A CORRELATIONAL STUDY OF BUILDING PRINCIPALEMOTIONAL INTELLIGENCE AND THE CONNECTION TO ACADEMIC ACHIEVEMENT

A DISSERTATION IN
Education

Presented to the faculty of the University
of Missouri- Kansas City in partial fulfillment of
the requirements for the degree

DOCTOR OF EDUCATION

by
James Fish

B.S. Ed., Arkansas State University, 2003
M.A., University of Missouri – Kansas City, 2006

Kansas City, Missouri
2012

A CORRELATIONAL STUDY OF BUILDING PRINCIPALEMOTIONAL INTELLIGENCE AND THE CONNECTION TO ACADEMIC ACHIEVEMENT

James Madison Fish, Candidate for the Doctor of Education Degree

University of Missouri-Kansas City, 2012

ABSTRACT

While student achievement is only one indicator of a building principal's effectiveness, it is widely considered to be one of the most important. This is especially true in regard to the current climate of accountability surrounding education. Multiple studies have yielded results concerning the behaviors and characteristics of building principals who are effective at increasing student achievement. However, many of these studies have not been able to show a direct and substantial connection between specific behaviors or traits and student achievement. The definition of emotional intelligence provided by Salovey and Mayer (1990) can be interpreted to encompass a range of these previously studied abilities under the umbrella of a distinct intelligence. This study incorporated the use of a hierarchical regression model, in order to determine the amount of variance in student achievement that can be accounted for by a principal's measured emotional intelligence or EQ. The use of EQ as an omnibus test of principal traits has the potential to inform both pre-service training for aspiring principals and professional development for current administrators. Results of this study indicate that there is a small, but statistically significant effect of a building principal's

emotional intelligence on student achievement in the areas of communication arts and mathematics.

The faculty listed below, appointed by the Dean of the School of Education have examined a dissertation titled “A Correlational Study of Building Principal Emotional Intelligence and the Connection to Academic Achievement,” presented by James Madison Fish, candidate for the Doctor of Education degree, and certify that in their opinion it is worthy of acceptance.

Dissertation Committee

Jennifer Friend, Ph.D., Committee Chair
School of Education

Loyce Caruthers, Ph.D.
School of Education

Rob Leachman, Ed.D.
School of Education

Dianne Smith, Ph.D.
School of Education

TABLE OF CONTENTS

ILLUSTRATIONS

Figure Page

TABLES

Table Page

ACKNOWLEDGEMENTS

The basketball legend Larry Bird is noted to have said once that “A winner is someone who recognizes his God-given talents, works his tail off to develop them into skills, and uses these skills to accomplish his goals.” While I don’t take issue with his perspective on the accomplishment of one’s goals, there is one vitally important element missing from his statement. No matter the level of talent an individual possess, or how hard one works to accomplish a particular goal, their work is never accomplished in isolation. Behind every achievement are the myriad contributions of many individuals. This dissertation represents quite a journey and the accomplishment of a long held personal goal. However, I would be sorely remiss not to recognize those who have made this accomplishment possible.

There are several people that I owe particular thanks to. The feedback and encouragement received from my advisor, Dr. Jennifer Friend, were invaluable during the dissertation process. A special thank you also goes to my committee members for their help in refining this work. I would also like to mention my friend, Phillip Adam. His help in running the statistical tests I had designed for this study is greatly appreciated. His help in this area contributed greatly to the completion of this study. Thank you should also be given to my family for their support as I have completed coursework and countless hours of writing.

In the vein of family I would like to give special recognition to two particularly important people. The greatest thank you of all goes to my wonderful wife Breann. More than anyone, she has put up with many hours of study and work that could have otherwise been spent with her. Her encouragement, support, editing, listening, brainstorming… have been more than invaluable in this process. I will forever be grateful for the loving kindness

and patience she has shown over the past several years. We often refer to ourselves as a team, and in this process that could not be truer.

Finally, I would like to dedicate this dissertation to my dad, Don Fish. As a newly hired college graduate my dad travelled with me to search for an apartment in Kansas City. On this trip we visited UMKC as a possible option for graduate school. What began as a simple visit with my dad has nine years later turned into quite an accomplishment. In the fall of 2008, dad passed away after several years of battling cancer. Anyone who knew him can speak to his kindness, patience, and ability to encourage others. The lessons I learned from my dad were valuable throughout the completion of the doctoral program and dissertation process. More importantly, these lessons are ones on a life well lived. Thank you Dad, this work is dedicated to you.

CHAPTER 1

INTRODUCTION

Since the release of *A Nation at Risk* (United States Department of Education, 1983) and particularly since the issuance of the *No Child Left Behind* legislation of 2001, the call for accountability in education has grown tremendously. Partly because of this call for accountability and partly due to the advancement of the teaching profession, great gains have been made in discovering what does and does not enhance a child's learning environment, and the potential impact on student achievement. Many researchers have identified strategies, programs and circumstances that influence a student's educational achievement (Heck & Hallinger, 2009; Leithwood & Mascall, 2008; Marzano, 2007; Marzano, Norford, Paynter, Pickering, & Gaddy, 2001; Tobias, 1994). Throughout this research it has been determined and become widely accepted that the single most influential factor in a child's educational achievement is the quality of the teacher(s) they have (Marzano, 2007). Marzano (2007) cites significant gains in both reading and mathematics for students who have highly effective teachers. In fact, one recent study found that teachers accounted for 30% of student achievement (Hattie, 2003). Because teachers have been shown to have a significant impact on educational achievement; much research has been conducted as to why certain teachers are more effective than others, and how less adept teachers can increase their proficiency in the teaching craft.

It has been suggested that teacher effectiveness can be fostered by, and to a certain extent created by the principal under whom teachers work (Dinham, 2007; Leithwood, 1998; Moore, 2009). These researchers, along with others, make the claim that certain characteristics held by building principals create favorable working conditions for teachers, thereby creating conditions within their schools that are favorable for student learning. Leech and Fulton (2008) discovered

that teachers who are enabled to feel effective in their positions have a high sense of efficacy. In addition, Hipp (1996) enumerates at length a variety of empirical research studies that have shown teacher efficacy to be significantly related to student achievement. In current literature many of the skills or practices building principals engage in that impact teacher efficacy often fall into the categories of transformational and transactional leadership.

Whether one works from the model of emotional intelligence provided by Salovey and Mayer (1990), Goleman (1998), or Bar-On (1997a), it is demonstrated that emotions play a significant role in the day to day functions of life. Due to the people oriented nature of schools, emotions are likely to influence not only how schools are structured, but how the individuals within them feel and how they generate results. Cooper et al. (2002) make two important points along these lines, that education is designed to meet multiple needs within our society and educational leaders play an important role in meeting student need for increased academic achievement (pp. 8 & 20). As educational leaders rise to the challenge of meeting the multiple needs of both society and our students they must look beyond the traditional methods for structuring and supervising schools. Components of transformational leadership, instructional leadership, servant leadership and even transactional leadership each play a role in accomplishing this task. However, there is an underlying theme throughout each of these leadership styles, emotion.

Gardner's (1983) work on Multiple Intelligences lists two types of intelligence that draw heavily on emotion, intrapersonal and interpersonal. Emotional intelligence encompasses both one's own emotions and those of others (Bar-On & Parker, 2000; Goleman, 1998; Salovey & Mayer, 1990). Each of these researchers and authors has drawn specific connections between their work and education. Just as we know that not all students have the same abilities and skills,

the same is true of educational leaders. Those leaders who draw from the best of available resources will not only undertake the technical elements of schooling, but the finer points as well. It may reasonably be argued that leaders who are adept at the finer points, may also find it easier to implement the more technical elements.

Transformational and transactional leadership styles or behaviors, along with their effects on the schools where they are employed are a widely studied area in the field of education. Transformational leadership may be roughly defined as "fostering capacity development and higher levels of personal commitment to organizational goals" (Leithwood & Jantzi, 2009, in Davies, 2009, p. 38). From this definition stems the notion that emotional intelligence may play a significant role in the practice of transformational leadership. Salovey and Mayer (1990) are credited with creating the term emotional intelligence and its definition "as the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (p. 5). Given the link between the positive effects of transformational leadership and emotional intelligence, it is logical to investigate the link between a desirable leadership outcome, student achievement, and the leader characteristic of emotional intelligence.

Emotional Intelligence

The concept of emotional intelligence is not relatively new, however it does continue to be a source of interest in a variety of fields. What began as a study in the field of psychology has now branched out into the application and investigation of this theory in other fields. The theory of emotional intelligence has been examined in the business world, but there is little direct investigation of this theory in education. However, when looking at this theory's definition, it becomes clear that there are strong connections with certain areas of educational research. While

this is not a brand new theory, it is new enough to be seen as a field where continued development is occurring and warrants careful consideration in the field of education.

Salovey and Mayer (1990) are credited with coining the term emotional intelligence. Their work began to look at how and why individuals perceive emotions and the ways in which this perception may cause them to think or act. This investigation ultimately lead to their definition of emotional intelligence, which states that emotional intelligence is "the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (p. 5). Since this time a number of researchers and theorists have studied the theory of emotional intelligence.

In addition to Salovey and Mayer, two of the most widely recognized and published contributors to the field of emotional intelligence are Daniel Goleman and Reuven Bar-on. Each of these individuals has provided a somewhat different conceptualization or definition for emotional intelligence than the one provided by Salovey and Mayer (1990). Goleman (2006) does not provide a definition of emotional intelligence per se; rather he provides a conceptualization of EI as a four factor model. This model includes self-awareness, self-management, social awareness and relationship management (Goleman, 2006). While Bar-On and Parker (2000) defines emotional intelligence "as an array of noncognitive abilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures" (Bar-On, R., & Parker, J.D.A., 2000, p.102).

Leadership, Emotion, and Intelligence

One premise of Goleman's (1998) work with emotional intelligence is that it may be a more important characteristic than *IQ* in certain circumstances. It is also proposed, that by being

aware of one's areas of strengths and weaknesses in regard to emotional intelligence, a person can work toward enhancing their emotional intelligence. Cherniss (1998) cites a study of small business owners who significantly raised their profits and sales after receiving training in the emotional intelligence aspect of using emotions to the benefit of one's self and others. Goleman's (1998) work is based on how emotional intelligence can be used in the workplace. A wide base of empirical and anecdotal evidence is provided to show how emotional intelligence is beneficial and can be used wisely in the business world. Ashkanasy and Dasborough (2003) conducted a study to determine the effectiveness of emotionally intelligent instruction on student learning in leadership courses. Their results were small, but did show some connection between the two. More specifically, they found that student knowledge of emotional intelligence had a moderate correlation of .26 with the group leadership activity (p. 20). This is interpreted by the researchers as evidence that knowledge of EI alone can have an impact on groups. In a recent study Barbuto and Burback (2006) compared the emotional intelligence of "transformational leaders" to their transformational leadership qualities. A preliminary result of this study indicates a link between emotional intelligence and transformational leadership characteristics. Little empirical evidence is available to demonstrate how the use of emotional intelligence may look in a school setting, particularly the principalship. However, the literature suggests that this is an area that fits well with current thinking and study in educational leadership (Fullan, 2008; Ginsberg, 2008; Goleman, 2006; Hartley, 2004; Leithwood & Beatty, 2009; Moore, 2009).

Making the Connection, Emotional Intelligence and Educational Leadership

"School leaders live in emotionally 'hot' climates," is the opening line of a recent article on the topic of leadership and emotion (Leithwood & Beatty, 2009, p. 91). The authors argue that when the rapid pace of educational change meets the human side of education, emotions and how

they play out, become an important aspect for leaders to carefully consider. Later in this same article Leithwood and Beatty (2009) write that the ability

> to appreciate the emotional states of one's colleagues, to figure out what those states are in complex social circumstances, to respond in ways that are considered helpful, and to understand and manage their own emotions is vital to a principal's success. (p. 98)

It is surely no coincidence that the description of a principal's role matches closely with Salovey and Mayer's (1997) definition of emotional intelligence. Marks and Printy (2003) use the term "relationship" to describe how a principal becomes effective at fulfilling the previously described role. These relationships form the basis for transformational leadership and the school level processes, such as Professional Learning Communities that can stem from them. Elliott, Murphy, Goldring, and Porter (2007) argue that the principal plays a crucial role in communicating "the importance of community" to all school stakeholders (p. 189). Leaders who are adept at recognizing and coping with emotions, understand the importance of relationships, and foster a sense of community within their schools have laid an important foundation for quality work to be built upon.

Two topics in educational reform that were mentioned previously are Professional Learning Communities (PLC's) and transformational leadership. These two areas represent professional behaviors or modes of work that enhance the endeavors taking place within schools. In their outline for Professional Learning Communities Dufour and Eaker (2008) call for schools to organize themselves in ways that increase the collaborative nature of their work. Elliott, Murphy, Goldring and Porter (2007) found the use of collaborative structures to be one of the most influential components of successful schools. One important method for enhancing collaborative structures within a school is through the use of distributed leadership. Heck and Hallinger (2009) define distributed leadership as a form "of collaboration practiced by the principal, teachers, and members of the school's improvement team in leading the school's

development" (p. 662). Graczewski, Holtzman and Knudson (2009) highlight the importance of involving teachers in decision making processes. This form of distributed leadership contributed significantly to the overall success of the schools in their study. A shift in the way schools are structured and managed is necessary for collaborative structures and distributed forms of leadership such as shared decision making to take place. This shift can be seen in a movement away from strictly transactional forms of school leadership, to a balance of both transactional and transformational practices. Leithwood (2007) provides an excellent contrast between these two forms of leadership when he says that transactional leadership stems from:

> a mechanistic worldview that assumes motivation to be the key to change; it believes extrinsic incentives and rewards are the strongest motivators and uses control strategies, such as detailed job descriptions and direct supervision of employees, to ensure desired employee performance. In contrast, transformative approaches spring from an organic worldview, assume capacity to be a key to change, offer intrinsic incentives and rewards when additional motivation is required, and use commitment strategies to ensure desirable performance. (p. 189)

From this description it should be clear that some elements of transactional leadership can be useful, such as job descriptions; whereas if an organization (school) hopes to structure itself for sustainable growth, there must also be room for transformational forms of leadership present.

In order for educational leaders to effectively engage in shared decision making, build organizational commitment and set a clear vision for their schools, they must have the tools or skills that allow them to work well with others. Fullan (2007) makes the case that each of these aforementioned ventures would be considered some form of educational change. Furthermore, in regard to educational change he states,

> that finding moral and intellectual meaning is not just to make teachers feel better. It is fundamentally related to whether teachers are likely to find the considerable energy required to transform the status quo. Meaning fuels motivation; and know-how feeds on itself to produce ongoing problem solving. Their opposites – confusion, overload, and low sense of efficacy deplete energy at the very time that it is sorely needed. (p. 39)

This quote contains a variety of terms related to the concept of emotion, and rightfully so. Emotions are part of who we are as people. Moore (2009) makes the case that emotional intelligence is a key element for enhancing and carrying out the skills necessary for effective change. Both Salovey and Mayer's (1990) and Goleman's (1998) definitions of emotional intelligence recognize the importance of interpreting others' feelings and acting accordingly. Johnson and Uline (2005) highlight the importance of emotionally intelligent principals in their concluding statement, "our children's future should not depend on their family's luck in finding a neighborhood that has the right school leaders" (p. 51). School leaders with high emotional intelligence possess the skills and abilities to carry out effective school change.

Statement of the Problem

In an increasingly diverse and changing society, those who are closest to change must be prepared and willing to engage our society in the act of ensuring equity and opportunity. Educational leaders hold a unique position in this endeavor, as they are at the crossroad of the diverse needs, opportunities, values and cultures of our society. An effective school leader is one who is not only able to recognize the important characteristics of their school and larger community, but can also address these qualities in an effective manner. The leader who can accomplish such a task is one who is continually seeking to improve their practice.

According to the National Center for Educational Statistics (2009), children across the United States have greatly varying rates of educational achievement depending on where they live. Thirty six point four percent of suburban and 32.6 % of rural fourth grade students achieved a score of proficient or advanced on the 2009 administration of the NAEP (NCES, 2009). Whereas, 26.1% of fourth grade students living in a city and 28.3% of students living in a town scored proficient or advanced on the same exam (NCES, 2009). While these figures alone do not

tell the whole story, they may pose an important set of questions for school leaders, and leaders at large to consider. Such as, why are suburban and rural students achieving at higher rates than other students? Or more importantly, why do we have 60 – 70% of students scoring at basic or below, regardless of where they live?

Increasing student achievement will require improvement from the individuals responsible for their education (Graczewksi, Holtzman, & Knudson, 2009). Not only must leaders continually strive to improve their practice, but they must also make a commitment to building schools that promote equity and ensure opportunity for all students. Rethinking the role of educational leaders, striving to enhance practice and placing emphasis on actions that increase equity and opportunity for students are not only worthy goals, but may be the very means by which the previously mentioned questions become answered.

While leaders in the field of education are not all school principals, this is a role with which many individuals are familiar and provides a model for understanding educational leadership. The role of a school principal has traditionally been that of a manager. Managing the human, financial and physical resources of a particular school building remain primary responsibilities of the building principal. However, a review of relevant literature will show that shifting the focus away from these areas is essential for building principals to be effective.

The Principal: From Manager to Instructional and Transformational Leader

In reviewing literature from a period between 1969 and 1973 there are several common themes presented that reinforce the traditional idea of the building principal as a manager. One is the idea that a principal must maintain sole discretion on what is taking place within the building. Robert W. Zellers (1973) asserts that there is a tendency for principals to take the view that they have the final say on the day to day teaching that takes place in a school; and raises the question

as to whether or not a principal can accept certain behaviors. Behaviors, that while challenging to traditional authoritarian managerial styles, are somewhat inconsequential in the larger school context. Examples from this list range from teacher dress to classroom organization.

Georgiades and Trump (1969) focus on a more instructional role for the building principal, but begin their work by recognizing the traditionally accepted managerial role. Their notion of the managerial concept is best stated by the use of the term “plant manager” (p. 161) when referring to the building principal. The authors make the case that the majority of a principal’s time is spent dealing with tasks that do not directly relate to student learning and achievement. Understanding the traditional expectation that a building principal act as a manager should not reflect negatively on educational leaders from the past, rather it should be seen as a starting point for current principals to work from.

There is indeed a need for the managerial aspect of schools. The principal who can find ways in which to effectively and efficiently carry out the managerial tasks, with which they are charged, will find themselves in a better position to address the instructional portion of their job. Georgiades and Trump (1969) cited the principal’s ability to dedicate the majority of their time to instructional tasks as the number one priority in effecting change toward increasing student achievement. Marzano et al. (2007) found that there are 21 leadership actions which positively affect student achievement, and only two pertained to the management of school resources (pp. 42-43). According to Lambert (2005), schools can find themselves in a situation where the principal is viewed as the ultimate authority and action cannot be taken without their approval. However, when teacher leadership is recognized by the principal and exercised by the teachers, many tasks that were previously held by the principal can be distributed among the school staff. Lambert (2005) provided an example of this idea in action when a building principal was asked

by the staff to allow them the opportunity to be responsible for "convening meetings and coordinating tasks" (p. 65). This principal had clearly found ways to build the leadership capacity of the school staff and at the same time removed a portion of the previously held duties.

Moving from the role of manager to the role of instructional leader not only involves addressing external factors, but internal ones as well. In fact it may be reasonable to surmise that a school which lacks a strong internal leadership structure may have little effectiveness on the larger school community or external factors. If a principal is to act as an educational leader, they must have the capacity to effect the education of students. In order to effect a student's education the principal must be able to dedicate their time to efforts which enhance a child's educational environment rather than to efforts that serve only to maintain the day to day activity of a school. A building principal can do a great deal to both free their time for instructional leadership and to promote quality instruction within their school.

Time is a limited commodity, with which we are all provided the same amount. The challenge for a principal is how to use this commodity toward the greatest good. One manner in which this goal can be accomplished is to develop the leadership skills of others within the school. During his study to determine the effects of principal leadership on student achievement, Dinham (2007) found a significant correlation between distributed leadership and student achievement. The most successful schools in the study were ones in which teacher leadership was developed and exercised well. Fulton and Leech (2008) gained similar results from their research on shared decision making. They found that when shared decision making skills are taught and supported by the principal; leadership capacity in the school is strengthened. The authors went on to state that the practice of shared leadership allows school staff to "create the results they really desire" (p. 641).

Addressing the Problem

If the role of the building principal is most effectively filled when the individual occupying that position is able to engage in the transformative acts of shared leadership and promoting a strong common vision; the question of how a principal can be effective at these tasks may reasonably asked. In fact, this has been the source of many empirical studies on effective school leadership in recent years. Author Jim Collins (2001), in writing about why some businesses fare better than others, cites two reasons that may relate to this idea. Businesses where exemplary leadership is found and where the best employees are drawn on effectively are those that begin to make the rise to the top.

Another popular business author, Patrick Lencioni (2002), provides a fictional corporate setting for describing what he calls “the five dysfunctions of a team” (viii). Each of these distinct challenges, or dysfunctions, has the potential to affect groups of individuals, including schools. Not only can these challenges affect schools, they do affect schools. The five dysfunctions are “absence of trust,” “fear of conflict,” “lack of commitment,” “avoidance of accountability” and “inattention to results” (Lencioni, 2002, p. 188). Dealing with these challenges effectively requires a high degree of emotional intelligence. While Lencioni (2002) does not offer empirical evidence as to why or how these challenges arise, or the effectiveness of his suggestions; there are strong connections between his narrative and the work of educational leaders.

These two popular authors draw on experience in the professional world of business to support their ideas about how companies or teams within them may be successful. However, as mentioned in the previous paragraph, there are common elements that can be found between their work and the work of education leaders. This is specifically true as it relates to the building principal. As this role has shifted from that of a manager to fit a more transformative definition

of leadership, those principals who are effective at supporting and sustaining schools that promote equitable achievement and opportunity for students; are ones who will base their work on models of leadership from both inside and outside education. Working from these models will not be enough though. There must be underlying elements that cause a principal to be able to capitalize on this information.

If principals are to be equipped with the knowledge of how to work effectively in schools that support and sustain equitable student achievement; there must be a better understanding of what principal characteristics foster such an environment. In the words of Davies (2009), the problem may be best summarized as an issue of; "increasing the density of leadership so that everyone has access to facilitative leaders who can help them articulate and analyze their professional experience, and act on it to improve the quality of teaching and learning" (p. 108). One possible explanation for leaders, who are adept at such work, could be emotional intelligence.

Purpose of the Study

The purpose of this quantitative study is to determine the relationship between a building principal's emotional intelligence and student achievement within that school. Fullan (2005) states that theories can only take an organization so far, the rest must be accomplished through practical measures. If educational leadership were to be viewed as a collaborative venture, schools and their leaders would then be presented with an interesting challenge; the challenge of how best to effectively navigate the competing views, experiences, and needs presented by the individuals who make up the organization. Dr. Bobby Moore (2009) presents the idea that emotional intelligence is an effective tool for rising to this challenge.

This type of intelligence is useful to educational leaders as they work with and work to support schools. Geoff Southworth (2009) does not directly mention emotional intelligence in his work; however he does directly discuss three areas of influence held by educational leaders. The first area is "direct effects," or ways in which a direct connection can be made between a leader's actions and outcomes within a school (p. 94). The second is "indirect effects;" those effects which are more loosely associated with the actions of a school's leader(s). The third area is titled "reciprocal effects," these are effects that form a looping pattern between a school's leader(s) and teachers. Southworth (2009) makes the statement that "effective school leaders work directly on their indirect influence" (p. 95). One of the best ways for a leader to work on this area is through the use of their emotional intelligence.

Exercising emotional intelligence, while it may play a beneficial role in leadership, is not an easy venture. Rick Ginsberg (2008) makes the case that educational leaders and leaders in general are not given the appropriate tools and training for dealing with the emotions that accompany leadership roles. However, leaders who possess high levels of emotional intelligence or who are skilled at exercising this intelligence are often successful in their leadership roles (Goleman, 2006).

As defined earlier, awareness of emotion is one of the key components of emotional intelligence. Ginsberg (2008) makes the point that this may run contrary to popular beliefs about leaders and leadership. It is common for leaders to be viewed as strong, individuals who are not easily swayed and who may attach little emotion to their actions. A correlating view is that emotion should not play a major role in leadership. Decisions should not be based on emotion alone. However, ignoring the emotional side of decision making neglects a very real and human element. This is especially true when leaders are confronted with particularly challenging

decisions. In light of these views and the nature of school leadership, the training and skills necessary to increase and exercise emotional intelligence are important to leaders and the schools entrusted to their care.

Findings from this study will potentially add to current research on how pk-12 building principals affect student achievement. Study results may be particularly valuable, in their potential to be a significant addition to a limited body of knowledge in the field of Emotional Intelligence as it relates to the principalship. Results of this study may also inform the training for pre-service school leaders and for the professional development of current school leaders.

Theoretical Framework

Empirical research evidence has shown that there are indeed certain characteristics and behaviors possessed by or practiced by building level school principals. Each of these pieces of evidence either proves or disproves the importance of these characteristics and behaviors as they relate to enhancing a student's school experience or academic achievement. While these results are important for informing the practice of educational leadership and the scientific advancement of this profession, they cannot be viewed or treated as isolated pieces of information. Rather, they must be placed in a framework that addresses the larger picture of education. In this way, empirical evidence and theory can be combined into a more comprehensible conceptualization of education as a whole. This research study is guided by theory in three main areas; intelligence, motivation, and leadership. Each of these fields of theory provide a basis for why emotional intelligence is a concept that fits well with educational leadership and warrants further study of their connections.

Intelligence

Intelligence as a characteristic possessed by an individual is defined by Merriam-Webster's (2011) online dictionary as "the ability to learn or understand or to deal with new or trying situations." This resource further defines intelligence quotient as "a number used to express the apparent intelligence of a person." Theory and research into the field of intelligence as a psychological construct delve much deeper into what intelligence actually is, how it is formed, and what is known about its connection to other areas of life. The notion that intelligence is a single fixed characteristic held in varying measures on an individual basis was once a commonly accepted notion. However, several theorists and many researchers have found that there is much more to intelligence than a single fixed human characteristic. Weschler (1958), who is credited with much of the foundational knowledge on intelligence made note that while his work focused on intellect, it was his opinion that other intelligences did indeed exist. Gardner (1983) proposed and has substantiated a theory of multiple intelligences that continues to grow. It is partially from these learnings, that Salovey and Mayer (1990) and Goleman (2006) produced their work on emotional intelligence.

General intelligence. General intelligence or *g* is what is most commonly referred to when intelligence or intelligence quotient *IQ* is discussed. Brody (1999) attributes the concept of *g* to the work of Spearman (1923). In this work Spearman developed a model that showed a relationship between different aspects of intelligence. From this model further research began to narrow down exactly what constructs or ideas constitute a general intelligence. Nettlebeck and Wilson (2005) credit Binet (1916) with developing the first test of *IQ* or *g*. From Spearman (1923) and Binet's (1916) work, much has been learned about the nature of intelligence.

Before discussing general intelligence further it is important to note an important historical context in which *IQ* testing and general intelligence were used. During the early twentieth century as this field was developing, a school of thought was developed that society could be bettered by protecting itself from those who were considered to be mentally incompetent or inferior. It was claimed "that a substantial number of free Americans, especially racial and ethnic minorities, did not have the inherited intelligence necessary to control their passions and that these higher-functioning morons were doomed to pauperism and crime (Ryan, 1997, p. 671). As this quote illustrates the incorrect idea that individuals of certain races and ethnicities are mentally inferior was not only alive and well, but being fostered by certain segments within scientific fields. Those who sought to continue or enhance segregation practices within public schools often drew on eugenics research to support their rhetoric. Eugenics as defined by Merriam-Webster is "a science that deals with the improvement (as by control of human mating) of hereditary qualities of a race or breed" (Merriam-Webster, 2012). While the field of intelligence and *IQ* testing have shifted away from this mindset, remnants of the eugenics movement linger in today's educational setting. Which is demonstrated in the statement "no question has been as persistent or so resistant to achieving consensus as that of the relative roles of nature and nurture in achieving individual and group differences in cognitive ability" (Rushton & Jensen, 2010, p. 9). Rushton and Jensen (2010) based their work on a review of eugenics related literature published within the past twenty years.

Due to the continued influence of the eugenics movement, awareness of this issue is important when discussing the topic of intelligence. Results gained from studies involving intelligence should be interpreted through a critical lens to avoid reaching over-generalized conclusions about any particular groups' inherent level of intelligence. In regard to this study

Salovey, Mayer, and Caruso (2002) have found no significant differences across racial and ethnic groups in regard to emotional intelligence when using the Mayer-Salovey-Caruso Emotional Intelligence test. In light of this finding, the research conducted in this study is considered by the principal researcher as having little to no bias in regard to race and ethnicity as they relate to the measured emotional intelligence of study participants.

Bar-On and Parker (2000) discuss general intelligence in much the same way that it is defined by Merriam-Webster (2011); however they do provide additional clarification. One clarification is that the term intelligence is "best applied to mental traits whose primary purpose is problem solving in one or another content domains" (p. 107). This additional information allows room for a model of general intelligence as a distinct concept, while not dismissing other accepted or theorized conceptualizations of intelligence. Others such as Wehschler (1958) define intelligence as "the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment" (Wehschler, 1958, as cited by Salovey, Bracket, & Mayer, 1990, p. 3). Under this definition, the idea of general intelligence is broadened a great deal. It is most likely from this definition that much of the current theory on intelligence has been centered.

Brody (1999) outlines several ideas about intelligence. First is the idea that individuals differ in their intelligence due to factors outside their control such as genetics and environment. Kinnie and Sternloff (1971) provide early evidence of this idea. It was proposed that there are factors other than mental ability that would impact a child's score on a given intelligence test, which is also an idea held by Binet (1916). One of the factors found to contribute to this was environment, specifically environment as it relates to socioeconomic status (p. 1990). Another of Brody's (1999) ideas on intelligence is that, it is not a fixed concept. Gardner (2006); Bar-On

and Parker (2000); & Mayer, Caruso, and Salovey (1999) each concur with this idea. Intelligence is developmental over time. One can reasonably expect a preschooler to perform differently on a test of general intelligence than a twenty year old college student. This makes sense, as all individuals gain knowledge and skills over the course of a lifetime.

If intelligence is not a fixed characteristic and it can encompass such a wide range of human abilities or functions, how can this concept be useful? Nettlebeck and Wilson (2005) state that a child's *IQ* can be useful in making "decisions about children's capabilities" (p. 611). They are quick to point out that these decisions should be made carefully (p. 611). When this statement is combined with constructivist theory on learning it may provide a guide to making such decisions. Constructivist theory describes a model of learning in which individuals build knowledge based on prior knowledge and experiences. If a child's *IQ* is used as a guide in helping them build upon prior learning or experiences, this measure of intelligence may be quite useful in the field education. However, the usefulness will be limited when there is a limitation on the understanding of other areas of intelligence.

Multiple intelligence. Howard Gardner (1983) is credited with developing the theory of multiple intelligences and remains the foremost theorist in this field. In his original work there are seven intelligences. Recently Gardner (1998) has added an eighth intelligence to his list and is considering a ninth. While this list of intelligences is not the only list of recognized intelligences, it is of importance in understanding how and why intelligence develops and what specifically constitutes an intelligence. Gardner (2006) outlines the criteria necessary for an area to be considered an intelligence as follows: a) how the area relates to research in the normal and abnormal development of humans b) the area must be clearly defined and limited to a specific set of skills/abilities c) the area must be able to be physically represented in some way (pp. 7-8).

These criteria may be considered quite broad and as such, have drawn considerable criticism. However, since Gardner's (1983) original work, much research has substantiated and expanded the original theory of multiple intelligences.

The original seven intelligences theorized in Garnder's (1983) *Frames of Mind* are as follows: "linguistic, logical-mathematical, musical, spatial, bodily-kinesthetic, interpersonal and intrapersonal" (Gardner, 1998, pp. 24-25). In subsequent years an eighth intelligence, "naturalist" has been added to the list (Gardner, 2006, p. 18). Each of these eight forms of intelligence are seen as distinct aspects of intelligence. Individuals under this theory are seen as having various levels of each of these eight intelligences. Logically speaking this makes sense, as many individuals can be identified who may be very gifted in one of these areas, but not in another. It is this thinking that has led to both the implementation and misinterpretation of multiple intelligence theory in education.

Gardner (1995), Gardner (1997), Moran, Kornhaber, and Gardner (2006) provide a basis for the wide range of aspects addressed under multiple intelligence theory. One important aspect of this theory is expressed by Gardner (1995) in the notion that this theory is so broad it could encompass almost any ability or characteristic. Multiple intelligence theory is "empirically based" and Gardner states, "that a treatment in terms of a number of semi-independent intelligences presents a more sustainable conception of human though than one that posits a single 'bell curve' of intellect" (pp. 4-5). Another important aspect of multiple intelligence is that it is complementary to general intelligence as opposed to it. Gardner (1995) theorizes that general intelligence refers more to scholastic aptitude, while multiple intelligence refers to an interaction between general intelligence and other distinct forms of intelligence (p. 5).

Emotional intelligence. Emotional intelligence is a field of intelligence that has begun to be widely studied, but may lend itself to misinterpretation for a variety of reasons. Therefore it is important to establish a framework for this field of intelligence as it applies to this study. Early work on emotional intelligence may have been misconstrued as a catch-all or silver bullet. Critics of emotional intelligence theory often claim that the concepts which come together to form this type of intelligence are too vague and cannot be reasonably separated from other psychological constructs (Petrides, Furnham, & Mavrovelli, 2007). In regard to the silver bullet syndrome, popular literature has proposed claims that emotional intelligence is a significant predictor of success (Matthews, Zeidner, & Roberts, 2007). That is to say, individuals with high emotional intelligence are often found to be highly successful in their chosen pursuit(s). Therefore, emotional intelligence must account for a high degree of their success. Prominent researchers in the field of emotional intelligence are quick to denounce both myths. In fact, their theories and subsequent research take care to explain not only how these myths arose, but how they can be disproved or take a unique place within the larger concept (Cherniss et al., 2006; Petrides et al., 2007; Salovey & Mayer, 1997).

It is not appropriate at this point to delve into great detail about the concept of emotional intelligence. However, as mentioned previously it is important to have a framework which to work. Three prominent models of emotional intelligence theory will be introduced. These models represent two important aspects of emotional intelligence theory. One, they are the three most widely accepted models of this theory as it currently stands. Two, they provide a well-rounded perspective of the varying schools of thought regarding emotional intelligence.

In 1990 Peter Salovey and John Mayer coined the term emotional intelligence. Their work is widely recognized as the catalyst for the field of emotional intelligence. In this model,

emotional intelligence is seen as an ability, a distinct facet of an individual rather than a collection of separate skills or abilities. As an ability model, the Salovey-Mayer (1990) conceptualization of emotional intelligence is unique.

Daniel Goleman (1998) is credited with a model of emotional intelligence that has been described by Cobb and Mayer (2000) as a mixed methods model of emotional intelligence. This is an important distinction between Goleman's model and the Salovey-Mayer model.

The Bar-On model was developed by Reuven Bar-On (1997a) and is another mixed methods model of emotional intelligence. The Bar-On model can best be understood through the use of his own words. Bar-On (2000) states that, "emotional and social intelligence is a multifactorial array of interrelated emotional, personal, and social abilities that influence our overall ability to actively and effectively cope with daily demands and pressures" (p. 385). This definition clearly places the Bar-On model in the mixed methods category of emotional intelligence theory as described previously by Cobb and Mayer (2000). Because of its broad-based definition, critics of this model also cite that it has significant overlaps with other psychological constructs, and therefore cannot be seen as a distinct intelligence. However, the use of Bar-On's measure of emotional intelligence, the EQ-I, continues to grow.

Emotional intelligence (EI) as a distinct intelligence cannot currently be defined in only one manner, as the previously discussed theoretical conceptualizations of this construct clearly demonstrate. However, these overlapping models should be able to provide a framework for the theory of EI and deliver insight into how it may apply to the field of education and this study in particular. Education is a field that at its core is centered on the interactions between people and between people and sets of knowledge. In any human interaction a variety of emotions and

emotional responses will be present. The type and frequency of these emotional endeavors is likely to have a significant impact on the educational experience of students.

Constructivist theory tells us that new knowledge is built on prior understandings and experiences (Lambert, Walker, Zimmerman, Cooper, Lambert, Gardner, & Szabo, 2002). Theorizing on leadership proposes that the most successful leaders are those who can inspire their followers to rally around common goals and inspire their will to attain them (Witziers, Bosker, & Kruger, 2003). Emotional intelligence theory addresses the components necessary for a leader to understand their followers' prior experiences and knowledge, along with a leader's ability to encourage, support and inspire others. While this study does not propose to find that a leader's (building principal) level of emotional intelligence is a predictor of successfully increasing student achievement, it does propose to demonstrate a correlation between this concept and EI. It is proposed that a building principal's EI is one component in the make-up of effective school administrators.

Motivation

Motivation theory provides an important insight into both the behaviors of building level principals and the outcome measure of student achievement. Much postulation and research has been devoted to the particular reasons behind how and why individuals are motivated. What exactly is it that drives some individuals and groups to pursue personally or socially gratifying objectives? While current theory would not sufficiently answer the wide array of other questions associated with this broad question, it does provide a starting point for establishing a baseline knowledge and connection between the additional fields of intelligence and leadership being examined within this study.

Three particular conceptualizations within the field of motivation theory provide a well-rounded and interrelated picture of human motivation. Albert Bandura's (2001) social cognitive theory delves into how collective and self-efficacy each play important roles into not only motivation, but personal and group achievement. Deci and Ryan (2008) lay out their views on self-determination theory. This theory looks at motivation in different aspects as well, particularly the areas of "autonomous motivation" and "controlled motivation" (p. 182). The third and final area of motivation theory examined is the expectancy-value theory as proposed by Atkinson (1964). In this theory motivation is seen as a relationship between "the relative value and probability of success of various options" (Eccles & Wigfield, 2002, p. 118).

Social-cognitive theory. This theory of motivation was developed by Albert Bandura (1986) as a means to explain not only how individuals are motivated individually and collectively, but why such motivation may or may not occur. Bandura (2002) states that social-cognitive theory,

> distinguishes among three modes of agency: personal agency exercised individually; proxy agency in which people secure desired outcomes by influencing others to act on their behalf; and collective agency in which people act in concert to shape their future. (p. 269)

Two of these areas are of particular importance to this study, "personal agency" and "collective agency" (Bandura, 2002, p. 269). Personal agency is synonymous with self-efficacy and collective agency is synonymous with collective efficacy (Bandura, 2001).

Bandura (2001) states that "to be an agent is to intentionally make things happen by one's actions" (p. 2). The idea of personal agency or self-efficacy is the individual's belief that they are or are not capable of making certain things occur. This belief is critically tied to the quality and quantity of work delivered by supervisors and their employees, or in the case of this study principals and teachers. One's self-efficacy also plays a crucial role in academic achievement.

Students who feel that they possess the ability to achieve high levels of academic success often do so more readily than those who do not possess such personally efficacious beliefs.

Bandura (1993) claims that "it is difficult to achieve much while fighting self-doubt" (p. 118). He goes on to make the case that ability is not a solidly fixed characteristic. Students who feel that they are able to grow in their knowledge and skills tend to do just that (Bandura, 1993). This concept can be broadened to the general population as well. Bandura (2001) discusses the importance of self-efficacy in determining the pursuits and goals individuals undertake. In this line of thinking, people tend to undertake tasks in which they feel they can be successful and tend to withdraw from those in which they do not feel they can be successful.

Carrying on with the previously quoted idea of agency is the concept of collective agency. This concept is the idea that the self-efficacy of the individuals who comprise a group will constitute a larger group efficacy or collective-efficacy. In more simple terms Bandura (2010) calls individuals "producers of environments" (p. 75). It is "people's shared beliefs in their collective power to produce desired results" that is at the heart of this concept (Bandura, 2010, p. 75). This does not refer to a group's ability to work together, rather it is the group's belief that they can work together to achieve a goal(s). This belief is created in two ways. One, self-efficacy of the group members has a direct effect on collective-efficacy. Groups which are comprised of highly efficacious participants are often high in collective efficacy. Two, group members who believe in the efficacy of the group often produce such a result. It is theorized that groups which contain high levels of both these elements of efficacy have the potential to undertake larger goals and maintain their commitment to them. This combination of self-efficacy and collective-efficacy as contributors to collective-efficacy are displayed in figure 1 below.

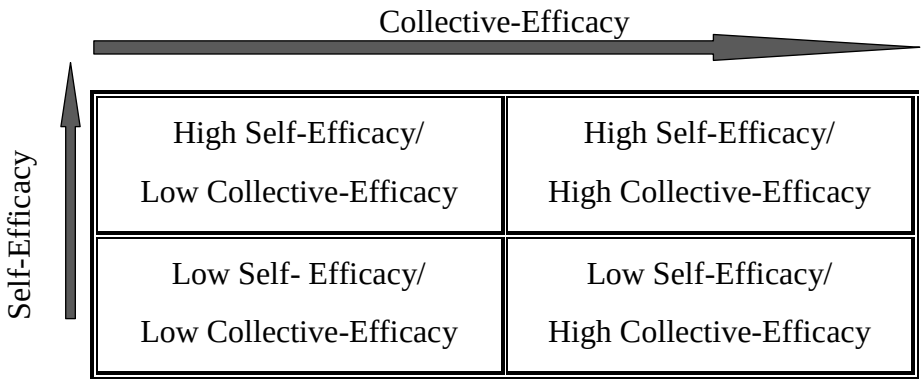


Figure 1 *Collective-Efficacy Continuum* (Bandura, 2010).

Self-efficacy and collective-efficacy address issues directly related to schools. Building principals, teachers and students who feel personally efficacious in their individual school pursuits are likely to be successful. As seen in the figure one matrix, as self-efficacy increases so does collective-efficacy. If these same individuals begin to develop the belief that they can work together toward common goals, they likelihood of such an event increases. Current literature on the effects of distributed and transformational leadership builds on this idea and provides evidence for their successful use within schools. Furthermore, the definition of emotional intelligence provided by Salovey and Mayer (1990) directly addresses perception of emotion, which is likely to play a role in the individual perception of a group's collective-efficacy.

Self-determination theory. While they are not the originators of this theory, Deci and Ryan (1985) are credited with defining and bringing it to the forefront within the study of motivation. Within this theory is the important distinction between two types of motivation. This differentiation provides the basis for why individuals choose or do not choose a course of action. These two forms of motivation are termed "autonomous" and "controlled" (Deci & Ryan, 2008, p. 182). Deci and Ryan (2008) describe autonomous motivation as motivation that comes from within an individual, whereas controlled motivation comes from outside forces. Self-determination theory attempts to provide a framework for how these two forms of motivation

interact within an individual to produce certain choices or actions. Recent research into the effects of transactional and transformational leadership styles has shown that it is a combination of these two forms of leadership that produces the greatest results. Likewise, self-determination theory does not make the claim that one form of motivation or the other is superior. Rather it is some combination of the two that produces action within the individual.

Vansteenkiste, Sierens, Soenens, Luyckx, and Lens (2009) postulate that neither autonomous nor controlled motivation makes much difference in an individual's choices or actions "if the motivation is of poor quality" (p. 671). It may then be reasonable to ask exactly what constitutes high quality motivation. LaGuardia and Patrick (2008) address this question as it relates to relationships. Healthy relationships between close friends, family, spouses, etc. are maintained through a combination of both autonomous and controlled motivation. Individuals are internally motivated to seek close relationships with others and controlling forces within society play a role in this relationship development as well. The answer to what constitutes high quality motivation is found in a combination of these two elements that meets the individual's psychological needs.

The importance of meeting an individual's psychological needs relates directly to schools and the process of schooling. A great deal of change is associated with these concepts. Fullan (2007) discusses the importance of understanding change or making meaning of it. Understanding and making meaning are important parts of the coping process. This process is often associated with traumatic events, but has its relevance to dealing with the day to day changes experienced in life. Ntoumanis, Edmunds, and Duda (2009) provide an explanation of this process through the lens of self-determination theory. When autonomous and controlled coped with, "behaviour [sic] is usually self-determined and psychological well-being is

experienced" (Ntoumanis et al., 2009, p. 252). A building principal that can provide teachers with the autonomy to make meaning of change and provide meaningful incentive for doing so will have provided this type of support (Gagne & Forest, 2008). Teachers who can provide children with a learning environment that supports autonomous learning and incentive for participating within such a structure will have done the same. The increasingly stringent regulatory environment faced by schools today is rife with change. Much of this change is positive, some is negative, and some is change for nothing other than the sake of change. Regardless of what type of change is being experienced, coping with change is a process. A clear understanding of how the coping process can be facilitated in a manner that also enhances the quality of motivation experienced within a school is important.

Expectancy-value theory. This theory of motivation is defined by Wigfield (1994) as "individuals' expectancies for success and the value they have for succeeding" (p. 50). In other words there are two main reasons why individuals are motivated toward the actions they pursue. One, people choose to engage in activities for which they feel they have some reasonable chance of being successful. Two, they may choose to participate in an activity or undertake a goal because they will find its accomplishment rewarding.

This theory is based on Atkinson's (1964) model. In this model, a connection is made between the individual's expectations and the value they attribute to achievement of a given pursuit. Eccles and Wigfield (2002) discuss their work from this premise. Their work is extended to include the multiple mediating or extraneous factors that may cause an individual to ascribe more or less expectation and or value to a given task. Directly relating to an individual's expectancy is their sense of self-efficacy toward the pursuit in question. Eccles and Wigfield (2002) recognize this as an essential component in this aspect of motivation. The matter of value,

that is, whether a pursuit is deemed to be worth undertaking or not, is seen from multiple perspectives. Eccles and Wigfield (2002) outlines four manners in which value can be determined. Again this moves away from Atkinson's more basic explanation and into the multiple mediating factors that may influence the decision making process.

Eccles and Wigfield(2002), provide an excellent example of how expectancy-value theory can be applied to the school setting. They paint the picture of a student who expects to succeed in school, but does not. Therefore the value of continuing to strive for success is diminished (p. 123). However, the converse of this scenario could also be true. In either instance, it is important to understand that a student's expectation of success is in part determined by the learning environment created by their teachers, which is directly influenced by the building principal. Similarly, the value that students place on high levels of achievement is in part determined by their school's culture and climate; both of which are directly influenced by the building principal.

Transformational leadership is often defined as some type of leadership that inspires others to work collectively toward increasing the common good. Bandura (2001) writes, "social efforts to change lives for the better require merging diverse self-interests in support of common core values and goals" (p. 18). Bandura (2002) makes note that leaders are most successful when their leadership style is in keeping with the cultural norms for enhancing both self and collective efficacy (p. 274). Ntoumanis et al. (2009) used the word "competent" to describe an individual's feeling toward an event or pursuit (p. 255). This feeling often drives them to be successful. These ideas connect well with the idea that building principals as leaders have the potential to influence a school's learning environment in a way that positively motivates both teachers and students. A principal's work to enhance motivation, whether from a social-cognitive, self-determination, or

expectancy-value approach can be connected to student achievement levels. Furthermore, Eccles and Wigfield (2002) state that "individuals' perceptions of other peoples' attitudes" and "their affective memories" play a large role in determining task expectations and values. These quoted terms can be directly connected to the Mayer and Salovey (1990) definition of emotional intelligence. This direct connection between motivation theory and the concepts of student academic achievement and emotional intelligence provides support for its usefulness in understanding the possible correlation between a building principal's emotional intelligence and student achievement being examined in this study.

Leadership

Leaders have been examined for the entire course of human history. What makes some great and others a failure? Are great leaders born? Do they learn to become great? Or is their greatness derived from something else entirely? These and many other questions have been a source of much written work and study in many different professions. Educational leadership is not unique in its endeavor to answer these questions. Davies (2008) states that,

> Until recently, we have been fascinated with leaders rather than leadership. There has been a tendency to portray leaders either as heroic figures, or as individuals with a set of personal characteristics which few saints could emulate. As a consequence of this fascination with the individual leader two things have been underemphasized and underestimated: The importance of not only successful leadership, but also of good management...(p. 101)

An examination of leadership theory as it relates to the field of education is an important first step in answering the questions mentioned in the previous paragraph. It is also important in laying the foundation for understanding the finer points of how leadership applies specifically to the field of education. In this regard, a review of extant literature on educational leadership theory would be beyond the scope of this section. However, the theoretical underpinnings of this study can be effectively summarized when several forms of leadership are examined;

constructivist, servant, instructional and transformational. Each of these four theories of leadership contribute in a meaningful way to the connection between emotional intelligence and student achievement this study is designed to investigate.

Constructivist leadership. In their book Cooper, et al. (2002) provide a definition for educational leadership based on constructivist theory. Constructivist theory states that learners construct "meaning based upon their previous knowledge, beliefs and experiences" (p. 1). John Dewey is credited with developing Constructivist Theory. While this theory is often related to how individuals learn and create knowledge, this theory is played out for leaders in much the same manner as it is for learners. Constructivist leadership is based on a collective effort within a school rather than that of one person or small group of individuals. This collective work is essential to the leadership process, because it is the "values, beliefs, and individual and shared experiences" of the collective group that drives a school forward (p. 14).

Constructivist leadership is also based on leaders who act in ways that may be considered to be outside the norm. Examples of these actions include: forming close connections with the individuals under their leadership, encouraging and sustaining professional growth, and showing approval for positive work that has taken place (Cooper, et al. 2002). These specific areas of behavior seek to further a collaborative nature within a school that is at the foundation of constructivist theory.

Servant leadership. Crippen (2005) credits the concept of servant leadership to a man named Robert Kiefner Greenleaf (p. 12). It was Greenleaf's idea that a leader's role is to guide their followers by serving them. Through this service followers will develop and carry out the ideals and tasks that enhance their selves and the organization as a whole. In fact, Greenleaf

stated that “the difference between organizations is how people relate and how they actually function” (Crippen, 2005, p. 15).

Thomas Sergiovanni (2007) calls for leaders who serve others. He calls this “a morally based leadership – a form of stewardship” (p. 76). This type of leadership meets people where they are and takes them to where they need or want to be. It is pointed out that one of the difficulties in practicing this type of leadership is that it is not often valued. It is not valued because it lacks the forcefulness and direct nature often associated with great leaders. However, this form of leadership works because it is not based on these ideas. The idea of servant leadership is at play here. Servant leadership not only provides direction for schools, but provides them with the means to move forward in their journey. “Power over and power to” can be used to best describe this type of leadership (Sergiovanni, 2007, p. 85). Power over individuals in a school achieves the singular purpose of letting them know who is in charge, while power to, is the means by which actual work is accomplished. Margaret Thatcher once said, “Being powerful is like being a lady. If you have to tell people you are, you aren’t” (Lewis, 2012). Power and its practice in this type of leadership stem from an individual’s moral authority.

Instructional leadership. Jo and Joseph Blase (2004) continue the thinking of educational leaders who move away from practicing leadership on individuals to practicing leadership with them. They propose instructional leadership as a means to “encourage collegiality and to significantly improve instructional supervision” (p. 4). Instructional leadership seeks to involve each member of the school community as active participants in the creation of an optimal learning environment. Marks and Printy (2003) called this type of work “active collaboration” (p. 371). This term is important to the concept of instructional leadership.

Marks and Printy (2003) propose the idea that true collaboration among principals and teachers is at the heart of effective instructional leadership. When this type of work begins to take place, instructional leadership is being practiced effectively. Elliott, Murphy, Goldring and Porter (2007) state "that the impact of leadership behaviors in terms of valued outcomes is indirect...Or more to the point, leaders influence the factors that, in turn, influence the outcomes" (p. 181). This influence can take on many forms such as, informal and formal conversations about learning and teaching, professional development, modeling of best practices, providing resources, etc. Instructional leaders must possess the knowledge of how to guide teachers as well as the skills to do so. Through the implementation of both knowledge and skill, principals in conjunction with teachers, create an atmosphere in which student learning is at the core of what is taking place within the school.

Transformational leadership. Each of the preceding theories on leadership expound on the virtues of collaborative work. While each of them shares this common element, they do not always address how to accomplish this task. According to Leithwood and Duke (1998) transformational leadership "assumes that the central focus of leadership ought to be the commitments and capacities of organizational members (p. 35)." Transformational leadership would appear to combine elements of the three previous leadership theories into one. In a conversation with Thomas Sergiovanni, author Ron Brandt (1992), elucidates one particular thought on this matter. Mr. Sergiovanni is widely recognized for his work in the field of transformational leadership. In this article Sergiovanni proposes that principals who inspire professionalism among the teachers in their school promote qualities that in turn create true professionals; individuals who are capable of working effectively without being "checked on" as they are "compelled from within" (Brandt, 1992, p. 46). Sergiovanni (1979) discusses at length

how various views of management or administration are at play in the principal's role. Throughout this work it is illustrated how distributing leadership and allow others within the school to exercise professionalism enhance the educational environment of the school. These views of leadership are at the heart of transformational leadership.

Constructivist leadership places a premium on the prior knowledge and experiences that teachers, students, families and communities hold. Sergiovanni (1979) makes the case very clearly, that prior knowledge or "frames of reference" are hallmarks of a profession and must be examined when thinking about leadership (p. 12). Hallinger and Leithwood (1998) also propose that these individual factors be taken into consideration in the practice of transformational leadership. They argue that effective leadership is defined within cultural contexts (p. 132). In regard to servant leadership, Leithwood, Harris, and Hopkins (2008) claim that effective leaders deliberately address the needs of those with whom they work. By seeking effective ways to meet the needs of their colleagues these leaders are actually performing servant-leadership. True collaboration and collegiality is at the heart of instructional leadership as discussed previously. Given the multiple levels of expectation, wide range of stakeholder commitment, and the personal and collective efficacies of the school community, achieving genuine implementation of these concepts is not an easy task. Leithwood and Beatty (2009) mention that "school leaders live in emotionally 'hot' climates (p. 91)." In other words, the kind of work that takes place in schools contains a significant amount of emotional meaning. Leithwood and Beatty (2009) describe four transformational leadership practices that influence teacher's emotions and indirectly impact learning and teaching within the school. This list includes "direction setting," "developing people," redesigning the organization," and "managing the instructional program

(pp. 97-98).” Each of these principal behaviors not only relates to the model of instructional leadership, but in some way can also be connected to constructivist and servant leadership.

Due to the similarities between transformational leadership and these previously defined theories one may reasonably ask the question; what is unique about transformational leadership? Its uniqueness as a theory of, or model for, educational leadership is that it synthesizes many of the most effective elements of several theories into one, more encompassing model. Leithwood and Jantzi (1998) and Brandt (1992) even mention that effective transformational leadership makes room for transactional leadership to be practiced; recognizing that transactional practices “are fundamental to organizational stability (p. 10).” In order to fully address organizational commitment and the ability to support organizational goals, an encompassing model of leadership is necessary. Transformational leadership is defined in such a manner.

Fullan (2005) writes that it is necessary to “give people the capacity to succeed” (p. 17). The truly transformational leader does more than ‘give,’ they create. This creation takes the form of school structures, processes and procedures that enhance learning at all levels (Fullan, 2005). In his meta-analysis of leadership effects on student achievement, Marzano (2007) found a significant correlation of r=.33 between a principal’s “situational awareness” and student achievement (p. 43). Understanding the needs of teachers, students, parents and community members; then giving them the tools and creating the structures they need in order to be successful, connects emotional intelligence, motivation and leadership. Public education in the United States is at the crossroads of ever increasing accountability and an increasingly diverse society (United States Congress, 2001; United States Census Bureau, 2010). Educational leaders who can successfully navigate this new terrain will draw heavily on the aforementioned knowledge and skill sets (Dinham, 2007; Johnson & Uline, 2005).

Research Hypotheses

Five hypotheses have been developed for investigation in this study.

H_1: A significant* correlation does exist between a pk-12 building principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) and End of Course exam (EOC) for communication arts and mathematics in grades 5, 8, and 11; when factors of SES, race/ethnicity, and gender are held constant.

H_2: A significant* correlation does exist between an elementary principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) for communication arts and mathematics when examined at grade 5, in addition to controlling for SES, race/ethnicity, and gender are held constant.

H_3: A significant* correlation does exist between a middle grades principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) for communication arts and mathematics when examined at grade 8, in addition to controlling for SES, race/ethnicity, and gender are held constant.

H_4: A significant* correlation does exist between a secondary principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the End of Course exam (EOC) for communication arts and mathematics when examined at grade 11, in addition to controlling for SES, race/ethnicity, and gender are held constant.

H_5: There will be a significant** difference between the communication arts and mathematics achievement scores of students who have a principal with an *EQ* score in the top third of study participants as compared to students with principals whose *EQ* score is in the bottom third of study participants.

*Correlations will be considered significant at the .05 level.

**Differences will be considered significant at the .05 level.

The research hypotheses above were developed in two ways. One is my personal interest in the specific characteristics held by principals of schools with high student achievement. Two, there is little research on how emotional intelligence affects the ability of those in educational leadership roles, specifically the role of pk-12 building principals. These two areas are valuable on both a personal and professional level.

As a current building principal it is important for me to continually increase my understanding of how and why leaders in the field of education currently are or become adept at influencing important educational outcomes for students. Student achievement is not, and should not, be the only desirable student outcome for schools to focus on. However, it is an area of importance. As a classroom teacher, assessing student achievement played an essential role in my daily practice. The use of student assessment data for informing instruction was quite valuable. Wiggins and McTighe (1998) cite this work as one of the essential steps in the "backward design" process (p. 7). While I can provide evidence of how I attempted to foster student achievement within my classroom, how the grade level I was a part of collaborated along these lines, or even specific initiatives my school adopted to impact student achievement; the essential question is still focused on how a building principal engages with and interacts with the many tangible and intangible elements of a school in a manner that positively impacts student achievement.

In regard to the second area driving these research hypotheses, Dinham (2007) makes the case that a wide variety of research has shown how teachers can affect student achievement, but that teacher effectiveness can be determined in part by the administrator the teacher works with. Bradberry and Greaves (2009) state that high Emotional Intelligence is "the strongest driver of leadership and personal excellence" (p. 21). Goleman (2006) also supports this claim in his research on Emotional Intelligence. Salovey and Mayer (1990) on the other hand, deviate from this line of thinking on the use of Emotional Intelligence as a predictor for career or life success. Each of these individuals has contributed a great deal to the current body of knowledge on Emotional Intelligence. However, to date, there is little research on this topic in regard to education and educational leadership in particular.

These research hypotheses seek to understand if there is a significant correlation between a specific principal characteristic (Emotional Intelligence) and student achievement. Leithwood (1998) and Dinham (2007) have found that there are multiple mediating or confounding variables that hold bearing on the measurement of principal effectiveness. These researchers go on to discuss the importance of attempting to measure the construct of principal effectiveness, due to the important implications it is likely to hold for the field of education. Because emotional intelligence as defined by Salovey and Mayer (1990) is viewed as a distinct intelligence rather than a broad set of skills or competencies, it may play a unique role in explaining the difference between principals in schools with varying levels of student achievement.

Variables and Terms

Previous discussion within this chapter has alluded to several variables and terms that may be helpful or necessary to clarify in order to better understand how they will be operationalized within this proposed study.

Variables

In research questions H_1 through H_4 there are four independent variables and two dependent variables. The independent variables in these questions are the MSCEIT scores for the building principals, and the student characteristics of race, gender, and SES. The variables of race, gender, and SES were controlled for in this study in order to account for known factors relating to student achievement. These factors have been shown through empirical research to contribute significant amounts of variance within student achievement (Lambert, 2002). In order to account for student level factors, or to level the playing field statistically, these variables were controlled for. There are two dependent variables within this set of research questions, both of which are derived from the MAP and EOC tests. These two dependent variables are student performance in the areas of communication arts and mathematics.

Within research question five there are a total of four variables, three independent and one dependent. The three independent variables within this question are the three categories of gender, years of experience, and level of education. In this question, the building principal's MSCEIT score takes the role of the dependent variable.

For research question six there are two independent and four dependent variables. The two independent variables are the building principal MSCEIT scores and their corresponding students that have been divided into two groups. These two groups will be students who correspond with a building principal whose MSCEIT score was either in the top or bottom third of gathered MSCEIT scores. The two dependent variables in this question are student communication arts and mathematics scores from the MAP and EOC tests.

Terms

MSCEIT – Mayer, Salovey, Caruso Emotional Intelligence Test. This test was designed to test the four branch model of emotional intelligence as proposed by Mayer and Salovey (1997).

MAP – Missouri Assessment Program. This is the standardized test developed by the state of Missouri that is given to all students in grades 3 – 8 in communication arts and mathematics.

EOC – End of Course exam. End of course exams replace the MAP at the secondary level and are administered in several content areas. The content areas used within this study are communication arts as determined by the English I EOC and the Algebra I EOC in mathematics.

Race – Race as it is used within research questions H_1 through H_4 refers to a student's demographics collected by each school and reported to the state of Missouri during the MAP demographic coding process.

Ethnicity – This term refers to the larger people group that individual students may associate their self with according to characteristics such as race, religion, origin, language or culture.

SES – Socioeconomic Status; SES as it is used in this study will apply to students who either do or do not receive free/reduced price meals under the federal student lunch program.

Gender – This term as used in the present study refers to a student's "biological sex" as reported to the Missouri Department of Elementary and Secondary Education. It is important to make this distinction as the American Psychological Association Publication Manual makes it clear that "gender refers to role, not biological sex, and is cultural" (VandenBos, 2009, p. 73).

The Missouri Department of Elementary and Secondary Education does not collect information to a student's gender as a role or in cultural context in regard to the MAP test and EOC exams.

Overview of Methodology

This is a correlational study that will employ a hierarchical linear regression model. Correlational studies are conducted in order to determine if a significant relationship exists between two or more variables (Runyon, Coleman, & Pittenger, 2000). While a correlational research design does not allow the researcher to infer causation, certain statistical measures may be employed which allow particular amounts of variance to be accounted for among variables. The use of hierarchical linear regression is one model that achieves this purpose. In hierarchical linear regression, the Pearson's *r* for each correlation is entered into the regression equation in a manner that allows each independent variable to be examined against the other independent variables and the dependent variable. This result is then squared, and referred to as R (r-square). The R value indicates how much variance a given independent variable accounts for, within the dependent variable (Gall, Gall, & Borg, 2007). This is particularly beneficial in this study, as it should be able to show how much variance a principal's emotional intelligence contributes to student achievement in communication arts and mathematics.

Participants

Participants in this study were selected using purposeful sampling. Purposeful sampling is used to obtain study participants who fit certain characteristics that are essential to the research process (Gall, et al., 2007). A sampling frame that included all building level principals from select school districts was used to identify potential study participants. From this sampling frame, only principals who had three or more years of experience in their current position were selected to be a part of this study. Marzano et al. (2005) found that the characteristics of a

principal that were necessary for successful first and second order change all involved lengthy work. First order change being those items such as scheduling, room arrangements, and other items that change the way a school looks or is run, but don't change the core functioning of the school. Whereas, second order changes include items such as a change from a transactional to a transformational leadership approach or from isolated teaching to deep collaboration (Lyddon, 1990). Principals whose impact on student achievement may be accurately measured, must have been given time to actually impact the learning environment and processes in which a student finds his or herself. Furthermore, only principals who serve students at grades 5, 8 and 11 were chosen to participate. The school districts used in this study are located within the metropolitan areas of two large mid-western cities. These districts represent a range of urban and suburban student populations. A minimum of 63 total participants were sought at random from the candidates within the sampling frame who meet the previously mentioned conditions for the purposeful sample. Twenty-one building level principals each from the elementary, middle school and high school levels were to be chosen in order to obtain the 63 total participants. This number of participants was determined through the use of the G*Power 3 program (Faul, Erdfelder, Lang, & Buchner 2007). In order to detect a medium effect size of .35 that is statistically significant when $\alpha = .05$, this program recommends a minimum of 63 participants. In the end, only 18 participants were actually chosen. Twenty-five of the 107 principals invited to participate returned their informed consent forms and demographic data sheets. Of these 25 principals, only 18 went on to complete the MSCEIT.

Measures

Three measures were used in this study. One is a survey that collected general demographic information on the participants and the schools they represent. See appendix A for

a copy of the demographic survey. The second measure used was the Mayer-Salovey-Caruso Emotional Intelligence Test or MSCEIT. The Mayer-Salovey-Caruso Emotional Intelligence Test measures each building principal's emotional intelligence, this test provides a score of the individuals' emotional quotient, or EQ. This test will be delivered in an online format, scored independently and the results delivered to me, the principal researcher, in an Excel spreadsheet format. The third measure used in this study will be the Missouri Assessment Program or MAP Tests and EOC, or End of Course Exams. This measure provides student achievement data in the content areas of mathematics and communication arts from the schools served by each of the 18 participants.

Validity and reliability of the measures. Bracket and Mayer (2003) have shown the MSCEIT to have acceptable levels of convergent, discriminant and incremental validity for the measurement of EQ. Furthermore, Mayer, Salovey, Caruso, and Siteranios (2003) have found that "the MSCEIT achieved reasonable reliability, and confirmatory factor analysis supported theoretical models of EI" (p. 179). Test-retest reliability for this measure was found in one study to be .86 (Bracket & Mayer, 2003, p. 204).

According to Appendix D in the supporting documents for Missouri's Assessment Program, the MAP tests have been designed by CTB and the state of Missouri using rigorous test construction standards (p. 3). Acceptable levels of consequential validity along with strong levels of factor analysis and inter-rater reliability have been found for each section of the MAP (p. 4). Cronbach's alpha for each of the three content area tests are equal to or greater than .90 (CTB, 2009, p. 146). Discriminant validity has also been found between content area tests. Several of the tests share high correlations, but CTB finds that this is due to test structure rather than test content (CTB, 2009, p. 154). For example, constructed response items require students to use

written language to express content knowledge of mathematics or science, hence a .75 and .77 correlation between communication arts and mathematics and science respectively (p. 168).

Data Collection

Permission to request participation from building principals within each of the school districts was sought from the appropriate district level personnel. Once this initial permission was granted, a letter detailing the nature, requirements and timeline of the research was mailed to each building principal requesting their participation in the study. The 63 participants were to be selected at random from the responding principals who met the appropriate characteristics for participation. Each principal was then contacted with information regarding the completion of the demographic survey and the MSCEIT. As mentioned previously, the proposed number of participants turned out to be much lower than originally sought, with only 18 of the 107 principals contacted responding, meeting study criteria, and completing all steps within the study.

Data Analysis

Upon collection of the demographic survey, MSCEIT and MAP communication arts and mathematics data, analysis was conducted. Two types of analysis were performed using PASW Statistics software. The first step in data analysis included the use of descriptive statistics. Descriptive statistics are those items that help us gain a better understanding of the data, or describe it (Runyon et al., 2000). Data generated at this level included the mean, median, mode, and Pearson *r* correlations for each set of data. This information provided basic information about each data set and the group from which this data was derived. Much of the descriptive data will also be used in the third step of analysis as well.

Inferential analysis will be the core of the data analysis process. Inferential statistics allow the researcher to infer something about a population, based on a sample's data (Norusis, 2009). Hierarchical linear regression, as defined previously, was the primary inferential statistic used in this step. From this statistical test it was proposed that the amount of variance a principal's emotional intelligence contributes to student achievement will be found. This statistical model did indeed produce a result sufficient to determine if the correlation between a building principal's EQ and student achievement was statistically significant and if a statistically significant* difference can be found between grade levels. A T-test, a statistical test that measures the difference between the means' of two groups, was used as a post-hoc test (Norusis, 2009). The post-hoc test, or test done after the regression test, will examine how different groups of students respond to a principal with high or low levels of emotional intelligence. *All results will be considered significant at the .05 level.

Ethical Considerations

There is one main ethical consideration in this research proposal, the inherently personal nature of intelligence and achievement scores. This research sought to measure these aspects in eighteen individuals and eighteen schools. Conducting the research and disseminating research results was done in a manner that protected the individual study participants as well as the schools where data was gathered. One manner used is the elimination of reporting for student subgroups that may readily be identified through the data, simply because of their size. Any student subgroup within a school that has less than 30 students will be eliminated from the school level data. In this manner, no data should ever appear within the finished study that could identify a small group or groups of students within a particular educational setting.

Sources of bias have also been accounted for within this study. This has been done by selecting candidates at random from the given sampling frame. Schools were selected for initial contact based on their geographic location and similarity in demographic characteristics. By selecting participants at random from a demographically diverse population the results of this study should be generalizable to a broader population of individuals. According to section J of the University of Missouri – Kansas City's Social Science Institutional Review Board application this study also represents no significant possibility of financial gain for myself, the PI, or my faculty advisor. This eliminates any suggestion of impropriety in the representation of data as discovered during the course of this study.

Potential Risks

There are no known or anticipated physical or psychological risks to participants in this study. The risk of loss of confidentiality is expected to be minimal in this study. Study participants will not be identified in any published materials in a manner that would cause them or their organization to be personally identified. While every effort was made to keep confidential all of the information completed and shared by participants, it cannot be absolutely guaranteed. Individuals from the University of Missouri-Kansas City Institutional Review Board (a committee that reviews and approves research studies), Research Protections Program, and Federal regulatory agencies may look at records related to this study for quality improvement and regulatory functions. In addition data may be accessed by the principal investigator and their dissertation committee. Any personally identifiable information provided will be presented in the aggregate, which will ensure participant anonymity.

Conclusion

The ability to understand our own feelings as well as the feelings of others; recognize other's emotions and use this information to guide rational thought requires a certain level of intellectual capacity (Salovey & Mayer, 1997). This statement reflects much of how the concept of emotional intelligence came about. While the variations of emotional intelligence theory provide somewhat conflicting conceptualizations of emotional intelligence, it remains clear that some individuals can perform the aforementioned functions better than others. While some controversy exists about how to measure the construct of EI, research in this field and its implications for education continue to be encouraged (Day, 2004). This research project investigated how the emotional intelligence of an education leader in the form of a school principal correlates with student achievement. Dinham (2007) discusses various means by which principals impact their schools. Many of these means are indirect and fall under what Southworth (2009) terms "influence" (p. 95). Current theorizations of intelligence, motivation, and leadership promote the notion that individuals and groups, which consequently are synonymous with schools, work best in supportive and collaborative environments.

The remaining chapters in this dissertation are dedicated to three broad purposes. First, a closer look is taken in chapter two at what current research and literature has to say about the theories introduced in chapter one. Chapter two is divided into three main sections; emotional intelligence, teacher efficacy, and student achievement. Secondly, the method for investigating the connection between a principal's emotional intelligence and student achievement is outlined in greater detail in chapter three. Finally, in chapters four and five, study results along with their implications are discussed.

CHAPTER 2

REVIEW OF LITERATURE

Chapter two discusses the relevant literature in regard to several broad topics. Two purposes are served by introducing and delving deeper into the topics of emotional intelligence, principal leadership, teacher efficacy and student achievement. First, this chapter should be useful in clarifying the areas of theory and research that form the basis of this study. Second, relevant literature is examined with the intent of developing a clear understanding how these concepts fit together. The extant literature in some areas is greater than others. However, sufficient empirical data exists to support the concepts developed here.

Emotional Intelligence

In chapter one, Salovey and Mayer (1990) were credited with coining the phrase emotional intelligence. Since their seminal work, there have been several widely popularized models of emotional intelligence. These models, along with other psychological constructs such as the big five (Goldberg, 1992), have caused some researchers and theorists to question the existence of an emotional intelligence; and ask the question of how, or even if, it can be measured. A great deal of research has gone into answering these questions, and a review of the findings reveals answers to both of them. The resulting information can best be grouped into two categories; emotional intelligence models and measurement of emotional intelligence. A third area discussed in the literature is the connection between emotional intelligence and school leadership, specifically principal leadership. Each of these sections should prove to meet the objectives set forth in the introductory paragraph of this chapter.

Just as there are with many theories, there are also multiple interpretations emotional intelligence theory. Regardless of interpretation, in order for an area to be considered an

intelligence it must meet three specific criteria. Salovey and Mayer (1999) refer to these criteria as "conceptual, correlational, and developmental" (p. 126). One common criticism of emotional intelligence theory is that it is not separate from other areas of emotion or intelligence. In a study of 503 adults, Salovey and Mayer (1999) were able to show that emotional intelligence is indeed a separate area of intelligence. Results of their study showed that the concepts stated in their definition were indeed accurate based on the use of consensus, expert and target scoring methods. Further study gave support to correlation between emotional intelligence and other accepted areas of intelligence. Finally, younger participants of the study were found to score lower on the measures than older participants. This finding supports the third criterion for an intelligence, development over time.

One common argument against EI as an intelligence is based on the idea that it does not correlate with other recognized intelligences, such as general intelligence. One of the leading names in the field of general intelligence (*g*) is David Weschler. Much of his work is centered on *g*, which overshadows his recognition of other forms of intelligence. He is quoted as having said "I have tried to show that in addition to intellective there are also definite non-intellective factors that determine intelligent behavior" (Weschler, 1943, as cited by Cherniss, 2000a, p. 3). Weschler's recognition of this idea, along with Gardner's (1983) work with multiple intelligences, certainly provides a theoretical basis for emotional intelligence. Empirical findings in later years would bear this theory out.

Mayer, Salovey, and Caruso (2008) have tested their model of EI against other psychological constructs; and found that there were modest correlations between "verbal intelligence and lower correlations with perceptual/organizational IQ" (p. 508). Mayer et al. (2008) also found that EI correlated modestly with only two of the Big Five personality traits.

These findings help to support the concept of EI as a distinct intelligence. Bar-On (2010) discusses at length the contribution that EI gives to the field of positive psychology. He supports this position with findings that show modest to high correlations between EI and educational achievement, happiness, and self-actualization (Bar-On, 2010). Each of these areas has been shown to correlate to some extent with other forms of accepted intelligence as well. The correlations between EI and other forms of intelligence and EI and important life factors, demonstrates the importance of this concept and the role it plays in human functioning.

Cherniss (2000a) cites a multitude of empirical research in which two of the four branches of EI as proposed by Salovey and Mayer (1990), the ability to perceive emotions or reason about emotions, were found to significantly and positively impact the individuals being studied. One of these findings was that individuals who could name the emotions they saw displayed or felt themselves, were able to overcome the emotional impact much quicker (Cherniss, 2000a, p. 4). Cherniss (2000a) goes on to state that prominent researchers and theorists use such findings to show the importance of EI to job performance. In regard to education, Stone, Parker, and Wood (2005) found that a sample of principals in Ontario who performed highly on a leadership scale, also performed highly on the EQ-i as developed by Bar-On (1997b). Outside of education, Lopes, Brackett, Nezlek, Schultz, Sellin, and Salovey (2004) have found significant connections between scores on the MSCEIT and job performance ratings and working relationships. These findings can best be summed up by Cherniss, Extein, Goleman, and Weissberrg (2006) when they say, “the weight of the evidence now supports the claim that EI is distinct from IQ, personality, or related constructs (p. 240).”

Emotional Intelligence Models

Competing models of emotional intelligence have muddled the waters in this field to a certain extent. There are three main models of EI, one proposed by Salovey and Mayer (1997), one by Goleman (1998) and Bar-On (1997a). These different models view the construct of EI as either ability based, or as a mixed-methods approach. These models were introduced in chapter one, but will be further discussed here. Cherniss et al. (2006) note that even though competing models of EI exist, they all recognize "two broad components: awareness and management of one's own emotions and awareness and management of others' emotions" (p. 240).

Howard Gardner's theory of multiple intelligences. Garnder's (1983) theory of multiple intelligences is not strictly a model of emotional intelligence, but there are aspects of this theory that provide a well-rounded basis for understanding how emotional intelligence theory has been developed.

In regard to education, Gardner (1997) and Moran, Kornhaber, and Gardner (2006) make several important assertions. One, just as intelligence is not a fixed characteristic of individuals, "our scientific understanding of intelligence is ever changing" (Gardner, 1997, p. 21). Continued empirical validation of this theory will provide new and useful information as to its application within education. Two, "intelligences are not isolated; they can work within an individual to yield a variety of outcomes" (Moran, Kornhaber, & Gardner, 2006, p. 23). Students are multifaceted and learn in multiple ways. One of the most essential of these multiple learning styles is the idea that students learn best in conjunction with each other. It is important not to confuse learning styles with an intelligence. However, particular intelligences do lend themselves to certain learning styles (Moran, Kornhaber, & Gardner, 2006). An understanding of

how intelligences and students who possess different levels of these intelligences work together can be effective in addressing students' educational needs.

Not only is multiple intelligence theory linked to education and student achievement, it is strongly tied to emotional intelligence. In Garnder's (1983) original list of intelligences, numbers six and seven are interpersonal and intrapersonal intelligence respectively. Interpersonal intelligence refers to the ability, "to notice distinctions among others – in particular, contrasts in their moods, temperaments, motivations, and intentions" (Gardner, 2006, p. 15). Intrapersonal intelligence is defined by Garnder (2006) as,

> knowledge of the internal aspects of a person: access to one's own feeling life, one's range of emotions, the capacity to make discriminations among these emotions and eventually to label them and to draw on them as a means of understanding and guiding one's own behavior.(p. 17)

These two definitions of distinct areas of intelligence are a foundational basis for the more encompassing model of emotional intelligence. Bar-On and Parker (2000), Goleman (1998), and Salovey and Mayer (1990) each define emotional intelligence in terms very similar to those used by Gardner (1983). Perception of and understanding of the emotions of one's self and others, along with the ability to act upon this information is the underlying construct in emotional intelligence. As a theory, emotional intelligence is somewhat newer than multiple intelligence theory and is greatly informed by the work in this field.

Salovey and Mayer model. In demonstrating that emotional intelligence is indeed a distinct area of intelligence, Salovey and Mayer (1999) gave support to their ongoing work in this field. As discussed in chapter one, there are three commonly accepted models of emotional intelligence, an ability model and a mixed model (Cobb & Mayer, 2000). The work of Peter Salovey and John Mayer is centered on the ability model. This model looks at emotional intelligence as a distinct intelligence set.

The definition of emotional intelligence proposed by Salovey and Mayer (1990) states that emotional intelligence is "the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (p. 5). This introductory definition has been further broken down into three main areas. The first of these areas as recognized by Salovey and Mayer (1990) is the "appraisal and expression of emotion" (p. 7). This refers to the broad set of abilities that allow individuals to not only monitor emotions, but be able to express them as well. This ability is demonstrated in both interpersonal and intrapersonal approaches. Salovey and Mayer (1990) title the second broad area of emotional intelligence "regulation of emotion" (p. 12). This component refers to an individual's ability to control their emotions. Once an individual realizes that they or another person are feeling a particular emotion, the individual can make a decision about their response. The third component is referred to as "utilizing emotional intelligence" (Salovey & Mayer, 1990, p. 15). This refers to an individual's ability to use emotional information as an area of strength to draw from in decision making. It is suggested that individuals who possess high levels of emotional intelligence are adept at using their emotions and the emotions of others to make effective decisions.

According to Mayer, Salovey, and Caruso (2008) this model contains four distinct elements. The ability to,"(a) perceive emotions in oneself and others accurately, (b) use emotions to facilitate thinking, (c) understand emotions, emotional language, and the signals conveyed by emotions, and (d) manage emotions so as to attain specific goals" (p. 506).

The four elements of this model cover a wide range of psychological thinking and could be confused with other psychological constructs or fields of study. As a distinct intelligence Mayer, Caruso, and Salovey (1999) have taken care to distinguish emotional intelligence as its own field

of intelligence. Their work has shown that there is a moderate correlation between emotional intelligence and other psychological constructs and other areas of intelligence, but it is not significant enough to claim that they are one in the same. Emotional intelligence has also been shown to be developmental. That is, children have been shown to score lower on the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) than adults (Mayer, et al., 1999). In regard to the predictability of EI as a contributor to success in a given pursuit, Mayer, et al. (1999) state that there is "little or no evidence to support" such claims (p. 154).

Salovey and Mayer's (1990) model of emotional intelligence implies that an emotionally intelligent individual possesses the ability to manage their self well and work well with others. This implication is the starting point for what Cobb and Mayer (2000) refer to as the "mixed model" of emotional intelligence (p. 15). This model was developed by Daniel Goleman and has been widely popularized. Goleman (1998) defines emotional intelligence as "abilities such as being able to motivate oneself and persist in the face of frustrations; to control impulse and delay gratification, to regulate one's moods and keep distress from swamping the ability to think, to empathize and to hope" (p. 34).

Goleman model. Goleman's (1998) outlines emotional intelligence in a similar manner to Salovey and Mayer (1990), but expands upon certain of their ideas. He also draws from Gardner's (1983) theory of multiple intelligences. In this model Goleman (1998) presents a picture of emotional intelligence that encompasses four distinct components. These four components are not specifically defined; rather they are presented in a larger context and supported by a variety of research within the fields of education, business, psychology, sociology and medicine.

Goleman's (1998) description of self-motivation and persistence is the first of his four components that comprise EI. In this aspect, an individual possesses the ability to put plans into action as well as see them through (p. 57). Second among these components is the ability to "delay gratification" (Goleman, 1998, p. 81). Feelings often lead individual's to make certain choices; the idea behind this component is that the emotionally intelligent individual is able to choose the best option among several or many, even if it is not the most immediately gratifying. The third component of this model is the individual's ability to control their emotions. Individuals who are able to control their emotions are more likely to behave in an intelligent manner and find success in their particular endeavor(s) (p. 87). The fourth and final component of Goleman's (1998) model is "the ability to empathize" (p. 34). The "ability to know how another feels" is an important aspect of emotional intelligence (Goleman, 1998, p. 96).

Goleman's (1998) model is one of the variations of emotional intelligence theory that have been termed mixed methods (Cobb & Mayer, 2000). The phrase "mixed methods" can be best understood in the context of Goleman's (1998) own words;

> abilities such as being able to motivate oneself and persist in the face of frustrations; to control impulse and delay gratification, to regulate one's moods and keep distress from swamping the ability to think, to empathize and to hope.(p. 34)

This definition of EI clearly addresses emotional concepts, and defines emotional intelligence as a collection of abilities rather than a single distinct ability. Much of Goleman's work is based on a review of empirical findings within a variety of professional fields. The synthesis of this information is the basis for his model of emotional intelligence. While his early work has been misinterpreted as placing a heavy emphasis on the use of EI as a predictor for success, Goleman (1998) does support the idea that EI plays a significant role in why some people achieve greater success than others.

Bar-On model. Reuven Bar-On (2010) defines his model as one that contains "an array of interrelated emotional and social competencies and skills" (p. 57). These competencies and skills can each be associated with the perception and management of emotions personally and in others. According to Bar-On (2000) this model as measured by the Emotional Quotient inventory (EQ-i) involves ten factors (p. 373). The EQ-i was developed by Bar-On (1997b) and is a self report measure of emotional intelligence. Each of these factors has been shown to have the proper amount of correlation with other psychological constructs to support claims of both convergent and divergent validity.

Further description of this model of emotional intelligence is based on empirical findings resulting from the use of the Emotional Quotient inventory (EQi) as developed by Bar-On (1997b). This is a self-report measure of emotional intelligence that has undergone a significant level of testing for reliability and validity. As a self-report measure, the EQi shows high levels of both constructs. Furthermore, results achieved using this measure lends support to Bar-On's (1997b) model of emotional intelligence. As a ten factor model however, there are significant overlaps with other psychological constructs such as the big five personality traits proposed by Goldberg (1992). This further supports the Bar-On model as a mixed methods approach to emotional intelligence.

The three models of emotional intelligence offered by Salovey and Mayer (1990), Goleman (1998), and Bar-On (1997a) share distinct commonalities. Reading the basic descriptions of these models should offer an idea of where these models converge. For example, each focus on being aware of individual emotions and the emotions of others. All three models also focus on the use of emotions in decision making and the ability to control emotions. While these models are similar, there is one chief difference.

Goleman (1998) cites the commonly accepted idea that "IQ accounts for only 20 percent of career success" (p. xiii). This implies that there are other factors that play a role in determining an individual's success. Goleman (1998) argues that an especially important one of these factors is emotional intelligence (p. 28). The claim is then made, that emotional intelligence may be a better predictor of success than IQ. It is important to understand that while Goleman (1998) makes and substantially supports this claim, he does not propose that emotional intelligence is the sole or even overwhelming predictor of success (p. xiv). On the other hand is the Salovey and Mayer (1990) model. This model of emotional intelligence has found some predictability in certain areas. However, empirical evidence is relatively limited and not sufficient to warrant predictions of success based on one's measured emotional intelligence or emotional quotient *EQ* (Cobb & Mayer, 2000). While some predictability has been found for certain areas of the EQ-i, it is argued that this may be due to the self-report nature of this measure or its relation to other psychological constructs.

Measuring Emotional Intelligence

A wide range of measures exist for the measurement of emotional intelligence. Bar-On and Parker (2000) state that two of the most common measures of emotional intelligence are the MSCEIT and EQ-i. One of these, the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) was developed to measure the ability-based conceptualization of EI as proposed by Salovey and Mayer (1990). Another is the Emotional Quotient inventory, developed by Bar-On (1997b) to measure his conceptualization of EI.

The MSCEIT is a test that can be delivered by paper/pencil or online procedures. Both deliveries are scored on site by the test publisher, Multi-Health Systems. Expert and concensus scoring are the basis for scaling and interpreting test results (Mayer, Salovey, Caruso, &

Sitarenios, 2001, p. 166). Farrelly and Austin (2007) found that the MSCEIT does not correlate with fluid intelligence, but does correlate with crystallized intelligence. They further found that there were low correlations between self-report measures of EI and the MSCEIT. The authors take this as definitive evidence that the tests "are not measuring the same construct" (p. 1059). These findings are important because they validate similar findings by Brackett and Mayer (2003), Livingston and Day (2005), and Salovey, Mayer, Caruso, and Sitarenios (2003). They also provide further empirical evidence to the theoretical concept of ability-based EI as discussed by Cobb and Mayer (2003) and Salovey and Mayer (1990).

Bar-On's (1997b) measure of emotional intelligence, the EQ-i, is a self-report measure. This measure is completed either paper/pencil or online just as the MSCEIT. Scoring of this measure however, can be completed by the test proctor or other individual in possession of the EQ-i manual. The question responses are based on "a five-point likert scale ranging from 'very seldom or not true of me' to 'very often true of me or not true of me" (Bar-On, in Bar-On & Parker, 2000, p. 365). Bar-On (2000) provides evidence for the validity of this measure from each of the 15 subscales of the EQ-i. As noted previously with the MSCEIT, it can be determined that the EQ-i and MSCEIT are not measuring similar constructs. The fifteen factors of the EQ-i involve components of psychological constructs not associated with the MSCEIT. Furthermore, this is evidenced through the findings listed by researchers in the previous paragraph. It is important to note that while the MSCEIT and EQ-i are not necessarily measuring the same constructs, the EQ-i does measure Bar-On's (1997b) model of emotional intelligence. A study of the EQ-i's factor structure shows that it "fits the theoretical basis of the EQ-i" (Bar-On & Parker, 2000, p. 370).

Other measures of emotional intelligence also exist; in fact, this is one of the largest areas of study within the field of emotional intelligence. The development of measures and scales that will determine a commonly accepted measure of an individual's emotional quotient or EQ is cited by many researchers as an important area of study. Empirical validation of these measures however, is somewhat complicated for two reasons. One, various measures are developed based on varying models of EI. Two, there is a significant difference between the use of performance based assessments and self-report models (Goldenberg, Matheson, & Mantler, 2006). Gall, Gall, & Borg (2007) note that multiple forms of bias may be a substantial problem in the use of self-report measures.

While competing conceptualizations and respondent bias are considered two limiting factors in the development of EQ measures, there are measures under development that address the conceptualization dilemma. Austin (2010) conducted a study of two new measures of EQ, the Situational Test of Emotion Management (STEM) and Situational Test of Emotional Understanding (STEU). Both of these measures are self-reports, but are based on the Salovey and Mayer (1990) model of EI. Austin (2010) found that these measures were "significantly correlated with MSCEIT total and branch scores" (p. 572). Wakeman (2006) and Bradberry and Greaves (2009) have both attempted to develop self-report measures of EQ that incorporate elements of ability-based and mixed-methods models of EI. The Emotional Intelligence Questionnaire (EIQu) was found to correlate with both models of EI, which the author takes as evidence of convergent validity for this new EQ measure (Wakeman, 2006).

In light of the many competing views on emotional intelligence and multiple means to measure the concept, one thing may be important to keep in mind; the concept of EI is a continuously growing area of study. It is clear from the large amount of literature devoted to this

topic that it is also an important area of study. It should be equally clear that research into the development of clear and concise models of EI, as well as psychometrically sound means of measuring these models are of importance to the field. This study proposes to use the foundational model of EI as developed by Salovey and Mayer (1990) and its associated measure, the MSCEIT. While future research will likely produce changes in these areas, this conceptualization and corresponding measure provide a solid foundation to work from in investigating another important area of EI, its application to various fields.

Emotional Intelligence and Principal Leadership

Fullan (2005) argues that effective leaders are those who have the skills and abilities to engage schools in lasting and meaningful change. Research cited by Ginsberg (2008) shows that one of the abilities possessed by effective leaders is high emotional intelligence. Hartley (2004) asserts that schools have not always considered the emotional side of decision making and as a result have ignored an important part of who we are as people. Understanding emotional intelligence and putting it to use are two different matters. Due to the personal nature of a building principal's job, it is important to consider how emotions and the way they play out, impact a principal's work. Lam and Kirby (2002) found that higher scores in three of the four branches of Salovey and Mayer's (1990) model of emotional intelligence accounted for improved cognitive functioning as tested in their study. General intelligence (*g*) is often associated with academic and career success. In light of *g*'s low predictability of career success, Lam and Kirby's (2002) finding supports the idea of emotional intelligence possibly playing an important role in career success. Due to the personal nature of a building principal's job, it is important to consider how emotions and the way they play out, impact a principal's work.

Wang and Huang (2009) found that there were strong correlations between transformational leadership and group cohesiveness in their study of 23 small businesses in Taiwan (p. 379). While this finding may not be surprising, it was further discovered that managers with higher levels of emotional intelligence were more likely to engage in transformational leadership practices and lead groups with higher cohesiveness. The researchers are careful to note that due to the sample in this study, generalization of the results is limited. Using this finding as a starting point, it is important to find if similar results have been achieved elsewhere and more specifically, if similar results have been found in an educational setting.

Parker and Sorenson (2008) conducted a correlational study between emotional intelligence and the leadership skills of National Health Service managers in the UK. This study also looked at transformational leadership in addition to emotional intelligence. The idea was to discover if the notion "that both transformational and transactional leadership styles were linked to achievement goals and objectives, and that the best leaders regularly demonstrate both styles," held true when examined through the lens of emotional intelligence (Parker and Sorenson, 2008, p. 139). Study results show that all 24 study participants who scored highly on the measure of emotional intelligence also scored highly on the measure of transformational/transactional leadership. As with the Wang and Huang (2009) study, the sample is representative of a specific population. Because similar results were achieved in vastly different population samples; this does begin to lend credibility to the idea that emotional intelligence is a critical component in effective leadership.

In a correlational study between emotional intelligence and teacher efficacy, Di Fabio and Palazzeschi (2008) found that in a sample of 169 high school teachers in the Tuscany region of Italy; high levels of emotional intelligence were significantly correlated with high levels of

self efficacy. The authors note that "higher emotional intelligence was linked to higher teacher self-efficacy in the capacity to manage the classroom, motivate and involve students, and use appropriate teaching strategies" (Di Fabio & Palazzeschi, 2008, p. 322). The teacher behaviors and skills noted here are exactly those that have been shown in other research to have significant impact on students' academic achievement. While this study does not involve leadership positions directly, it does begin to show the connection between the exercise of emotional intelligence and education.

McWilliam and Hatcher (2007) discuss the reinvention of educational leadership as a change from a field that is mostly authoritarian and managerial, to one that could best be described as shepherding. This work may be overly tied to the emotional side of leadership, but does provide particular insight into the softer skills necessary for effective principal leadership. McWilliam and Hatcher (2007) called these "the three Cs: caring passionately about their role in an organization, thinking creatively about their work and communicating effectively to achieve their goals" (p. 234). If these skills are viewed in conjunction with Salovey and Mayer's (1997) definition of emotional intelligence as an intelligence that:

> Involves the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth (p. 35);

a clear connection between these ideas and the concept of emotional intelligence can be gained.

McWilliam and Hatcher (2007) further refer to six passions possessed by effective educational leaders; "a passion for achievement; a passion for care; a passion for collaboration; a passion for commitment; a passion for trust; a passion for inclusivity" (McWilliam and Hatcher, 2008, p. 237). As was previously noted, there is a distinct connection between these "passions" and Salovey and Mayer's (1997) conceptualization of emotional intelligence. Educational

leaders who are competent in attaining the goals or behaviors described by McWilliam and Hatcher (2008) must at least be aware of how their emotions and the emotions of others impact the school environment, and awareness is only one component of emotional intelligence.

Stone, Parker, and Wood (2005) conducted a study for the Ontario Principals Council. In their findings, the top 20% of principals were found to have the highest levels of emotional intelligence. Particularly strong areas within emotional intelligence for these principals included inter and intrapersonal relationships, adaptability, and stress management (p. 19). It is important to note that these findings are based on the results of two self-report measures, one for leadership and one for emotional intelligence. It is also important to note that the measure for emotional intelligence was a mixed methods model, the EQi developed by Bar-on (1997b). These are important distinctions due to the fact that similar results may not have been achieved when using an ability-based model and measure of EI. Theoretical and methodological differences aside, the importance of Stone, Parker, and Wood's (2005) work is that they have found what appears to be a significant correlation between emotional intelligence and effective principal leadership. In light of the fact that little empirical investigation has been done in this field, this finding is of great importance.

McDowelle and Bell (1997) state that, "inquiries into the effect of emotional intelligence on educational leadership will inform discussions about the part ethics, collaboration and democratic decision-making play in the exercise of school leadership" (p. 8).
They go on to say that "the abilities associated with EQ have clear implications for the exercise of school leadership" (p. 9). Hartley (2004) points out that emotional intelligence and its connection to transformational leadership makes it an ideal area for study within the field of educational leadership. He argues that leaders with higher emotional intelligence are likely to

inspire better performance from those they lead (p. 588). Hartley (2004) also points out that emotional intelligence works in complement with "rational management" practices to create a better result than either method alone (p. 588). This idea echoes Parker and Sorenson (2008). An interesting study by Ashkanasy and Dasborough (2003) found that undergraduate students who scored well on the Mayer-Salovey-Caurso Emotional Intelligence Test (MSCEIT) also fared better on in-class team leadership exercises (p. 20). While no causality can be inferred from these results, it does lend credence to the idea that emotional intelligence and leadership abilities or skills may be correlated in significant and important ways.

Cherniss (1998) claims that important skills possessed by effective school leaders include: "the ability to modulate emotions," "persistence," "building consensus, coordinating team efforts, appreciating multiple perspectives" (pp. 27 & 28). These skills match clearly with Salovey and Mayer's (1997) definition of EI. The evidence should be clear that EI can and does play a significant role in effective school leadership. In addition, it is important to gain empirical evidence that supports the wise use of this concept in the changing field of educational leadership. If we are to effectively educate our children today, for the world of tomorrow; the best tools we can give them will be based on enduring concepts that touch the core of who we are as individuals and a society. This can only take place if we have a clear knowledge of how such concepts such as emotional intelligence directly impact the teaching and learning that takes place in our schools.

Teacher Efficacy

Teachers are considered to be one of the most critical elements in student success (Marzano, 2007). Moore (2009) cites research that states "leadership is second only to classroom instruction among school-related factors for improving student learning" (p. 20). Dinham (2007)

cites research that 30% of a student's achievement can be attributed to the quality of their teacher. In her review of Finland's education system Sahlberg (2007) makes note that all Finnish teachers have a master's degree or higher. While this review does not attempt to determine causality between teacher education and student achievement, it remains likely that the high level of teacher training plays a role in Finland's consistently high ranking among international examinations of student achievement.

Based on the evidence at hand it is important to recognize not only that teacher quality plays an important role in student achievement, but that there must be certain factors which contribute to teacher quality. Teacher preparation as mentioned by Sahlberg (2007) certainly plays a role in this amalgamation. However, this is to a certain extent out of the control of educational leaders within school systems. Regardless of preparation, there must be other factors that contribute to teacher quality.

Ashkanasy and Dasborough (2003) based their study of emotional intelligence on the premise that emotionally intelligent leaders tend to have highly satisfied workers. In their study, direct instruction in emotional intelligence did produce small effects in group performance for college students (p.20). Burgess (2005) also works from the premise that emotional intelligence can be taught and learned. He proposes a conflict resolution model that has been used successfully in clinical applications with those in education. This model relates to the emotional intelligence factors of regulating and using emotions effectively. In her work Chernis (1998) has found that good "people skills" are often associated with effective principals (p. 26). In her examination of "servant leadership" as proposed by Robert Greenleaf, Crippen (2005) highlights numerous leader behaviors that associate closely with the key components of emotional intelligence (p. 13).

The ideas that emotional intelligence can be learned and be practiced in a way that increases employee satisfaction or productivity have not been widely studied within education. However, the effects of transformational leadership have been. As noted earlier, there are distinct relationships between certain transformational leadership practices and emotional intelligence. One well documented effect of transformational leadership practices is an increase in teacher efficacy. Additionally, teacher efficacy has been shown to contribute to student achievement. Dinham (2007) writes,

> that the influence of educational leadership on teacher and student performance has generally been underestimated, and that the measured direct effects of leadership, which some researchers have found to be very low, are outweighed by indirect and antecedent effects such as school history, context and organization, with school climate acting as an intermediate variable between leadership and classroom achievement. (p. 265)

From this statement it may be inferred that while educational leadership does not have a wide base of empirical backing for its effect on student achievement, it is distinctly possible that the effects we see come about in a manner that is difficult to measure.

Elliott et al. (2007) highlight an emphasis on "organizational culture and advocacy" as two of the main factors that distinguish effective principals from those who work in less effective schools (p. 179). Hollenczer and Schneider (2006) take this a step further in their look at communication. Principals who are able to communicate effectively, both realize the need for information and how best to deliver it. This type of behavior relates directly to Elliott et al.'s (2007) focus. Johnson and Uline (2005) echo these remarks. In their work, principals who were effective communicators led more effective schools. McDowelle and Bell (1997) reached the conclusion that "emotional illiteracy" within a group, lowers the group IQ (p. 11). Giving credence to the idea that leaders who exhibit low levels of emotional intelligence behave in manners that hinder the group's ability as a whole.

In a mixed-methods study of leadership behavior on teacher efficacy, Hipp (1996) found significant correlation between transformational leadership practices and teacher efficacy. Results of both the quantitative and qualitative analysis were used to arrive at the conclusion that there are a set of transformational practices principals can engage in that will increase teacher efficacy (p. 32). Marks and Printy (2003) found that one factor attributed to teacher efficacy, "shared instructional leadership," was directly related to a principal's transformational leadership capacity (p. 385). Given the link between emotional intelligence and transformational leadership and the connection between transformational leadership and teacher efficacy, it stands to reason that there is some connection between emotional intelligence and teacher efficacy. Because teacher efficacy has been shown to influence student achievement, emotional intelligence on the part of educational leaders can reasonably be assumed to play a role, albeit indirect, in student achievement (Dinham, 2007; Hipp, 1996; Leithwood, 2007; & Moore 2009).

> The ability to engage in such practices depends, in part, on leaders' knowledge of the technical core of schooling – what is required to improve the quality of teaching and learning – often invoked by the term instructional leadership. But this ability also is part of what is now being referred to as leaders' emotional intelligence. (Leithwood and Jantzi, 2008, p. 507)

The quote above clearly articulates a direct connection between the business of educational leadership and emotional intelligence. This connection as it relates to leader efficacy was studied by Leithwood and Jantzi (2008). The results of their study show that while there were no significant and direct correlations between the self-efficacy or collective efficacy of a school's leaders, "LCE and leader behavior explain 58% of the variation in school conditions," which accounts for "19% of the variation in student achievement" (pp. 519-520). In other words, self and collective efficacy of a school's leaders has an indirect, but significant impact on student achievement.

Leithwood and Jantzi (2008) do not discuss in great detail the "school conditions" which are influenced by school leaders in their study (p. 519). However, one positive school structure may be the concept of flow. Flow is a term coined by Csikszentmihalyi (1990) and is a state in which the individual becomes so engaged in an activity, that their consciousness is dedicated solely to the task at hand. Furthermore, flow stems from a feeling of efficaciousness in the activity at hand. Basom and Frase (2004) discuss this concept as it relates to teaching. The authors determined that leadership behaviors that promoted flow included frequent classroom visits by the school principal (p. 245). In addition, the authors cite Frase (1998) in which it was found that principal visits to classrooms were found to be a significant predictor of "teacher self-efficacy, teacher-perceived school efficacy, teacher-perceived efficacy of other teachers, teacher-perceived organizational effectiveness, teacher-perceived efficacy of the evaluation process and professional development programs, and the frequency of teacher flow experiences" (p. 246). The importance of highly efficacious teachers and the frequency with which teachers experience moments of flow within the classroom can be effectively summed up by Basom and Frase (2004); "It is virtually impossible to create and sustain over time the conditions for productive learning for students when they do not exist for teachers" (p. 254). Teachers must be given the opportunity to work in an environment that produces professional learning and growth. This growth leads to enhanced efficacy and can be stimulated in large part by effective principals.

Chan (2008) introduces his article with the idea that teaching is a stressful occupation and that teachers need effective ways to deal with this stress. The two resources investigated in this study are emotional intelligence and self-efficacy (p. 397). Results of this study indicate that a teacher's emotional intelligence plays a significant role in their ability to deal with job stress and that EI strongly mediates the role of self-efficacy in dealing with job stress (p. 403). The

importance of this outcome can be seen when examining a study by Ross and Gray (2006). In this study Ross and Gray (2006) propose three connections "between leadership and professional commitment..., teacher efficacy..., and between teacher efficacy and professional commitment" (p. 180). The authors found that each one of these 'connections' held true in their study, with transformational leadership having the greatest effect on collective-efficacy. Bandura (2010) reminds us that collective efficacy is a combination of both the level of self-efficacy possessed by individual group members and an aggregate of the individual group members' personal assessment of the group's collective-efficacy. This information, in combination with Ross and Gray's (2006) additional finding that "transformational leadership had direct effects on teacher commitment," supports the connection between principal leadership and teacher efficacy. Ware and Kitsantas (2007) found similar results in their study of the self and collective-efficacy of teachers in regard to professional commitment. They found that self-efficacy in regard to three key areas of teaching were significantly related to professional commitment (p. 309). More importantly however, was the finding that there are five distinct areas that principals can grant teachers more control over and increase teacher self and collective efficacy (p. 309).

Teacher burnout could be defined as "a syndrome of emotional exhaustion, depersonalization, and reduced accomplishment which is a special risk for individuals who work with other people in some capacity" (Schwarzer and Hallum, 2008, p. 155). While this description paints a grim picture of a potential professional pitfall for teachers, the results of teacher burnout may be even grimmer. Pas, Bradshaw, Hershfeldt, and Leaf (2010) state that "when teachers experience high levels of burnout or feel emotionally exhausted, their relationships with students and the quality of their teaching suffer" (Pas, et al., 2010, p. 13). It is a normal part of life for individuals to experience highs and lows in their professional pursuits.

What educators and particularly educational leaders must not allow to become normal however, are conditions that increase teachers' tendency to experience professional lows.

Schwarzer and Hallum (2008) in a study of German and Syrian teachers found that teachers with low self-efficacy experienced greater degrees of burnout (p. 163). They also found that teachers who experienced burnout were likely to possess even lower efficacy toward their teaching after the burnout experience (p. 167). This finding supports the connection between burnout and efficacy. Pas et al. (2010) found that teachers who experienced burnout were less likely to utilize school resources to help address students' academic and/or behavioral needs. The authors infer that this is likely "to be associated with withdrawal from teaching" or "learned helplessness" (p. 24). The findings presented in this article, along with the authors' interpretation of this information clearly support that notion that less efficacious teachers provide lower quality instruction for students.

As pointed out earlier, principals can and do have an effect on the level of teacher efficacy within a school. Overton (2009) conducted a qualitative study to investigate the reasons behind teachers' feelings of power and efficacy, or the lack thereof. Principal behaviors were cited by study participants as having both negative and positive impacts on teachers' perceived level of power. These perceptions had direct connections to teachers' sense of efficaciousness toward their craft. Principal behaviors found to undermine teacher efficacy were the devaluing of teacher input into decision making, a general lack of appreciation for teachers' work, withholding of necessary resources, and a general sense of nonsupport. Overton (2009) addresses these problems by stating "that student learning is at the heart of what schools do. It is more likely to be enhanced when teachers are contented, committed to the tasks of teaching and have an appropriate sense of efficacy and empowerment" (p. 7).

Expectancy-value theory reminds us that individuals are motivated to pursue tasks which fulfill two basic requirements; a) the individual feels that they have a reasonable chance of achieving success within the task, and b) the individual finds value for having achieved the task at hand (Eccles & Wigfield, 2002). Wang and Huang (2009) claim that transformational leaders enhance teachers' motivation in both of these areas by "providing meaningful challenges" (p. 381). Furthermore, self-determination theory would look at this scenario as one in which 'autonomous' motivation must be increased and 'controlled' motivation must be decreased (Deci & Ryan, 2008). Within the school setting a principal is uniquely situated to affect the school conditions that would increase teacher motivation under these perspectives.

Overbaugh and Lu (2008) claim that a teacher's self-efficacy determines "the tenacity with which he/she will persist in trying...given the academic 'climate' of their school" (p. 45). Leithwood and Jantzi (2009) cite evidence that principals who practice transformational leadership styles have been shown to positively impact "teachers' levels of effort and commitment" (p. 48). Southworth (2009) argues that the manner in which principals structure their schools plays a significant role in not only whether teachers are effective; but perhaps more importantly, are engaged in practices that will help them feel effective. Moore (2009) takes these ideas one step further and connects them with emotional intelligence. His argument is that simply having knowledge of how to structure schools in a changing environment is not enough. Principals must have the skills to effectively manage change and the impact it has on those within schools, particularly teachers. He makes the case that principals with high levels of emotional intelligence have exactly those skills (p. 22). Wang and Huang (2009) posit that the skills of emotional intelligence increase a principal's perception of emotion and effective responses to this emotion shown by teachers. Bandura (2001), while not addressing education or

educational leadership, provides an accurate summation of the important impact self-efficacy and its stimulation by others has on the individual.

> To make their way successfully through a complex world full of challenges and hazards, people have to make good judgments about their capabilities, anticipate the probable effects of different events and courses of action, size up sociostructural opportunities and constraints, and regulate their behavior accordingly (p. 3) ... If they believe they are being exploited, coerced, disrespected, or manipulated, they respond apathetically, oppositionally, or hostilely. (p. 5)

Given the current level of knowledge about the skills and behaviors practiced by effective principals, there should be little doubt that these individuals hold considerable influence over the conditions that will engender the behavior described above; or something much better for the entire school community.

Student Achievement

The current focus on student achievement stems from the culture of accountability created within schools through various means. The No Child Left Behind Act of 2001 and its current counterpart, Race to the Top, can be seen as one of the major factors in the creation of state and local policies which place an increasing value on student achievement. Regardless of why an enhanced interest in student achievement came to be a driving focus in schools, several large issues are at play when student achievement is discussed. One of these issues is the question of exactly what student achievement is or is not. A second issue is what factors directly and indirectly impact student achievement, specifically those factors related to building principals.

Leithwood and Jantzi (1998) conducted a study on the effects of distributed leadership and its impact on student engagement. Their premise for this study was to find out if this leadership style had distinct impact on student characteristics other than academic achievement.

These researchers chose student engagement as their focus due to its desirability as an outcome for students. Or more specifically because,

> it measures, directly and indirectly, educationally significant variables. For example, for many students, dropping out of school is the final step in a long process of gradual disengagement and reduced participation in the formal curriculum of the school, as well as in the school's co-curriculum and more informal social life. (pp. 12-13)

This focus on a student characteristic outside of academic achievement demonstrates the importance of other school related outcomes. Results of this study show that distributed leadership did not significantly impact student engagement. Indeed, other factors were found to have far greater influence on this variable, such as a student's family.

A second study investigating a student outcome other than academic achievement as it relates to leadership was conducted by Tornsen (2009). This study was conducted in 24 Swedish secondary schools. In Sweden students are measured on both academic and social outcomes. Results of this study showed that principals in the schools where students had high achievement in both academic and social domains were those who engaged in three distinct sets of actions. One of these sets included a high level of interaction with teachers. The second set was the focus on how teachers could help students achieve national objectives. The final set of actions included the principal's effectiveness at fostering a culture where teacher cooperation was greater than in schools with lower achievement.

While these two studies achieved different results, two important factors related to student achievement should be noticed. One, these two studies were conducted in different countries with different school structures. However, they were both able to demonstrate the varying ways in which school principals have an impact on student achievement when examined outside of academics. Two, they show in a small way the importance of understanding how "principals are responsible for student and school outcomes" (Tornsen, 2009, p. 49).

While Leithwood and Jantzi (1998) were not able to detect a link between distributed leadership and student engagement, Leithwood and Mascall (2008) found a significant correlation between collective leadership and student achievement in academics. In this study the authors found "that collective leadership influences student achievement through teacher motivation and work setting" (p. 544). Of these two mediating variables, work setting had the strongest correlation with student achievement. This finding falls directly in line with standard two for administrators, as outlined by the Interstate School Leaders Licensing Consortium (ISLLC). This standard states that an effective "education leader promotes the success of every student by advocating, nurturing and sustaining a school culture and instructional program conducive to student learning and staff professional growth" (ISLLC as cited by Murphy, 2005, p. 167). A review of the descriptors that follow this standard will show that working collaboratively, listening, and nurturing are implied actions necessary for a principal to meet the standard. Even a cursory review of Salovey and Mayer's (1997, 1990) definition of EI should bring to mind significant connections between this ISLLC standard their ability-based model of emotional intelligence.

Further evidence for the link between collective or distributed leadership and student achievement was found by Heck and Hallinger (2009). In their study, the researchers proposed a linear model of mediating variables that would lead from distributed leadership to increased student achievement in mathematics. Results of this study show that the greatest effect on student mathematical achievement was found in a path that began with distributed leadership, was mediated by the variable of teacher capacity, and connected to a growth in mathematical achievement (p. 681). In other words, distributed leadership had the effect of increasing teachers' capacity for mathematics instruction, which in turn increased student achievement in this area of

academics. This finding supports the premise proposed by many educational researchers and repeated in this article by Heck and Hallinger (2009) that; "leadership effects on learning are brought about indirectly through their impact on people, structures, and processes in the school over time" (p. 663). Southworth's (2004) thinking on this matter claims that effectual principals will make a conscious effort to work on their areas of influence, but will do so in an indirect manner (p. 120). Exercising influence in an indirect manner will require skills of emotional intelligence, specifically the ability to use emotional information to guide rational thinking. Salovey, Mayer, and Caruso (2002) describe the goal of one emotional intelligence program in the workplace as having the goal of leaders learning "the role of emotion in the workplace and gaining an awareness of how one's own emotional reactions and the emotions of others affect management practices" (p. 72). While the role of the principal has shifted away from strictly managerial practices, the reality of managing human resources still exists. Principals who operate from the emotional, or human side of management, may find themselves better positioned to do less managing and more influencing.

One area where principals can have influence is on quality instruction, which is addressed by Johnson and Uline (2005) in a discussion of the six ISLLC standards. In their discussion of standard two, they focused on the importance of two particular areas, clear and focused professional development and the amount of time a principal spent on instructional matters. Promoting quality instruction in a school that lacks either of these factors may be a difficult endeavor for a building principal. High quality professional development that is focused on the needs of students provides great benefit for the promotion of quality instruction. It was also found that this type of professional development is "a key strategy to (sic) helping teachers feel supported" (p. 47). Teachers who feel supported in their efforts are more likely to provide

students with the type of engaging and effective teaching they need for high levels of learning to take place.

The country of Finland has been widely recognized over the past two decades for the success of their system of education. While it is vastly different from the model used in the United States, it is clear that it is working for Finnish students. In fact, Finland is the third highest ranking country in literacy and science according to the year 2000 Program for International Student Assessment (Marshall and Oliva, 2010; Sahlberg, 2007). Two important connections may be drawn between the success of Finnish students and the importance of professional development. Sahlberg (2007) notes in her review of the Finnish education system that professional development centered on improving the practice of teaching and enhancing other areas of the profession is a key element in the success of their schools. In fact, ongoing professional development has played a part in the elevation of teacher standing within Finland's wider professional community. She asserts that teachers have gained a status in Finnish society relative to other professional level positions. This elevation of status is not afforded to teachers in all areas of the United States, but where it is, a greater number of teachers who feel supported in their work can be found; making a connection back to the idea of supported teachers found in Johnson and Uline's work.

The work of Graczewski et al. (2009) clearly illustrates how professional development relates to instructional leadership and is the core of what drives quality classroom instruction in many schools. When it comes to instructional leadership, time matters. The most successful schools that were observed in Johnson and Uline's work had principals who spent a great deal of time focused on instruction and learning. Dinham (2007) supports the notion that principals make the most significant impact on instruction when instructional leadership is their primary

focus. In his study of several Australian schools one of the common themes that arose was the connection teachers drew between their principal's leadership, the quality of their teaching and student achievement. Communicating a clear vision for the school and implementing policies and procedures to meet this vision were the most significant factors identified by Graczewski et al. (2009) in their study of the San Diego City Schools. Schools who had leaders that were identified as having the ability to promote these factors found themselves with higher student achievement and better teacher morale. This idea was supported by the finding that of the four measures of principal behavior used in the study, the way teachers viewed their principal's school vision had the highest correlation with student achievement (p. 77).

Owens and Valesky (2011) outline "five basic assumptions of effective schools" (p. 127). One of these assumptions states that;

> the school accepts responsibility for the success or failure of the academic performance of the students. Students are firmly regarded as capable of learning regardless of their ethnicity, sex, home or cultural background, or family income…Differences among schools do have an impact on student achievement, and those differences are controllable by the school staff. (p. 127)

The ideas that students are capable of learning and that the faculty of a school can control a certain degree of this achievement lead to the question of exactly who among the staff accounts for what portion of student achievement. Current literature shows that teachers account for a great deal of the variance in student achievement. While the link between student achievement and principal behaviors or characteristics is less direct, research does exist in this area.

Mackey, Pitcher, and Decman (2006) studied four urban elementary schools to see how principal behavior effected student achievement. They found that the two principals who were most actively engaged in the instructional process had the highest student gains in reading. Additionally, it was found that the school whose principal had the most background experience and instructional engagement had the most significant student gains. These results were similar

to those found by Ylimaki (2007). In her study she found that principals with the strongest "pedagogical knowledge and capacity building skills" led the schools most effective at improving student achievement (p. 17). These studies serve to show that building principals do indeed have an impact on student achievement.

Witziers, Bosker, and Kruger (2003) conducted a meta-analysis of empirical research focused on the connection between leadership and achievement. Their findings highlight three important points in this discussion. First, the researchers found that studies in which leadership was viewed as "a one-dimensional concept" were not able to determine any appreciable relationship between leadership and student achievement (p. 409). Second, they did find that certain principal behaviors do have an appreciable impact on student achievement, specifically "supervision and evaluation, monitoring, visibility, and defining and communicating mission" (p. 410). Third, the authors argue that it may be more important to understand why principals do what they do, than it is to know what they do (p. 416). These findings support the notion that principal leadership is a complex topic and cannot be fully understood unless mediating factors that impact leadership effects are investigated as well. With this work, Witziers et al. (2003) also lend credibility to the connection between principal leadership and emotional intelligence. The principal behaviors that showed the highest correlation with student achievement all involve building and maintaining effective relationships. If supervision and evaluation of teachers or communicating a school mission are to be done effectively, the principal must have a solid relationship with the other members of the school community. Perceiving, understanding, and acting on emotions are cornerstones of emotional intelligence and play an important role in any relationship. In their conclusion the authors suggest that knowing why principals behave in a

given manner is important to further research. It is distinctly possible that an investigation of principals' emotional intelligence may reveal important answers to this question.

Hoadley, Christie, and Ward (2009) found that one of the strongest indicators of sustained student achievement was the level of "positive relations between teachers and managers" (p. 383). In their article on "the effects of school leadership on student achievement," Nettles and Herrington (2007) focus a great deal on the literature regarding the relationships principals have with their teachers, students and community. Seven areas of transformational leadership are discussed in this article, with these seven being broken down into thirty-seven subcomponents. Of these thirty-seven items, twenty-four relate directly to Salovey and Mayer's (1990) definition of emotional intelligence. De Mayer, Rymenans, Van Petegm, Bergh, and Rijlaarsdam (2007) focus on choosing research methods that are capable of looking through the mediating variables of a building principal's effect on student achievement. One of these variables is a school's "human capital" and a principal's behavior and attitudes toward this resource (p. 129). Caldwell (2010) uses the term "spiritual capital" to refer to this same concept. This idea is defined as "the strength of moral purpose and the degree of coherence among values, beliefs and attitudes about life and learning" (p. 91).

While student achievement in academic areas is not the only measurable outcome for schools, or necessarily even the most essential, it is nonetheless an outcome of importance. Principal behavior is widely accepted as having a small, yet significant impact on student achievement (Hoadley, et al., 2007). Furthermore, this impact is often moderated by intermediate variables (De Mayer, et al., 2007). The purpose of this proposed study is to examine the emotional intelligence of building principals' and its effect on student achievement. As mentioned previously, many factors (intermediate variables) of transformational leadership can

be directly related to the definition of emotional intelligence. To date, there are currently no studies that have sought to examine this relationship of a building principal's emotional intelligence to student achievement. If a significant relationship does exist, there is a substantial opportunity for these findings to be applied to pre-service training for aspiring principals and professional development for acting principals as they seek to enhance the learning and achievement of their students.

Leadership for Learning

Blase and Blase (2004) found that a distinct set of principal behaviors "dramatically and positively impacted teachers' feelings and attitudes, thinking, and instructional behavior" (p. 162). Several connections can be drawn between the outcomes identified in the Blase and Blase (2004) study and Salovey and Mayer's (1997) definition of emotional intelligence. Clearly there must have been the recognition of emotion, rational thought about the emotion, and action taken based on the processing of emotional information, in order for teachers to have been affected in the manner described. Another connection that may be drawn lies between the "feelings and attitudes, thinking, and instructional behavior" (p. 162) found by Blase and Blase (2004). In other words, teachers were able to translate positive feelings about leadership effects into better instructional practices. Multiple theories of motivation would describe this phenomenon in different ways. However, each would ultimately say that the teachers' need for psychological wellbeing had been met (Bandura, 1986; Deci & Ryan, 2008; Eccles & Wigfield, 2002). In order to best understand the manner in which this can occur, it is helpful to examine the type of leadership that stimulates learning.

Multiple forms of leadership exist and there is no one correct form of leadership. In fact it is commonly accepted that a mix of leadership practices are exercised by the most effective

leaders. However, one promising form that is currently at the forefront in the field of leadership is transformational leadership. Transformational leadership does not have a commonly accepted definition, but it could be said that it involves the use of practices that enhance the abilities of those individuals a leader works with (Denessen, Nguni, & Sleegers, 2006). Blase and Blase (2004) make the case that "facilitative, supportive actions by principals as instructional leaders have powerful effects on classroom instruction" (p. 5). These statements used to define transformational leadership encompass the idea of this leadership model, but do not address the specifics. It is important to have an understanding of core strategies and behaviors that underlie transformational leadership.

As mentioned earlier, shared decision making as a form of distributed leadership is considered to be a hallmark practice of effective transformational leaders. Blase and Blase (2004) cite the freedom of teachers to make professional decisions as one of the key traits revealed by their study of effective educational leaders. This result is echoed by research conducted by Leithwood (2007) and Schoo (2008). Leithwood (2007) argues that leaders who engage in shared decision making build the capacity of an organization. This type of capacity building creates significant and lasting change. Schoo (2008) cites evidence that leaders make the difference in how an organization gets from point A to point B. The use of shared decision making is one of the elements effective leaders use to make this happen.

Effective educational leaders also engage in the transformational practice of setting clear goals and developing organizational commitment. Cooper et al. (2002) make a strong case for the connection between constructivist theory and transformational leadership. Constructivist theory as it relates to leadership indicates that effective leaders create structures for collaboration and create a common vision for their school. Denessen et al. (2006) found that in their study of

Tanzanian schools, transformational practices of school leaders did indeed increase organizational commitment. Another international study conducted by Dinham (2007) highlights the importance of organizational commitment. In his words "these principals give a lot and expect a lot" (p. 269).

If we accept the idea that only teaching contributes more to student learning than school leadership; Southworth (2009) asks the question of how much can be achieved if leaders and teachers work together (p. 93)? Several core components of transformational leadership have been discussed, but another vital component, collaboration, remains. Marzano et al. (2005) found in a meta-analysis that three collective sets of principal behaviors that foster collaboration, significantly correlated with student achievement. These sets of behaviors were communication, culture, and visibility at an *r* of .23, .25, and .20 respectively (pp. 42-43). Of these three, culture and visibility best fit the definition of collaboration. Culture is described as fostering "shared beliefs and a sense of community and cooperation" (p. 42). Principals who have "quality contact and interactions with teachers and students" meet Marzano et al.'s (2005) description of visibility (p. 43). One may wonder what 'quality' and 'community' mean in the previous definitions, and this is an important question to answer. DuFour and Eaker (1998) provide insight into the answer and lay a foundation for principals to build on when they say;

> to have the greatest impact, principals must define their job as helping to create a professional learning community in which teachers can continually collaborate and learn how to become more effective. Principals must recognize that this task demands less command and control and more learning and leading, less dictating and more orchestrating. (p. 184)

From these words it may be determined that a principal's role is one in which there is an intense focus on doing the things that will support shared decision making, clear goal setting, and collaboration. Schools where these ideas are not only present, but actively in use, are schools

where student learning takes place. Not only will student learning take place, it will take place well.

Professional learning communities. Dufour and Eaker (1998) are commonly associated with the term professional learning communities, but they are certainly not the only individuals interested in this concept. One hallmark of a profession is its ability to grow both theoretically and in more practical and applicable ways. Education holds a unique position in the continuum of learning, because of its focus on learning. Just as, if not more important, than why professional learning takes place in schools, is how. Fullan (2008) claims, that schools are no better, than the teachers who are employed within them. Focusing on factors other than professional development is not likely to increase the bottom line for a school, which is student learning. Understanding that principals have significant impact on students and teachers, and understanding avenues such as emotional intelligence, through which this impact occurs are important steps in learning about and evaluating school leadership. Examining the professional learning community model takes this one step further by providing an example of how these elements can come together to effectively benefit students and their academic achievement.

Thompson, Gregg, and Niska (2004) based their article on how professional learning communities are played out in middle school education. They found that each of the schools within their study had aligned themselves with Senge's (1990) "five disciplines of a learning organization" (Thompson et al., 2004, p. 3). As a result of this alignment, the schools were making progress in two areas, faculty collaboration and student achievement. Furthermore, the schools that were found to be most closely aligned with the five principles appeared to be making the most progress in both areas. The importance of these finding are that faculty

collaboration has a significant impact on student achievement and that an increase in the first variable will most likely result in an increase of the latter.

Graham (2007) also completed a study of PLC's in the middle school setting and achieved results similar to Thompson et al. (2004). This study was premised on the idea that principals will have the greatest impact on student achievement when they focus on increasing teachers' capacity for quality instruction. Teacher interviews revealed a significant connection between engaging in the PLC process and an enhancement of their teaching practices. They indicated a shift from focusing solely on what students should be learning to focusing on whether or not they actually learned it, and what they could do to increase learning. Another key finding in this study were the teacher elements that made the PLC approach successful. Graham (2007) states that, "the idea of professional collaboration and support was one of the strongest themes to emerge from the interviews" (p. 11). This finding supports Southworth's (2009) claim that in effective schools, "classrooms will not be private places, but venues visited by colleagues looking to develop themselves and to play a part in developing others" (p. 103).

The previous two examples highlight the positive results that can take place in schools that align themselves with the PLC model. What may be just as important are the steps principals took to ensure these results were achieved. Of the factors that contributed to successful PLC implementation, principal leadership was found to be the strongest in both schools (Thompson et al., 2004; Graham, 2007). Specific examples of how principals demonstrated their leadership included; creating a school schedule that allowed time for collaboration and supporting teacher initiated professional development. Both of these actions fall in line with how DuFour and Eaker (1998) describe a principal who fosters a PLC in their school.

With collaboration at the heart of the PLC process, principals must be prepared to address the challenges that surround this activity. Sheppard and Brown (2009) found that a district level administrator was able to overcome obstacles related to collaboration through a strategic series of actions. By implementing collaboration with key groups in the district, other groups began modeling these practices and the initial efforts had a compounding effect. Similar efforts could be undertaken by a principal at the building level. By building the collaborative capacity of small groups, these groups can in turn influence other groups of teachers. In fact, Mullen and Hutinger (2008) suggest the use of study groups to accomplish this task. They recommend this approach because it allows the principal to become highly engaged with their staff in examining core issues of teaching and learning in their school (p. 280).

Scheduling was cited in the two middle school examples as a way in which their principal supported the PLC process. If teachers don't have the time to collaborate, they are not likely to. Structuring the school schedule so that teachers have common collaboration time is essential to ensuring collaboration takes place (Mullen & Hutinger, 2008; Lujan & Day, 2010; Supovitz & Christman, 2005). Another important step principals should take in supporting collaboration is to help their staff develop the skills necessary for collaboration to take place. Working collaboratively and collegially is a new concept to some and can be challenging for others. Two of Lencioni's (2002) challenges that teams face are trust and conflict. If team members don't trust each other, they are not likely to collaborate well. In addition, a fear of conflict stifles the flow of ideas. Teachers must trust that they are working toward a common goal and that conflict is not meant to attack an individual, rather it is used to stimulate discussions and ideas that can improve current practices. Morrison (2008) found that nurse managers with higher levels of emotional intelligence were more likely to use collaborative skills to handle situations of

conflict. Morrison (2008) supports Lencioni's (2002) notion of healthy conflict in her statement, that "when conflict is approached with high levels of EI, it creates opportunity for learning effective interpersonal skills. If conflict is handled appropriately it can enhance productivity (p. 981)." Further linking group work with emotional intelligence, Jordan and Troth (2004) found that individuals with higher emotional intelligence performed better on problem solving tasks and that teams with overall higher levels of EI performed better on problem solving tasks. Probably the most important finding however was that teams in this study "with higher emotional intelligence used collaboration as their preferred style of conflict resolution" (p. 208).

Lujan and Day (2010) suggest that training on the PLC process be given to all staff members at a school (p. 16). This suggestion is made with the intent that everyone at the school will operate from the same level of understanding about their collaboration process. Supovitz and Christman (2005) further suggest that principals provide learning communities within a school the opportunities to engage in meaningful professional development together (p. 651). This serves the purpose of enhancing collaboration by giving a group a purpose for collaboration, a chance to focus on a topic that is professionally meaningful and has practical implications for their work. As the instructional leader of a school, the principal is uniquely situated for applying emotional intelligence skills with their staff in a manner that enhances the school environment.

If a principal is successful in structuring a school schedule, building trust, lowering a fear of conflict and provides a meaningful focus for the group, much work toward fostering collaboration will have been completed. In all of this work, the necessity of EI may be inferred, but specific connections can be made. Schoo (2008) claims that how the group perceives a situation is much more important than how the leader perceives it (p. 43). Perception of emotion is one of the key components of EI. When helping group members – teachers in a school –

overcome issues of trust or learn how to have healthy conflict, a principal must be aware of the emotions taking place within the group. Using emotional information to guide thinking is another key component of EI. Simply realizing that teachers may be upset, happy, etc. isn't good enough. Effective principals will be able to exercise EI in a manner that helps them make appropriate choices based on the group's emotion(s). Indeed, Oginska-Bulik (2005) found that in a study of "human service workers," teachers had the highest level of stress in a group that also included firefighters and police officers (p. 173). The majority of this job related stress was due to two factors, one of which was "social relations" (p. 173). While these findings present a grim picture, the upside is the additional discovery that individuals with high EI were less likely to feel stressed and/or experience symptoms of depression (p. 170). As noted previously, the building principal is uniquely situated in a position to address this issue. Who better than the principal to foster a climate and culture within a school that enhances teachers' relationships with other teachers, students, parents, administration and community. Building a collaborative capacity within a staff that promotes quality teaching and learning is considered a core function of the building principal and clearly engages the abilities associated with emotional intelligence.

Conclusion

Emotional intelligence as defined by Salovey and Mayer (1997) is a distinct form of human intelligence that is proposed to exist in four branches; perception, facilitation of thought, understanding, and regulation (p. 37). Through these four branches, individuals are able to follow a cognitive continuum that begins with recognizing or perceiving emotional information and ends with this information's use to facilitate situation appropriate action. While this is an oversimplified version of emotional intelligence, it does allow the mind to develop scenarios in which this information may fit, specifically in regard to effective leadership. An effective leader

is often good at listening not to just what is said, but how it is said. This individual is also often skilled at thinking about what they are hearing and what that means for them, the speaker and the group as a whole. Furthermore, skilled leaders often take that information one step further and act upon it in a manner that best fits the situation. Peter Senge, in regard to effective leadership, is described as having said; “people with high levels of personal mastery cannot afford to choose between reason and intuition, or the head and the heart, anymore than they would choose to walk on one leg or see with one eye” (Cooper, 1997, p. 33). In other words, effective leaders, including school principals, must have other skills to draw from besides those that are derived from a purely analytical and managerial standpoint.

Leithwood (2007) describes a type of leadership that engages the skills of emotional intelligence, transformational. In this form of leadership, individuals are guided and supported in their pursuit of common organizational goals. Crippen (2004) and Shields (2004) take this ideal further, with descriptions of servant leadership and transformative leadership respectively. In these forms of leadership, individuals inside and outside the group grow personally and as part of a collective. Regardless of which leadership style may be best suited to a given situation, two things remain clear; transactional leadership alone will not produce the educational results schools desire to achieve, and the skills of emotional intelligence are vital to any of these three leadership styles. The evidence is clear that principals impact a child’s educational achievement through their interaction with teachers and other members of the school (Blase & Blase, 2004; Heck & Hallinger, 2009; Leithwood & Mascall, 2008; Mackey et al., 2006; Tornsen, 2009; Witziers et al., 2003). When principals engage in the processes of instructional supervision, goal setting, communication of vision and mission, collaboration, and various forms of distributed

leadership; there exists an essential need for skills which address the thoughts and feelings, which are a very real and important part of each individual in an organization.

Due to the commonly accepted notion that a principal's effect on student achievement is mediated by a multitude of variables, it may be argued that understanding these variables is important to understanding effective leadership. Because a principal engages in close work with many individuals and each individual will bring with them a unique perspective and set of emotions; there is reason to believe that a principal's emotional intelligence is a mediating variable worth investigating. This study is designed to determine the nature of the correlation between a principal's emotional intelligence and student achievement. Results of this study were expected to be, and were, useful in addressing the training of pre-service administrators and enhancing the skills of practicing administrators.

CHAPTER 3

METHODOLOGY

Chapters one and two provided a framework for the investigative work to be completed as outlined in this chapter. As cited previously, there is evidence that a principal's effect on student achievement takes place through mediating variables, and that emotional intelligence may be an important mediator of which to gain a better understanding. Five research hypotheses looking at the nature of the correlation between a building level principal's emotional intelligence and student achievement were originally formulated. A hierarchical linear regression model was used to test the first four, with a T-test being used to test the fifth hypothesis. Chapter three reviews the relevant research hypotheses and discusses the other key elements of the research design, including; participants, measures, and procedures used for data collection and data analysis.

Research Hypotheses

The following research hypotheses are the same as those introduced at the end of chapter one. However, null hypotheses have been added for H_1, H_2, and H_5. The null for H_2 is applicable to hypotheses three and four as well. This is further noted in italics at the end of H_{02}.

$H_{01:}$ A significant* correlation does <u>*not*</u> exist between a pk-12 building principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) for communication arts and mathematics in grades 3, 8, and 11; when factors of SES, race/ethnicity, and gender are held constant.

H_1: A significant* correlation does exist between a pk-12 building principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT)

and student achievement as measured by the Missouri Assessment Program (MAP) for communication arts and mathematics in grades 3, 8, and 11; when factors of SES, race/ethnicity, and gender.

H_{02}: A significant* correlation does *not* exist between an elementary principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) for communication arts and mathematics when examined at grade 5, in addition to controlling for SES, race/ethnicity, and gender. *Important Note: Null hypothesis H_{02} is applicable to hypotheses 3 and 4, where grades 8 and 11 are substituted for grade 5 respectively.*

H_2: A significant* correlation does exist between an elementary principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) for communication arts and mathematics when examined at grade 5, in addition to controlling for SES, race/ethnicity, and gender are held constant.

H_3: A significant* correlation does exist between a middle grades principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) for communication arts and mathematics when examined at grade 8, in addition to controlling for SES, race/ethnicity and gender are held constant.

Originally hypotheses H_2 and H_3 were proposed separately. Due to the continuous nature of the scale on which the MAP test is measured, and in an attempt to increase sample size in a statistically valid manner; these hypotheses were combined. The new hypotheses is labeled as H_2 modified.

H_2 modified: a significant* correlation does exist between a middle grades and elementary principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) for communication arts and mathematics when examined at grades 5 and 8, when SES, race/ethnicity, and gender are held constant.

H_4: A significant* correlation does exist between a secondary principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) for communication arts and mathematics when examined at grade 11, in addition to controlling for SES, race/ethnicity, and gender.

H_5: There will be a significant** difference between the communication arts and mathematics achievement scores of students who have a principal with an *EQ* score in the top third of study participants as compared to students with principals whose *EQ* score is in the bottom third of study participants.

H_{05}: There will be no difference between the communication arts and mathematics achievement scores of student who have a principal with an *EQ* score in the top third of study participants as compared to students with principals whose *EQ* score is in the bottom third of study participants.

*Correlations will be considered significant at the .05 level.

**Differences will be considered significant at the .05 level.

Participants

Participants were drawn from building level principals within the metropolitan area of two large mid-western cities. Individuals fitting this description were the head principal of their building. Purposeful sampling was used to select participants for this study. Only individuals

who have at been the head principal in their building for three years or more were selected to participate in the study. A letter outlining the purpose, methods and timeline of this research was mailed to building principals in a combination of nine urban and suburban school districts that are located within the metropolitan area of two large Midwestern cities. Interested principals were asked to respond to the letter by phone, email or in writing. From the pool of interested participants 21 principals each, from the elementary (grades k-5), middle school (grades 6-8), and high school levels (grades 9-12) will proposed to be randomly selected to participate in this study, for a total of 63 participants. As needed, further mailings were made to principals in other districts in order to achieve a minimum of 21 principals in each grade span.

The choice of 63 participants was based on the use of the g-power program designed by Faul, Erdfelder, Lang, and Buchner (2007). Using a hierarchical linear regression model with five predictor variables, g-power was asked to calculate a sample size necessary to detect a moderate effect size of at least .35 when $\alpha = .05$. The output for the g-power calculation can be seen in figure 2. As mentioned earlier, the sample size of 63 was not achieved. The sample size in this study ended up being 18. A total of 107 invitations to participate in this study were made, with 25 candidates responding who met the criteria for study participation. Of the 25 eligible respondents, 18 ultimately completed the study.

F tests - Linear multiple regression: Fixed model, R^2 increase

Analysis: A priori: Compute required sample size

Input:	Effect size f^2	= 0.35
	α err prob	= 0.05
	Power (1-β err prob)	= 0.95
	Number of tested predictors	= 5
	Total number of predictors	= 5
Output:	Noncentrality parameter λ	= 22.0500000
	Critical F	= 2.3766845
	Numerator df	= 5
	Denominator df	= 57
	Total sample size	= 63
	Actual power	= 0.9524891

Figure 2 Sample size calculation using g-power (Faul, Erdfelder, Lang, & Buchner, 2007).

Permission and Informed Consent

Permission to approach building principals in each of the nine school districts was gained through each districts approved policies for participation in educational research. A letter was mailed to the director of research and assessment, or corresponding position within each district (Appendix A). This letter outlined the research to be conducted, timeline, summary of anticipated benefits and risks and my contact information. Once permission to solicit participation from principals within a given district was obtained, the aforementioned principal letter (Appendix B) was mailed. Upon receipt of interested study participant responses,

principals were to be randomly selected from the eligible population. In the end, due to lack of principal responses, all eligible principals were included in the study. All study participants completed and returned an informed consent form(Appendix C). The consent form outlined the purpose and methods for this research, along with the assurance that all data collected will be kept confidential by the researcher. Collected data is disseminated in a confidential manner as well. Study participants were made aware of any anticipated benefits or risks this research poses to them and that they may withdraw from this study at any time without consequence. The principal letter and consent form were approved by the dissertation committee and UMKC's IRB committee as a part of dissertation process.

Ethical Considerations

There are two main ethical considerations in this research proposal. One, emotions and achievement scores are inherently personal. This research measured these aspects in eighteen individuals and their corresponding schools. Conducting the research and disseminating research results must protect the individual study participants as well as the schools where data was gathered. One manner to ensure this happened was to report all study data in the aggregate, with no mention of specific schools or building principals. The second ethical consideration present is to ensure study participants are aware of and given the tools needed to accurately use the scores gained from the MSCEIT measure. Study participants were provided with their scores on this measure, along with literature that will help them understand and utilize these results.

Measures

Three measures were used in this research study. One, a survey collecting demographic information (Appendix D) will be given to each participant. The survey consists of six fill in the blank questions. The questions will help provide a general profile of the study participants and

their schools. Four questions will be directed to the participant; gender, level of education, years of experience, and the type of building they work in (i.e. elementary, middle, or high school). Two questions are directed at the participant's school; percent of students in the building receiving free and reduced lunch and the type of AYP reportable sub-groups.

The second measure used was the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). This test assessed the Emotional Quotient (EQ) of building principals. Bracket and Mayer (2003) have shown the MSCEIT to have acceptable levels of convergent, discriminant and incremental validity for the measurement of EQ. Furthermore, Mayer, Salovey, Caruso, and Siteranios (2003) have found that "the MSCEIT achieved reasonable reliability, and confirmatory factor analysis supported theoretical models of EI" (p. 179). Test-retest reliability for this measure was found in one study to be .86 (Bracket & Mayer, 2003, p. 204). This measure of EQ was delivered online, automatically scored and the results are delivered to the test administrator.

The third sets of measures used in this study were the Missouri Assessment Program and End of Course tests in the content areas of communication arts and mathematics. This is a standardized testing program used to measure academic achievement near the conclusion of each academic year. All Missouri public school students in grades three through eleven complete between two and three of these test sections. According to Appendix D in the supporting documents for Missouri's Assessment Program, the MAP tests have been designed by CTB and the state of Missouri using rigorous test construction standards (p. 3). Acceptable levels of consequential validity along with strong levels of factor analysis and inter-rater reliability have been found for each section of the MAP (p. 4). Cronbach's alpha for each of the three content area tests are equal to or greater than .90 (CTB, 2009, p. 146). Discriminant validity has also

been found between content area tests. Several of the tests share high correlations, but CTB finds that this is due to test structure rather than test content (CTB, 2009, p. 154). For example, constructed response items require students to use written language to express content knowledge of mathematics or science, hence a .75 and .77 correlation between communication arts and mathematics and science respectively (p. 168).

Data Collection

Data collection took place in three steps. First, selected study participants were contacted via standard mail and email to discuss the requirements for completing the appropriate measures. Secondly, principals were emailed a link and necessary information to complete the online version of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT). Scores from the administration of each test were reported to me by the test publisher, Multi-Health Systems. The score report contained an overall *EQ* score as well as individual scores from each subscale of the test. This data was entered into PASW statistics software for use during the data analysis portion of the research design.

Third, student achievement data was collected from Missouri's Department of Elementary and Secondary Education (DESE). Disaggregated student achievement data at the building level is publicly available by grade level on DESE's website. Disaggregated data is data that is broken down by various characteristics. For the purpose of this investigation, test data for the Spring 2010 administration of the communication arts and mathematics portions of the MAP test will be used. This test data will be disaggregated by socioeconomic status (SES), race/ethnicity, and gender.

This information was collected for students in grades 5, 8, and 11. These grades were selected because of their representation of a cumulative knowledge range and their designation as benchmark years in MAP testing. Grade 5 students are likely to represent the breadth of elementary academic content knowledge, as they are at the upper limit of the elementary level. The same is true of grades 8 and 11. Additional school level information necessary to complete the proposed analysis will be submitted in a data request to DESE.

Data Analysis

The purpose of the statistical analysis was to detect the presence and significance of a correlation between a building principal's EQ and student achievement within that school. As members of the educational profession seek to enhance their practice, better understandings of the ways in which educational leaders impact students is an important area of focus.

Descriptive Analyses

Descriptive statistics are those that describe the data, such as the mean, median, and mode (Runyon et al., 2000). Descriptive statistics were used in three distinct areas within this research. One, it was helpful to have an understanding of the relevant characteristics present within the sample. A table of the mean years of experience, level of education, and educational setting (elementary, middle, or high school) for the building principals provides a context for establishing the population to whom the research results may be generalizable. This type of table is also be used to describe the schools from which MAP data was drawn. This table shows the total number of schools in each level and the corresponding average of students receiving free and reduced lunch and average number of each AYP reportable subgroup. The tables referred to in this paragraph may be found in chapter four on pages 103, 105, and 106.

The second area in which descriptive statistics were used is in the display of data obtained from the MSCEIT and MAP tests. Graphic displays that show the mean scores and standard deviations for the overall group of building principals as well as elementary, middle school, and high school groups will be given. This data will also be calculated and reported graphically for MAP test results. As mentioned in the previous paragraph, these tables may be found in chapter four.

The third area in which descriptive analyses will be used is in calculating the correlation coefficients between student achievement and the variables of the building principal's EQ, SES, race, and gender. Pearson's product moment correlation coefficient will be the equation used to calculate these statistics. This statistic is represented by *r* and tells us the connection between two variables. Correlational data provided a picture of how each of the independent variables correlates with the dependent variable of student achievement individually. Additionally, the correlational data was essential to the calculation of later inferential statistics.

Inferential Analyses

Research question one asks if there is a statistically significant correlation between a building principal's EQ and student achievement. A student's SES, race/ethnicity, and gender have all been shown to significantly impact academic achievement as measured by standardized tests. When considering these factors to determine if a building principal's EQ is also correlated with student achievement, it will be necessary to use a multiple regression model. According to Gall et al. (2007) this type of model allows the researcher "to determine the correlation between a criterion variable and a combination of two or more predictor variables" (p. 353). For hypothesis one, a hierarchical multiple regression was used. The first step included the total percentage each of students of color, students receiving free and reduced lunch and percent

female. The second step included the principals' measured emotional intelligence or EQ. For each step the R^2 value was calculated. This analysis produced a result explaining the amount of variance in student achievement that can be explained by a principal's EQ when controlling for student characteristics of SES, race/ethnicity, and gender.

Research hypotheses two, three, and four are similar to hypothesis one. However, hypothesis one looks at the collective group of building principals; while question two examines the correlation between the principal's EQ and student achievement at grades 5, 8, and 11 specifically. A hierarchical multiple regression model was used in the analysis of data for these questions as well. As with question one, this was done to determine the amount of variance in student achievement that can be accounted for by the principal's EQ. Step one in this analysis began where analysis of hypothesis one ended. In other words, this step include each variable as they are entered in question one. Step two included the variable of grade level in the equation. This resulted in the use of two variables, one each for grades 5 and 8. Grade 11 was left out, as it is the dummy code. The overall change in R^2 was also calculated to see if there is a statistically significant difference from the result of level one when grade level is added as a variable. Step number three multiplied grade level by the principal's measured EQ for each separate grade level. The difference between R^2 in steps two and three was then calculated to determine the amount of variance a principal's EQ contributes to student achievement at each level.

One further inferential tests was used, a T-test for independent samples. The T-test for independent samples was conducted to determine if there is a significant difference between student achievement scores between principals whose *EQ* is in either the upper or lower third of principal *EQ* scores, 67^{th}-100^{th} percentile and 0-33^{rd} percentile respectively.

Conclusion

Witziers et al. (2003) describe a method of educational research involving a principal's effect or impact on school level factors, which they term as a "reciprocal effects" model (p. 401). This model is defined as one in which "relationships between the principal and features of the school and its environment are interactive. This model implies that school leaders adapt to the organization in which they work, changing their thinking and behavior over time (pp. 401-402)." The terminology used in Witziers et al. (2003) description of this type of research fits well with the topic of emotional intelligence and the basis of the research conducted in this study.

The ability to monitor one's own feelings, the feelings of others, and use this information to guide rational and adaptive behavior are hallmarks of EI theory (Bar-On, 1997a; Goleman, 2006; & Salovey & Mayer, 1997). As principals build relationships with their staff, students, parents and community members they not only "adapt" to the schools, they shape them as well (Witziers et al., 2003, p. 402). Principals who are adept at the adaptation and shaping process must have skills and knowledge related to broader systems processes than simply the managerial aspects (Fullan, 2005). The methods outlined in chapter three were designed to elicit information regarding the principal characteristic of emotional intelligence as a unique knowledge set; that may distinguish some individuals from others, in regard to the school outcome of student achievement in communication arts and mathematics. While these methods may not be used to infer causation, they may shed light onto an important manner in which principals may influence the schools in which they work.

CHAPTER 4

RESULTS

In order to determine the effect, if any, that a building level principal's total emotional intelligence score has on student achievement in Communication Arts and Mathematics, several statistical tests were conducted on the data collected from the sample. In this chapter two main areas of emphasis will be covered. First a detailed description of the final sample for this study will be provided. Secondly, and most important, the results of several statistical tests conducted on the sample data will be delivered. Through these two sets of information the results of the research hypotheses presented in chapter 3 were discovered.

This study employed the use of two different statistical tests, hierarchical linear regression and the T-test. The majority of this study is centered around the use of hierarchical linear regression as defined in previous chapters. Using this statistical test, several models were created and tested in research hypotheses one through four, as well as H_6. In H_5 a T-test was employed to determine if there was a statistically significant difference between the test scores of students who had a principal in the top or bottom third of study participants. The top and bottom third were determined based on total emotional intelligence scores. With 18 study participants this meant that the top third included the six principals with the highest total emotional intelligence score and the bottom third included the six principals with the lowest total emotional intelligence scores. Results of these statistical models/tests revealed small, but statistically significant findings.

Not only were the findings of the conducted tests statistically significant, they also provide additional empirical evidence to the current body of educational research. In this election year, education is one of the leading issues being discussed. The Missouri legislature is currently

debating House Bill 156, which would tie teacher and administrator evaluation to student performance in the form of achievement test scores. Political discussion on the issue of student achievement provides an impetus for quantifying and understanding factors that impact student achievement. More significantly however, the need for continued empirical research on factors that impact student achievement is driven by the importance of providing all students with a high-quality educational experience. This study was designed to inform the learning of pre-service school leaders and the practice of those individuals currently in school leadership roles. Chapter four will provide empirical data relating to the findings of this study in addition to providing empirical evidence useful to the practice of aspiring and current educational leaders.

Description of the Sample

The sample size included 18 building level principals and their corresponding students in grades 5, 8, or 11. While only 18 building principals were used in this study, these 18 principals represent a total of 4,251 student scores in Communication Arts and Mathematics on either the MAP (Missouri Assessment Program) or EOC (End of Course) exams. Detailed descriptions of the principal and student samples are provided in this section for two important reasons. One, the descriptive data provided an overall picture of the demographic make-up of the study sample. This is useful in determining the type of population that the study data may be generalizable to. Gall et. al (2007) take great care to mention that results of a study should be generalized to a larger population with care (p. 389). In order to help the reader accurately determine the population to which these study results can be generalized it is imperative to have a clear understanding of the population from which the results were derived. The second reason why a detailed description of the study sample is important is because it outlined the raw data that was used as the basis for further statistical analysis. By understanding the demographics and

foundational data presented within the study sample, the reader gains a better understanding of what the study results ultimately may or may not reveal.

Building Principals

As mentioned previously, this study included 18 building principals. The principals were derived from a sampling frame that included 113 building principals in nine school districts from the metropolitan area of two large mid-western cities. These school districts were chosen because they represented a diverse range of student ethnicities and socio-economic backgrounds. Of the 113 building principals that were invited to participate in the study, 32 responded with completed informed consent forms and demographic data sheets. From these 32 responses, 25 principals fit the criteria for building principals in this study. The two determining criteria were for a principal to represent a building in which they had students in either grade(s) 5, 8, or 11, and to have been principal within that building for at least three years. Of the 25 respondents who fit these two criteria, 18 ultimately completed the study. Study completion was determined by participants who took the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT).

The 18 building principals who met the criteria for and completed the study represent a fairly diverse demographic. Of the 18 participants, six were male and twelve were female. Years of administrative experience and experience within their respective schools for this sample ranged from 3 years to 21 or more. The level of education for these principals also varied widely, with principals representing education from the Master's to Doctorate Level. It is also important to note that there were 15 elementary/middle schools represented and 3 high schools. More detailed information on each of these demographic areas can be found in table 1.

Table 1

Principal demographics

Gender			School Level			Level of Education		
	N	Percent of Sample		N	Percent of Sample		N	Percent of Sample
Male	6	33.33%	Elementary/Middle	15	83.33%	Masters	1	5.56%
Female	12	66.66%	High School	3	16.67%	Masters +	1	5.56%
Total	18			18		Specialist	3	16.67%
						Specialist +	5	27.78%
						PhD/EdD	8	44.44%
						Total	18	

Years of Administrative Experience			Years as Building Principal		
	N	Percent of Sample		N	Percent of Sample
3 to 5	2	11.11%	3 to 5	10	55.56%
6 to 8	3	16.67%	6 to 8	4	22.22%
9 to 11	4	22.22%	9 to 11	2	11.11%
12 to 20	7	38.89%	12 to 20	2	11.11%
21+	2	11.11%	21+		

Principal scores on the MSCEIT are delivered in each of the four branches of emotional intelligence as proposed by Salovey and Mayer (1997). However, for this study it is the principals' total emotional intelligence score that is of interest. The mean MSCEIT score for this sample was 96.78, with the median score being 97.05 and the standard deviation of scores being .19. This information can also be found below in table 2, with an additional breakdown of scores by building level. The descriptive statistics for the whole group provide a much more unified picture of the data than that which is gathered from an examination of the data when it is broken down by building level.

Table 2

Building principal total MSCEIT scores

Total MSCEIT Scores		Total MSCEIT Scores by Building Level		
Mean	96.78480564		Elementary/Middle School	High School
Median	97.05503681	Mean	100.20	79.70
St. Deviation	0.191082297	Median	93.36	78.52
		St. Deviation	16.44	2.50

Student Sample

The student sample in this study was derived from the students in each of the 18 building principal's schools. These students are in either grades 5, 8, or 11. Students in grades 5 and 8 completed the MAP test in both Communication Arts and Mathematics, while the students in grade 11 completed the EOC for Communication Arts and Mathematics. In grade 11 Communication Arts represents English II and Mathematics represents Algebra I. The student sample reflects a wide range of ethnicities and socio-economic backgrounds.

At the elementary/middle school level there were 1328 students who completed the Communication Arts MAP test and 1327 that completed the Mathematics MAP test. At the high school level there were a total of 1010 students completing the EOC for Communication Arts and 585 completing the EOC for Mathematics. Tables 3 and 4 below provide a complete demographic profile of the students completing each of these exams.

Table 3

Student MAP demographic data

Communication Arts			Mathematics		
	N	Percent of Sample		N	Percent of Sample
Male	713	53.68%	Male	717	53.57%
Female	615	46.31%	Female	610	45.96%
White	621	46.76%	White	615	46.34%
Black	664	50.00%	Black	667	50.26%
Asian/Pacific Islander	0	0%	Asian/Pacific Islander	0	0%
Hispanic	35	2.63%	Hispanic	37	2.78%
Native American	8	>1%	Native American	8	>1%
Free and Reduced	624	46.98%	Free and Reduced	621	46.79%

Lunch (SES)		Lunch (SES)	
Total	1328	Total	1327

Table 4

Student EOC demographic data

Communication Arts			Mathematics		
Male	532	52.67%	Male	316	53.92%
Female	478	47.33%	Female	270	46.08%
White	414	40.99%	White	349	59.56%

Black	488	48.32%	Black	141	24.06%
Asian/Pacific Islander	22	2.18%	Asian/Pacific Islander	24	4.10%
Hispanic	86	8.51%	Hispanic	72	12.29%
Free and Reduced Lunch (SES)	595	58.91%	Free and Reduced Lunch (SES)	270	46.08%
Total	1010		Total	586	

Research Hypotheses Results

In this study five research hypotheses were outlined in chapter three. Of these original five hypotheses, three were run as originally outlined. In the following section, the original research hypotheses will be presented, along with the results of the statistical tests that were conducted and any modifications made to the hypotheses. In addition to the original research hypotheses another regression model was conducted. The additional model was useful in detecting an effect for principal MSCEIT scores in the sample as a whole, rather than in the originally proposed parts. This portion of the chapter represents the main focus of the study.

H_1 Statistical Test and Results

Research hypothesis H_1 was stated as: a significant* correlation does exist between a pk-12 building principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) and End of Course (EOC) exam for communication arts and

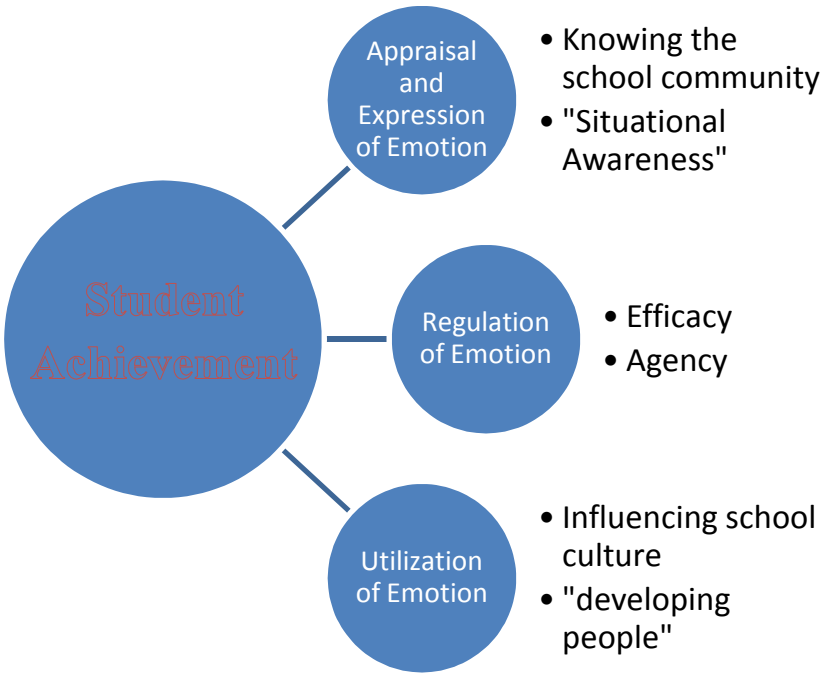
mathematics in grades 5, 8, and 11; when factors of SES, race/ethnicity, and gender are held constant.

*Correlations will be considered significant at the .05 level.

In order to test this hypothesis, a hierarchical linear regression model was used. The total emotional intelligence score for each of the 18 building principals was entered into the regression model as the predictor variable. In this model principal MSCEIT score, student grade level, gender, ethnicity, and socioeconomic status were held constant. Four of these five variables were held constant due to the unique correlations each of the variables hold with student achievement. By holding these variables constant in the regression model, it can be better determined what, if any, effect a principal's total emotional intelligence has on student achievement.

The first regression model tested looked specifically at the communication arts MAP scores for students in grades 5 and 8. According to the results of this regression model effect size for this model ranged from an R-square of .000 to .287. In other words, this model accounted for roughly 0% to 29% of the variance in a student's communication arts MAP scale score. The predictors of gender, MSCEIT score, SES, grade, and race/ethnicity were entered one by one, with the R-square increasing as each new predictor was added. A detailed breakdown of predictors and the increase in R-square can be seen in table 5. It was proposed that due to the connections between the model of emotional intelligence proposed by Salovey and Mayer (1997) and various definitions of transformational leadership; a significant effect would be found between principal MSCEIT scores and student achievement (Fullan, 2008; Ginsberg, 2008; Goleman, 2006; Hartley, 2004; Leithwood & Beatty, 2009; Moore, 2009). Figure 2 provides a graphic representation of this model and proposed effect.

Figure 3



The relationship between emotional intelligence, transformational leadership, and student achievement.
Bandura (2010); Deci & Ryan (2008); Hallinger & Leithwood (1998); Leithwood & Beatty (2009); Leithwood, Harris, & Hopkins (2008); Marzano (2007); Salovey & Mayer (2007)

Figure 3 presents a model that demonstrates the connection between elements of transformational leadership, emotional intelligence, and student achievement. The small circles represent the three branches of emotional intelligence proposed by Salovey and Mayer (1997); while the bulleted information to the far right describe important elements of transformational leadership. It was originally proposed that emotional intelligence might be thought of as an encompassing term for the elements of transformational leadership that have shown to have statistically significant effects on student achievement. The results of the MAP Communication Arts regression model show that this may not be a model in which direct effects of a building principal's emotional intelligence may be detected.

Table 5

R-square results for the communication arts MAP model run in H_1

Variables Entered	R^2	R^2 Increase
MSCEIT Score	.000	
MSCEIT Score, Grade*	.066	.066
MSCEIT Score, Grade, SES*	.208	.142
MSCEIT Score, Grade, SES, Race/Ethnicity*	.280	.072
MSCEIT Score, Grade, SES, Race/Ethnicity, Gender*	.290	.001

** Statistically significant at P < .05*

As the results listed in Table 5 clearly show, principal MSCEIT score had no effect on student achievement. Rather, previously known characteristics such as ethnicity and socio-economic status had much greater effect on student achievement. In fact, when the variables other than MSCEIT score were entered into this model, almost a full third of the variance in student MAP score could be explained. Using the data gathered from this regression model, research hypothesis H_1 can be rejected.

Further rejection of H_1 is supported by an examination of the standardized coefficients, beta (*B*), for each variable entered into the five models. In each of the five models the principal's total MSCEIT score had a *B* of >.038. This indicates that the MSCEIT score had very little strength of correlation with student performance on the communication MAP scores. In fact, in

models four and five, which had the highest effect size on student scores; MSCEIT score had a small and negative correlation with student achievement. Detailed information on the effect size for each model and the *B* for each variable within a given model can be found in table 6.

Table 6

R^2, adjusted R^2, and standardized coefficients (beta) for MAP communication arts scores in H_1

Models	R^2	Adjusted R^2	Variables	*Beta*
Model 1	.000	.000	MSCEIT Score	.019
Model 2*	.066	.064	MSCEIT Score	.061*
			Grade	.259*
Model 3*	.208	.206	MSCEIT Score	.038
			Grade	.272*
			SES	-.378*
Model 4*	.280	.278	MSCEIT Score	-.035
			Grade	.341*
			SES	-.192*
			Race/Ethnicity	-.349*
Model 5*	.290	.287	MSCEIT Score	-.036
			Grade	.338*
			SES	-.191*

Race/Ethnicity	-.349*
Gender	-.099*

** Statistically significant at the P ≤ .05 level*

While data from the communication arts MAP model support rejection of H1 it is important to look at all elements of the hypothesis, which includes the communication arts EOC, along with mathematics in both the MAP and EOC assessments. The results for this model when conducted using the mathematics MAP scores differed slightly, but were not always statistically significant. Using the same predictors as the communication arts MAP model, the R-square value for mathematics ranged from .001 to .358. As predictors were added, the building principal's total MSCEIT score accounted for a relatively constant amount of variance within the model. However, in each of the sets of predictors, the principal's total MSCEIT score was never statistically significant at the $p < .05$ level. As stated previously, this lends support to the rejection of H1. Tables 7 and 8 below provide detailed information from the mathematics MAP model.

Table 7

R-square results for the mathematics MAP model run in H_1

Variables Entered	R^2	R^2 Increase
MSCEIT Score	.001	

MSCEIT Score, Grade	.141	.141*
MSCEIT Score, Grade, SES	.286	.145*
MSCEIT Score, Grade, SES, Race/Ethnicity	.358	.072*
MSCEIT Score, Grade, SES, Race/Ethnicity, Gender	.358	.000*

** Statistically significant at $P \leq .05$*

Table 8

R^2, adjusted R^2, and standardized coefficients (beta) for mathematics MAP in H_1

Models	R^2	Adjusted R^2	Variables	*Beta*
Model 1	.001	.000	MSCEIT Score	-.024
Model 2	.141	.140	MSCEIT Score	.035
			Grade	.380*

Model 3	.286	.284	MSCEIT Score	.009
			Grade	.386*
			SES	-.382*
Model 4	.358	.356	MSCEIT Score	-.061*
			Grade	.462*
			SES	-.195*
			Race/Ethnicity	-.347*
Model 5	.358	.356	MSCEIT Score	-.061*
			Grade	.462*
			SES	-.195*
			Race/Ethnicity	-.347*
			Gender	.005

* *Statistically significant at P≤ .05*

Examination of the data revealed in tables 7 and 8 further support the rejection of H1. While several of the models were statistically significant, the model with total MSCEIT score alone was not. Furthermore, the standardized coefficient for the principal's total MSCEIT score

was statistically insignificant at the P < .05 level in three out of the five models. As with communication arts MAP scores, variables such as gender, race and ethnicity, and SES that have well documented connections to student achievement produced much greater effects in this model than did a principal's MSCEIT score alone.

The models in H1 that used MAP scores support the rejection of this hypothesis. However, it is important to examine the results of EOC scores in both communication arts and mathematics to determine if there is any information revealed that supports this rejection or may in fact counter the MAP model evidence. The EOC models were conducted in exactly the same manner as those done for both communication arts and mathematics using MAP test scores. Examination of the EOC communication arts data reveals a range in R-square from .001 to .172. While an examination of the EOC mathematics data reveals a R-square range from .055 to .148. Each model for both communication arts and mathematics EOC scores were found to be statistically significant at the P < .05 level. While each model was found to be statistically significant, an interesting piece of information was revealed when examining the standard coefficient (beta) for each predictor. The building principal's total MSCEIT score was not a statistically significant predictor in any of the communication arts models, but was a statistically significant predictor in all of the mathemaitcs EOC models. Data collected and examined in this study cannot support why this may be the case, but it is an interesting result nonetheless. Details on the statistical data gathered from each model in EOC communication arts and mathematics can be found below in tables 9 through 11.

Table 9

R-square results for the communication arts and mathematics EOC models run in H_1

Variables Entered	Communication Arts		Mathematics	
	R^2	R^2 Increase	R^2	R^2 Increase
MSCEIT Score	.001	NA	.055*	NA
MSCEIT Score, SES	.113*	.112	.109*	.054
MSCEIT Score, SES, Race/Ethnicity	.158*	.045	.146*	.037
MSCEIT Score, SES, Race/Ethnicity, Gender	.172*	.014	.148*	.002

**Statistically significant at $P \leq .05$*

Table 10

R^2, adjusted R^2, and standardized coefficients (beta) for communication arts EOC in H_1

Models	R^2	Adjusted R^2	Variables	*Beta*
Model 1	.001	.000	MSCEIT Score	.027
Model 2*	.113	.111	MSCEIT Score	.023
			SES	-.335*
Model 3*	.158	.155	MSCEIT Score	-.004
			SES	-.202*
			Race/Ethnicity	-.252*
Model 4*	.172	.168	MSCEIT Score	-.008
			SES	-.199*
			Race/Ethnicity	-.250*

			Gender	-.118*

** Statistically significant at P< .05*

Table 11

R^2, adjusted R^2, and standardized coefficients (beta) for mathematics EOC in H_1

Models	R^2	Adjusted R^2	Variables	*Beta*
Model 1*	.055	.053	MSCEIT Score	-.234*
Model 2*	.109	.106	MSCEIT Score	-.149*
			SES	-.248*
Model 3*	.146	.142	MSCEIT Score	-.117*
			SES	-.175*

			Race/Ethnicity	-.213*
Model 4*	.148	.142	MSCEIT Score	-.116*
			SES	-.176*
			Race/Ethnicity	-.212*
			Gender	-.038*

* *Statistically significant at P< .05*

Arguably, the preponderance of data would state that H1 could be rejected. However, as seen in table 11, mathematics EOC scores and principal MSCEIT scores appear to be linked in a small way. This model produced the smallest overall effect sizes in H1, but it also produced the only effect size in which the building principal's total MSCEIT score was a statistically significant predictor. Examination of mathematics EOC model one shows that the principal's total MSCEIT score has a statistically significant effect of at least .053 or 5.3 percent. This information coupled with the B of between -.234 and -.116 demonstrates at least a small negative relationship between the factors of MSCEIT score and mathematics EOC scores. As stated earlier, the information in this study cannot support why this is the case, but it is of importance to note. In summation it can be determined that H1 can be partially rejected in regard to a connection between all MAP scores and building principal MSCEIT scores, as well as MSCEIT scores and communication arts EOC scores. However, a valid and complete dismissal of H1

cannot be made, due to the statistically significant link between building principal MSCEIT scores and mathematics EOC scores.

H_2 and H_3 Statistical Test and Results

Research hypotheses are as follows: H_2: A significant* correlation does exist between an elementary principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) for communication arts and mathematics when examined at grade 5, in addition SES, race/ethnicity, and gender are held constant.

H_3: A significant* correlation does exist between a middle grades principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) for communication arts and mathematics when examined at grade 8, in addition SES, race/ethnicity, and gender are held constant.

*Correlations will be considered significant at the .05 level.

These two hypotheses were proposed separately. However, when looking at the sample of student data, it became clear that combining these two hypotheses into one would be a better way to run the data through the regression model. Both grade 5 and grade 8 students take the MAP test in Communication Arts and Mathematics. Therefore the scale score achieved by students in these grades reflects the same level of measurement, even though two different tests are being used. Combining these hypotheses also made a better fit due to the sample size. With a limited set of building principal data being used as a predictor of student achievement, combining both elementary and middle level principals into the same category provided a larger set of predictor data. This larger set of predictor data enhances the valid use of a hierarchical regression model.

By combining the two hypotheses, the new hypothesis should read as follows; H_2 modified: a significant* correlation does exist between a middle grades and elementary principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) for communication arts and mathematics when examined at grades 5 and 8, when SES, race/ethnicity, and gender are held constant.

The results of the hierarchical regression test show that there is not a statistically significant connection between a building principal's total emotional intelligence score and student achievement on the MAP test in either communication arts or mathematics. The results of the models examining these connections can be found in tables 5 through 8 as provided earlier in this chapter. For both communication arts and mathematics MAP scores, five models were run with various predictors entered each time. For both MAP content areas, four of the five models were statistically significant at the $P \leq .05$ level. However, the one model in each content area that was not significant was the one in which the principal's total emotional intelligence score was the only predictor. The other predictors of grade level, SES, ethnicity, and gender are all known to have statistically significant connections with student achievement scores. Knowing that the predictors other than MSCEIT score have proven connections to student achievement and that the MSCEIT scores did not show a connection in this model helps to support a rejection of the modified H_2 hypothesis.

Taking a closer look at the data revealed through the communication arts and mathematics MAP regression models is necessary to completely reject H_2. The standardized coefficient, beta (*B*) for each of the predictors helps us better understand the nature of the correlation between the predictors and our dependent variable of student achievement. Tables six

and eight show how each of the predictor variables relate to the dependent variable in both the communication arts and mathematics models. It can be seen that predictors which we would expect to have a negative relationship with student achievement, such as SES or ethnicity, do indeed have a negative relationship. These data also show that the variable of grade has a positive relationship with achievement score. This is logical on the MAP scale due to the fact that as students progress in grade level, so does the scale for proficiency; i.e. a proficient 8^{th} grader will score higher than a proficient 5^{th} grader. Data that match previously known negative or positive associations is valuable in determining the usefulness of the *B* data. Examination of the *B* for MSCEIT score reveals that out of the ten models run for mathematics and communication arts scores, only one is statistically significant at $P \leq .05$, all the others are statistically insignificant. This helps us understand that MSCEIT score is not a valid predictor of student achievement on the communication arts or mathematics MAP tests for students in grades 5 or 8.

The modified H_2 hypothesis can be rejected based on the data revealed in the regression models conducted on MAP scores. Model data in which MSCEIT score was used as the sole predictor showed no statistical significance. This was further supported by the finding that nine out of the ten *B* for MSCEIT score were statistically insignificant. Given these two pieces of information, the principal researcher can confidently reject H_2.

H_4 Statistical Test and Results

Research hypothesis four was proposed and tested as follows: a significant* correlation does exist between a secondary principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by

the End of Course (EOC) exams for communication arts and mathematics when examined at grade 11, when SES, race/ethnicity, and gender are held constant.

*Correlations will be considered significant at the .05 level.

This hypothesis was tested in exactly the same manner as the previous three hypotheses. The building prinicpals' total emotional intelligence scores were used as the predictor variable for student achievement in communication arts and mathematics. As with the previous hypotheses, SES, race/ethnicity and gender were held constant due to their unique correlations with student achievement. Results of these regression models revealed an interesting finding that confounds the ability to either completely accept or reject H_4.

As discussed in H_1, communication arts EOC scores show no connection with the building principal's total MSCEIT score. Three of the four models run on communication arts EOC scores were statistically significant. However, the one model that used MSCEIT score as the sole predictor was not statistically significant at the $P \leq .05$ level. Examination of the *B* for MSCEIT score in each of the communication arts models also revealed that this was a statistically insignificant predictor in each of the four models. Based on this information alone, one could reasonably expect to reject H_4.

Complete rejection of H_4 is not possible however, due to other information also revealed in the discussion of H_1. When looking at the connection between the building principal's total emotional intelligence score, also referred to here as MSCEIT score, and mathematics EOC student scores; it is found that there is a statistically significant connection. Each of the four models run between mathematics EOC scores and MSCEIT scores reveals a statistically significant connection. Within these correlations, MSCEIT score alone accounted for just over 5% of the variance in student EOC scores. While this is a small effect size, it can be considered

significant when all other factors that could possibly impact student achievement are taken into account. This finding gathers further support when it is revealed that the overall model used here accounts for 14.8 percent of the variance in student EOC scores. Of that 14.8 percent, only 9.3 percent of the variance is explained by variables other than MSCEIT score. Examination of the *B* for MSCEIT score in each of the models reveals a small to moderate negative connection with EOC mathematics scores, indicating that as MSCEIT score rises, EOC score decreases. This is interesting, because it may seem more logical that as a building principal possesses and exercises more emotional intelligence, student scores would increase. Further data analysis/study would be needed to determine why this is not the case.

Based on the results of the regression models used to evaluate H_4 it is not possible to accurately reject or accept this hypothesis. However, two statements can be accurately made based on the model data. One, a statistically significant connection between a building principal's total MSCEIT score and communication arts EOC scores does not exist based on the sample data. Two, a statistically significant connection between a building principal's total MSCEIT score and mathematics EOC scores does exist based on the sample data. Further study would need to be conducted to determine exactly why there is a significant connection in mathematics, but not communication arts.

H_5 Statistical Test and Results

Research hypothesis five was proposed and tested as follows: there will be a significant** difference between the communication arts and mathematics achievement scores of students who have a principal with an *EQ* score in the top third of study participants as compared to students with principals whose *EQ* score is in the bottom third of study participants.

**Differences will be considered significant at the .05 level.

This hypothesis was designed to determine if there is a difference in student achievement for students who have a principal with higher emotional intelligence and students who have a principal with lower emotional intelligence. It is important to note two items within this research hypothesis. One, there is not a continuum of emotional intelligence being proposed or worked from in this study. In other words, the terms high and low, as they relate to emotional intelligence are not used to specify a principal's amount of emotional intelligence. Rather, high refers to principals with total emotional intelligence scores in the top third of study participants and low refers to principals with total emotional intelligence scores in the bottom third of study participants. Because the principal sample is not representative of all building principals, it must be noted that high and low only refer to scores collected from this sample and not placement along a scoring continuum. Secondly, the test used with this hypothesis is only designed to determine if there is a statistically significant difference between two sets of data. The results of this test should not be interpreted to mean that high or low emotional intelligence on the part of a building principal causes student achievement to increase or decrease.

The test used with this hypothesis is a T-test. As mentioned in the previous paragraph, this test is used to determine if there is a statistically significant difference between two sets of data. Before this test could be conducted, each student's MAP or EOC score must be converted to a z-score. The z-score is used to convert scores to a common metric through the use of mean scores and standard deviations from the entire sample. In this case mean scale scores and standard deviations were obtained from the 2011 MAP and EOC technical manuals (DESE, 2011). Once the scale scores for students were converted to z-scores, the t-test for independent samples could be conducted. The first step in interpreting the results of this test was to look for equality of variance. Using Levene's test of variance, it can be determined that an F of .932 with

a significance of .338, means that the variance within the two groups (top-third/bottom-third) can be assumed to be equal (Runyon et al., 2000). This is important to note, as it helps us understand the sample data used in this test. The resulting *t* value for this test was 8.853, with a significance of .000. The significance is far below the $P \leq .05$ level, thus allowing the principal researcher to determine that there is indeed a statistically significant difference between the mean communication arts and mathematics scores for students associated with a building principal having a total emotional intelligence score in the top or bottom third of study participants.

Table 12

Results of T-test for H_5

	F	Significance	*t*	Significance (2 tailed)*
Levene's Test	.932	.338	8.853	.000
Equal Variances Assumed				
N Top Third	1543			
N Bottom Third	2153			

**Results significant at the P < .05 level*

Understanding that there is a statistically significant difference between the scores of students associated with building principals whose scores fell in the top or bottom third of study participants is important for several reasons. One, even though causation cannot be inferred from this understanding, it does support the need for further research on what may have caused this difference. Two, if the cause of this difference can be determined through further research; this result may be useful in enhancing the quality of education students receive at their respective schools. Three, although the hierarchical regression models used so far in this study do not

conclusively support the assumption that a building principal's total emotional intelligence score have a significant effect on student achievement; if such a connection could be made, this T-test would be useful in helping to support the idea that higher EI scores for building principals result in higher achievement scores for students. As mentioned at the outset of this paragraph, this information is speculative in nature and would need additional research to verify or disqualify. What can be said with confidence in regard to H_5 is that the data allows us to confidently accept this hypothesis.

A New Regression Model

The results of the three regression models tested in hypotheses H_1, $H_{2/3}$, and H_4 demonstrated no effect of principal MSCEIT score on student achievement in either mathematics or communication arts or by MAP or EOC. The model proposed in Figure 3 attempts to make a connection between emotional intelligence and student achievement. In addition, an extensive review of the extant literature would indicate two important elements. One, significant effects on student achievement can be drawn between the practices of transformational school leaders and student achievement (Denhim, 2007; Graczewksi et al., 2009; Heck & Hallinger, 2009; Leithwood & Jantzi, 2008; Leithwood & Mascall, 2008; Marzano, 2007; Tornsen, 2009). Two, the descriptions of the transformational leadership practices that have significant effects on student achievement are similar to the definition of emotional intelligence being used in this study. This premise, as outlined in detail in chapter two, seemed logical to test using a regression model in which known variables that impact student achievement would be held constant. As can be seen in the results of these research hypotheses, this did not appear to be the case.

While the originally proposed regression models did not reveal a significant effect of principal MSCEIT scores on student achievement, the researcher began to wonder if there was a

mathematically sound method for increasing the sample size using the current data. By increasing the sample size it was hoped to be able to detect even a small, yet statistically significant effect size. As originally proposed, student test scores on the MAP and EOC would be used. Both the MAP and EOC produce a student scale score. Using these scores presents two challenges in the use of a regression model. One, the MAP scale score is continuous. In other words, a student in a higher grade should logically score higher than a student in a lower grade. Using MAP scores from 5^{th} and 8^{th} grades meant that the older students would almost automatically score higher than the younger students. This is why grade was added as a constant in the models as tested. Two, the scale for the MAP test and EOC test are not the same. In fact they vary quite a bit. A scale score of 700 on 5^{th} grade communication arts would be quite good, while a scale score of 200 on the English II EOC would be a very high score. Even though these two tests represent a similar level of measurement, they do not represent the same scale. For this reason, one could not reasonably say that a score of 700 on the MAP is over three times higher than the score of 200 on the EOC.

In order to overcome the challenge of conflicting measurement scales it was determined that each student scale score could be converted to a z-score as done in H_5. Runyon et al. (2007) state that this is useful; "because z-scores represent abstract numbers, as opposed to the concrete values of the original scores, … we may compare an individual's position on one variable with his or her position on a different variable (p. 118)." In other words, converting MAP and EOC scale scores to z-scores allows for them to be compared directly. By being able to directly compare all student scale scores regardless of the MAP/EOC scale problems previously mentioned, the sample size automatically increased from that of the students who completed

individual exams, to that of all students in the sample. Increasing the sample size thereby increases the chance of detecting a small, yet statistically significant effect.

With all student scale scores converted to z-scores a new regression model was created that was identical to the model used in H_1. This new model was given the label of H_6 and reads as follows: a significant* correlation does exist between a pk-12 building principal's Emotional Intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and student achievement as measured by the Missouri Assessment Program (MAP) and End of Course (EOC) exam for communication arts and mathematics in grades 5, 8, and 11; when factors of SES, race/ethnicity, and gender are held constant.

*Correlations will be considered significant at the .05 level.

While H_6 reads identical to H_1, the variables used and method for which they were entered varied slightly. Variables used in this model included gender, race/ethnicity, socio-economic status, MSCEIT score, and content. In this model a content code for communication arts/mathematics was substituted for grade level. The content code was a 0 for communication arts and 1 for mathematics. This regression model was run with communication arts scores for the first four variables. As a result, the final regression model with the content code shows the R-square for mathematics and not communication arts. In this final result it can be seen that the content area of mathematics does not contribute to any of the variation in student achievement scores.

Interpreting the data from this model, it is revealed that with a sample size of 4,251 student scores, the single predictor of building principal MSCEIT score has an effect of .010. This means that the MSCEIT score accounts for 1% of the variance in a student's achievement in communication arts. As the subsequent variables are entered, the R-square value increases to a

maximum of .210 or 21% of variance by the time all variables are entered. The R-square value and increase with each entered variable can be found below in table 13.

Table 13

R-square results for the communication arts MAP model run in H_6

Variables Entered	R^2	R^2 Increase
MSCEIT Score	.010*	NA
MSCEIT Score, Gender	.014*	.004
MSCEIT Score, Gender, SES	.153*	.139
MSCEIT Score, Grade, SES, Race/Ethnicity	.210*	.057
MSCEIT Score, Gender, SES, Race/Ethnicity, Content	.210*	.000

** Statistically significant at the $P \leq .05$ level*

While principal total MSCEIT score only accounts for 1% of the variance in student communication arts and mathematics scores on either the MAP or EOC, this result is statistically significant at the $p \leq .000$ level. This result exceeds the $p \leq .05$ stated in the hypothesis. Further examination of the standardized coefficient, beta *(B),* as it relates to principal MSCEIT score in each of the five models in H_7, reveals further support for this finding. The *B* for MSCEIT score in each of the five models ranges from .069 in model five, to .102 in model one. While these coefficients reveal small correlations, they are each significant at the $p \leq .000$ level, which is far less than the $p \leq .05$ level called for in the hypothesis. Each of these coefficients are also positive

in nature, indicating that as the principal's total MSCEIT score increases, so does student achievement. Details of the effect size for each model, along with the standardized coefficients are located in table 14 below. While the effect size is small, there is a statistically significant effect, which allows the principal researcher to accept H_6.

Table 14

R^2, adjusted R^2, and standardized coefficients (beta) for H_6

Models	R^2	Adjusted R^2	Variables	*Beta*
Model 1*	.010	.010	MSCEIT Score	.102*
Model 2*	..014	.014	MSCEIT Score	.099*
			Gender	-.063*
Model 3*	.153	.152	MSCEIT Score	.076*
			Gender	-.059*
			SES	-.373*
Model 4*	.210	.209	MSCEIT Score	.070*
			Grade	-.059*
			SES	-.224*
			Race/Ethnicity	-.282*
Model 5*	.210	.209	MSCEIT Score	.069*
			Grade	-.059*
			SES	-.224*
			Race/Ethnicity	-.281*

	Content	-.015

** Statistically significant at the P ≤ .000 level*

Summary of Results

In chapter three there were six research hypotheses presented. Of the original five, three were conducted as proposed, two were combined into one, and one was eliminated based on extenuating information. The results of the statistical tests conducted for each hypothesis revealed interesting information regarding the researcher's proposed connection between emotional intelligence and student achievement. There were two connected items of particular interest that stood out in the research. One, the lack of a clear connection between a building principal's emotional intelligence and student achievement. A second item of interest that is closely connected to the first is the existence of confounding evidence that does not allow for a complete rejection for some of the research hypotheses, or contradicts the rejection of certain hypotheses. These items will be discussed briefly in the following paragraphs and then in greater detail in chapter five.

In research hypothesis H_1 four different regression models were conducted. In three out of the four models, no statistically significant effect was found between the building principal's total MSCEIT score and student achievement. These models involved scores for communication arts and mathematics on the MAP test, and communication arts on the EOC exam for English II. Given these results it would have seemed logical to reject H_1. However, mathematics EOC scores and MSCEIT scores were found to have a statistically significant correlation. In fact, MSCEIT score alone accounted for 5.5% of the variance in student test scores in this model. While a preponderance of evidence would support rejection of H_1 this cannot be done based on

the evidence. Hypothesis H_4 looked exclusively at communication arts and mathematics EOC scores. Based on the previously discussed information showing no significant correlation between communication arts EOC and MSCEIT scores, but a significant correlation between mathematics EOC and MSCEIT scores; H_4 cannot be confidently rejected or accepted.

Research hypotheses $H_{2\ modified}$, $H_{5,}$ and H_6 were each able to be confidently rejected/accepted based on the results of the statistical tests run for each of them. H_2 was written to examine the connection between MAP communication arts/mathematics scores and principal MSCEIT scores for total emotional intelligence. The regression models conducted for each of these tests showed no significant correlation between these variables; therefore allowing the researcher to reject $H_{2\ modified}$. H_5 was written to determine if there was a significant difference in the mean student scores in both communication arts and mathematics on the MAP and EOC between students associated with principals whose total EI scores fell in the top or bottom third of study participants. Results of this test show that there is indeed a statistically significant difference between these group means. H_6 was the final hypothesis proposed in the study and was identical to H_1. While these two hypotheses were identical, they were tested with different regression models and produced different results. In H_1 four different regression models were used to examine the correlation between student achievement and principal emotional intelligence. In H_6 only one regression model was used to test the same correlation. By increasing the sample size, this new regression model was able to detect a small, but statistically significant effect of principal emotional intelligence on student achievement.

Conclusion

As mentioned several times throughout this chapter, there are confounding results from several of the statistical tests; either within a single hypothesis or between hypotheses. Due to

these confounding elements, the researcher would offer two suggestions. One, confounding information should be interpreted with caution. Two, while the preponderance of evidence points to rejection of several hypotheses, further research is necessary to determine if these research hypotheses can indeed be rejected with confidence. The use of hierarchical linear regression in this study was chosen with the intent of producing statistically valid results. While other methods may have been pursued that would produce statistically valid results; hierarchical linear regression is a sufficiently rigorous method to produce results that may reasonably be used to infer causation rather than simple connection between variables.

While a statistical method was used that would reasonably allow for the inference of causation through an R-square effect, results should still be interpreted with caution. Student achievement is impacted by many factors, and only several of the leading factors were used as variables in this study (Blase and Blase, 2004; Cooper et al., 2002; Dinham, 2004; DuFour and Eaker, 2008; Leithwood & Mascall, 2008; Marzano, 2007). Furthermore, statistical methods are only as good as the data upon which they are based. The data used in this study were collected from mid-sized to large school districts representing both urban and suburban students in two large mid-western cities. While this data represented student populations from these areas, it is not necessarily representative of students on a national scale. Data collection and analysis from a broader sample of students and principals would be needed in order to accurately generalize to all students. In this case, study results may reasonably be generalized to urban/suburban students in large mid-western cities. Given the broad nature of variables that impact student achievement, it is also important to interpret study results on the basis of the variables that were included in the study. A student's ethnicity, socio-economic status, and gender have each been empirically shown to have an effect on student achievement (Cooper et al., 2002; Marzano, 2007). However,

there are other variables which effect student achievement. A broader spectrum of variables would provide a clearer picture of the factors which effect student achievement.

The broader spectrum of variables mentioned in the previous paragraph leads to the need for further research in order to substantiate the acceptance or rejection of the research hypothesis. The statistical rigor of hierarchical linear regression was sufficient for the purposes of this research study. However, in order to accommodate a wide range of variables that impact student achievement, more statistically rigorous research methods would need to be employed. Future research would best be done using a hierarchical linear model. Using this research method would allow the researcher to create a model in which multiple variables could be tested in a manner that produces a net direct effect on student achievement (Gall et al., 2007). The uses of additional variables, along with an increase in the rigor of the statistical method used, are valid avenues for additional research. In summation, the results of this study can be considered to be statistically valid, but additional research is necessary to further substantiate the findings of this study.

Student achievement is of great interest in our current educational environment. The need to quantify what a student has learned, or not learned, is at the heart of multiple federal and state mandates (United States Congress 1st Session, 2001; Top 10 by 20, 2012). However, accurately quantifying student achievement cannot be accomplished without a complete understanding of the factors that impact what students may or may not learn. Gall et al. (2007) use the term "nesting" to describe how various student, school, family, community and many other factors fit together to create the conditions in which students learn. In addition to understanding the factors that impact student achievement, it is important to use assessments that produce valid and reliable results (Runyon et al., 2000). Finally, understanding factors that impact student achievement, and developing effective student assessments are necessary and vital parts of

quantifying student achievement. However, it is the argument of this researcher that the aforementioned items are of little concern if effective educational practices are not undertaken by teachers and administrators on a daily basis. The intent of this research is to in some small, yet meaningful way; contribute to the knowledgebase a set of information that will be useful to school leaders in accomplishing this task. In chapter five, a detailed discussion of this study's implications will be delivered.

CHAPTER 5

IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH

Introduction

"In leadership positions, almost 90 percent of the competencies necessary for success are social and emotional in nature" (Cherniss, 2000b, p. 434). Given such a profound statement, it would seem reasonable that further examination of leaders might be warranted in order to determine how social and emotional factors do indeed impact success in leadership. The current educational climate of accountability is highly focused on the scores students receive on standardized achievement exams. In the case of the state of Missouri, this would refer to how students score on the Missouri Assessment Program (MAP) tests or End of Course (EOC) exams. In fact Missouri's guiding document for measuring school improvement, MSIP 5, states that a school must have; "demonstrated a significant change in student performance over multiple years." The MSIP 5 document goes on to directly address standardized student achievement testing by outlining that each school produce standardized test results in which:

> 1. Student performance on assessments required by the MAP meets or exceeds the state standard or demonstrates improvement in performance over time. 2. The percent of students tested on each required MAP assessment meets or exceeds the state standard. 3. Growth data indicate that students meet or exceed growth expectations. (DESE, 2011)

Regardless of how one may feel about the use of standardized assessments and the use of their results to inform decisions regarding education, the reality is that the use of student assessment data is inextricably linked to successful school evaluation and by proxy, successful evaluation of those who lead these schools. It was the purpose of this study to examine if there was a direct link between the leader trait of emotional intelligence and the student outcome of standardized achievement test scores.

Discussion and Implications

The previous four chapters have provided an introduction to the concepts examined in this study, an empirical and theoretical basis on which these concepts are grounded, specific methodology used in this study, and the statistical results of the data gathered in this investigation. Each of these previous elements plays a unique role in developing the overall construct that is being investigated. However, there is an important question yet to be answered; why? Why are the results of this study useful?

In chapter four it was revealed that no statistically significant connection between three areas of student assessment and building principal emotional intelligence could be determined. However, in one area of student assessment, a significant effect of the building principal's emotional intelligence on student achievement was discovered. Furthermore, a statistically valid operation for increasing the overall sample size in the study, revealed a small yet significant effect of the building principal's emotional intelligence on student achievement. Additional detail on these findings can be found in table 15 below.

If most of the results in this study show no statistically significant connection, then why exactly are the results of importance? There are several reasons why the results of this study are important to educators and the current body of education research. One, the search to understand how and why students learn what they learn is ongoing. Information that lends an answer, even a small one, to this question can be valuable. Two, as mentioned in the introduction to this chapter, quantifying student achievement is of great interest in our current educational context. Three, in the interest of providing students with the best of educational opportunities, continual improvement in educational practices is required. For these reasons, the results of this study create slight, but important contributions to the field of education.

Table 15

Effect size of building principal emotional intelligence (EI) on student achievement

Hypothesis	*R*-square	Adjusted *R*-square	Effect Size*
$H_{2/3}$ Connection of EI with communication arts achievement in grades 5 and 8.	.000	.000	0%
$H_{2/3}$ Connection of EI with mathematics achievement in grades 5 and 8.	.001	.000	0%
H_4 Connection of EI with communication arts achievement in English I.	.001	.000	0%
H_4 Connection of EI with mathematics achievement in Algebra I.	.055	.053	5.3%
H_7 Connection of EI with communication arts and mathematics achievement in grades 5, 8, and 11; using z-scores.	.010	.010	1%

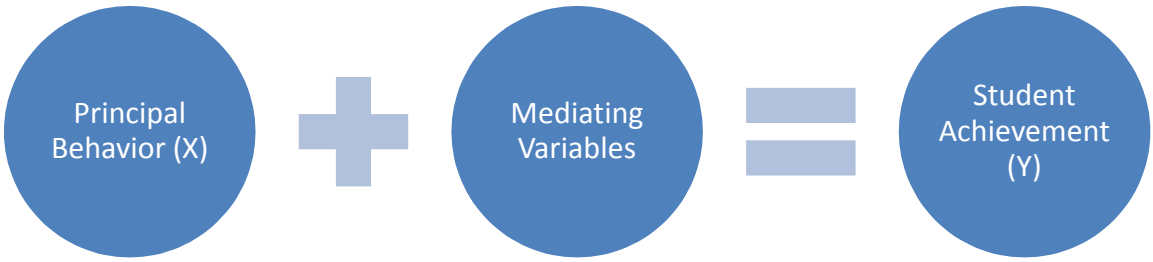
All results are statistically significant at the $P \leq .000$ level.

**Amount of variance in student achievement scores that can be attributed to a building principal's total emotional intelligence score.*

Student Learning

Heck and Hallinger (2009) found that the way building principals effect student achievement are indirect. In mathematical terms, principal behavior X does not equal student achievement Y. Rather X + mediating variables = Y. It is the principal's influence on these mediating variables that creates student achievement. The use of collective leadership practices has been shown to impact student achievement (Leithwood & Mascall, 2008). Principals that are actively engaged in the academic practices of the school have also been shown to have student populations with high levels of student achievement (Mackey et. al, 2006; Ylimaki, 2007). In each of these two areas, collective leadership and engagement with the academic process, social interaction with members of the school community can be implied.

Figure 4



The relationship between principal behavior(s) and student achievement

Cherniss (2000b) highlights the importance of "social and emotional competencies in the workplace" (p. 433). Results from a range of empirical studies are cited in this chapter written by Cherniss (2000b) that support the use of emotional intelligence training to increase workplace productiveness for those in management positions. The building principal fits very well into the category of management. While earlier discussions in this study highlight the shift in the principal's role from that of management to that of instructional leader; the principal's role fits in the management realm of the workplace. Managers who underwent various training programs

that focused on social and emotional aspects, showed significant gains in workplace production, staff interactions, and staff productivity. It stands to reason then, that building principals with strong emotional competencies should be able to have an impact on teachers in such a way as to increase their productivity. In this study productivity was measured in terms of student achievement.

When 4,251 student scores across 18 different schools were examined, the building principal's emotional intelligence accounted for 1% of the variance in student achievement scores. While 1% is a relatively small number, the variance in student scores based on ethnicity, gender, and socio-economic status only accounted for an additional 19%. This small result, when taken into the larger picture represents an important finding. If 1% of student achievement can be directly connected to the single attribute of a building principal's emotional intelligence, and empirical evidence exists that supports the use of training programs focused on increasing managerial level emotional competencies; then the premise could be supported that principals with high emotional intelligence make good building leaders and that building leaders could become better at their job by increasing their emotional competencies (Cherniss, 2000b; Mayer et al., 2002).

Student Achievement and Continuous Improvement

The use of standardized assessment data is at the very heart of the move toward educational accountability. In this push, much debate has taken place over whether this is an appropriate manner in which to determine what students have or have not learned. In fact, constructivist theory would state "that knowledge is formed within the learner and is brought to the surface by a skilled teacher through processes of inquiry…" (p. 24). The demonstration of not only knowledge, but the ability to use knowledge to think and create, are not easily tested. It

is the opinion of this researcher that standards are necessary, as would Lambert et al. (2002), and that testing these standards in a standardized manner is equally necessary. However, I draw the line at stating the use of standardized assessment is superior to other more authentic assessments. Rather, various forms of assessment should function together to give us a picture of a child's academic achievement; or more importantly, give educators a better understanding of how to guide a student's learning. Regardless of where one falls on the continuum between the use of standardized or authentic assessments, or the use and applicability of test results to guide instruction; gaining an understanding of student achievement is of value to educators and students alike.

One may reasonably ask the question, what is the difference between student learning and student achievement? The difference may seem trivial, but contains important implications for the field of education. Student learning represents the knowledge and skills that students have gained through the course of a school's formal and informal curriculum, while student achievement represents a quantifiable gain or loss of learning (Marzano, 2007). Learning, as with other abstract concepts, cannot be measured with definitive accuracy, but can be quantified with a certain degree of accuracy through an achievement score.

It is unreasonable to expect perfection from students, teachers, principals, or others in the educational community. However, it is not unreasonable to expect continued improvement. One way to measure continued improvement is through the use of student achievement scores. The MSIP 5 crosswalk states that "the department recommends that the state remain committed to its work with the growth model pilot and to use the work of the pilot to inform decisions" (DESE, 2011, p. 15). The growth model gives schools credit for increases in student achievement test scores. Study data suggests that there is indeed a connection between student achievement and a

principal's emotional intelligence. Data from previously cited sources suggests that emotional competency training benefits both workers and managers. As argued in the previous section, these two pieces of information combine to create the idea that a principal's emotional intelligence is indeed an important factor in raising student achievement.

> When success in the classroom is defined in terms of competitive status with others, only a few students can be successful. However, when individual growth is the criterion for success, then all students can experience success regardless of their comparative status. (Marzano, 2003)

The Leader in Me process that is an extension of *The Seven Habits of Highly Effective People* is used in many schools across the nation. One of the core tenants of this process is a focus on continuous improvement. Principal of A.B. Combs elementary, Muriel Summers, states that her school does "not collect data on anything except those things that are in direct alignment with student achievement and improving the processes in our school" (Covey, 2008, p. 64). As referenced earlier, perfection is not an achievable or realistic goal. However, continuous improvement is. Continuously striving to be better today than we were yesterday is a hallmark of successful schools.

Schools in which students are given the opportunity to set goals and measure their progress toward those goals are schools in which the continuous improvement model is at work. Witziers et al. (2003) found strong connections between a building principal's interpersonal relationships with staff and students and student achievement. It could be reasonably argued that continuous improvement cannot take place in a school without positive relationships between the principal and other school community members. This further aligns with the four-branches of emotional intelligence; perception of emotion, facilitation of thought, understanding emotions, and managing emotions (Salovey & Mayer, 1997). Each of these four branches can be directly connected to effective and healthy relationships.

The four-branch model of emotional intelligence proposed by Salovey and Mayer (1997) can be further tied to Marzano's (2003) block quote on the previous page. This quote centers on a student's perception of how they are doing in school. Are they growing as a student, or do they see little success because they are compared to others? Is this child given the opportunity to use their academic information and their thoughts on this information to set measureable and achievable goals? How is this child taught to appropriately celebrate success and remediate failure? Each of these questions directly relate to a branch of emotional intelligence. Using the model proposed in figure 5, it could be argued that principal emotional intelligence + the mediating variable of effective relationships with teachers = student achievement. Figure five uses a single color to represent the independent variable of building principal emotional intelligence and a multi-colored array to represent the multiple independent variables present in the concept of effective principal/teacher relationships. The combination of these colors is then represented by a further in-depth color wheel, demonstrating that there is a distinct interplay between independent variables and their impact on the dependent variable of student achievement. The interplay between the independent variables is further represented by a two-way arrow. While this study did not test such a model, it did reveal that there is a connection between a building principal's emotional intelligence and student achievement. Thereby revealing that in some significant manner, emotional intelligence plays a distinct and unique role in student achievement.

Figure 5

Proposed model linking principal emotional intelligence with continuous student improvement

Limitations

Results of this study were mixed. The principal researcher has identified limitations to this study that are likely the cause these mixed results. Limitations are discussed briefly in this section and provide avenues for future research which is discussed in further depth in subsequent sections.

The research conducted in this study attempted to use a statistical model that was sufficiently rigorous to achieve two purposes. These purposes were to achieve statistical reliability and validity for the proposed connection between a building principal's emotional intelligence and student achievement. Reliability as defined by Runyon et al. (2000) is "the extent to which a measurement procedure produces a consistent outcome", and validity is defined as "the extent to which a test measures what it purports to measure" (pp. 184-185). Both of these objectives were achieved in this study, but there are limitations to this research as well.

Reliability in this study was achieved in two parts. The first part being the use of statistically reliable data. The three tests used in this study were the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), the Missouri Assessment Program (MAP), and End of

Course exams (EOC). Each of these tests have been shown to have high levels of reliability, as outlined in chapter three. The second way in which reliability was achieved was through the sampling process. This study was designed to look at a population that accurately represented urban and suburban students. A sampling frame was used that included a wide range of urban and suburban school principals. From the sampling frame, just over 100 principals were invited to participate in this study. Of those principals who were invited, just 18 met the criteria for participation and actually completed the study. The selection process reliably gathered data from a sample that was intended to be represented.

In regard to validity, a statistical method was used that had sufficient rigor to produce results that were not only accurate, but could be used as the basis for further research and action within the educational community. As outlined in both chapters three and four, hierarchical linear regression is a statistical method in which models are created to test the amount of variance between independent and dependent variables. In this study a building principal's emotional intelligence and student ethnicity, gender, and socio-economic status were independent variables; while student achievement in communication arts and mathematics were dependent variables. Models tested using hierarchical linear regression are able to show the effect (R-square) of the independent variable(s) on the dependent variable(s) as new variables are added. In chapter four, the effect of adding variables in each of the research hypotheses can be seen. By accounting for the amount of variance that each independent variable contributes to the model, the researcher can better determine possible causation in the dependent variable. Using such a rigorous statistical test therefore produces validity in the testing results.

While both reliability and validity were achieved there are several limitations to the results of this study. In chapter one the G-Power program was used to determine an appropriate

number of participants to determine a medium effect size. The result of this examination revealed that at least 63 participants would be needed. With the 18 participants, a total of five variables in the models, and an effect size of .01, G-Power calculations reveals that the results of the z-score manipulated model has a power of .056 (Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A., 2007). This is a rather low power of predictability, but can be explained. With a small sample of 18 participants, predictability would be expected to be low. The larger sample size of 63 participants would therefore have had a greater power of predictability. Also, with only 1% of the variance in student achievement scores being explained by the variable of principal emotional intelligence, one could reasonably expect the power of predictability to be small. This is especially true when considering that 99% of the variation in student scores is obviously explained by some other variable.

A second limitation to this study also relates to the sample size. The generalizability of study results are limited to schools with student populations that are similar in makeup to those schools represented in the study. The 18 different schools examined in this study represent a student population that is similar to many urban/suburban school districts in large mid-western cities. However, at only 18 participating schools, caution should be taken when generalizing results to all urban/suburban student populations. These results represent students in mid-western settings. Pertinent social factors may cause urban/suburban students from large east coast, west coast, or southern cities to differ in significant ways from those students represented in the study. Sample size alone could also present other significant variables in generalizing results. The sample population was drawn from only two large mid-western cities. In order to generalize results to other mid-western student populations two factors would need to be changed. One, an overall increase in the sample size would need to be conducted. The original G-Power

calculation called for a minimum of 63 participants. Some statistics texts call for a minimum of 32 participants, with an additional 18 participants per predictor variable (Gall et al., 2007). For this particular study that would result in a minimum of 104 participants. Second, taking the sampling frame outside of the urban/suburban setting to include rural areas would be needed as well. The two steps of increasing the sample size and including students from rural schools would greatly enhance to generalizability of study results.

Results of this study are mixed when looking at the predictability of a building principal's emotional intelligence on student achievement scores. When tested in some models, there is no significant effect; and when tested in other models there is a small, yet significant effect. The limitations indicated previously are most likely significant factors in the mixed results that were revealed upon completion of the statistical analysis of the study data. Addressing the study limitations would allow for a more complete and accurate determination of what, if any, effect a building principal's total emotional intelligence score has on student achievement in the areas of communication arts and mathematics. Addressing these limitations also provides avenues for future research, which will be discussed in the following section.

Recommendations for Future Research

As discussed previously, the statistical method used in this study is considered to be fairly rigorous and is widely used in this type of research. With this being the case, there are still additional avenues for research that would answer important questions relating to the connection between emotional intelligence and student achievement. In this study one percent of the variation in student achievement scores can be explained by the building principal's total emotional intelligence. This finding also merits further research as well. In regard to future

research; the use of even more statistically rigorous research methods are needed in order to fully investigate the connection between a principal characteristic and a student outcome.

New models

Gall et al. (2007) states that "hierarchical linear modeling is becoming increasingly accepted as the best statistical approach for understanding and quantitatively estimating" the effects of multiple independent variables on a dependent variable (p. 362). In this study there were several independent variables which included a student's race/ethnicity, gender, socio-economic background, and grade level. Each of these variables are known to have connections with student achievement (Lambert et al., 2002; Leithwood & Duke, 1998; Marzano et al., 2001; NCES, 2009; Southworth, 2009; Witziers et al., 2003). While each of these variables have known connections with student achievement, it can be rationally argued that it is the interplay of these and many other variables, that truly produces the end result of student achievement. A hierarchical linear regression model such as the one used in this study can produce results that help researchers understand if a causal connection exists between the independent and dependent variables. However, this type of statistical test cannot explain how an effect occurs.

Figure four on page 139 provides a model for how the principal characteristic of emotional intelligence (independent variable) may impact student achievement (dependent variable). In this model, a principal's emotional intelligence combined with mediating variables, produced the end result of student achievement. In this study there were only four mediating variables being considered, and each of these variables are known to impact student achievement. Future research should move beyond known variables and look for paths through which known and unknown variables may link a building principal's emotional intelligence with

student achievement. This type of research must move beyond the direct effects model even proposed in figure five.

Figure six presents several possible avenues for future research using the hierarchical linear modeling approach. In these models, the idea is presented that a principal's emotional intelligence has an impact of teacher level factors, school level factors, and student factors before it reaches the student outcome of standardized achievement scores. This model is derived from Southworth's (2009) premise that effective principles have multiple areas of direct and indirect influence, but that they focus most on the areas of indirect influence. Areas such as teacher efficacy and organizational commitment can be influenced both directly and indirectly; as can school level factors such as the culture and climate of a school.

While many models of proposed connections could be created and therefore tested, there are three models presented. Each of these models is represented by a different colored arrow, green, blue, or red. In the green model it is proposed that the impact of a building principal's emotional intelligence on student achievement would be mediated by teacher and student level factors. The blue model indicates that a building principal's emotional intelligence on student achievement would be mediated by school and student level factors. The red model is the most involved and looks at both direct and reciprocal effects of different variables. In the red model it is proposed that the building principal's emotional intelligence is mediated by a reciprocal effect between school level and teacher level factors before being further mediated by student level factors. A review of extant literature as provided in chapter two supports each of these models as legitimate avenues for future research, as do the results of the present study.

Multiple studies have been conducted in which emotional intelligence and transformational leadership have been shown to be significantly correlated (Leithwood, 2007 &

Moore, 2009). Furthermore, there is a body of research that indicates a direct link between transformational leadership practices and teacher efficacy (Hipp, 1996; Marks & Printy, 2003). While teacher quality is not solely based on a teacher's level of efficacy, the two do go hand in hand. Dinham (2007) found that 30% of student achievement can be attributed to teacher level factors. These multiple avenues of empirical research findings provide legitimacy to the idea that a building principal's emotional intelligence may indeed impact teacher level factors, which are known to impact student achievement. This evidence directly impacts the proposed green model.

Evidence also exists that would support the proposed blue model. Leithwood (2007) and Schoo (2008) found evidence that shared decision making was one of the strongest indicators of effective educational leaders. Denessen et al. (2006) conducted a study in which transformational leadership practices of education leaders were found to have a strong connection with teacher's organizational commitment. Additionally, Marzano (2005) found that a principal's efforts to work on the culture of a school had a significant correlation with student achievement. Given the impact that transformational leadership acts, such as shared decision making, have on a school's culture and climate; it stands to reason that school level factors afford a legitimate level of mediation between a principal's emotional intelligence and student achievement.

The third model (red model) for proposed future research combines elements of the green and blue models. This model also most heavily necessitates the use of HLM as the statistical test most appropriately suited to investigate the proposed connection. In this model it is proposed that the building principal's emotional intelligence influences teacher and school level factors. However, this influence is placed on these factors individually and collectively. These factors in turn impact student factors. The meshing of various factors (or variables) is termed by Gall et al. (2007) as the "nesting" effect (p. 361). In this effect, one set of variables cannot be extracted

from another set without some impact on the both. Variables that fit this description are inextricably linked to each other in a significant manner. Logic would dictate that building principals do indeed have impact on teacher efficacy and a school's culture/climate in ways that are directly connected to each other. Research cited in support of both the green and blue models would support this connection as well.

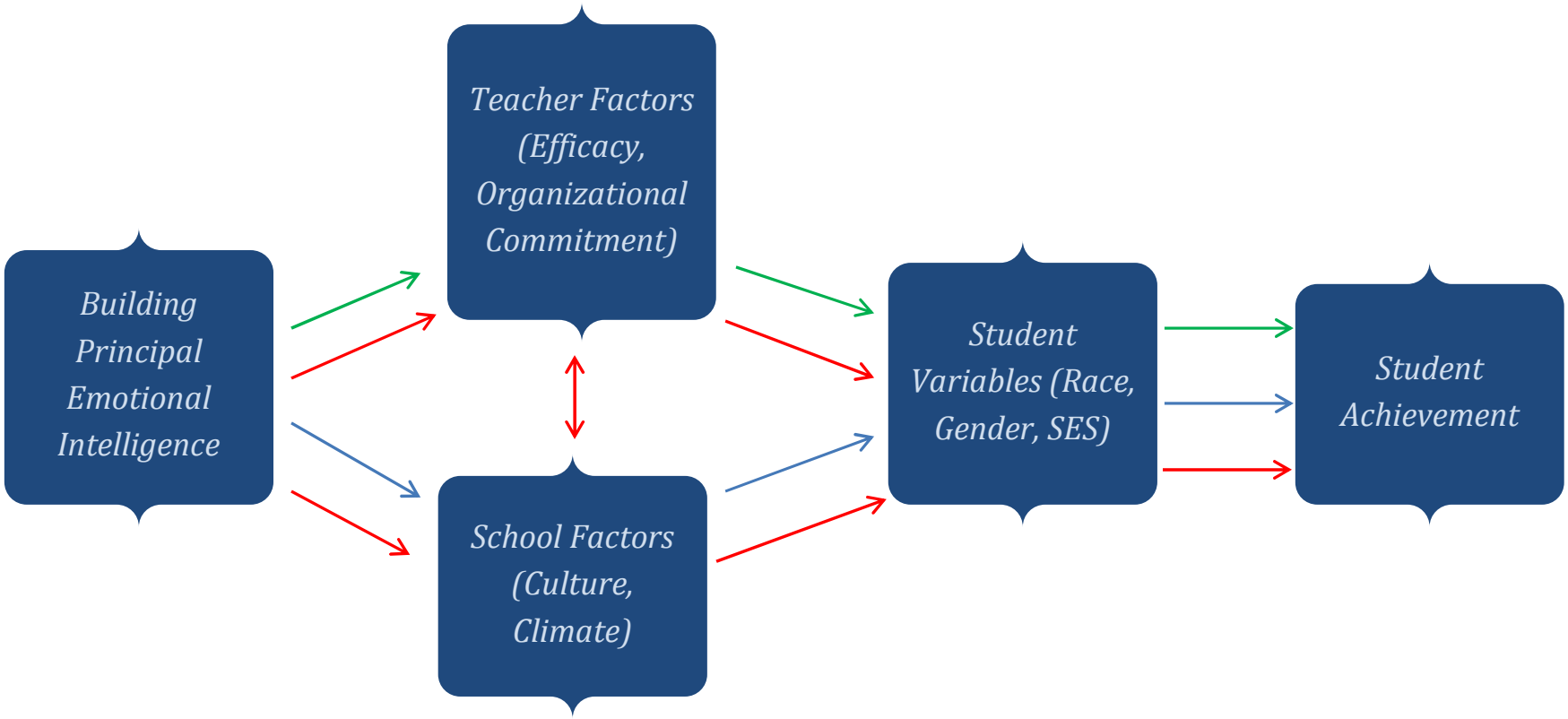
One finding of this present study is that there is a statistically significant effect of the building principal's emotional intelligence score when looking at mathematics, but not communication arts. Figure five below summarizes the results relating to this finding. In this figure it can be seen that the correlation (R), R-square, and adjusted R-square are identical. In the model without a content code, there is no independent variable for either mathematics or communication arts. However, in the model with a content code, a multiplier of zero is used for communication arts. This results in this particular model showing the effect for mathematics alone. Because there is no increase in the results, it can be inferred that the principal's emotional intelligence score has no effect in the area of communication arts. The red model proposes that the building principal has a direct effect on school and teacher level variables, which in turn have reciprocal effects upon each other. A careful examination of these variables may reveal why it was found in this study, that the building principal's total emotional intelligence score showed a statistically significant effect on the area of student mathematics achievement and not on student achievement in communication arts.

Table 16

Effect of building principal total emotional intelligence score on mathematics and communication arts achievement

Model	R	R-square	Adjusted R-Square
Z-Score model *without* content code	.458	.210	.209
Z- Score model *with* content code	.458	.210	.209

Figure 6 *Proposed models for the connection between building principal emotional intelligence and student achievement*



Additional Areas for Research

In addition to the models proposed as avenues for further research there are other elements that would add further information to this current study. Furthermore, these areas may help answer the question of why building principal emotional intelligence accounted for 5.5% of the variance in student achievement in Algebra I, but not in English I. This study was quantitative in nature with further study along these lines being proposed. However, to fully flesh out the connection between student achievement and a building principal's emotional intelligence, alternate research methods are recommended.

The red model proposed in the previous section (see figure six on page 153) alludes to the direct, indirect, and reciprocal effects found between a building principal and the school community (Southworth, 2009). While these connections can be tested and quantified through the use of multiple measures, there is information within this model that cannot be quantified. Using a mixed-methods approach in which both quantitative and qualitative methods are employed is a valuable avenue for further research. In fact, Gall et al. (2007), make the case that this type of methodology "can provide richer insights" into a topic than either methodology alone (p. 34).

As mentioned earlier, the potential to expand on quantified data, or collect data that are not quantifiable is wide open in the red model. Focus groups, individual interviews, and face-to-face follow-up meetings to surveys or tests each provide the potential to add valuable information the proposed models. One set of information that was not gathered in this present study was demographic data on the building principal's race and ethnicity While research on the MSCEIT reveals no significant differences in measured emotional intelligence between racial or ethnic groups in the norm sample, it is possible that there is other important information to be

gained by having gathered this particular piece of demographic data from study participants (Mayer, Salovey, & Caruso, 2002). Hearing from students and teachers in their own voices about their interactions with the building principal has the potential to provide both new information and depth to quantitatively gathered data. When thinking about the diverse setting that can be found in many schools across the nation, hearing from students and teachers in their own voice becomes even more powerful. As educational leaders seek to increase academic achievement and increase the opportunities for all children to receive a socially just education, research that fully probes significant issues should be pursued.

Addressing Limitations

In the previous section on limitations there were several important details noted that could impact avenues for future research. Both of these avenues dealt with sampling, whether it be sample size or sample demographics. Increasing the sample size would provide two important elements to the current research. One, an increased sample size would help to determine if there is a greater effect of a building principal's emotional intelligence on student achievement than what was found in this study, or if the effect noted in this study does appear to be correct. Secondly, an increased sample size would allow study results to be more accurately generalized to the population from which the sample was drawn.

Addressing the demographics of the sample population falls directly in line with increasing the sample size. While at times it is important to have an understanding of a particular population, in regard to variables that impact students' educational achievement, it may be even more important to have an understanding of a very broad student population (i.e. all students). This can be seen very clearly in the works of Hattie et al. (2003), Leithwood et al. (2008), Leithwood and Jantzi (2008), Marzano (2002, 2005). Each of these researchers have used the

process of meta-analysis to synthesize research which covers a wide range of demographics and sample sizes. These studies have contributed greatly to educators' understanding of the processes of teaching and learning. As mentioned previously, the sample in this study represents only students in an urban/suburban mid-western setting. There are two steps in future research that could improve the quality of study results. One, including students from rural areas and mid-size towns would provide a better picture of the overall student population. Two, including students from different areas of the country would additionally provide a better picture of the student population. As cited previously in this study, Gall et al. (2007) make the statement based on postpositivist thinking that an objective reality does indeed exist, but that it can only "be known imperfectly" (p. 16). One of the chief reasons that this reality may only be known in an imperfect manner is that that there are many independent variables that often impact a given dependent variable. Another important motive for this statement is that researchers and research methods interject a certain degree of error into the measurement process of how one variable leads to or is connected to another. Taking into account as many variables as possible, as proposed in suggestions one and two, is one way to address the first chief reason in Gall et al.'s (2007) previous statement. Suggestion two also addresses the second motive behind Gall et al.'s (2007) statement. Each state is required to use a standardized test to measure student achievement in the areas of communication arts and mathematics (United States Congress 107th 1st Session, 2001). While each state has developed or adopted a test to achieve this mandate, measurement issues abound across state tests. Such issues include whether or not these test measure the same concepts, if these tests measure the same concepts in the same manner, or how to compare scores across tests. While the issues of what concepts are measured or how they are measured are complicated to resolve, the issue of comparing scores across tests can be addressed. In this study,

the use of z-scores was employed to achieve this purpose. By looking at mathematics or communication arts scores across states, the demographic profile of the sample would be greatly enhanced. This could be accomplished in the statistically defensible method of converting all student test scores to z-scores so that they could be compared on a common metric. These steps were time and cost prohibitive in this study, but would provide an added level of legitimacy to study results.

Conclusion

At the outset of this study it was noted that study results were anticipated as having the potential to inform both programs for pre-service principals and the professional development of current building administrators. This statement was based on the premise that teacher quality plays a significant role in student achievement and that teacher quality is significantly impacted by the building principal (Dinham, 2007; Hattie et al., 2003; Leithwood, 2008; Marzano, 2007; Moore, 2009). Determining if there was indeed a significant connection between the principal characteristic of emotional intelligence the student outcome of academic achievement provides the potential for helping building administrators gain or sharpen the skills that impact student learning. Results of this study revealed a small, but significant finding. A finding, that while in need of further research, does indeed have the potential to inform pre-service training and acting educational administrators.

When one looks at a school there are a myriad of responses that may be gathered; ranging from the physical setting to much deeper elements of how the school is structured and run. It is in these deeper elements that one truly begins to understand the nature of a school, or the purposes for which that school exists. The National Council for Teachers of Mathematics published the following statement:

> Imagine a classroom, a school or a school district where all students have access to high-quality, engaging mathematics instruction. There are ambitious expectations for all, with accommodations for those who need it. Knowledgeable teachers have adequate resources to support their work and are continually growing as professionals. (NCTM, 2000, p. 3 as cited by McCoy, 2011, p. 1)

While this quote references the study of mathematics. There are many elements of high-quality education mentioned in this statement. Described in this quotation is a school that has taken to heart the deeper meaning of education and is working from foundational elements of both empirically based teaching methods and a desire for continuous improvement. The use of sound methodology to address a student's academic and social needs, coupled with a desire to continually improve the educational process are two hallmarks of quality educators.

Referencing the previously mentioned idea that building principals play an important role in influencing teachers and that teachers play an important role in influencing student achievement, one question remains. How do building principals influence teachers in a manner that positively impacts student learning? More specifically, how does a building principal impact teachers in a way that helps to create the type of teacher described in the previous paragraph? It was found in H_1 that the building principal's emotional intelligence did not account for any variance in communication arts scores, but did account for some variance in mathematics. Does this show a connection between the findings of this study and the NCTM (2000) quote cited above? This study does not, and was not intended to, fully answer these important questions. However, this study does add a significant piece of information that helps to answer these queries. This study also meets the purpose for which it was designed; to inform pre-service and acting administrators as they perform the work it takes to create high-quality teachers working in high-quality learning environments that produce students who are well equipped for twenty-first century success.

The finding that a building principal's total emotional intelligence score accounts for 1% of the variance in student achievement scores may be easy to ignore if looked at in the light that 99% of the variance in these scores is explained by other variables. Looking at this result in light of other research that indicates 30% of student achievement is accounted for by classroom teachers, or 20% of student achievement is accounted for by student centered variables, this 1% may be a critical element in these other percentages (Hattie et al., 2003). Emotionally intelligent individuals are much more likely to be adept at building effective relationships, communicating important messages, managing their own emotions and the emotions of those around them, and be secure in the ability to work well with others; all of which are hallmarks of effective principals (Dufour & Eaker, 2008; Graczewski et al., 2009; Heck and Hallinger, 2009; Murphy et al., 2007).

Salovey and Mayer (1990) define emotional intelligence "as the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (p. 5). Building principals who are adept at the skills presented within this definition may reasonably be assumed to be adept at those skills associated with effective principals mentioned in the preceding paragraph. Given the challenges presented by the current accountability movement in education, even a 1% increase in the known variance of student achievement may contribute significantly to a pre-service or acting principal's knowledge set. Beyond meeting demands applied to schools under the current accountability movement is the need to provide all students with the type of educational experience that prepares them for success in a global society and 21st century workforce. It can be reasonably argued, and has been in this study, that a building principal's emotional intelligence plays an important role in their social interaction with the

school community. Furthermore, it is the result of this social interaction that sets the tone for a culture and climate of ongoing learning and student achievement. Bell (2010) states that, "in the future, children must enter a workforce in which they will be judged on their performance. They will be evaluated not only on their outcomes, but also on their collaborative, negotiating, planning, and organizational skills" (p. 43). Educational leaders must be prepared to lead conversations and interact with the school community in ways that promote the skills proposed by Bell (2010). Future research is needed to confirm the findings of this study and to determine the manner in which a principal's emotional intelligence and student achievement are connected. Franklin D. Roosevelt stated in his first inaugural address on March 4th, 1933 that "happiness… lies in the joy of achievement and the thrill of creative effort" (Lillian Goldman Law Library, 2008). The creative effort of today's educational leaders paves the way for our children to experience the joy of achievement.

APPENDIX A

Letter to District Level Personnel

Dear...

I am a student at the University of Missouri – Kansas City working on my doctoral degree in educational administration. The focus of my dissertation work is the correlation between student academic achievement and the emotional intelligence of building principals.

In order to complete my study I will need 63 participating schools and principals. Individual participants will be asked to complete an online version of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and a demographic profile indicating their; gender, level of education, years of experience, and school level (elementary, middle, high school). Principals will receive their own individual results for the Emotional Intelligence Test, which may be useful in professional growth as a school leader.

All study related information will be disseminated and collected in a confidential manner. It is not the intention of this study to evaluate individual principal or school performance in the areas of emotional intelligence or student achievement. Rather, the purpose of this study is to add to current research on how pk-12 building principals affect student achievement.

I am eager to begin the research process and am hopeful that your district finds value in this study by allowing your principals to participate. Should your district be willing to participate in this study, an email stating your consent for principals participation is greatly appreciated. If you have any questions regarding this research project please feel free to contact me by phone at (816) 813-0392 or email at jmfb43@mail.umkc.edu I look forward to hearing from you in the near future.

Sincerely,

James Fish

APPENDIX B

LETTER TO STUDY PARTICIPANTS

Dear...

I am a student at the University of Missouri – Kansas City working on my doctoral degree in educational administration. The focus of my dissertation work is the correlation between student academic achievement and the emotional intelligence of building principals.

In order to complete my study the _____ school district has granted me permission to ask for your participation in this study. As a participant you will be asked to complete an online version of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and a demographic profile indicating your gender, level of education, years of experience, and school level (elementary, middle, high school). Principals will receive their own individual results for the Emotional Intelligence Test, which may be useful in professional growth as a school leader.

All study related information will be disseminated and collected in a confidential manner, no personally identifiable information will be revealed. It is not the intention of this study to evaluate yours or the school's performance in the areas of emotional intelligence or student achievement. Rather, the purpose of this study is to add to current research on how pk-12 building principals affect student achievement.

I am eager to begin the research process and am hopeful that you will consider participating in this study. Should you be willing to participate in this study, an informed consent letter is attached. You may sign and return this form in the provided envelope. Participant selection will be complete by the end of September. At this time you will be notified if you have been selected for study participation. If you have any questions regarding this research project please feel free to contact me by phone at (816) 813-0392 or email at jmfb43@mail.umkc.edu I look forward to hearing from you in the near future.

Sincerely,

James Fish

APPENDIX C

INFORMED CONSENT – PARTICIPANT FORM

Consent for Participation in a Research Study

Building Principal Emotional Intelligence and Student Achievement

Principal Investigator:

James Fish

Invitation to Participate

You are invited to participate in a quantitative research study designed to understand the relationship between the emotional intelligence of a building principal and student achievement. The findings of this study will be presented in dissertation format by the principal researcher in partial fulfillment of the requirements for the degree Doctor of Education.

Who Will Participate

All building level principals who serve students in grades 3, 8, and 11 in seven of the University of Missouri – Kansas City's nine partner schools in addition to two other districts in the Kansas City Metropolitan area will be invited to participate in this study.

Purpose

The purpose of this study is to determine the nature of the correlation between a building principal's emotional intelligence as measured by the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT), and student achievement as measured by the Missouri Assessment Program (MAP) in communication arts and mathematics.

Description of Procedures

Building principals will be asked to complete a demographic data survey and an online version of the MSCEIT. Completion of the demographic data survey and online MSCEIT are anticipated to take no longer than an hour to complete.

Voluntary Participation

Your participation in this study is strictly voluntary. You may choose not to participate in this study and may choose to withdraw from the study at any time. Choosing not to participate or to withdraw from the study will not result in a penalty or loss of benefits to which you are entitled. Any data provided up to the point of withdrawal will be retained by the principal researcher for analysis.

Fees and Expenses

There are no monetary costs to you.

Compensation

You will not receive compensation for participation in this study.

Benefits

Principals will receive their own individual results for the Emotional Intelligence Test, which may be useful in professional growth as a school leader. Furthermore, the results of this study will inform the design and delivery of instruction for principal preparation programs and professional development for current principals. This information will be particularly useful in continuing to understand how principals are effective at increasing student achievement. A copy of this dissertation will be housed in the UMKC library.

Alternatives to Study Participation

The alternative is not to participate in this study.

Confidentiality

Data collected will include an Emotional Quotient (EQ) score as measured by the MSCEIT, demographic data for the building principal and their school as a whole, as well as disaggregated

student achievement data as measured by the communication arts and mathematics portions of the MAP in grades 3, 8, and 11. All data will be stored in the home office of the principal investigator and will only be accessed by the principal investigator and their dissertation committee. Any personally identifiable information provided will be presented in the aggregate, which will ensure participant anonymity. Individuals from the University of Missouri – Kansas City's Institutional Review Board may also have access to study records.

In Case of Injury

The University of Missouri – Kansas City appreciates the participation of people who help carry out its function of developing knowledge through research. If you have any questions about the study that you are participating in you are encouraged to call James Fish, the investigator, at (816) 813 – 0392.

Although it is not the University's policy to compensate or provide medical treatment for persons who participate in studies, if you think you have been injured as a result of participating in this study, please call the IRB Administrator of UMKC's Social Sciences Institutional Review Board at (816) 235 – 1764.

Questions

If you have any questions, please contact the principal investigator

James Fish 6308 N. London Ave. Apt. B/ Kansas City, MO 64151/ jmfb43@mail.umkc.edu / ph. (816) 813 – 0392

Authorization

_____ Participant's Signature_____

James Fish

Printed Name_____

Date_____ Date_____

APPENDIX D

DEMOGRAPHIC DATA COLLECTION SHEET

Demographic Data Sheet

Name: School:

Please write your response to questions 1-4 in the response box, using the provided choices.

1. Gender

Response:

Male Female

2. Level of Education

Response:

Masters Masters + Specialist Specialist + PhD / EdD

3. How many years of administrative experience do you have?

Response:

3 - 5 6 - 8 9 - 11 12 - 20 21+

4. How many years have you been the principal in your building?

Response:

3 - 5 6 - 8 9 - 11 12 - 20 21+

APPENDIX E

SSIRB APPROVAL

September 14, 2011

Jennifer Friend, Ph.D.
UMKC - School of Education
328 Education
Kansas City, MO 64110

Amendment Approval Date: 9/13/2011
Expiration Date: 8/28/2012

Dear Dr. Friend,

Your Amendment dated, 9/13/2011, to research protocol IRB #SS11-100e entitled, "A Correlational Study of Building Principal Emotional Intelligence and the Connection to Academic Achievement" was given an expedited review by a member of the UMKC Social Sciences Institutional Review Board (SSIRB).

The IRB approves your amendment dated, 9/13/2011, to research protocol IRB # SS11-100e as submitted. You are granted permission to conduct your study as revised. The date for continuing review remains unchanged at 8/28/2012, unless closed before that date.

The approval includes the following:
- Addition of Raymore-Peculiar and Belton USD 124 School Districts to the study

Any further changes to the study must be promptly reported and approved. Please contact the administrative office of the SSIRB (email: umkcssirb@umkc.edu; phone: 816-235-5927) if you have questions.

Thank you,

SSIRB Administrative Office

PLEASE NOTE:

If a signed copy of this letter is needed, please contact a member of the IRB staff.

This e-mail is an official notification intended only for the use of the recipient(s). If you have received this communication in error, please return it to the sender immediately and delete any copy of it from your computer system.

REFERENCES

Ashkanasy, N.M., & Dasborough, M.T. (2003). Emotional awareness and emotional intelligence in leadership teaching. *Journal of Education for Business, 79*(1), 18-22.

Atkinson, J.W. (1964). *An introduction to motivation.* Princeton, NJ: Van Nostrand.

Austin, E. (2010). Measurement of ability emotional intelligence: Results for two new tests. *British Journal of Psychology, 101,* 563-578.

Barbuto, J.E., & Burbach, M.E. (2006). The emotional intelligence of transformational leaders: a field study of elected officials. *Journal of Social Psychology, 146*(1), 51-64.

Bandura, A. (2010). Exercise of human agency through collective efficacy. *Current Directions in Psychological Science, 19* (6), 75-78.

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist, 28* (2), 117-148.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology, 52,* 1-26.

Bandura, A. (2002). Social cognitive theory in cultural context. *Applied Psychology: An International Review, 51* (2), 269-290.

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bar-On R. (1997a). *The emotional quotient inventory (EQi): A test of emotional intelligence.* Toronto, Canada: Multi-Health Systems.

Bar-On, R. (1997b). *BarOn emotional quotient inventory (EQ-i): Technical manual.* Tornonto, Canada: Multi-Health Systems.

Bar-On, R., & Parker, J.D.A. (2000). *Handbook of emotional intelligence*: *Theory, development, assessment and application at home, school and in the workplace*. San Francisco: Jossey-Bass.

Bar-On, R. (2010). Emotional intelligence: An integral part of positive psychology. *South African Journal of Psychology, 40* (1), 54-62.

Basom, M.R., & Frase, L. (2004). Creating optimal work environments: exploring teacher flow experiences. *Mentoring and Tutoring, 12* (2), 241-258.

Binet, A., & Simon, T.H. (1916). *The development of intelligence in children.* Baltimore, MD: Williams and Wilkins Company.

Blase, J., & Blase, J. (2004). *Handbook of instructional leadership.* Thousand Oaks, CA: Corwin Press.

Brackett, M.A., & Mayer, J.D. (2003). Convergent, discriminant, and incremental validity of competing measures of emotional intelligence. In Salovey, P., Brackett, M.A., & Mayer, J.D. (Eds.), *Emotional intelligence key readings on the mayer and salovey model* (pp. 195-219). Port Chester, NY: Dude Publishing.

Bradberry, T., & Greaves, J. (2009). *Emotional intelligence 2.0.* San Diego: TalentSmart.

Brandt, R. (1992). On rethinking leadership: A conversation with Tom Sergiovanni. *Educational Leadership, 49* (5), 46-49.

Brody, N. (1999). What is intelligence? *International Review of Psychology, 11*, 19-25.

Burgess, R.C. (2005). A model for enhancing individual and organizational learning of 'emotional intelligence': The drama and winner's triangles. *Social Work Education, 24*(1), 97-112.

Caldwell, B.J. (2010). Strategies for leadership in a high-stakes game. *ISEA, 38* (1), 87-97.

Chan, D. W. (2008). Emotional intelligence, self-efficacy, and coping among Chinese prospective and in-service teachers in Hong Kong. *Educational Psychology, 28* (4), 397-408.

Chernis, C. (1998). Social and emotional learning for leaders. *Educational Leadership, 55*(7), 26-28.

Chernis, C. (2000a). *Emotional intelligence: What it is and why it matters.* Paper presented at the annual meeting of the society for industrial and organizational psychology, New Orleans, Louisiana.

Chernis, C. (2000b). Social and emotional competence in the workplace. In Bar-On, R., Parker, J.D.A (Eds.), *The handbook of emotional intelligence* (pp. 433 – 458). San Francisco: Jossey-Bass.

Chernis, C., Exstein, M., Goleman, D., & Weissberg, R.P. (2006). Emotional intelligence: What does the research really indicate? *Educational Psychologist, 41* (4), 239-245.

Cobb, C.D., Mayer, J.D. (2000). Emotional intelligence, what the research says. *Educational Leadership, 58*(3), 14-18.

Collins, J., (2001). *Good to great: Why some companies make the leap and others don't.* New York: Harper Business.

Cooper, J.E., Gardner, M.E., Lambert, L., Lambert, M.D., Szabo, M., Walker, D., & Zimmerman, D.P. (2002). *The constructivist leader.* New York: Teachers College Press.

Crippen, C. (2005). Servant-leadership as an effective model for educational leadership and management: first to serve, then to lead. *Management in Education, 18*(5), 11-16.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience.* New York: Harper & Row.

CTB McGraw-Hill. (2009). *Missouri assessment program grade level assessments technical report 2009.* Retrieved from http://dese.mo.gov/divimprove/assess/tech/documents/2009-MAP-Technical-Report.pdf

Davies, B. (2009). *The essentials of school leadership.* Los Angeles, CA: SAGE.

Day, A.L. (2004). The measurement of emotional intelligence. In Geher, G. (Ed.). *Measuring emotional intelligence common ground and controversy* (pp. 245-270). New York: Nova Science Publishers

Deci, E.L., & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behavior.* New York: Plenum.

Deci, E.L., & Ryan, R.M. (2008). Self-determination theory: A macrotheory of human motivation, development and health. *Canadian Psychology, 49* (3), 182-185.

Denessen, E., Nguni, S., & Sleegers, P., (2006). 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, 17*(2), 145-177.

Di Fabio, A., & Palazzeschi, L. (2008). Emotional intelligence and self-efficacy in a sample of Italian high school teachers. *Social Behavior and Personality, 36* (3), 315-326.

Dinham, S. (2007). How Schools get moving and keep improving: leadership for teacher learning, student success and school renewal. *Australian Journal of Education, 51*(3), 263-275.

Dufour, R., & Eaker, R. (2008). *Professional learning communities at work: best practices for enhancing student achievement.* Bloomington, IN: Solution Tree.

Eccles, J.S., & Wigfield, A. (2002). Motivational beliefs, values and goals. *Annual Review of Psychology, 53,* 109-132.

Elliott, S.N., Goldring, E., Murphy, J., & Porter, A.C. (2007). Leadership for learning a research-based model and taxonomy of behaviors. *School Leadership and Management, 27*(2), 179-201.

Farrelly, D., & Austin, E.J. (2007). Ability EI as an intelligence? Associations of the MSCEIT with performance on emotion processing and social tasks and with cognitive ability. *Cognition and Emotion, 21* (5), 1043-1063.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191.

Fullan, M. (2005). *Leadership and sustainability.* Thousand Oaks, CA: Corwin Press.

Fullan, M. (2007). *The new meaning of educational change.* New York: Teachers College Press.

Fullan, M. (2008). *The six secrets of change.* San Francisco, CA: Jossey-Bass.

Fulton, C.R., & Leech, D. (2008). Faculty perceptions of shared decision making and the principal's leadership behaviors in secondary schools in a large urban district. *Education, 128*(4), 630-644.

Gall, M.D., Gall, J.P., & Borg, W.R. (2007). *Educational research an introduction 8th edition.* Boston: Pearson.

Gagne, M., & Forest, J. (2008). The study of compensation systems through the lens of self-determination theory: Reconciling 35 years of debate. *Canadian Psychology, 49* (3), 225-232.

Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.

Gardner, H. (1995). Reflections on multiple intelligences. *Phi Delta Kappan, 3*(77), 200-207.

Gardner, H. (1997). Multiple intelligences as a partner in school improvement. *Educational Leadership, 7*(47), 20-21.

Gardner, H. (1998). A multiplicity of intelligences. *Scientific American Presents,* 18-23.

Garnder, H. (2006). *Multiple Intelligences*. New York: Basic Books.

Georgiades, W., & Trump, J.L. (1969). NAASP model schools project. *Education, 90*(2), 161-163.

Ginsberg, R. (2008). Being boss is hard: the emotional side of being in charge. *Phi Delta Kappan, 4*(90), 292-297.

Goldberg, L.R. (1992). The development of markers for the big five factor structure. *Psychological Assessment, 4* (1), 26-42.

Goleman, D. (2006). *Emotional intelligence.* New York: Bantam Books.

Goleman, D. (1998). *Working with emotional intelligence.* Boston: Harvard Business School Press.

Goldenberg, I., Matheson, K., & Mantler, J. (2006). The assessment of emotional intelligence: A comparison of performance-based and self-report methodologies. *Journal of Personality Assessment, 86* (1), 33-45.

Graczewski, C., Holtzman, D., & Knudson, J. (2009). Instructional leadership in practice: what does it look like, and what influence does it have?. *Journal of Education for Students Placed at Risk, 14*, 72-96.

Graham, P. (2007). Improving teacher effectiveness through structured collaboration: A case study of a professional learning community. *Research in Middle Level Education Online, 31* (1), 1-17.

Hallinger, P., & Leithwood, K. (1998). Unseen forces: The impact of social culture on school leadership. *Peabody Journal of Education, 73* (2), 126-151.

Hartley, D. (2004). Management, leadership and the emotional order of the school. *Journal of Educational Policy, 5* (19), 583-594.

Hattie, J. (2003). *Teachers make a difference: What is the research difference?* Paper presented at the Australian Council for Educational Research Melbourne, Australia.

Heck, R.H., & Hallinger, P. (2009). Assessing the contribution of distributed leadership to school improvement and growth in math achievement. *American Educational Research Journal, 46*, 659-689.

Hipp, K.A. (1996). *Teacher efficacy: influence of principal leadership behavior.* Paper presented at the annual meeting of the American Educational Research Association New York, New York.

Hoadley, U., Christie, P., & Ward, C.L. (2009). Managing to learn: instructional leadership in south african secondary schools. *School Leadership and Management, 29* (4), 373-389.

Hollenczer, L.L., & Schneider, J.E. (2006). *The principal's guide to managing communication.* Thousand Oaks, CA: Corwin Press.

Johnson, Jr., J.F., & Uline, C.L. (2005). Preparing educational leaders to close achievement gaps. *Theory Into Practice, 44*(1), 45-52.

Kinnie, E.J., & Sternlof, R.E. (1971). The influence of nonintellective factors on the iq scores of middle and lower-class children. *Child Development, 42* (6), 1989-1995.

LaGuradia, J.G., & Patrick, H. (2008). Self-determination theory as a fundamental theory of close relationships. *Canadian Psychology, 49* (3), 201-209.

Lam, L.T., & Kirby, S.L. (2002). Is emotional intelligence an advantage? An exploration of the impact of emotional and general intelligence on individual performance. *The Journal of Social Psychology, 142* (1), 133-143.

Lambert, L. (2005). Leadership for lasting reform. *Educational Leadership, 62*(5), 62-65.

Lambert, L., Walker, D., Zimmerman, D.P., Cooper, J.E., Lambert, M.D., Gardner, M.E., & Szabo, M. (2002). *The constructivist leader.* New York, NY: Teachers College Press.

Leithwood, K. (1998). *Distributed leadership and student engagement in school.* Presented at the annual meeting of the American Educational Research Association, San Diego, California.

Leithwood, K. (2007). Transformational school leadership in a transactional policy world. In *The jossey-bass reader on educational leadership.* (2nd ed. pp.183-196). San Francisco: Jossey-Bass.

Leithwood, K., & Beatty, B. (2009). Leadership for emotionally hot climates. *ISEA, 37* (1), 91-103.

Leithwood, K., & Duke, D.L. (1998). Mapping the conceptual terrain of leadership: A critical point of departure for cross cultural studies. *Peabody Journal of Education, 73* (2), 31-50.

Leithwood, K., Harris, A., & Hopkins, D. (2008). Seven strong claims about successful school leadership. *School Leadership and Management, 28* (1), 27-42.

Leithwood, K., & Jantzi, D. (2008). Linking leadership to student efficacy: The contributions of leader efficacy. *Educational Administration Quarterly, 44* (4), 496-528.

Leithwood, K. & Jantzi, D. (2009). Transformational leadership. In Davies, B. (ed.), *The essentials of school leadership* (pp. 37-52). Los Angeles, CA: Sage.

Leithwood, K., & Mascall, B. (2008). Collective leadership effects on student achievement. *Educational Administration Quarterly, 44*, 529-561.

Lencioni, P. (2002). *The five dysfunctions of a team*. San Francisco: Jossey-Bass.

Lewis, J.J. (2012). Margaret Thatcher quotes [Blog post]. Retrieved from http://womenshistory.about.com/od/quotes/a/m_thatcher.htm

Lillian Goldman Law Library (2008). *First inaugural address of Franklin D. Roosevelt.* Retrieved from Yale Law School The Avalon Project Documents in Law, History, and Dimplomacy website: http://avalon.law.yale.edu/20th_century/froos1.asp

Lopes, P.N., Brackett, M.A., Nezlek, J.B., Schutz, A., Sellin, I., & Salovey, P. (2004). Emotional intelligence and social interaction. *Personality and Social Psychology Bulletin, 30*, 1018-1034.

Lujan, N., & Day, B. (2010). Professional learning communities: Overcoming the roadblocks. *The Delta Kappa Gamma Bulletin,76* (2) , 10-17.

Lyddon, W.J. (1990). First and second-order change: implications for rationalist and constructivist cognitive therapies. *Journal of Counseling and Development, 2* (69), 122-127.

Mackey, B., Pitcher, S., Decman, J. ( ). The influence of four elementary principals upon their schools' reading programs and students' reading scores. *Education, 127* (1), 39-55.

Marks, H.M., & Printy, S.M. (2003). Principal leadership and school performance: an integration of transformational and instructional leadership. *Educational Administration Quarterly, 3* (39), 370-397.

Marshall, C., & Oliva, M. (2010) *Leadership for social justice.* Boston: Allyn & Bacon.

Marzano, R.J. (2003). *What works in schools.* Alexandria, VA: ASCD.

Marzano, R.J. (2007). *The art and science of teaching.* Alexandria, VA: ASCD.

Marzano, R.J., Waters, T., & McNulty, B.A. (2007). *School leadership that works from research to results.* Alexandria, VA: ASCD.

Marzano, R.J., Norford, J.S., Paynter, D.E., Pickering, D.J., Gaddy, B.B. (2001). *A handbook for classroom instruction that works.* Alexandria, VA: ASCD.

Matthews, G., Zeidner, M., & Roberts, R.D. (2007). Emotional intelligence: Consensus, controversies, and questions. In Matthews, G., Zeidner, M., & Roberts, R.D. (Eds.), *The science of emotional intelligence knowns and unknowns* (pp. 3-46). Oxford, NY: Oxford University Press.

Mayer, J.D., Caruso, D., & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. In Salovey, P., Brackett, M.A., & Mayer, J.D. (Eds.), *Emotional intelligence key readings on the mayer and salovey model* (pp. 123-160). Port Chester, NY: Dude Publishing.

Mayer, J.D., Salovey, P., Caruso, D., & Sitarenios, G. (2001). Emotional intelligence as a standard intelligence. In Salovey, P., Brackett, M.A., & Mayer, J.D. (Eds.), *Emotional intelligence key readings on the mayer and salovey model* (pp. 161-178). Port Chester, NY: Dude Publishing.

Mayer, J.D., Salovey, P., Caruso, D., & Sitarenios, G. (2003). Measuring emotional intelligence with the MSCEIT V2.0. In Salovey, P., Brackett, M.A., & Mayer, J.D. (Eds.), *Emotional intelligence key readings on the mayer and salovey model* (pp. 179-194). Port Chester, NY: Dude Publishing.

Mayer, J.D., Salovey, P., & Caruso, D.R. (2008). Emotional intelligence new ability or eclectic traits?. *American Psychologist, 63* (6), 503-517.

Mayer, J.D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds). In Salovey, P., Brackett, M.A., & Mayer, J.D. (Eds.), *Emotional intelligence key readings on the mayer and salovey model* (pp. 29-60). Port Chester, NY: Dude Publishing.

McDowelle, J.O., & Bell, E.D. (1997). *Emotional intelligence and educational leadership at east carolina university.* Paper presented at the 51st annual conference of the National Council for Professors of Educational Administration, East Carolina University.

McWilliam, E., & Hatcher, C. (2007). Killing me softly: the 'making up' of the educational leader. *International Journal of Leadership in Education, 10* (3). 233-246.

Merriam-Webster. (2011). *The merriam-webster unabridged dictionary.* Retrieved from http://www.merriam-webster.com

Missouri Department of Elementary and Secondary Education. *Appendix d MAP score use, meaningfulness, and dependability.* Retrieved from: http://www.dese.mo.gov/divimprove/fedprog/discretionarygrants/ReadingFirst/DMAP.pdf

Missouri Department of Elementary and Secondary Education. (2011). *Missouri assessment program grade level assesments 2011 addendum to the 2010 technical report.* Retrieved from: http://www.dese.mo.gov/divimprove/asess/tech/

Missouri Department of Elementary and Secondary Education. (2011). *Missouri end-of-course assessments technical report phase I assessments 2010-2011.* Retrieved from: http://dese.mo.gov/divimprove/assess/tech/index.html

Missouri Department of Elementary and Secondary Education (2011). *Missouri school improvement program crosswalk – MSIP 4 to MSIP 5 to revised MSIP 5.* Retrieved from: http://dese.mo.gov/qs/documents/msip5-crosswalk.pdf

Moore, B. (2009). Emotional intelligence for school administrators: a priority for school reform?. *American Secondary Education, 37*(3), 20-26.

Moran, S., Kornhaber, M., Gardner, H. (2006). Orchestrating multiple intelligences. *Educational Leadership, 1*(67), 22-27.

Morrison, J. (2008). The relationship between emotional intelligence competencies and preferred conflict-handling styles. *Journal of Nursing and Management, 16*, 974-983.

Mullen, C.A., & Hutinger, J.L. (2008). The principal's role in fostering collaborative learning communities through faculty study group development. *Theory into Practice, 47*, 276-285.

Murphy, J. (2005). Unpacking the foundations of ISLLC standards and addressing concerns in the academic community. *Educational Administration Quarterly, 41*, 154-191.

National Center for Educational Statistics. (2009). *Table B.2.a.1 – Percentage distribution of public school students across National Assessment for Educational Progress reading achievement levels, by grade level and school locale: 2009* Retrieved from National Center for Educational Statistics website: http://nces.ed.gov/surveys/ruraled/tables/b.2.a.-1.asp?refer=urban

Nettlebeck, T. & Wilson, C. (2005). Intelligence and iq: What teachers should know. *Educational Psychology, 25* (6), 609-630.

Norusis, M.J. (2009). *PASW statistics 18 statistical procedures companion*. Upper Saddle River, NJ: Prentice Hall.

Ntoumanis, N., Edmunds, J., Duda, J.L. (2009). Understanding the coping process from a self-determination theory perspective. *British Journal of Health Psychology, 14*, 249-260.

Okinska-Bulik, N. (2005). Emotional intelligence in the workplace: exploring its effects on occupational stress and health outcomes in human service workers. *International Journal of Occupational Medicine and Environmental Health, 18* (2), 167-175.

Overbaugh, R., & Lu, R. (2008). The impact of nclb-eett funded professional development program on teacher self-efficacy and resultant implementation. *Journal of Research on Technology in Education, 41* (1), 43-61.

Overton, J. (2009). Early childhood teachers in contexts of power: empowerment and a voice. *Australasian Journal of Early Childhood, 34* (2), 1-10.

Owens, R.G., & Valesky, T.C. (2011). *Organizational behavior in education leadership and school reform.* Boston: Pearson.

Parker, P.A., & Sorensen, J. (2008). Emotional intelligence and leadership skills among nhs managers: An empirical investigation. *The International Journal of Clinical Leadership, 16*, 137-142.

Pas, E.T., Bradshaw, C.P., Hershfeldt, P.A., & Leaf, P.J. (2010). A multilevel exploration of the influence of teacher efficacy and burnout on response to student problem behavior and school-based service use. *School Psychology Quarterly, 25* (1), 13-27.

Petrides, K.V., Furnham, A., & Mavroveli, S. (2007). Trait emotional intelligence: Moving forward in the field of EI. In Matthews, G., Zeidner, M., & Roberts, R.D. (Eds.), *The science of emotional intelligence knowns and unknowns* (pp. 151-166). Oxford, NY: Oxford University Press.

Ross, J. A., & Gray, P. (2006). Transformational leadership and teacher commitment to organizational values: The mediating effects of collective teacher efficacy. *School Effectiveness and School Improvement, 17* (2), 179-199.

Runyon, R.P., Coleman, K.A., & Pittenger, D.J. (2000). *Fundamentals of behavioral statistics 9th ed.* Boston: McGraw-Hill.

Rushton, J.P., & Jensen, A.R. (2010). Race and iq: A theory-based review of the research in Richard Nisbett's intelligence and how to get it. *The Open Psychology Journal, 3*, 9-35.

Ryan, P.J. (1997) Unnatural selection: Intelligence testing, eugenics, and American political cultures. *Journal of Social History, 30* (3), 669-686.

Sahlberg, P. (2007). Education policies for raising student learning: the Finnish approach. *Journal of Education Policy, 22*(2), 147-171.

Salovey, P., & Mayer, J.D. (1990). Emotional intelligence. In Salovey, P., Brackett, M.A., & Mayer, J.D. (Eds.), *Emotional intelligence key readings on the mayer and salovey model* (pp. 1-28). Port Chester, NY: Dude Publishing.

Salovey, P., Mayer, J.D., & Caruso, D. (2002). The positive psychology of emotional intelligence. In Salovey, P., Brackett, M.A., & Mayer, J.D. (Eds.), *Emotional intelligence key readings on the mayer and salovey model* (pp. 61-80). Port Chester, NY: Dude Publishing.

Schoo, A. (2008). Leaders and their teams: Learning to improve performance with emotional intelligence and using choice theory. *International Journal of Reality Therapy, 27* (2), 40-45.

Schwarzer, R. & Hallum, S. (2008). Perceived teacher self-efficacy as a predictor of job stress and burnout: Mediation analyses. *Applied Psychology: An International Review, 57*, 152-171.

Sergiovanni, T. (2007). Leadership as stewardship: "Who's serving who?" In *The Jossey-Bass reader on educational leadership* (2nd ed., pp. 75-92). San Francisco: Jossey-Bass.

Sergiovanni, T. (1979). Rational, bureaucratic, collegial, and political views of the principal's role. *Theory Into Practice, 18* (1). 12-20.

Sheppard, B., & Brown, J. (2009). Developing and implementing a shared vision of teaching and learning at the district level. *ISEA, 37* (2), 41-59.

Soutworth, G. (2004). *Primary school leadership in context: Leading small, medium and large sized primary schools.* London: RoutledgeFalmer.

Southworth, G. (2009). Learning-centered leadership. In B. Davies (Ed.), *The essentials of school leadership* (pp. 91-111). Los Angeles, CA: Sage.

Spearman, C. (1923). *The nature of intelligence and the principles of cognition.* London: Macmillan.

Stone, H., Parker, J.D.A., & Wood, L.M. (2005). *Report on the Ontario principals' council leadership study.* Retrieved form Consortium for Research on Emotional Intelligence in Organizations website: http://www.eiconsortium.org

Supovitz, J.A., & Christman, J.B. (2005). Small learning communities that actually learn: Lessons for school leaders. *Phi Delta Kappan, 86* (9) , 649-651.

Thompson, S. C., Gregg, L., & Niska, J. M. (2004). Professional learning communities, leadership, and student learning. *Research in Middle Level Education Online, 28* (1), 35-54.

Tobias, S. (1994). Interest, prior knowledge, and learning. *Review of Educational Research, 64* (1), 37-54.

Tornsen, M. (2009). Principal leadership, national responsibilities and successful school outcomes. *ISEA, 37* (3), 37-52.

United States Census Bureau. (2010). *2010 census data.* Retrieved from http://2010.census.gov/2010census/data/

United States Congress 107th 1st session. (2001). *No child left behind act of 2001.* (Report No. 107-334). Retrieved from http://catalog.gpo.gov

United States Department of Education, United States National Commission on Excellence in Education. (1983). *A nation at risk: the imperative for educational reform: a report to the nation and the secretary of education*. Retrieved from http://catalog.gpo.gov

VandenBos, G.R. (2009). *Publication manual of the American Psychological Association.* Washington, D.C.: American Psychological Association.

Vansteenkiste, M., Sierens, E., Soenens, B., Luyckx, K., & Lens, W. (2009). Motivational profiles from a self-determination perspective: The quality of motivation matters. *Journal of Educational Psychology, 101* (3), 671-688.

Wang, Y., & Huang, T. (2009). The relationship of transformational leadership with group cohesiveness and emotional intelligence. *Social Behavior and Personality, 37* (3), 379-392.

Ware, H., & Kitsantas, A. (2007). Teacher and collective efficacy beliefs as predictors of professional commitment. *The Journal of Educational Research, 100* (5), 303-310.

Wechsler, D. (1958). *The measurement and appraisal of adult intelligence.* Baltimore, MD: Williams & Wilkins.

Wigfield, A. (1994). Expectancy-value theory of achievement motivation: A developmental perspective. *Educational Psychology Review, 6* (1), 49-78.

Wiggins, G. & McTighe, J. (1998). *Understanding by design*. Alexandria, VA: ASCD.

Witziers, B., Bosker, R.J., & Kruger, M.L. (2003). Educational leadership and student achievement: The elusive search for an association. *Educational Administration Quarterly, 39*, 398-425.

Zellers, R. (1973). The tolerance of principals in accepting alternative teaching styles. *Education, 94*(1), 48-49.

VITA

James Madison Fish was born August 26, 1979 in Spearfish, South Dakota. He lived for a short time in both South Dakota and Wyoming, but was raised and schooled mostly in several small towns across the state of Missouri. James graduated from Doniphan High School and attended Arkansas State University where he received a Bachelor of Science in Early Childhood Education in May, 2003.

In August of 2003, James accepted a teaching position at Line Creek Elementary in the Park Hill School District in Kansas City, MO. At Line Creek James taught 4th and 5th grades as well as serving as an assistant to the principal for 6 years. During this time he completed a Master's degree in Educational Administration, receiving his diploma from the University of Missouri – Kansas City in 2006. Thereafter he began work toward his Ed.D. through the University of Missouri – Kansas City in January of 2010.

In 2011 he received a new position as Elementary Principal at Doniphan Elementary in his hometown of Doniphan, MO. Upon completion of his degree requirements, James plans to continue his tenure as building principal at Doniphan Elementary.

James is a member of the Missouri Association of Elementary Principals and the Missouri State Teachers Association.