordinate motivation, empowering norms, and organizational productivity. *International Journal of Organizational Analysis*, 8, 16-47..
- McDonald, R.P. & Ho, M.R. (2002). Principles and practice in reporting structural equation analyses, *Psychological Methods*, 7(1), 64-82.
- Moolenaar, N.M., Daly, A.J., & Slegers, P. (2010). Occupying the principal position: Examining relationships between transformational leadership, social network position, and schools' innovative climate. *Educational Administration Quarterly*, 46(5), 623-670.
- Murphy, J.F., Weil, M., Hallinger, P., & Mitman, A. (1982). *Academic press: Translating high expectations into school policies and classroom practices*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Myung, I.J. (2003). Tutorial on maximum likelihood estimation. *Journal of Mathematical Psychology*, 47, 90-100.
- Newmann, F.M., Rutter, R.A., & Smith, M.S. (1989). Organizational factors the affect school sense of efficacy, community, and expectations. *Sociology of Education*, 62(4), 221-238.
- North Carolina Department of Public Instruction. (2007). *North Carolina Standards for Superintendents*. Retrieved from <http://www.dpi.state.nc.us/docs/ihe/remodeling/superintendent/standards.pdf>
- North Carolina Department of Public Instruction. (2010). *North Carolina teacher working conditions survey: Teacher working conditions are student learning conditions* (Research Brief). Retrieved from http://2012.ncteachingconditions.org/sites/default/files/attachments/NC10_TWC_Student LearningConditions.pdf
- North Carolina Department of Public Instruction. (2012). *The ABCs of public education: 2011-12 growth and performance of North Carolina public schools*. Retrieved from <http://www.ncpublicschools.org/docs/accountability/reporting/abc/2011-12/execsumm.pdf>
- North Carolina Department of Department of Public Instruction. (2014). *2014 North Carolina teacher working conditions survey: Preliminary findings* (Research Brief). Retrieved from http://www.ncteachingconditions.org/uploads/File/NC%20preliminary%20brief_to%20post_june-4.pdf
- Norton, R., & Pettegrew, L.S. (1977). *Communicator style as an effect determinant of attraction*. *Communication Research*, 4(3), 257-282.

- Nguni, S., Slegers, P., & Denessen, E. (2007). Transformational and transactional leadership effects on teachers' job satisfaction, organizational commitment, and organizational citizenship behavior in primary schools: The Tanzanian case. *School Effectiveness and School Improvement: An International Journal of Research, Policy, and Practice*, 17(2), 145-177. doi:10.1080/09243450600565746
- Osborn, R.N., Hunt, J.G., & Jauch, L.R. (2002). Toward a contextual theory of leadership. *The Leadership Quarterly*, 13, 797-837.
- Peterson, S., & Luthans, F. (2003). The positive impact of development of hopeful leaders. *Leadership and Organization Development Journal*, 24(1), 26-31. Retrieved from <http://dx.doi.org/10.1108/01437730310457302>.
- Pfeffer, J. & Sutton, R.I. (2000). *The knowing-doing gap: How smart companies turn knowledge into action*. Boston, Massachusetts: Harvard Business School Press.
- Podsakoff, P.M., MacKenzie, S.B., Moorman, R.H., & Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. *Leadership Quarterly*, 1(2), 107-142.
- Raftery, A.E. (1995). Bayesian model selection in social research. *Sociological Methodology*, 25, 111-163.
- Reynolds, M. & Keith, T. (2013). Measurement and Statistical Issues in Child Assessment Research. *Oxford Handbooks Online*. Retrieved from <http://www.oxfordhandbooks.com/view/10.1093/oxfordhb/9780199796304.001.0001/oxfordhb-9780199796304-e-003>.
- Robinson, V.M., Lloyd, C.A., & Rowe, K.J. (2008). The Impact of leadership on student outcomes: An analysis of the differential effects of leadership types. *Educational Administration Quarterly*, 44(5), 635-674.
- Sarros, J.C., & Santora, J.C. (2001). The transformational-transactional leadership model in practice. *Leadership & Organization Development Journal*, 22(8), 383-394.
- Sergiovanni, T. J. (1990a). Value-added leadership: How to get extraordinary performance in schools. Harcourt Brace Jovanovich, San Diego.
- Schermelleh-Engel, K., Moosbrugger, H., & Muller, H. (2003). Evaluating the fit of structural equation models: tests of significance and descriptive goodness-of-fit measures. *Methods of Psychological Research Online*, 8 (2), 23-74.
- Schimmoeller, L. (2007). *An empirical investigation of the relationship between organizational culture and leadership styles* (Doctoral Dissertation). Available from Pro Quest Dissertations and Theses database. (AAT3244423)

- Schwahn, C., & Spady, W. (1998). *Total leaders: Applying the best future-focused change strategies to education* (2010 ed.). Arlington, VA: American Association of School Administrators.
- Schwahn, C., & Spady, W. (2010). *Total leaders 2.0: Leading in the age of empowerment*. Lanham, MD: Rowman & Littlefield Education.
- Shockley-Zalebak, P. (1988). *Fundamentals of organizational communication: Knowledge, sensitivity, skills, values*. White Plains, NY: Longman Inc.
- Shouse, R.C. (1995, April). *Academic press and school sense of community: Sources of frictions, prospects for synthesis*. Paper presented at the meeting of the American Educational Research Association, San Francisco.
- Shouse, R.C. (1996). Academic press and sense of community: Conflict and congruence in American high schools. *Research in Sociology of Education and Socialization*, 11, 173-202.
- Shultz, K.S., & Whitney, D.J. (2005). *Measurement theory in action: Case studies and exercises*. Thousand Oaks, CA: Sage. Retrieved from <http://dx.doi.org.libproxy.lib.unc.edu/10.4135/9781452224749.n6>
- Singer, M.S., & Singer, A.E. (2001). Situational constraints on transformational versus transactional leadership behavior, subordinates' leadership preference, and satisfaction. *The Journal of Social Psychology*, 130(3), 385-396.
- Smith, P. & Bell, L. (2011). Transactional and transformational leadership in schools in challenging circumstances: A policy paradox. *Management in Education*, 25(2), 58-61.
- Smith, S., & Piele, P. (2007). *School leadership: Handbook for excellence in student learning* (4th ed). Thousand Oaks, CA: Corwin.
- Sun, J., & Leithwood, K. (2012). Transformational school leadership effects on student achievement. *Leadership and Policy in Schools*, 11(4), 418-451.
doi:10.1080/15700763.2012.681001
- The Wallace Foundation. (2013, January). *The school principal as leader: Guiding schools to better teaching and learning*. Retrieved from <http://www.wallacefoundation.org/knowledge-center/school-leadership/effective-principal-leadership/Pages/The-School-Principal-as-Leader-Guiding-Schools-to-Better-Teaching-and-Learning.aspx>
- Trepanier, S.G., Fernet, C., & Austin, S. (2012). Social and motivational antecedents of perceptions of transformational leadership: A self-determination theory perspective. *Canadian Journal of Behavioral Science*, 44(4), 272-277.

- Wadesango, N. (2012). Understanding the influence of gender on degree of teacher participation in decision-making in schools. *Journal of Social Science*, 32(3), 277-284.
- Waters, T., Marzano, R. J., & McNulty, B. (2004). Leadership That Sparks Learning. *Educational Leadership*, 61(7), 48–51.
- Weston, D., & Rosenthal, R. (2003). Quantifying construct validity: Two simple measures. *Journal of Personality and Social Psychology*, 84(3), 608-618.
- Wooldridge, J.M. (2013). *Introductory econometrics: A modern approach* (5th ed.). Canada: Cengage Learning.
- Yammarino, F.J., & Bass, B.M. (1990). Long-term forecasting of transformational leadership and its effects among naval officers: Some preliminary findings. In K.E. Clark & M.B. Clark (Eds.), *Measures of leadership*, West Orange, NJ: Leadership Library of America.
- Zeller, R.A., & Carmines, E.G. (1980). *Measurement in the social sciences: The link between theory and data*. New York, NY: Cambridge University Press.