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The Relationship among Principal Instructional Leadership, Collective Teacher Efficacy, Student Academic Achievement, and Socioeconomic Status in Appalachia Eastern Kentucky High Schools

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By

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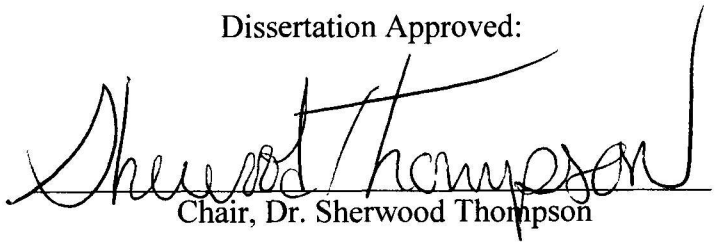

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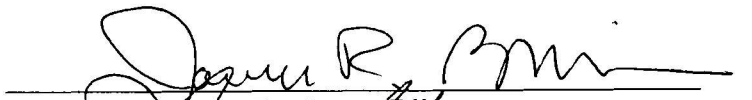

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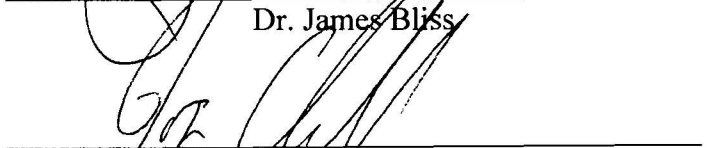

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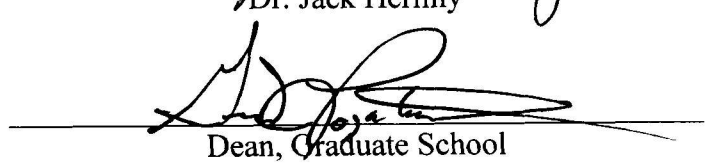

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The Relationship Among Principal Instructional Leadership, Collective Teacher Efficacy and Student Academic Achievement in Appalachia Eastern Kentucky High Schools

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DEDICATION

This dissertation is dedicated to my mother,

Guadalupe Salazar Rodriguez, my siblings – Josef, David, Reina,

Mike, Rey, and Nancee – and my children, Emilia and Daniel Salazar,

all of whom believe that education is the way to improve our

lives as well as the lives of those whom we touch

ACKNOWLEDGEMENTS

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and was available on late Friday afternoons to help me frame my research questions. I am appreciative to Dr. Hausman, who taught me how to think about leadership theory, and to Dr. Cleveland, whose expertise in socio-cultural theory helped me focus on socioeconomic theory and apply the Coleman Report and teacher collective efficacy to a rural high school setting.

ABSTRACT

Current studies have shown that principal instructional leadership can affect student academic achievement as much as 15% (Hallinger & Murphy, 1982; Hallinger & Heck, 1996; Leithwood & Beatty, 2009). Research studies on collective teacher efficacy have shown that teacher efficacy can significantly affect student academic achievement (Tschannen-Moran & Hoy, 2001; Tschannen, Moran &Woolfolk, 2001; Woolfolk; 2004; Goddard, et. al, 2000; Francera, 2009). Previous research has suggested that the effects of socioeconomic status of students can be ameliorated through a combination of principal instructional leadership and collective teacher efficacy (Howley & Howley, 2010; Coleman, 1966). The goal of finding what predictive measures affect student academic achievement warrants further study. This non-experimental research project developed four hypotheses and three research questions to examine the relationship among principal instructional leadership, collective teacher efficacy and student academic achievement, accounting for socioeconomic status. Teachers provided data for measures of collective teacher efficacy and instructional leadership behaviors by responding to items on the Collective Teacher Efficacy Scale (Goddard, et. al, 2004), and the Principal Instructional Management Rating Scale (Hallinger and Murphy, 1986). Data was obtained from 449 teachers and aggregated to the school level of 42 individual schools. Archived data from the Kentucky Department of Education Report Card provided data for free and reduced lunch percentages (socioeconomic status) and ACT composite scores (Student Academic Achievement). Pearson product-moment correlation coefficients and multiple regressions

were computed to identify the direct and indirect influences of principal instructional leadership, collective teacher efficacy and student academic achievement.

This study revealed two interesting observations: Teacher Perceptions of Classroom Management was highly correlated to Student Motivation to Learning at r = .479, p = .001, indicating that teacher's sense of efficacy regarding classroom management affects student's motivation to engaging in the learning process. Principal Protects Instructional Time (a subscale of Developing the School Learning Climate Program) was highly correlated to Maintains High Visibility, indicating that the principal's physical presence is as important as is his or her ability to manage the instructional program of the school; it was correlated at r =.485, p = .001. Socioeconomic status, as other studies have shown (Lubbers,1998; Francera, 2009; Goddard, et. al. 2004, Tschannen-Moran, M., & Woolfolk Hoy, A. 2001; Coleman, 1966) was a strong predictor of student academic achievement. It was correlated at an inverse r = -.479, p = .001. Implications for future research merit examining the principal's instructional leadership ability to provide professional development in-service workshops to increase teacher's collective efficacy behaviors, using school-based data to improve and sustain student academic achievement.

TABLE OF CONTENTS

LIST OF TABLES

TABLE PAGE

Chapter I

INTRODUCTION TO THE STUDY

This introduction provides the basis for the study of principal leadership, collective teacher efficacy, and the role that socioeconomic factors play in student academic achievement. This study also addresses state and federal mandates; and provides a catalyst for examining student academic achievement in light of high school principal leadership and management skills and behaviors; as well as the collective efficacy of high school teachers.

Today, the instructional leadership role of the high school principal has received greater attention than ever before; and a sense of urgency exists for today's high school principals as they work to meet state academic benchmarks (Smith, 2007; Senate bill 1, 2009; ESEA Act, 2008; Spillane & Thompson, 1997) and national mandates regarding adequate yearly progress in student academic achievement, as required by the No Child Left Behind Act (NCLB) of 2001. High school principals need scholarly research to discern how and in what areas they can be most effective (Leithwood & Jantzi, 2006; Leithwood & Beatty, 2009; Hallinger, 2008). In light of these issues, high school principals must learn how and when to incorporate the most effective concepts and theories and apply them to their unique school settings (Hallinger & Murphy, 1987; Hallinger & Heck, 1996; Harmon, Howley, and Sanders, 1996; Goddard, Hoy, Woolfolk -Hoy, 2004; Spillane, Hunt, & Healy, 2009; Spillane & Thompson, 1997; Wallace Foundation, 2008).

Pressing national and state legislative mandates, constantly changing school structures, and constraining budgets often limit the ability of high school principals to evaluate their own leadership skills and habits. More often than not principals are forced to learn instructional leadership skills by experience alone (Sansotti & Gross, 2010; Harmon, Hawley & Sanders, 1996). In addition, high school principals do not have the time or expertise to research what theoretical models will work in their school settings (Hoadley, Christie, & Ward, 2009; Howley, Howley & Burgess, 2001; Leithwood & Beatty, 2009; Marks & Printy, 2003). Also high school principals may not have had the benefit of extensive professional internships and residencies (Daresh, 2004; Hallinger & Murphy, 1987) to assist them in resolving short-term management problems and to develop long-term leadership skills. Moreover, many high school principals may lack the skills to work with their teachers to instill leadership skills, formulate collaborative concepts, and develop collective teacher efficacy behaviors (Smith, 2007; Daresh, 2004; Catano & Strange, 2007; Cray & Millen, 2010; Goddard, Hoy, Woolfolk-Hoy, 2004; Hallinger, 2005, Leithwood & Jantzi, 2006; Moran, Hoy & Woolfolk, 1998; Goddard, 2001). Thus high school principals may not know what methods or theories will work best in their schools. This often leads high school principals to succumb to the latest educational leadership fads (Howley, Howley & Burgess, 2001; Hallinger, 2005).

Statement of Problem

A review of the instructional leadership research of the past 15 years indicates that high school principals' leadership can make a difference (Hallinger & Murphy, 1982, Hallinger, 2005) in collective teacher efficacy and student academic achievement

(Hallinger & Heck, 1996; Goddard, Hoy, Woolfolk-Hoy, 2004;). Today's mandate driven high-stakes testing calls for the high school principal to share instructional leadership responsibilities with his/her staff. Strong high school principal leadership programs that bind theory and practice are effective tools to assist novice and seasoned high school principals to direct their personal leadership styles, resources, and school environments to develop personal and professional leadership skills (Darling-Hammond & Orphanos, 2006; Catano & Stronge, 2007; Lumby, Fosket & Fidler, 2005; Spillane, Hunt, & Healy, 2009).

Collective teacher efficacy behaviors guided by school principals may ultimately lead to increasing student academic achievement. Bandura defined collective teacher efficacy as, "A group's shared belief in the conjoint capabilities to organize and execute the courses of action required to produce given levels of attainment" (Bandura p. 477, 1993). This concept is an important component to developing principal instructional leadership, and improving student academic achievement.

Present day high school principals face the following imperatives: (a) to improve their managerial and leadership skills; (b) to improve their data analysis skills; (c) to articulate a school-wide mission statement by setting goals and priorities and; (d) to rethink the internal structures, finances, resource distribution and; (e) to learn management and leadership skills to better support activities of teaching and learning (Hallinger, 2005; Jacobson & Woodward, 1990; Leithwood, Andersen & Wahlstrom, 2004). High school principals today must also strive to develop collective teacher efficacy to improve student academic achievement (Goddard, Hoy, Woolfolk-Hoy, 2004;

Hallinger, 2005; Hallinger & Heck, 1996; Leithwood et. al., 2004; Darling-Hammond et. al., 2006; Goddard, 2001; NCLB, 2001). High school principals today are too often unequipped or ill-equipped to perform these duties and responsibilities (Leithwood et. al, 2004; Howley et al., 2001; Jacobson, Woodworth, 1990). A breakdown of management and leadership may affect student academic achievement (Darling-Hammond et al., 2005; Hallinger, 2008; Catano & Strong 2007; Autry-Walken, 2010) integral components of a positive teaching and learning school environment.

Purpose of Study

The purpose of this non-experimental research study was threefold: 1) to study the significant relationship among principal instructional leadership behaviors and student academic achievement; 2) to study the significant relationship between collective teacher efficacy and student academic achievement, and; 3) to study the significant relationship between student academic achievement and a combination of principal instructional leadership behaviors and collective teacher efficacy (Bandura, 1997; Goddard et.al, 2004; Hallinger, 2003; Hallinger & Heck, 1996; Hallinger, 2005; Hallinger, 2008; Tschannen et.al, 2001). Moreover, this dissertation may clarify the connections among high school principal instructional leadership behaviors, the self-confidence and sense of efficacy experienced by teachers (Goddard, et.al, 2000; Francera, 2009), and student academic achievement as measured by the standard ACT academic measurement test (Hallinger & Heck, 1996; ACT, 2010).

Equally important, this study may add to the public policy development of state educational agencies' strategies to design policies and programs for high school principal

and teacher professional instructional development. This study may also add to the pedagogical knowledge of university leadership instructional programs to redesign instructional curriculums to improve both high school principal instructional leadership and teacher efficacy for prospective high school principals and teachers (Hallinger, 2008; Jacobson &Woodworth, 19990; Catano & Strong, 2007; Hallinger & Heck, 1996; Leithwood & Jantzi, 2008).

Conceptual Framework

The independent variables of central interest will be principal instructional leadership behaviors, collective teacher efficacy practices and student academic achievement, accounting for student socioeconomic status. High school principal instruction leadership consists of conscious activities to design and frame school goals and objectives, and to manage the instructional environment (Hallinger, 2008; Hallinger & Heck, 1996). Collective teacher efficacy consists of teacher behaviors that incorporate teacher leadership, collaborative skills, teaching strategies and classroom management skills that promote and increase student academic achievement (Lubbers, 1998; Bandura, 1993; Goddard et.al, 2000; Tschannen-Moran & Barr, 2004). The dependent variable is the school composite achievement score as measured by the Kentucky mandated 11th grade test known as the ACT.

Research Questions

Secondary school principals, in order to satisfy school board, state, and federal mandates are required to serve as effective instructional leaders and building managers.

To determine which specific instructional and leadership skills are associated with student achievement, the following research questions were addressed:

1. What is the relationship, if any, between principal instructional leadership and student academic achievement, controlling for SES?

2. What is the relationship, if any, between collective teacher efficacy and student achievement, controlling for SES

3. What is the relationship, if any, among student academic achievement and a combination of principal instructional leadership and teacher collective efficacy, controlling for SES?

Using the three main dimensions and each of the of the 10 subsets of the PIMRS and three categories of the CTE the following null hypotheses were addressed to determine the strength of the significant relationship between teacher perception of principal instructional leadership and teacher perception of student's learning behaviors on student academic achievement, controlling for socioeconomic status.

Hypotheses Statements

1. Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership behaviors that Defines the School Mission.

1.1 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership behaviors that Frames the School's Goals and Student Academic Achievement.

1.2 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership that Communicates the School's Goals.

2. Ho: There is no significant relationship between teacher's perceptions of principals' instructional leadership behaviors that manages the Instructional Program and Student Academic Achievement.

2.1 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership behaviors that Coordinates the Curriculum and Student Academic Achievement.

2.2 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership behaviors that Supervises and Evaluates Instruction and Student Academic Achievement.

2.3 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership behaviors that Monitors Student Progress and Student Academic Achievement.

3. Ho: There is no significant relationship between teacher's perceptions of principals' instructional leadership behaviors that Develops the School Learning Climate Program and Student Academic Achievement.

3.1 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership that Protects Instructional Time and Student Academic Achievement.

3.2 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership behaviors that Provides Incentives for Teachers and Student Academic Achievement.

3.3 Ho: There is no significant relationship between teacher's perceptions of principal instructional that Provides Incentives for Learning and Student Academic Achievement.

Rationale

This non-experimental research study will provide important information about the instructional leadership skills of the high school principal, and the collective efficacy of the faculty. This study will help add to the body of knowledge to the current literature (Hallinger, 2008, Goddard, 2001; Goddard, et.al, 2004; Tschannen-Moran, et.al, 2001) on Principal Instructional Leadership and Collective Teacher Efficacy. Current studies have shown high school principal instructional leadership can affect student academic achievement as much as 15% (Hallinger & Murphy, 1982; Hallinger & Heck, 1996; Leithwood & Beatty, 2009). Research studies on collective teacher efficacy have shown that collective teacher efficacy can significantly affect student academic achievement (Tschannen-Moran & Hoy, 2001; Tschannen, Moran &Woolfolk, 2001; Woolfolk, 2004; Goddard, Hoy, Woolfolk-Hoy, 2004) and ameliorate the effects of low socioeconomic status of the student body. At this juncture, there is no research on the principals' instructional leadership and teacher efficacy effects on student academic achievement in rural high school settings (Cray & Millen, 2010; Harmon, et.al, 1996; Hallinger & Murphy, 1987).

The building high school principal is responsible for the mechanisms, procedures, policies and objectives of the school (Howley & Howley, 2010; Jacobson & Woolworth, 1990; Marks & Printy, 2003). Principal instructional leadership has been shown to affect

the collective efficacy of teachers (Lubbers, 1988; Autry-Walken, 2010; Goddard, Hoy &Woolfolk-Hoy, 2000) and improve the academic achievement of students. It is imperative therefore, to research and analyze research about the instructional leadership behaviors and how it effects collective teacher efficacy and student academic achievement. As of this writing, there is no known study on the effects of principal instructional leadership and collective teacher efficacy in rural Appalachian Kentucky high school settings (Harmon, et.al., 1996).

This research study on high school principal instructional leadership and collective efficacy in a rural setting will add to the body of information and its effect on student academic achievement (Hoadley & Ward, 2009). Equally as important, this study could add to the pedagogical knowledge of university principal leadership programs to improve both principal instructional leadership programs, and collective teacher efficacy training curriculums (Cray & Millen, 2010; Darling-Hammond & Orphanos, 2006; Hallinger & Murphy, 1987). Similarly, pre-service and in-service training of high school principals could be influenced, as could the hiring practices of high school principals be impacted by the results of this study (Catano & Stronge, 2007; Harmon, et.al. 1996; Hausman, et.al, 2000; Cray & Millen, 2010; Hallinger, 2008; Lubbers, 1988).

Limitations of Study

All studies are subject to limitations. Limitations need to be accounted for in attempting to generalize results from one population to another. This study has several limitations.

1. These results are not generalized to schools other than the Eastern and South Central Kentucky Appalachian Regional Commission designated county high schools. Even within the population used in this study, there are within-school differences that may account for results other than those variables included in this study.

2. Information received via internet survey format is subject to under-representation.

3. Research based on surveys is limited by the response rate. A low response rate impacts the analysis and ability to generalize the data to the general population.

4. There are control variables that impact both the high school principals' instructional leadership and collective teacher efficacy other than those included in this study. Schools may differ in many ways and all of these variables were not included in this study. For example, the principal's level of expertise, how socioeconomic status of the school is accounted for in the percentage of free and reduced lunch, and this may vary from school to school as did the number of years teachers had working under the current high school principal; and the educational attainment level and years of working experience of the faculty

Definitions of Terms

Principal instructional leadership (PIL) - refers to behaviors employed by the high school principal to affect instructional change and maintenance of teaching and learning behaviors.

Teacher efficacy - refers to the extent to which teachers believe that they have the capacity to affect student performance.

Collective efficacy - refers to the group's shared belief in its joint capabilities to organize and execute the course of action required to produce a given level of attainment.

Collective teacher efficacy (CTE) - refers to a group level characteristic, referring to the perceptions of teachers, as a whole, will have a positive effect on students.

Student academic achievement (SAA) - measures the school's academic learning by the ACT 11th grade assessment, a measure of college readiness of high school students. Student achievement is understood to be an accumulation of academic knowledge and skills obtained throughout a student's academic school career.

School socio-economic status (SES) - measures the school's free and reduced lunch rate and refers to an individual or a group's position within a social structure. Socioeconomic status takes into account the following familial variables: occupation, education, income, enrichment activities, wealth and place of residence.

Chapter II

REVIEW OF LITERATURE

The review of the literature focuses on the following four areas: principal instructional leadership, collective teacher efficacy, academic achievement, and student socioeconomic status. This review will provide a theoretical and conceptual understanding for connecting the proposed predictors: principal leadership, collective teacher efficacy to the criterion of student academic achievement, accounting for socioeconomic status.

Principal Instructional Leadership

A review of the empirical research of the past fifteen years indicates that principal instructional leadership can make a difference in both student academic achievement (Hallinger & Heck, 1996), as well as teacher collective teacher efficacy (Goddard, 2001). This study is based on the instructional leadership management model developed by Hallinger & Murphy (1987); Hallinger (2008), Hallinger & Heck (1996), Murphy & Hallinger (1992). And the Collective Teacher Efficacy Perception Scale (CTE) developed by Goddard, (2002). Principal Instructional Management Rating Scale (PIMRS) was developed as the practical application to the Instructional Leadership Management Model (Hallinger & Murphy, 1985) to measure principal leadership effectiveness and pedagogical management.

The Instructional Leadership Management Model was designed to assist high school principals as they direct the day-to-day educational leadership and management duties of a school. It assists them in navigating federal and state educational mandates,

and to also remain cognizant of local school board initiatives, community values and prevailing economic and social conditions (Hallinger & Strike, 1996; Hallinger & Murphy, 1985; Hallinger, 2008; Leithwood, Andersen, et. al., 2004).

The quality of the educational instruction depends to a great extent on the high school principal. The high school principal as instructional leader and change agent has the power to provide either incentive for teachers to diligently develop their instructional expertise and collective efficacy or reason to become complacent in their instructional duties (Hallinger (2008; Hallinger & Heck 1996; Murphy & Hallinger,1992). Instructional leadership is defined as, "…thoughts, traits, behaviors and processes" (Mielcarek, P. 12, 2003) that takes place in the principal's instructional repertoire. In short, the high school principal leads, provides guidance, instills innovation, and empowers and supports teachers, so they can overcome personal and professional challenges and build personal and professional collective teacher efficacy (Marks & Printy, 2003; Leithwood & Jantzi, 2006; Lumby & Fidler, 2005), important behaviors that affect student academic achievement and school climate.

The core elements of the Instructional Leadership Management model are designed to help the high school principal in the implementation of his or her leadership objectives. First, it helps in defining and communicating shared goals by giving the principal an established plan for working collaboratively with staff to define, communicate, and work with data-driven shared goals of the school (Smith, 2007; Leithwood, Louis, Anderson, Wahlstrom, 2004; Hallinger & Heck, 1996; Hallinger, 2008; Hallinger & Murphy, 1987). Then, this model provides a reliable means of

monitoring and providing feedback on the teaching and learning process by developing the educational leadership activities around the academic curriculum. The leadership model requires principals to be visible throughout the school, talking with students and teachers, providing praise and feedback to teachers regarding student academic performance, and most importantly protecting instructional time (Lumby, Fosket, Filder, 2005; Hallinger & Heck, 1996)

The principal is also charged with promoting school-wide professional development by encouraging teachers to learn more about student achievement through data analysis, and professional development opportunities that are aligned to national, state standards and school goals designed by the district superintendent and endorsed by the school board (Hallinger & Murphy, 1987; Hallinger & Heck, 1996; Leithwood & Beatty, 2009; NCLB, 2001; Wallace Foundation, 2008).

Collective Teacher Efficacy

Chief among the high school principal's leadership responsibilities are to promote and provide resources to develop teacher leadership and collaborative skills in order to generate an expectation of collective teacher efficacy, important components crucial to improving and maintaining high student academic achievement. When a high school principal does his/her job well, the principal creates a positive learning and teaching environment for both students and teachers (Hallinger & Heck, 1996; Salazar, 2007, Sansotti, Notlemayor & Gross, 2012).

The Collective Teacher Efficacy Perception Scale was developed to measure the individual and collective teacher perceptions regarding teacher efficacy perceptions to:

teacher perceptions in classroom management; teacher perception to student motivation to learn; and teacher perception to student management

Teachers with a strong sense of collective efficacy are more willing to implement new ideas, techniques and teaching strategies to improve student learning. Furthermore, collective teacher efficacy enables teachers to be more persistent and resilient when they are faced with obstacles or setbacks (Tschannen-Moran & Hoy, 2001; Tschannen-Moran & Woolfolk, 2001; Goddard, Hoy, Woolfolk-Hoy, 2004; Bandura, 1997).

Bandura (1997) defined teacher efficacy as, "…the extent that a teacher believes he or she has the capacity to affect student performance," (Bandura, p. 23, 1997). Research on teacher efficacy conducted by Tschannen-Moran, & Woolfolk (2001), Moran, Hoy & Hoy (1998), and Goddard (2002), Goddard, Hoy, Woolfolk-Hoy, (2004), concluded that next to the high school principal leadership and management skills, teachers have a strong and direct impact on how they direct learning and how they manage student behavior. A more efficacious teacher will persevere, maintain a positive attitude; and seek pedagogical strategies to improve his/her teaching techniques and teacher behaviors to affect student academic performance (Moran, Hoy & Hoy, 1998; Tschannen-Moran &Woolfolk, 2001; Goddard, 2002).

Tschannen-Moran & Woolfolk (2001), Goddard, Hoy, Woolfolk-Hoy (2004), Goddard, Hoy, Woolfolk-Hoy (2000) in their research maintain that efficacious teachers are the key to high school principal's leadership success. Efficacious teachers planned for student learning, set goals for themselves, and identified a variety of strategies to achieve them (Tschannen-Moran et al., 2004). Teacher efficacy is measured by the following: a)

willingness to accept the school's goals and values; b) a desire to maintain a strong belief in the leadership of the high school principal; c) a willingness to exert considerable effort on behalf of the school; and; d) a strong desire to maintain strong school affiliation (Bandura, 1997; Autry-Welken, 2010; Lubber, 1998; Moran et. al, 1998; Goddard, et. al, 2004).

In his research, Bandura (1997) stresses that teacher efficacy beliefs determine how much effort teachers will expend in reaching students, how long they persevere in the face of obstacles and how resilient they continue to be in a challenging teaching environment (Goddard et.al, 2000; Tschannen-Moran et. al, 2001). For example, if a teacher ascribes a student's inability to master the class material to factors she/he cannot control (socioeconomic status, language factors e.g. English as a Second Language, and student motivation), that teacher is less likely to try new methods, or preserve or maintain high expectations (Lubbers, 1988; Goddard, Hoy, Woolfolk-Hoy, 2000; Autry-Walken, 2010; Bandura, 1997, Goddard, 2001)**.**

Collective teacher efficacy is an important component of teaching and learning (Goddard, Hoy & Woolfolk-Hoy, 2004; Tschannen-Moran & Woolfolk Hoy, 2001). Leithwood & Beatty (2009) note in their research that teachers' constant stress, burnout and feelings of depersonalization lead to chronic absenteeism, lower teaching performance, and a lower tolerance for classroom disruptions (Skaalvik & Skaalvik, 2007). A strong sense of teacher self-efficacy, developed by the principal, across the disciplines in the high school setting promotes collegiality, improves general school climate, and a sense of belonging. These are crucial components of a positive learning

and teaching environment (Goddard et.al, 2000; Goddard, Hoy, Woolfolk-Hoy, 2000; Tschannen-Moran & Woolfolk, 2001).

Collective teacher efficacy is different from individual teacher efficacy in that references the effectiveness of the entire teaching staff. While teacher excellence may appear in one or two teachers, or a small number of teachers or within a specific department, collective teacher efficacy is a school-wide phenomenon (Goddard, 2001; Goddard, et. al., 2000); Tschannen-Moran & Barr, 2004). Teachers who are coached by their high school principals or teaching mentors develop intrinsic motivation to undertake difficult tasks and challenges, and tend to maintain a strong commitment to achieving mastery in spite of pedagogical or classroom behavioral set-backs (Goddard et. al., 2000). Moreover, teachers are able to sustain their efforts in the face of failure, and recover easier from failure when they have strong self-efficacy beliefs, and strong high school principal pedagogical support (Tschannen et. al, 2001; Goddard et. al, 2004).

Tschannen et.al., (2001), and Goddard et.al., (2004), suggest that professional development workshops for novice and veteran teachers that promote collective teacher efficacy and leadership skills, (Boyd, 2008; Catano & Stonge, 2007) can help principals and teachers to increase student academic achievement when the high school principal skillfully and conscientiously teaches the following concepts to develop teacher efficacy: 1. Mastery experience, which develops a teacher's sense of accomplishment in their lessons; 2. Vicarious experience, which allows teachers to observe others conduct masterful lessons; 3. Verbal feedback, which provides intellectual exchange between an experienced and trusted teacher or mentor working with a seasoned or novice teacher; 4.

Cognitive processes, in which the teacher conducts intellectual self-reflection (Goddard, 2002; Goddard et.al., 2004; Goddard et. al., 2004; Tschannen-Moran & Barr, 2004). This is further enhanced when the teacher receives follow-up support via reflective dialogue with the principal or a teaching mentor.

Goddard, Hoy & Woolfolk Hoy (2004), Bandura (1997), and Lubbers (2010) suggest that a high school principal's managerial and leadership skills are most effective when principals promote a school environment that includes an articulated school mission, a positive school learning climate, that promotes teacher leadership and problem solving skills through the use of distributed leadership (Boyd 2004; Leithwood & Jantzi 2006; Hallinger & Murphy 1985; Autry-Walken, 2010; Cray & Millen, 2010). Distributive leadership, an important theoretical component of the instructional leadership management model, enhances the school principal's ability to entrust leadership and collaborative skills to his or her teachers. The goal is to develop collaborative behaviors across academic disciplines to affect academic change and to maintain collective resiliency when teachers are faced with pedagogical and social-behavior obstacles (Alig-Mielcarek, 2003; Daresh, 2004; Hallinger, 2008).

Research also supports the concept that the high school principal's own sense of his or her own ability to promote a learning environment and to persist in the face of leadership obstacles, and management burdens and to show resilience in difficult and trying circumstances, can affect the sense of efficacy in the faculty (Goddard, Hoy, & Woolfolk Hoy, 2004; Bandura, 1997, Daresh, 2004).

High school instructional principal leadership and collective teacher efficacy may have reciprocal effects; when teachers feel supported in their efforts, principals are also reinforced in their leadership ability to guide the staff to meet academic challenges, classroom behavior issues, and psycho-social familial obstacles (Harmon, et.al., 1996; Howley & Howley, 2001; Leithwood & Beatty, 2009). Most importantly, collective teacher-efficacy enhances teacher collegiality, cooperative problem solving skills and leadership development; these elements are the glue that binds the school, the school's mission, curriculum and the learning environment; important components that promote student academic achievement (Murphy & Hallinger, 191992; Leithwood & Jantzi, 2006; Smith, 2007).

Goddard et al., (2004), Tschannen-Moran et. al., (2001) concluded in their research that collective efficacy beliefs help direct teacher's and student's motivation to teach and to learn, furthermore they posit that students and teachers monitor their degree of output and effort in accordance to the results they expect from their actions (Tschannen-Moran & Barr; Goddard, 2001). Thus, collective teacher efficacy may have a multiplier as well as a reciprocal effect as it works in conjunction with high school principal leadership, teacher teaching techniques and student learning behaviors (Leithwood, Louis, Anderson, Wahlstrom, 2004; Salazar, 2007; Wallace Foundation, 2008; Lubbers, 1998; Hallinger & Heck, 1996).

When collective teacher efficacy is accounted for as an independent measured unit, its measurement has a significant effect on student academic achievement (Bandura, 1993; Goddard et al., 2000; Goddard, Hoy, & Woolfolk Hoy, 2004). In addition, high

school principal instructional leadership, when it promotes teacher collaboration and leadership development, and when coupled with collective teacher efficacy, lessens the effects of socio-economic status. Similarly the measurement of collective teacher efficacy and the level of commitment from high school principals to quality instructional leadership, may account for a significant improvement in student academic achievement (White, 1982; Bandura, 1997; Goddard et. al, 2000; Hallinger & Heck, 1996; Hallinger & Heck, 1987; Leithwood, Anderson, Wahlstrom, 2004)

Social Economic Status

The historical legacy of the Equality of Educational Opportunity Study (EEO) (1966), referred to as the Coleman Report, has implications for poor, predominately White, and rural high school settings. The Coleman Report concluded that schools have a minor influence on a child's academic achievement that is independent of socioeconomic status, and social environment factors; and these inequities followed students into adult life (Haller & Strike, 1986, White, 1982; Walin, 2008; Whitaker, 1983; Spillane, Hunt & Healy, 2009).

The Coleman Report revealed the following: Family background had an important and significant influence on student achievement. Considerable differences existed in academic achievement, in all grade levels between Black and White students. The Coleman Report found little variation between achievement within schools and the population within schools. And most importantly the social-economic composition of the school and family had a greater effect on student achievement than either the quality of the buildings or the quality of the instructors. Interestingly, on a more optimistic note, the

degree to which students and parents believed they could control their educational milieu also had an important effect on their academic achievement (Haller & Strike, 1986). In short, the Coleman Report concluded that socioeconomic factors and family background were the key determining components to a student's success in school, and more revealing was the fact that educational characteristics of the school had negligible effect on student academic achievement. However, the Coleman Report did not explain why some schools in low SES neighborhoods had above average academic achievement results (Coleman, 1996; Reeves & Bylund, 2005). Consequently, researchers have begun to examine to what extent instructional leadership and teacher sense of self-efficacy overcomes the effects of a student's low familial SES (Hallinger & Murphy 1985; Goddard, 2004; White, 1982, Yang, 2003).

Most recently, researchers have taken issue with how SES factors are taken into account with regards to how student achievement is measured, and more importantly, in what ways researchers have reevaluated the definition of SES. Researchers are now scrutinizing how family and cultural conditions affect student achievement. For example, White (1982), and Yang (2003) found that, where it was documented, significant variance was found when factors such as to what degree did student motivation, familial support for academic achievement, parent educational and career level, and peer influence affects student academic achievement (White, 1982, Yang, 2003).

White (1982), Howley & Howley (2010), Reeves & Byland (2005) argued that social class, family background and economic status are factors that influence how a child learns and makes his or her way in the world. This analysis is problematic, because

the manner in which a child is raised is influenced by many more factors besides the economic well-being of the family. The extent to how a child is raised is contested by researchers because how a child is raised is a matter of study rather than definition (Papanostasiou 2002; Yang, 2002, White, 1982). Research has yet to definitively account for how low SES families are often able to ameliorate poverty, navigate the lack of opportunities to succeed academically. This is true of rural communities that lack human and financial capital. There is a growing body of research which suggests that community social capital and extended family structures may ameliorate the effects of poverty (Howley & Howley, 2010; Howley, Howley & Burgess, 2001; Jacobson & Woodworth, 1990; Reeves & Bylund, 2005; Carr & Kefalos, 2009).

Researchers have determined that many factors influence a family's socio-economic status, and subsequently, student academic achievement. Most significant among factors that concern this study are the family's educational background, the student's educational views and attitudes toward the subject matter (Papanostasiou, 2002). Yang (2002) established that family educational background, particularly the mother's, and interestingly, the student's friends' attitudes toward math had a strong and direct effect on academic achievement. Milne & Plourde (2006), Reeves & Bylund (2005), White (1982) indicate in their research that students who come from impoverished households begin school inadequately prepared to learn, and consequently remain behind. Furthermore, these students rarely are able to catch-up to their more affluent peer group and were destined to lag behind, both academically and socially, (Haller & Strike, 1996; Carr and Kefalas, 2009; Howley & Howley, 2010), unless school

intervention policies counter these factors (Boyd 2004; Leithwood & Jantzi 2006; Hallinger & Murphy 1985; Autry-Walken, 2010; Cray & Millen, 2010; Howley et.al 2001)).

Bradley & Corwyn (2002) pointed out in their study that social economic status affects student academic achievement. Families considered to be functioning on the lower end of the socio-economic stratum face the most challenges. The inability of these families to provide such academically enriching activities as reading books and magazines, engaging in regular family dinner discussions, visits to museums, libraries, and theatrical events markedly affect the student's level of engagement in the pedagogical milieu of the school, and subsequently, the student's academic achievement, and, in the long run, success in adult life. Low SES families who have less developed human, social and financial capital, are the least able to have a positive impact on success in school (Parker, Hannah & Toppings, 2006; Bradley & Cornwyn, 2002; Hoadley & Hoadley, 2010). Most importantly, researchers have determined that low SES accounts for both cause and effect (Joynes, 2002; Papanostasiou, 2002) with regards to the ability of students to persist and to succeed academically. However, students do not live or learn in a social and intellectual vacuum. According to Goddard (2001) and White (1982), the weakened correlation between SES and student academic achievement can be attributed to such influences as the availability of preschool programs, quality television and films, interaction with community groups, positive interaction with peer groups, and the deliberate efforts of the school administration directed toward the amelioration of negative factors through the development of teacher collective efficacy, establishing a

positive teaching and learning climate as well as developing high academic expectations (Goddard, 2001; Tschannen et. al 2004; Walen, 2008; White, 1982).

To what extent social economic status affects both Collective teacher efficacy and student academic achievement, has not been adequately determined. Today, research projects that study academic achievement control for social economic status (Milne & Plourde, 2006) traditionally research projects primarily examined the significant relationship between SES and reading scores; however, in more recent projects, reading and math scores have been scrutinized as separate entities (Yang, 2003). And even though reading has been established as a strong indicator of the student's home environment and academic success, current research indicates that math proficiency is a better indicator of student academic achievement (Yang, 2003).

Student Academic Achievement

Studies have focused on numerous factors inside and outside of schools to determine which factors have the most influence on student academic achievement, e.g. economic, social and cultural, or a combination of all these factors. Student achievement, whether measured by tests or other criteria, is the most consistent of measurements for schools in the United States. However, none have been as constant for policy makers, school administrators, and researchers as academic achievement test outputs (U.S. Department of Education, 2000). The popular standardized ACT assessment is still the salient data criterion for all American public high schools. The current student achievement tests output as defined by the ACT has established the ACT as the current

status, improvement, growth and value-added assessment (U.S. Department of Education, 2000).

The NCLB ACT of 2001 called, among other criteria, for public schools to provide students with a high level of instruction by competent instructors. Central to achieving this goal, the NCLB Act stipulated three broad-based principles: a) stronger accountability for results; b) greater flexibility for states, school districts and schools in the use of federal funds; c) and more flexibility for parents of children from disadvantaged backgrounds to switch schools (Powell, Higgins, Aram & Freed, 2009). The NCLB Act (2001) further required that all students reach math and reading proficiency by certain dates. Most importantly, the NCLB Act specified the use of research-based programs to develop curricula and learning outcomes that allow all students to achieve academic mastery. The emphasis on research-based instructional approach along with the use of high stakes testing of students and increased accountability for teachers and schools has fueled educational research for this decade (Allen & Sconing 2005; ACT, 2005; Wallace Foundation, 2008). The goal of this research is to discern what factors influence student achievement in order to learn how to improve student academic progress (Autry, 2010; ACT, 2008; ACT, 2010). Similarly, the Kentucky State assembly Senate bill 1 mandates that there will be 50% fewer students needing developmental courses by graduating seniors by the year 2014, this would reduce the number of college freshmen who take development courses in English, reading, and math.

The schools surveyed in this study are designated at-risk or distressed counties by the Appalachian Regional Commission (ARC). Coincidentally these counties students with the highest need of developmental classes. Of the graduating ARC designated Eastern Kentucky high school graduating seniors, 65-70% need at least one of the three (English, reading, math) developmental classes, of which math is the one they needed the most, followed by English and then reading (Kentucky Senate bill 1, 2009).

The ACT assessment is one of the nation's most dependable indicators of college readiness, and the high schools' pedagogical achievement measurements (ACT, 2010). The ACT assessment is composed of four curriculum-based tests of academic achievement: English, mathematics, reading, and science, designed to measure the academic skills of every high school student who graduates from a basic high school curriculum (ACT, 2010). Moreover, these four academic subjects are the benchmarks for measuring college readiness and success (KY Department of Education).

In order to achieve academic proficiency, students must demonstrate proficiency on the four designated core subjects of the ACT standardized tests, e.g. English, mathematics, science and reading (ACT scores range from 1-36). For example, schools that administer the ACT have the following benchmarks: for Math, an ACT score of 21 is necessary to qualify for matriculation into a college social studies course; for English, an ACT score of 18 is necessary to qualify for matriculation into a college composition class; and for Biology an ACT score of 24 is necessary to qualify for matriculation to a college science course. If a student meets these benchmarks, it means a student has a 75% probability of earning an "A" in high school classes; and a70% probability of earning a

"B" in college classes. These scores are reported in the Kentucky Department of Education School Report Card website and on the websites of the individual high schools surveyed (ACT, 2010, KY Department of Education).

The challenge for school high school principals is to design, develop, and reinforce the school goals that combine the school environment and curriculum, teacher preparation and in-service programs; that challenge teachers and students to work toward higher levels of academic achievement (Leithwood & Jantzi, 2006; Leithwood & Beatty, 2009; Murphy & Hallinger, 1992). For example, in data analysis of underperforming and failing schools reports list poverty, lack of family guidance, and negative peer pressure to underperform as factors that hinder student academic achievement and teacher efficacy (Hallinger, 1996; Leithwood et. al, 2005; Yang, 2003, Smith, 2007; Jacobson & Woodworth, 1990). Moreover, the challenge for high school teachers is to develop a sense of positive collective teacher efficacy, leadership and collaborative skills, as well as, data analysis skills to enhance pedagogical competencies in order to ameliorate the effects of SES (Yang, 2003, Salazar, 2007; Reeves & Bylund, 2005). High school principals and their staffs need to be cognizant of all factors that promote student academic achievement.

Chapter III

METHODOLOGY

This chapter outlines the methodology and research methods used in this study. The different aspects of the research designed are included in this section: purpose of study, research design, instrumentation, Principal Instructional Management Rating scale, collective Teacher Efficacy, ACT scores, socioeconomic status (SES), and data collection procedures

Purpose of Study

The purpose of this research was to study the significant relationship between high school principal instructional leadership behaviors and collective teacher efficacy perceptions and student academic achievement accounting for SES. Most importantly this study aimed to examine high school principal instructional leadership and collective teacher efficacy have not been conjointly studied in rural high school setting (Hallinger, 1996; Harmon, Howley, and Sanders, 1996). Principals as building leaders direct and influence every aspect of school life. Their influence is the core element central to teacher competency and student academic achievement (Tschannen-Moran, Woolfolk Hoy, 2001; Goddard, 2002).

Research Design

This was a non-experimental descriptive-correlation research study**.** The independent variables are: the high school principal instructional leadership behaviors (designated as Principal Instructional Leadership-PIL); and the perceived collective efficacy of teachers (designated as Collective Teacher Efficacy-CTE). The dependent

variables were the 11th grade ACT composite scores (designated as Student Academic Achievement-SAA) and free and reduced lunch high school statistical data used to measure the school's socioeconomic status (designated as Socioeconomic Status-SES). The group level analyses were: a) the gender; b) number of years teaching and; c) the educational achievement level: bachelors, masters or Ed. D/Ph.D., and; d) years working under current principal. Two published surveys were used to collect the data: The Collective Teacher Efficacy Scale Short Form (Goddard, 2002) and the Principal Instructional Management Rating Scale (Hallinger & Murphy, 1985).

Population

This research study was based on the population of 42 independent city and county public high schools located in rural Eastern and South Central Appalachia Kentucky. The selected high schools were designated by the Appalachian Regional Commission (ARC) as either economically distressed (They ranked in the worse 10% of the nation's counties); or At-Risk (They ranked between the worst 10% and 25% of the nation's counties). The ARC uses an index-based county economic classification to identify and monitor the economic status of all Appalachian designated counties. Based on three economic indicators, the ARC computes these economic factors: Three year average unemployment rate, per capita market income, and the poverty rate and compares them with national averages (Appalachian Regional Commission, 2011).

Survey Administration

Permission to administer the survey was obtained from the building principal of each high school, and requested them to distribute the survey letter, IRB consent form,

and the Survey Monkey website link to their faculty via their faculty contact email list. Most importantly, the researcher followed-up with the school counselors/curriculum supervisors with whom previous contact had been made, to ask for their help in getting the faculty to participate in the survey. All teachers in each school were offered the opportunity to participate in the survey.

High schools were selected based on the following criteria: The multifaceted role the rural high school principals play as high school building managers, the direct and indirect roles they have as instructional leaders, and the development of teacher leadership and cooperative skills that fall under the guidance and supervision of the principal. The total number of observations consists of 42 high schools and comprises 449 individual high school teachers/support staff and administrators as respondents.

The schools surveyed varied in the number of students enrolled, and grade levels served (three high schools served a K-12 population; four schools were independent city schools, i.e., do not receive county tax support), and they varied in the number of administrators and teachers on staff. Several schools had a "main high school principal" covering K-4, middle school, and high school and were assisted by two assistant principals. The rest had the traditional one principal with two assistants leadership model.

Instrumentation

Two published surveys were used to collect data, The Principal Instructional Management Rating Scale (Hallinger & Murphy, 1985) and the Collective Teacher Efficacy Perception Scale (Goddard, 2002). In addition, student achievement data (ACT scores) and free and reduced lunch data was collected from the Kentucky State

Department of Education online archives. Survey data and archival data were merged at the high school level, with no test scores identified by individual students.

Principal Instructional Management Rating Scale (PIMRS)

This research study utilized Hallinger's Principal Instructional Management Rating Scale (PIMRS) survey (Hallinger & Murphy, 1985) for teachers to evaluate the high school principal's instructional leadership capacity. The PIMRS has been tested for validity and reliability. The PIMRS has met high standards of reliability with all ten subscales exceeding $a = .80$ using Chronbach's Alpha test of internal consistency (Hallinger, & Murphy, 1995).

The instrument consists of ten sections with five questions in each section. Respondents were asked to answer, "To what extent does our high school principal…?" The main topic sections are as follows: 1) frames the school goals; 2) communicates the school goals; 3) supervises & evaluates instruction; 4) coordinates the curriculum; 5) monitors student progress; 6) protects instructional time; 7) maintains high visibility; 8) provides incentives for teachers; 9) promotes professional development; 10) provides incentives for learning. Most importantly data was be collected and analyzed to determine the effectiveness of the high school principals' leadership role in teacher efficacy. Each of the ten sections was embedded with 10 questions in a Likert scale questionnaire that had a scale of "1" to "5", with "1" representing strongly disagree and "5" representing strongly agree.

Collective Teacher Efficacy Perception Scale (CTE)

The Collective Teacher Efficacy Scale (CTE), the short form developed by Goddard (2002) was used to measure the collective efficacy of the faculty. The CTE is a valid and reliable tested survey scale instrument (Goddard, 2002). Each question on this 12 item Likert questionnaire has a scale of "1" to "5", with "1" representing strongly disagree and "5" representing strongly agree. Questions 3, 8, 9, were reversed for scoring and represented, "Teachers Perception to Classroom Management". Questions 1, 2, 4 represented "Teachers Perception to Community Challenges to Learning"; and questions 5, 6, 7, represented, "Teachers Perception to Classroom Management" and questions 10, 11, 12 Teachers Perception to Student Motivation to Learn (Goddard, 2002).

Student Academic Achievement

This research study incorporated the popular standardized ACT assessment, administered to all Kentucky high school 11th grade students to determine the high school principal's instructional leadership role and collective teacher efficacy in affecting student achievement. Each high school is required to report the schools' ACT scores for all 11th grade students in, "The School Report Card" archival data as collected by the Kentucky Department of Education to gauge the schools' academic performance.

Socioeconomic Status

A consistent measure for socioeconomic status in all Kentucky schools is the participation rate in the federal free and reduced lunch program. This measure approximates the student's socioeconomic status by obtaining information from students' families about their household income. Based on the family income students may qualify

for free or reduced lunch. Therefore, the proportion of students who met the criteria for free and reduced lunch determined the school aggregate socioeconomic status. Schools, in turn, reported this information to the Kentucky Department of Education, which allowed for a standardized measure across schools. It is assumed in using the free and reduced lunch measure that most students who qualified for this program participated in it.

Data Collection Procedures

Data were collected through the use of a web-based survey (Survey Monkey) for the following assessment published surveys: high school principal Instructional Management Rating Scale (PIMRS), Hallinger & Murphy (1985); and the collective teacher efficacy scale (CTE short form) designed by Goddard (2002).The use of the web-based survey allowed participants to respond at times that were the most convenient for them – outside of classroom hours.

The researcher secured permission from the schools' high school principals to conduct the survey. The purpose of the study, IRB protocols, e.g. a letter of consent, confidentiality and anonymity assurance and a direct link to the website for the survey, and a copy of the survey instruments were sent to each high school principal. The survey began with an acceptance of the informed consent by the teachers. Upon agreeing to the consent terms of the web-based survey, participants respond to the survey items via Survey Monkey.

After the researcher received permission from the high school principals the principal designated a curriculum coordinator or counselors as test administers; they were

asked to forward the survey protocols to the teachers through the school contact email list. The survey was on Survey Monkey for a two-week window. After the first week a reminder was sent, to encourage those who had not participated in the survey, to do so.

Data Analysis

The analysis of the data occurred in three steps. First, the data were analyzed for completeness and thoroughness, and aggregated to the school level. School-level composite data are not the same as teacher-level data or student-level data. To aggregate all data to the school means that teacher data taken individually must be aggregated and that district level student achievement data were also disaggregated, for consistency. Once the data have been reviewed for omissions and consistency, descriptive statistics using SPSS/PASW Version 15 were calculated to fully analyze the data. Lastly, the six research questions were examined, as explained below.

1. What is the significant relationship, if any, between high school principal instructional leadership and student academic achievement, controlling for SES?
2. What is the significant relationship, if any, between collective teacher efficacy and student achievement, controlling for SES?
3. What is the significant relationship, if any, between student academic achievement and a combination of high school instructional leadership and teacher collective efficacy, controlling for SES?

The descriptive analysis included demographic data of the respondents to the two survey instruments: gender, work experience, position/title, years working with current

principal and highest educational attainment level. Schools were identified by a number rather than by actual name.

Descriptive statistics were calculated on Hallinger's PIMRS (1985) and Goddard's CTE (2004) to compare the sample data with normative results of previous studies. The descriptive statistics included means, standard deviations, number of observations, and alpha sub-scale reliabilities. These were examined and tabulated in advance of testing specific hypotheses. Second, the researcher completed tests of specific research questions and hypotheses, as outlined earlier in this prospectus. To test specific hypotheses, the investigator calculated correlation and multiple regression strength of significance.

The data analysis of Hallinger's PIMRS included three main categories: Defining the School Mission, Managing the Instructional Program, and Developing the School Learning Climate Program, of which 10 subscale items measuring teacher perceptions were collected through the PIMRS teacher surveys. Teacher survey data was entered into SPSS/PASW Version 15 in a single spread sheet for each school. Sub-scale totals were compiled by SPSS/PASW Version 15 and added to the item-level data on each data line. Subscale totals were averaged and aggregated to the school level using the school ID as a grouping variable. Using this procedure, the investigator produced a school-level data file containing average teacher perceptions of principal instructional leadership on 10 subscales. The school-level data then became a base to which the investigator added: the four Collective Teacher Perceptions and the variables for the percent of free and reduced lunch (SES) and school-average ACT composite scores (SAA).

The statistical section of the data analysis included 10 tables placed in order of simplicity to complexity, starting with a description of the sample and closing with a multiple regression of ACT composite score on (a) high school principal leadership, and (b) collective teacher efficacy, controlling for (c) school-level percent free and reduced lunch.

Finally, the investigator showed the results of the above in subject-matter terms to indicate how high school principal instructional leadership, teacher collective efficacy, and student achievement are related to one another at the school level, controlling statistically for average SES. The R-square was reported to show the strength of multiple correlations among the variables of interest: the independent and dependent variables.

Chapter IV

PRESENTATION AND ANALYSIS OF DATA RESULTS

This chapter reports the results of the study. The first section presents the reliability of measures of the Principal Instructional Management Rating Scale (PIMRS), and the Teacher Collective Efficacy Scale (CTE). Hallinger (1983), reports that internal consistency refers to the degree to which variables that have been grouped and how subscales correlate with each other. Internal reliability of measures are reported in this section.

The second section describes the demographic sample of the Kentucky Appalachia rural schools selected to participate in this study. Schools in the sample are described by the Appalachian Regional Commission criteria of distressed and at-risk counties as outlined earlier in this study. The third section reports the descriptive statistics for the independent and the dependent variables, and the components and subscales of the PIMRS and CTE. The fourth section of the chapter presents inferential statistics on both the PIMRS and the CTE. The fifth section presents the analyses of the Pearson product-moment correlation coefficients and multiple regressions. They were examined against the six hypotheses and three research questions for evidence of relationships among; principal instructional leadership, collective teacher efficacy, student academic achievement; accounting for socioeconomic status.

Reliability of Measures

Principal Instructional Management Rating Scale

Hallinger and Murphy (1985) states that reliability is the consistency with which an instrument yields the same or similar responses across settings and time. The PIMRS has been administered in elementary, middle school and high school settings; as well as in international school settings to establish a basic criteria for reliability. Internal consistency refers to the degree to which items that have been grouped together conceptually and how subscales correlate with each other. When a high correlation exists among observations between two variables, one can conclude that the instrument yields consistent or reliable data.

In the original validation study Hallinger (1983) Hallinger & Murphy (1985), the internal consistency of the instrument was chosen as the appropriate form of reliability. When analyzing PIMRS data obtained from teacher respondents, Chronbach's Alpha test treats each teacher's response independently, as if each teacher rates a "different" principal; when in essence teachers were grouped within schools, with each school's teachers rating their own principal. So reliability estimates of internal consistency are based on the combined ratings of teachers grouped to their schools. Hallinger (1983) set internal consistency to a minimum standard reliability of $a = .80$ when assessing the internal consistency of the PIMRS. Hallinger (1983) reported an internal consistency of the 10 subscales meeting the standard of $a = .80$. The size of the alpha coefficients for Hallinger's (1983) study for the 10 subscales ranged from a low $a = .78$ for the, Incentives to Improve Teaching, to a high $a = .90$ on three different subscales:

Supervision and Evaluation of Instruction, Curriculum Coordination, and Monitoring Student Progress. Maintains High Visibility and Protects Instructional Time scored at *a* = .84.

Principal instructional leadership for this study was measured by the PIMRS (Hallinger & Murphy, 1985). The internal reliability was tested using Chronbach's Alpha Coefficient of Reliability. The overall composite scale had a high internal validity of *a* = .90.

Chronbach's coefficient alphas were calculated for each measure to determine the degree of internal consistency. These coefficients are presented in Table 1. PIMRS, which measured the principals' rating of principal instructional leadership performance, demonstrated a high strong internal consistency. Total scale scores demonstrated a coefficient *a*= .98 for the individual 50 scale items, and the 10 subscales ranged from a low score of *a* = .78 for the component, "Provides Incentives for Teachers," and a high *a* = .90, for "Supervises/Evaluation," "Curriculum Coordination", and "Monitors Student Progress," respectively.

Table 1
Reliability of Measures of the PIMRS (Hallinger, 2008)
10 Subscales of PIMRS

	alpha		
	(*n* = 50 -76)	**(*n* = 2500)**	**(*n* = 41schools)**
Frames Goals	.89 (77)	.85	.89
Communicates Goals	.89 (70)	.79	.89
Supervision/Evaluation	.90 (61)	.80	.90
Curriculum Coordination	.90 (53)	.82	.90
Monitors Student Progress	.90 (52)	.83	.90
Protects Instructional time	.84 (70)	.80	.84

Table 1 (continued).			
	(*n* = 50 -76)	(*n* = 2500)	(*n* = 41schools)
Maintains Visibility	.81 (69)	.78	.81
Incentives for Teachers	.78 (70)	.80	.78
Professional Development	.86 (58)	.82	.86
Incentives for learning	.83 (76)	.80	.87

**Reliability Estimates are Chronbach's Alpha coefficients

Collective Teacher Efficacy Perception Scale

Collective Teacher Efficacy Perception Scale (CTE), (Goddard, 2002), measured the collective teachers' perception of student learning behaviors which were divided into three components: Collective Efficacy Perceptions to Classroom Management; Collective Efficacy Perceptions to Community Challenges to Learning; and, Collective Teacher Efficacy Perceptions to Student Motivation to Learning. Goddard's survey demonstrated an internal reliability of a = .84, compared to the reliability of this survey, a =.74. A standard alpha acceptability of $\alpha > .70$ is acceptable for internal validity.

Chronbach's coefficient alphas were calculated for each measure to determine the degree of internal consistency. This study demonstrated strong internal consistency. Total CTE alphas for the Goddard's (2002) scale demonstrated a coefficient of a = .98 for the 12 individual scale items. The three subscales, Teacher Perception to Student Motivation of, Teacher Perception of Community Challenges to Learning of a =.81; and Teachers' Perception of Classroom Management all had a = .81. The reliability of scores reported for Collective Teacher's Efficacy scales for this study demonstrated an a = .74 for all three components and are reported below in Table 2.

Table 2
Reliability of Measures Collective Teacher Efficacy Perception Scale (CTE) (Goddard, 2002)

			n
Teacher Perception of Student Motivation to Learning	.81 (1050)	.74	42
Teacher Perception of Classroom Management	.81 (1050)	.74	42
Teacher Perception of Community Challenges to Learning	.86 (1050)	.74	42

Reliability of measures $\alpha > .70$ is acceptable for internal validity

Descriptive Statistics of PIMRS and CTE

The school-level teacher data then became a base to which the investigator added variables for the percent of free and reduced lunch (SES) and school-average ACT composite scores (SAA). The data analysis of Hallinger's Principal Instructional Management Rating Scale (PIMRS) the three main components and 10 subscale items measured teacher perceptions of instructional leadership behaviors and were collected through the PIMRS teacher surveys, and then compiled and added to the item-level data on each data line. These three components and 10 subscales measured teachers' perceptions of principal instructional leadership behaviors: Defining the School Mission, Managing the Instructional Program, and Developing the School Learning Climate Program. Using this procedure, the investigator produced a school-level data file containing average teacher scores. The investigator produced an aggregated school-level data file containing average teacher perceptions to principal instructional leadership.

Teacher survey data were entered into the spreadsheet for Goddard's Collective Teacher Efficacy Scale (CTE) (2002). This survey included three components: Teacher Perception of Classroom Management; Teacher Perception of Student Motivation to learning; and Teacher Perception of Community Challenges. Totals were averaged and

aggregated to the school level using a numerical school ID as a grouping variable similar to the procedure of the PIL.

The statistical section of the data analyses was placed in order of simplicity to complexity, starting with a descriptive statistics of the sample, correlations, hypotheses and closing with multiple regressions.

Data were obtained from 449 teachers associated with 42 schools from 54 Appalachian Regional Commission county designated eligible rural schools from Southeast and South Central Appalachia Kentucky. The sample (42 high schools from 31 counties) represents 60.1% of the high schools of the ARC designated counties in Kentucky. Descriptive statistics on these participants are shown in Table 3. The majority of the respondents were teachers (90.6%) and female (63.7%). Most years of experience among the sample was 1-4 years (37.6%), followed by 10-15 years (24.7%). The majority of the teachers in the sample had worked with their principals between 1-4 years (59.2%). The 59.2% statistic mirrors the state and national trend of the current turn over for principals. A total of 62.3% the teachers had 10+ years of experience.

An interesting note: Approximately 84.4% of the teachers had either a Master's degree (37.6%) or Rank 1 (38.4%) as their highest degree, signifying a high average teaching longevity and high level of education attainment at each particular school.

Table 3
Demographic Characteristics of the Sample

Variable	*n*	%
Gender		
Female	286	63.7
Male	163	36.3
Total	449	100
Years Working with Current Principal		
1-4 Years	266	59.2
5-9 Years	98	21.8
10- 15 Years	58	12.9
15 Plus Years	27	6.0
Total	499	100
Years Experience as a Teacher/Admin/Support Staff		
1-4 Years	70	15.6
5-9 Years	99	22.0
10-15 Years	111	24.7
15 Plus years	169	37.6
Total	449	100
Position/Title		
Administrator	26	5.8
Teacher	407	90.6
Support Staff	16	3.6
Total	449	100
Education		
Bachelors	60	13.5
Masters	179	37.6
Rank 1 (Masters+ 36 hrs)	102	38.4
Ed. D/ Ph.D.	11	1.4
Total	499	100

Demographic Characteristic PIMRS/CTE Surveys

The descriptive results for the PIMRS categories of this study are shown on Table 4 via display of means, standard deviations, range values, and sample sizes for each variable. The dependent variable is displayed first followed by the independent variables.

Table 4

Means, Standard Deviations, Range Values, and Frequencies for Collected Data PIMRS/CTE

Variable	Mean	Standard Deviation	Range Min - Max
Dependent Variable ACT Mean (SAA)	**17.6**	**1.23**	**15.0 - 21.0**
Independent Variable			
Free/Reduced Lunch (SES)	67.9	10.36	46.0 - 87.0
PIMRS			
Defines the School Mission	41. 5	3.99	30.2 - 48.5
Managing the Instructional Program	61.4	5.86	51.0 - 72.2
Developing the School Learning Climate Program	93.1	10.56	66.4 - 112.6
Coordinates the Curriculum	20.24	2.00	16.2 - 23.8
Frames School Goals	21.03	1.84	7.45 - 24.1
Communicates School Goals	20.24	2.00	7.53 - 23.82
Supervises & Evaluates Instruction	20.7	2.09	16.7 - 24.45
Monitors Student Progress	20.48	2.01	16.29 -24.0
Protects Instructional Time	18.66	1.66	15.33 - 22.17
Provides Incentives for Teachers	17.40	2.30	13.71 - 22.20
Provides Incentives for Learning	18.06	2.93	11.29 - 24.55
Promotes Professional Development	19.55	2.03	14.00 - 22.67
Maintains High Visibility	19.41	3.14	10.14 - 24.73
CTE			
Teacher Perception to Community Challenges to Learning	8.98	1.19	6.45 -11.50
Teacher Perception to Classroom Management	14.03	1.33	11.6 -17.41
Teacher Perception to Student Motivation to Learn	12.6	.09	11.2 - 15.75

Means, Standard Deviations, Range Values and Frequencies for PIMRS/CTE Surveys

Hypotheses Testing of Principal Instructional Leadership

This section presents the correlation results of the teacher's perceptions of principal instructional leadership behaviors and collective teacher perceptions to student learning correlated to the dependent variable: Student Academic Achievement. Using the three dimensions, and each of the 10 subscales of the PIMRS as a basis; one purpose of this study was to design hypotheses to examine if a relationship existed between principal

instructional leadership behaviors on student academic achievement. To do so the following null hypotheses and null sub-hypotheses were tested:

1. Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership behaviors that Defines the School Mission.

1.1 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership behaviors that Frames the School's Goals and Student Academic Achievement.

1.2 Ho: There is no significant relationship between teachers' perceptions of principal instructional leadership behaviors that Communicates the School's Goals.

2. Ho: There is no significant relationship between teacher's perceptions of principals' instructional leadership behaviors that Manages the Instructional Program and Student Academic Achievement.

2.1 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership behaviors that Coordinates the Curriculum and Student Academic Achievement.

2.2 Ho: There is no significant relationship between teachers' perceptions of principal instructional leadership behaviors that Supervises and Evaluates Instruction and Student Academic Achievement.

2.3 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership behaviors that Monitors Student Progress and Student Academic Achievement.

3. Ho: There is no significant relationship between teacher's perceptions of principal's instructional leadership behaviors that Develops the School Learning Climate Program and Student Academic Achievement.

3.1 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership that Protects Instructional Time and Student Academic Achievements, accounting for Socioeconomic Status.

3.2 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership behaviors that Provides Incentives for Teachers and Student Academic Achievement , accounting for Socioeconomic Status.

3.3 Ho: There is no significant relationship between teacher's perceptions of principal instructional that Provides Incentives for Learning and Student Academic Achievement, accounting for Socioeconomic Status.

3.4 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership behaviors that Promotes Professional Development and Student Academic Achievement, accounting for Socioeconomic Status.

3.5 Ho: There is no significant relationship between teacher's perceptions of principal instructional leadership behaviors that Maintains High Visibility and Student Academic Achievement, accounting for Socioeconomic Status. Correlation Testing for Principal Instructional Leadership

The correlational analysis was run between principal instructional leadership scores for Dimension I and the three subscales on the dependent variable, student

academic achievement. Scores for all correlations are expressed as continuous, interval scores determined by using the Pearson r coefficients.

Correlation Testing for Hypothesis Number 1

A correlational analysis between teacher's perceptions of principal instructional leadership behaviors scores and student academic achievement scores was run to test for the correlation coefficients of teacher's perception of principal instructional behaviors in Dimension 1 (Defining the School Mission), and its subscales: Frames the School's Goals, Communicates the School's Goals to the dependent variable, Student Academic Achievement. The test of the correlations for the hypothesis and sub-hypotheses are shown in Table 5.

Table 5

Correlation of Hypothesis and Sub-Hypotheses Tests of PIL Behaviors in Dimension 1 and Subscales and Student Academic Achievement, Accounting for SES, *n = 42*

Dimension 1	Correlation coefficient	p Value
Defines the School Mission	.229	.188
Subscales		
Frames the School's Goals	.170	.282
Communicates the School's Goals	.268	.086

No correlation found

The results of the study indicated that there is no significant relationship between teacher's perception of principals' instructional leadership behaviors of the Dimension 1, Defines the School Mission of, r = .229, n =42, p =.188, two tails; and the two subscales Frames the School's Goals, r = .170, *n = 42*, p = .282, two tails; and Communicates the School's Goals, r = .268, *n = 42*, p = .086, two tails to the dependent variable Student

Academic Achievement. As it regards to the significance of the null hypothesis, none of the scores met the $p < .05$ threshold level of significance, so the null hypothesis is accepted for Dimension 1 and its two subscales. This would suggest that teachers did not perceive instructional leadership behaviors in Dimension I that Defines the School Mission and it's two subscales, Frames the School's Goals, Communicates the School's Goals as relating to Student Academic Achievement.

Correlation Testing for Hypothesis Number 2

A correlational analysis between teacher's perceptions of principal instructional leadership behaviors scores and student academic achievement scores was run to test for the correlation coefficients of teacher's perception of principal instructional behaviors in Dimension II, Managing the Instructional Program, and in its three subscales: Coordinating the Curriculum, Supervises and Evaluates Instruction, and Monitors Student Progress to, dependent variable Student Academic Achievement. The test of the correlations for the hypothesis and sub-hypotheses are shown in Table 6 below.

Table 6

Correlation of Hypothesis and Sub-Hypotheses Tests of PIL Behaviors in Dimension II and Student Academic Achievement, Accounting for SES, *n = 42*

Dimension II	Correlation Coefficient	p Values
Managing the Instructional Program	.198	.208
Subscales		
Coordinates the Curriculum	.198	.208
Supervises & Evaluates Instruction	.170	.282
Monitors Student Progress	.203	.197

No correlations found

The results of this analysis indicated that there is no significant relationship between teacher's perceptions of principal instructional leadership behaviors, Managing the Instructional Program in Dimension II, r = .198, *n = 42*, p = .208, two tails and the subscales of: Coordinates the Curriculum, r = .198, *n = 42*, two tails; p = .208, two tails, or its subscales Supervises & Evaluates Instruction, r = .170, *n = 42*, p =.282; two tails, and Monitors Student Progress, r =.203, *n = 42*, p =.197, two tails, to the dependent variable student academic achievement. As it regards to the significance of the null hypothesis the variables for Dimension II, do not meet the p <. 05 threshold of significance, therefore the null hypothesis is accepted. This would suggest that principal instructional leadership behaviors in this Dimension II are not significant in relating to Student Academic Achievement.

Correlation Testing for Hypothesis Number 3

A correlational analysis between principal instructional leadership scores and Student Academic Achievement scores was run to test for the correlation coefficients of teacher's perception of principal instructional behaviors and in Dimension III, Managing the Instructional Program, and in its five subscales: Protects Instructional Time, Provides Incentives for Teachers, Provides Incentives for Learning, Promotes Professional Development, Maintains High Visibility to the dependent variable, Student Academic Achievement. The test of the correlations for the hypothesis and sub-hypotheses is shown in Table 7 below.

Table 7

Correlations of Hypothesis and Sub-Hypotheses Tests PIL Behaviors in Dimension III and Subscales and Student Academic Achievement, Accounting for SES, *n = 42*

Dimension III	Correlation Coefficient	p Values
Developing the School		
Learning Climate Program	.198	.208
Subscales		
Protects Instructional Time	-.122	.443
Provides Incentives for Teachers	.104	.198
Provides Incentives for Learning	*.331	.032
Promotes Professional Development	.080	.613
Maintains High Visibility	.220	.162

*Correlation is significant at p = 0.32, two tailed

The results of the analysis indicate that there is no significant relationship between teacher's perceptions of principal instructional leadership behaviors in Dimension III that Develops the School Learning Climate Program and Student Academic Achievement, r = .198, *n = 42*, p = .208, two tails, and the corresponding subscales, Protects Instructional Time r = -.122, *n = 42*, p = .443, two tails; Provides Incentives for Teachers r = .104, *n = 42*, p = .195, two tails; Promotes Professional Development, r = .080, *n = 42*, p = .613, two tails; Maintains High Visibility, r = .220, *n = 42*, p = .162, two tails. As it regards to the significance of the null hypothesis, all but one of variables for Dimension III do not meet the $p < .05$ threshold, therefore the null hypothesis is accepted. This would suggest that Dimension III and it's three subscales are not related to Student Academic Achievement. The data revealed that, the teacher's perceptions of principal instructional leadership had a significant but weak correlation for behaviors that Provides Incentives for Learning, r = . 331, *n = 42*, p = .032, two tails,

therefore the null hypothesis is rejected, for this variable: Provides Incentives for Learning. This would suggest principal instructional leadership: Provides Incentives for Learning has a weak but significant relation to Student Academic Achievement.

Correlation Testing of Collective Teacher Efficacy

Similarly, using the three components of the CTE the following hypothesis was utilized to examine if a relationship exited between collective teacher efficacy perceptions of student learning, and the total scores of the three domains of principal instructional leadership behaviors on the dependent variable: Student Academic Achievement.

4.0 Ho: There is no significant relationship between the three components of the collective teacher efficacy perceptions (CTE) of student learning and teacher's perception of principal instructional leadership behaviors and the three main components and its ten subscales (PIL)

Correlation for Hypothesis Number 4

A correlational analysis was run between the three total Collective Teacher Efficacy scores: Teacher Perception to Community Challenges to Learning, Teacher Perception to Classroom Management, Teacher Perception to Student Motivation to Learning, to the three components of instructional principal instructional total scores: Defines the School Mission, Managing the Instructional Program, Developing the School Learning Climate on Student Academic Achievement (and its subscales) scores to test for correlation coefficients. The correlations of the CTE/PIL hypothesis results are listed in Table 8.

Table Number 8

Correlation of Hypothesis Test of CTE and PIL Correlations to Academic Achievement for SES, *n = 42*.

Dimension	Correlation Coefficient	p Value
Student Academic Achievement (Socioeconomic Status)	r= -.485*	.001
Teacher Perception to Student Motivation to Learning (Socioeconomic Status)	r= -.394	.010
Teacher Perception to Community Challenges to Learning (Protects Instructional Time)	r= .349	.023
Teacher Perception to Community Challenges to Learning (Teacher Perceptions to Classroom Management)	r= .414	.006
Teacher Perception to Community Challenges to Learning (Teacher Perception to Student Motivation to Learning)	r= .341	.027
Teacher Perception to Classroom Management (Monitors Student Progress)	r= .314	.043
Teacher Perception to Classroom Management (Provides Incentives for Teachers)	r= .359	.020
Teacher Perception to Classroom Management (Provides Incentives for Learning)	r= .359	.020
Teacher Perception to Classroom Management (Provides for Professional Development)	r= .358	.020
Teacher Perception to Classroom Management (Developing School Learning Climate)	r= .376	0.14
Teacher Perception to Classroom Management (Student Academic Achievement) (SAA)	r= .341	.027
Teacher Perception to Student Motivation to Learning (Provides Incentive for Learning)	r= .331	.027
Teacher Perception to Classroom Management (Student Motivation to Learning)	r= .479	.001
Provides Incentives for Learning (Student Academic Achievement) (SAA)	r= .331	.032
Maintains High Visibility (Protects Instructional Time)	r= .485*	.001

Correlation is significant at p= .005, two tails

*Correlation is significant at p= .001, two tails

The results of the Collective Teacher Efficacy analysis when correlated to principal instructional leadership variables, and the dependent variable, Student

Academic Achievement Accounting for Socioeconomic Status, demonstrates interesting results. Primarily all the factors of the PIMRS correlate to each other; consequently, they will not be reported.

Of major interest of this study is to examine the correlational effect(s) of the three Collective Teacher Efficacy dimensions when correlated to the dependent variable Student Academic Achievement, when accounted for Socioeconomic Status. A combination of fifteen combined variables (CTE, PIL, SES and SAA) was correlated.

Socioeconomic Status

Socioeconomic Status was correlated to Student Academic Achievement at a high and significant $r = -.485$, $p = .001$. Teacher Perception to Student Motivation to learning was correlated to Student Academic Achievement at $r = -.394$, $p = .010$. The results suggest two things: as socioeconomic status increases student's motivation to learn decreases; moreover, as socioeconomic rates increase, Student Academic Achievement decreases. Therefore the null hypothesis is rejected.

Community Challenges to Learning

The results indicate that Collective Teacher Efficacy Perceptions to Student Learning correlations to principal instructional leadership behaviors in the following variables: Community Challenges to Learning was correlated at a weak but significant $r = .349$, $p = .023$, two tails correlation to, Protects Instructional Time. This would suggest that principal instructional behaviors of Protecting Instructional Time affects teacher's classroom behaviors by limiting interruptions to classroom teaching. The Community Challenges to Learning correlates to teacher's Perceptions to Classroom Management at a

high significant r = .414, p = .006, two tales. This would suggest that as teacher's Perceptions Community Challenges to learning affect classroom management. Teacher's Perception to Community Challenges to Learning was correlated to teacher's Perception to Student Motivation to learning at a weak significant r = .341, p = .0.27. This would suggest that teacher's Perception to Community Challenges to learning is closely related to student motivation to learning. Therefore the null hypothesis is rejected.

Teacher Perception to Classroom Management

Teacher perception to classroom management was correlated to principal instructional leadership behaviors, Monitor's Student Progress, it is correlated at an weak but significant r = .314, p = .043, two tails to student academic achievement (SAA). This would indicate that the principal's monitoring student progress helps teacher's classroom management behaviors. Teacher perceptions to classroom management correlates, to Provides Incentives for Teachers at a r =.359, p = .020. This would suggest that teacher perception to classroom management is mitigated by the principal's instructional behavior by providing incentives for teachers. Teacher Perception to Classroom Management is correlated, to Provides Incentives to Learning at a correlated but weak significant r = .359, p = .020, two tails. This would suggest that teacher's perception's of classroom management is tied to the principal's instructional leadership behavior when the principal provides incentives to learning for students. Teacher's Perception to Classroom Management is correlated to Provides for Professional Development at a correlated but weak significant r = .358, p = .020, two tails. This would suggest that teacher perception to classroom management is mitigated by the

principal's instructional behaviors related to professional development of the teachers. Teacher's Perception to Classroom Management is correlated to principal instructional learning behaviors- Developing the School Learning Climate Program - at a correlated but weak significant r = 376, p = .014, two tails. This would suggest that the principal's instructional learning behaviors - developing the School Learning Climate Program, has a bearing on how well teachers manage classroom behaviors. Teacher's Perception to Classroom Management is correlated to Student Academic Achievement (SAA) at a correlated but weak significant r = .341, p = .027, two tails. This would suggest that when teachers maintain classroom behaviors more learning takes place. Therefore the null hypothesis is rejected for all the variables listed.

Teacher Perception to Student Motivation to Learning

Collective teacher efficacy perceptions to student learning, teacher perception to student motivation to learning, is correlated to principal instructional leadership behaviors, provides incentives for learning, is correlated at a weak but significant r = .331, p = .027, two tails. This would suggest the indirect influence of the principal's instructional leadership behaviors are related to student academic achievement. The null hypothesis is rejected.

Provides Incentives to Learning

Principal instructional leadership behaviors - Provides Incentives for Learning, is correlated to the dependent variable: student academic achievement (SAA) at a weak but significant r = .331, p = . 032, two tails. This would suggest that there is an indirect but

important relationship between student academic achievement and principal instructional leadership behaviors. Therefore the null hypothesis is rejected.

Maintains High Visibility

Maintains High Visibility, and Protects Instructional Time, both under the component: principal instructional leadership behaviors are correlated at a high and significant r = .485, p. = .001, two tails. This would suggest that the principal's visibility on campus and protecting instructional time increases student and teacher teaching and learning behaviors. Therefore the null hypothesis is rejected.

Tests of Research Questions of PIL and CTE on SAA

An important component of this study was to determine the strength of the relationship between the principals' instructional leadership behaviors, and collective teacher efficacy perceptions of student learning effects on student academic achievement accounting for socioeconomic status. Using the three dimensions and the 10 subscales of the PIMRS and the three dimensions of the CTE as a basis, the following research questions were designed and tested:

1. What is the strength of the relationship, if any, between high school principal instructional leadership behaviors and student academic achievement, controlling for SES?
2. What is the strength of the relationship, if any, between teacher's perceptions of principal's instructional leadership behaviors and student academic achievement, accounting for SE?

3. What is the strength of the relationship, if any, between student academic achievement and a combination of principal instructional leadership behaviors and teacher collective efficacy perception to student learning, controlling for SES?

Research Question Number 1 Findings

To interpret multiple regression results accurately, it is imperative to review R squared, beta weights, f-scores, standardized coefficients and p-values, as well as regression standardized residual scatterplots. Linear regression plots were used to aid in the validation of assumptions of normality, linearity, and equality of error variances (see scatterplots and histogram at the end of this section).

Taking in to account that small sample size and non-meaningful effects can became statistically significant with a sufficiently large sample, the results of these multiple regression were reviewed within the context of this sample size, *n = 42*. An R^2 of .408 and an adjusted R^2 of .378 indicated enough of an effect to analyze further. These values are shown in the first row of Table 9, along with the regression summary.

A standard multiple regression analysis was performed to examine the strength of the relationship of the first question: What is the strength of the relationship, if any, between teacher's perceptions of principals' instructional leadership behaviors and student academic achievement, accounting for socioeconomic status. These values for model one are shown in the first three rows of Table 9 along with the regression summary**.** The regression was significant from zero with F (1, 40) = 13.46, P = < .001.

Table 9
Regression Results for Model 1 PIL and SAA Accounting for SES, *n = 42*

Source	SS	ds	MS	F	Sig	R^2	Adj R^2
Regression	26.81	1	13.40	13.46	.001	.408	.378
Residual	38.83	40	.99				
Total	65.64	41					

Dependent Variable ACT (SAA)
Independent Variables Total PIL, Total SES

The stepwise results indicated a model fit with an F-value 13.465 (40,1), P < .001, and an adjusted R^2 of .378. The adjusted R^2 statistic indicated that the independent variable accounted for 37.8% of the variance in the dependent variable. The results showed that there was no strength in the relationship between PIL and CTE with regards to Student Academic Achievement.

The results indicate that there is no strength in the relationship between principal instructional leadership and student academic achievement (standardized beta = .120, p = .337) when accounting for socioeconomic status. This would suggest that principal instructional leadership behaviors are not strongly associated with student academic achievement.

Research Question Number 2 Findings

A standard multiple regression analysis was performed to examine the strength of the relationship of the second question: A standard multiple regression analysis was performed to examine the strength of the relationship of the first question: What is the strength of the relationship, if any, between teacher's perceptions of principals' instructional leadership behaviors and student academic achievement, accounting for socioeconomic status. Model number two examined the strength of the relationship

between collective teacher efficacy perceptions to student learning to student academic achievement accounting for socioeconomic status, as shown in Table 10.

Table 10
Regression Results for Model 2 CTE and SAA Accounting for SES, *n*=42.

Source	SS	ds	MS	F	Sig	R^2	Adj R^2
Regression	20.27	1	13.136	13.013	.001	.400	.369
Residual	39.37	40	1.010				
Total	65.64	41					

Dependent Variable: ACT (SAA)
Independent Variables: Total CTE, Total SES

A stepwise results indicated for Model two (see Table 11) with a F-value of 13.013 (40, 1) at p < .001 and an adjusted An $\boldsymbol{R^2}$ of .400, and he adjusted R^2 of .369 in this study means the independent variables account for 36.9% of the variance in the dependent variable and it is a good fit. As it regards the 2nd research question: There is no strong relationship between collective teacher efficacy perceptions of student learning and student academic achievement, accounting for socioeconomic status (standardized beta of -.079, P = .532). This suggests that collective teacher efficacy perceptions to student learning are not strongly associated with student academic achievement, accounting for socioeconomic status.

Research Question Number 3 Findings

A standard multiple regression analysis was performed to examine the strength of the relationship of the third questions: What is the strength of the relationship, if any, between student academic achievement and a combination of principal instructional leadership behaviors and teacher collective efficacy perception to student learning, controlling for SES? An R^2 of .415 and an adjusted R^2 indicates a good fit. Model 3

examined the combined strength of the principal instructional leadership, collective teacher efficacy perceptions of student learning, and student academic achievement accounting for SES as shown on Table 11.

Table 11
Regression Results for Model 3 Combination of PIL, CTE and SAA, Accounting for SES, *n*= 42.

Source	SS	Df	MS	F	Sig	R^2	Adj R^2
Regression	27.23	3	9.078	8.981	.001	.415	.369
Residual	38.41	38	1.011				
Total	65.64	41					

Dependent Variable Total (ACT) SAA
Independent Variables Total PIL, Total CTE, Total SES

The stepwise results indicated for the 3rd model (see Table 11) an F-Value 8.981, at p =.001 and an adjusted - R^2 of .369. The F-value indicated a good model fit. The adjusted- R^2 of .369 means the independent variable accounted for 36.9% of the variance in the dependent variable. As it regards the 3rd research question: There is no significant strength in the relationship between the combined high school principal instructional leadership behaviors, collective teacher perceptions, socioeconomic status. and student academic achievement (CTE standardized beta -.080, p = .523; and, PIL standardized beta .121, p = .336, respectively).

There was, however, a significant strong relationship between socioeconomic status and student academic achievement, (standardized beta of -.619, p = .001). With regards to the 3rd research question the analysis suggests that as socioeconomic status rates increases, student academic achievement decreases.

Summary

This chapter reported the results of the study in sections. The first described the reliability of measures. From there, the researcher presented descriptive results for both the three main components and the ten subscales of the PIMRS; and the 3 main components of the CTE. The results of the correlations were presented. The results of the four correlations were out of the 54 possible correlations between Collective teacher efficacy and principal instructional Leadership behaviors presented thirteen showed weak but possible correlations. The researcher then presented the three regression models. Of the three multiple regression models presented - which represented the three hypotheses - only student academic achievement and socioeconomic status demonstrated a strong significance relationship. The next chapter discusses the meaning of the findings in light of previous literature. It also offers recommendations on educational public policy and educational leadership strategies, limitations of the study, and opportunities for future research.

Chapter V

DISCUSSION

This chapter provides a discussion of the study and the findings, explanations, conclusions and recommendations for future research. After a brief review of the background, purpose and methodology of the study, the results and interpretation of the data and research questions will follow. The concluding section will discuss the implications of the results and suggestions for future research.

Today's mandate-driven high-stakes testing calls for high school principals to use data analysis to improve their managerial and leadership skills, to articulate a school-wide mission, and learn management and leadership skills to better support teaching and learning activities that lead to student academic achievement. Present day high school principals today are too often unequipped or ill-equipped to perform these duties and responsibilities.

Since principals are trained to be more building managers than instructional leaders, the purpose of this research study was to examine the interplay of principal instructional leadership, with collective teacher efficacy and its effect on student academic achievement accounting for socioeconomic status. This research study also sought to provide a means where by veteran and novice principals may incorporate concepts, theories and strategies to be effective instructional leaders and improve student academic achievement (Haller & Strike, 1986; Hallinger, 2003; Hallinger, 2005; Leithwood et. all, 2004). In addition this study also sought to

enumerate the concepts and strategies for principals and teachers to be able to incorporate collective teacher behaviors to affect student academic achievement (Goddard, 2001; Goddard, 2002 Goddard et. al, 2000; Hallinger, 2003; Hallinger et.al, 1996; Hallinger & Heck, 1996). An important component of this study was to provide instructional leadership and collective teacher strategies to state department of education and education agencies with effective public policy strategies to improve student academic achievement (Hallinger, 2008; Hausman, Crow, Sperry, 2000, Wallace Foundation, 2008, Reeves & Bylund, 2005). Also of equal importance was to provide research information to principals and teachers to use their schools' data-set to establish procedures to examine and improve student academic achievement (Tschannen-Moran et. al, 2001; Tschannen & Woolfolk Hoy, 2001; Goddard, et. al, 2000; Hallinger & Strike, 1986; Hallinger & Heck, 1996; Hallinger, 2005, Hallinger, 2008).

Another important aspect of this study was to add to the study and discussion by university education departments to restructure principal instructional leadership and collective teacher efficacy training curriculums to incorporate both instructional leadership strategies and collective teacher efficacy to their principal and teacher preparation programs (Haller & Strike, 1986; Darling-Hammond, Orphanos, 2006; Hallinger, 2005; Wallace Foundation, 2008; Sansotti et.al, 2010).

Unique to this study is the demographic region of rural Eastern and Central Kentucky public schools. The schools chosen are designated as at-risk or

economically distressed county schools (Appalachian Regional Commission 2011). This research study focused on the challenges faced by high poverty rural schools and to establish a framework from which principals and teachers can use leadership and collective efficacy research and how the results of this study can ameliorate the effects of poverty and rural isolation on student academic achievement. In order to achieve this purpose the following hypotheses and subsequent research questions were asked:

1. Ho: There is no relationship between teacher's perceptions of principal instructional leadership behaviors that defines the school mission, accounting for SES.

1.1 Ho: There is no relationship between teacher's perceptions of principal instructional leadership behaviors that frames the school's goals and student academic achievement, accounting for SES.

1.2 Ho: There is no significant relationship between teacher's perceptions of high school principal instructional leadership that communicates the school's goals.

2. Ho: There is no relationship between teacher's perceptions of principals' instructional leadership behaviors that manages the instructional program and student academic achievement, accounting for SES.

2.1 Ho: There is no relationship between teacher's perceptions of principal instructional leadership behaviors that coordinates the curriculum and student academic achievement, accounting for SES.

2.2 Ho: There is no relationship between teachers' perceptions of principal instructional leadership behaviors that supervises and evaluates instruction and student academic achievement, accounting for SES.

2.3 Ho: There is no relationship between teacher's perceptions of principal instructional leadership behaviors that monitors student progress and student academic achievement, accounting for SES..

3. Ho: There is no relationship between teacher's perceptions of principals' instructional leadership behaviors that develops the school learning climate program and student academic achievement, accounting for SES.

3.1 Ho: There is no relationship between teacher's perceptions of principal instructional leadership that protects instructional time and student academic achievement, accounting for SES.

3.2 Ho: There is no relationship between teacher's perceptions of principal instructional leadership behaviors that provides incentives for teachers and student academic achievement, accounting for SES.

3.3 Ho: There is no relationship between teacher's perceptions of principal instruction that provides incentives for learning and student academic achievement, accounting for SES.

3.4 Ho: There is no relationship between teacher's perceptions of principal instructional leadership behaviors that promotes professional development and student academic achievement, accounting for SES.

3.5 Ho: There is no relationship between teacher's perceptions of principal instructional leadership behaviors that maintains high visibility and student academic achievement, accounting for SES.

4.0 Ho: There is no significant relationship between the three components of Collective Teacher Efficacy Perceptions of Student Learning and teacher's perception of principal instructional leadership behaviors and the three main components and its ten subscales on student academic achievement, accounting for SES.

Taking in to account that small sample size and non-meaningful effects can became statistically significant with a sufficiently large sample, the results of this studies' correlation coefficients for the following questions were reviewed within the context of this sample size, *n = 42*.

1. What is the strength of the relationship, if any, between high school principal instructional leadership behaviors and student academic achievement, controlling for SES?

2. What is the strength of the relationship, if any, between collective teacher efficacy perceptions to student learning and student achievement, controlling for SES?

3. What is the strength of the relationship, if any, between student academic achievement and a combination of high school principal instructional leadership behaviors and teacher collective efficacy perception to student learning, controlling for SES?

Summary of Findings

Correlations

The data analysis provided two distinct results. Overall there was strong correlation between principal instructional leadership behaviors (PIMRS) when the correlations were run internally; e.g., within the scope of the three dimension and the 10 subscales. This can be expected as the PIMRS has been tested for validity and reliability as outlined in chapter three; and they will not be reported

There were no statistically significant relationships between principal instructional leadership behaviors on the dependent variable, student academic achievement accounting for socioeconomic status (except for Dimension III, sub scale, Provides Incentives for Learning). The findings were not consistent with the literature and related research (Goddard, 2002; Tschannen-Moran et. al, 2001; Leithwood et. all, 2004; Leithwood, 2006; Francera, 2009; Boyd, 2008; Lubber, 1988). The findings of this part of the research failed to support the hypothesis that the three dimensions of the PIMRS and its 10 subscales influenced student academic achievement over and above that explained by socioeconomic status. The data analysis yielded the following findings for the proposed hypothesis listed above.

Data analysis to answer hypothesis number 1.0 indicated that principal instructional leadership behaviors did not correlate at a significance level with: the main component , Managing the Instructional Program, $r = .198$, $p = .208$, two tails; and the three subscales: Coordinates the Curriculum 2.1, $r = .198$, $p = .208$, two tails;

Supervises &Evaluates instruction 2.1, r = .170, p 282, two tails; monitors student progress 2.2, r = .203, p = .197, two tails.

Data analysis to answer hypothesis number 2.0, indicated that principal instructional leadership behaviors: the main component, Defining the School Mission to Student Academic Achievement showed no correlation significance at r = . 229, p = .188, two tales, and the two subscales: Frames the School Goals 1.1, r = .170, .282, two tales, and Communicates the Schools Goals 1.2, r = .268, p =. 086, two tails.

Data analysis to answer hypothesis number 3.0 indicates that principal instructional leadership behaviors showed no correlation significance to the main component: Developing the School Learning Climate Program 3.0, r = .198, p = .208, two tails; and the three subscales: Protects Instructional Time 3.1, r = -.122, p = .443, two tails; Provides Incentives for Teachers 3.2, r = .104, p = .198, two tails; Provides Incentives for Learning 3.3, r = .331, p = .032, two tails, showed a correlation (it also showed correlation in hypothesis number 4.0, see analysis below); Promotes Professional Development 3.4, r = .080. p = .613, two tails; maintains high visibility 3.5, r = .220, p = .162, two tails.

There were weak (in two of the 15 variables strong correlations were reported) but significant relationships between collective teacher efficacy perception to student learning, principal instructional leadership behaviors, and student academic achievement when accounting for socioeconomic status. The results of this research supports the hypothesis that collective teacher efficacy (when coupled with principal instructional leadership behaviors) influences student academic achievement. The findings were

consistent with the literature and related research concerning the direct relationship of daily classroom teacher interaction with students (Goddard, 2004; Goddard, et. al, 2000; Goddard, 2001, Leithwood, Leithwood & Jantzi, 2006; Howley & Howley, 2010; Leithwood et.al, 2004; Francera, 209, Lubbers, 1988).

Data analysis conducted to answer hypothesis number 4.0 indicates that collective teacher efficacy showed significant correlations to the three PIL dimensions and it's 10 subscales.

Socioeconomic Status was negatively correlated to Student Academic Achievement at a r = -.485, p.001 indicating that as socioeconomic rates increase student academic achievement rates decrease. Moreover, Teacher Perception to Student Motivation to Learning was correlated at a high negative r = -.394, p = .010, indicating that as Socioeconomic Status increases, Student Motivation to Learning decrease.

Teacher Perception to Community Challenges to Learning was mildly correlated to Protects Instructional Time: r = .349, p = .023, two tails; Teacher Perception to Community Challenges to Learning was correlated to Teacher Perceptions to Classroom Management, r =. 414, p = .006, two tails; Teacher Perception to Community Challenges to Learning was correlated to Teacher Perception to Student Motivation to Learning at r =.341, p = .027, two tails; Teacher Perception to Classroom Management, r = .341, p = .027, two tails; Teacher Perception to Classroom was correlated to Monitors Student Progress at r = .314, p = .043, two tails; Teacher Perception to Classroom Management was correlated to Provides Incentives to Classroom Management at r = .359, p = .020, two tails; Teacher Perceptions to Classroom Management was correlated to Provides

Incentives for Learning at r = .359, p = .020, two tails; Teacher Perception to Classroom Management was correlated to Provides Professional Development at r = .358, p = .020, two tails; Teacher Perception to Classroom Management was correlated to Developing the School Leaning Climate at r = .376, p. 014, two tails; Teacher Perception to Classroom Management was correlated to Student Academic Achievement at r = .341, p = .027 two tails; Teacher Perception to Student Motivation Provides Incentives for Learning was correlated to Student Academic Achievement at r = .331, p = .032,two tails (this was correlated in dimension III, sub scale three: r = .331, p = .032); Maintains High Visibility was correlated to Protects Instructional Time at r = .485, p = .001.

Another purpose of this study was to determine the strength of the relationship among principal instructional leadership behaviors, Collective Teacher Efficacy, Student Academic Achievement, accounting for Socioeconomic Status. The following research questions were designed and tested:

1. What is the strength of the relationship, if any, between high school principal instructional leadership behaviors and student academic achievement, controlling for SES?
2. What is the strength of the relationship, if any, between collective teacher efficacy perceptions to student learning and student achievement, controlling for SES?
3. What is the strength of the relationship, if any, between a combination of collective efficacy perception to student learning, principal instructional leadership behaviors, and student academic achievement controlling for SES?

Multiple Regressions

Multiple regression analysis was conducted to examine the strength of the relationship between the total scores for Principal Instructional Leadership and the total scores of the three Collective Teacher Efficacy Perceptions to Student Learning: Collective Teacher perception to Student Motivation to Learning; Collective Teacher Efficacy Perceptions to Community Challenges to Learning, Collective Teacher Efficacy Perceptions, to Student Motivation to Learning the dependent variable: Student Academic Achievement, accounting for SES.

Data analysis conducted to answer research question number 1: What is the strength of the relationship, if any, between high school principal instructional leadership behaviors and student academic achievement, controlling for SES, revealed a standardized beta = .120, p = .337 score, when accounting for socioeconomic status and was not strongly associated with Student Academic Achievement. Student Academic Achievement accounted for only 37.8% of the variance of the dependent variable that can be explained by the independent variables.

Data analysis conducted to answer research question number 2: What is the strength of the relationship, if any, between collective teacher efficacy perceptions to student learning and student achievement, controlling for SES, revealed that a standardized beta = -.79, p = .532, when accounting for socioeconomic status was not strongly associated with Student Academic Achievement. Student Academic Achievement accounted for only 36.7% of the variance of the dependent variable that can be explained by the independent variables.

Data analysis to answer research question number 3: What is the strength of the relationship, if any, between a combination of collective efficacy perception to student learning, principal instructional leadership behaviors, and student academic achievement controlling for SES, revealed two beta scores. A (CTE standardized beta = -.080, p = .523); and a (PIL standardized beta = .121, p = .336) revealed no strong relationship. However, (standardized beta of = -.619, p = .001) revealed a strong negative relationship between Student Academic Achievement and Socioeconomic Status. Student Academic Achievement accounted for 36.9% of the variance of the dependent variable that can be explained by the independent variables.

Discussion

The findings of this study do not support past literature and research regarding principal instructional leadership behaviors and its contribution over and above that explained by collective socioeconomic status. However, this does not negate principal instructional behaviors as an important aspect of school leadership and management with regards to: combining student academic achievement data to align principal instructional behaviors with collective teacher efficacy behaviors to improve teacher instruction and student learning behaviors; conducting collective teacher efficacy behaviors workshops; as well as designing individual and collective efficacy evaluating instruments ; and of course satisfying national and state assessments: Common Core Curriculum requirements, end-of-course assessment, testing-on demand, and AP examinations (Leithwood et. all, 2004; Hallinger, 1987; Leithwood & Jantzi, 2006, Powell et.al, 2009).

The lack of statistically significant results for the correlations may be due to the low number of schools (*n = 42*). Each school served as a unit of analysis (as opposed to individual teacher responses, *n* = 449), the schools varied in size as well as in their reporting. Smaller schools reported a higher number of responses, and there were a higher number of females who responded to the survey. Moreover, the instrumentation may have overwhelmed teachers, as well as the timing of the survey (April-May, when schools are concerned with school-wide testing). The explanation provided by principals who opted not to participate in the survey was that a similar instrument was administered or was to be administered and they not want to overwhelm teachers with, "yet another survey." School counselors and curriculum supervisors who were enlisted to encourage teachers to participate and/or complete the survey reported a reluctance to (in spite of having obtained principal approval) participate and did not encourage teachers to complete the survey as they felt that the PIMRS evaluated the principal, and for political/professional reasons chose not to complete the instrument. Personal visits to the school sites helped secure a higher survey response. In spite of the fact that the CTE was composed of 12 survey questions, when added to the 50 item PIMRS, the survey may have overwhelmed some teachers. The survey was set so that no question was to be skipped; however a 62 question survey is not the norm. Another factor that may have contributed to the data failing to support the hypotheses was the use of ACT composite scores instead of a subscale math ACT score. However, a random comparison of ten schools' 10 school's ACT composite scores to ACT math subscale scores showed only a

slight difference (.3-.4) between ACT composite scores and ACT math subscale scores (Kentucky Department of Education, 2013).

Recommendations for Action

Principal instructional leadership and collective teacher efficacy cannot function in isolation. Both instructional leadership and collective teacher efficacy must work in tandem to improve principal instructional leadership behaviors and collective teacher efficacy. This research project points out how crucial both are to affect student academic achievement. To that end the following recommendations for action are offered.

A basic tenet of socioeconomic status and student academic achievement research in educational research deals with the in-school factors that educators can control: positive learning climate, high academic expectations, providing incentives for teaching and learning, (Bandura, Goddard 2001; Goddard et. al, 2000; Tschannen-Moran & Barr, 2004, Hallinger, 2003).

This research project showed a strong negative relationship between socioeconomic status of schools and student academic achievement. Sadly it confirms past research (Leithwood et. all, 2004; Hallinger & Strike, 1986; Hallinger, 1987; Leithwood et. al, 2004;; Jackson & Woodworth, 1990; Educational leaders from state agencies to university educational departments wrestle with the dilemma of how to ameliorate out-of-school factors, such as socioeconomic status with in-school factors that promote teaching and learning.

The legacy of the Equality of Educational Opportunity Study (1966), referred to as the Coleman Report still looms in the annals of low SES schools, in spite of federal and state efforts to bring equality to the learning environment. The legacy of the 1966 Coleman Report (White, 1982; Reeves & Bylund, 2005; Yang &Yang, 2003) has implications for rural high schools that have a high percentage of homogenous and socioeconomically disadvantaged white student populations. The Coleman Report (1966) concluded that socioeconomic status is one of the most influential variables affecting student academic achievement. Moreover, other researchers White, (1982) and Yang&Yang (2003), attribute out-of school factors e.g. parent school participant and educational attainment level, mobility, reading, television, and parent availability, variables over which schools do not have control account for as much as 74% of the variance of achievement (Papanostasiou, 2002, White, 1982; Parker et.al, 2006; Howley & Howley, 2010).

Catano & Stronge (2007), Hallinger (1996), Leithwood & Jantzi (2006), Sansotti, et. al. (2010) concluded that the combination of in-school and out-of-school factors included student socioeconomic status awareness among the faculty, designing measurable school goals, managing the instructional program and developing the school learning climate, as having an influence on achievement. Moreover, research has concluded that a relationship that includes strong instructional leadership, positive school climate, high academic expectations, monitoring student performance are factors that statistically improve and sustain

student academic achievement (Catano & Stronge, 2007; Goddard, et. al, 2000; Hoadley, et. al, 2009)

This research project did not yield a significant relationship between principal instructional behaviors, student academic achievement, when accounting for SES. It is the belief of this researcher that principal instructional leadership behaviors are the first step to improving and sustaining academic achievement. Instructional leadership defined as, "...thoughts, traits, behaviors and processes" (Mielcarek, P. 12, 2003) that take place in the principals' instructional repertoire. Instructional leaders lead, provide guidance, instill innovation and empower and supports teachers. To that end the following recommendations for action are offered: Instructional leadership is crucial to developing, maintaining and sustaining positive school climate that promotes academic achievement. School leadership should include the components of that balanced leadership with management skill. Primarily instructional leaders must learn how to institute and manage the instructional program and couple that with developing a positive school learning climate (Hallinger, 2002; Hallinger & Stake, 1986; Hallinger, 205; Hallinger, 2008, Leithwood et. al, 2004).

Hallinger & Murphy (1985) state that instructional leadership behaviors convey through serious thought and execution the implementation of an effective instructional program that is far from the state and national mandates imposed on schools, and are mechanisms in which the whole school is empowered to achieve academic success. As instructional leaders are more confident in designing and communicating the school goals

and instituting instructional management programs, teachers in turn are more apt to exhibit leadership, confidence and efficacy in their teaching behaviors.

Studies conducted on individual and collective teacher efficacy (Bandura, 1997; Tschannen -Moran & Barr, 2004; Skaalvik, Skaalvik, 2007; Tschannen-Moran & Woolfolk Hoy 2001, Salazar, 2007) point out that a teacher who believes he/she has the ability and skills when confronted by the most difficult of teaching situations will be inclined to try different teaching techniques and strategies. Equally important is how individual teacher efficacy and collective teacher efficacy can ameliorate teacher stress and burn out – crucial factors that thwart a positive teaching and learning environment and crucial to increasing student academic achievement.

Improving student academic achievement requires educators to review practices for effective and successful teaching. Collective teacher efficacy as suggested by Bandura (1993), Goddard, et. al (2004), Tschannen & Barr (2004) suggest that when teachers believe that students are motivatable and teachable, schools which are heavily populated with poor (and rural) students achieve at high levels on standardized tests. To that end the following recommendations are offered.

Developing a sense of collective teacher efficacy through mentoring, collaborating within academic departments means instituting a school climate of collaboration, resources and time to develop skills and experiences in which teachers practice mastery. Collective efficacy behaviors include: developing mastery experiences by establishing goals, experiencing vicarious experiences through peer teacher observations/teaching discussions, analysis of teaching tasks and assessing teaching

competence under the guidance of a same-subject peer/or department head, developing norms in pedagogy, persistence in effort, and resilience in the light of personal and professional set-backs . These are the responsibility of the instructional leader. One of the tenets to developing collective teacher efficacy comes from collaborative learning teams (and within same-subject academic departments) is to begin with focusing on four basic teaching areas: 1. What do students have to learn? 2. How are we going to teach it? 3. How will we know they have learned it? and; 4. How will we provide enrichment and interventions (Yazici, 2005). When teachers actively collaborate to discuss teaching and teaching techniques, with the assistance of instructional leadership, collective teacher efficacy behaviors become of part of the teaching and learning school climate which ultimately leads to improving and sustaining student academic achievement.

Recommendations for Future Research

Data-driven instructional leadership behaviors and principal supported collective teacher efficacy behaviors can be effective strategies in improving student academic achievement as this research study has indicated. Further research using both the PIMRS and CTE in tandem could include the following suggestions:

- Repeat this study with a larger sample size and administer the survey during the fall.
- Repeat this study, modifying the PIMRS and CTE surveys so that the survey totals 45 questions that respondents can answer in a single setting.
- Conduct a qualitative study focusing on 1-2 schools via oral interviews with principal and teachers.

- Repeat this study analyzing different population size schools and examine variances among the different school populations.
- Follow-up on this study including the demographic variables: gender, years teaching, educational attainment level, number of years working for the current principal.
- Perform regression models that compare subscale variables: math and reading.
- Repeat this study with another rural, low socioeconomic status majority white population in another state.
- Conduct a study examining principal efficacy and individual and collective teacher efficacy.
- Conduct a study examining school climate and socioeconomic status and its effect on student academic achievement.
- Conduct a study examining teacher efficacy perceptions and student efficacy beliefs related to student academic achievement.
- Conduct a study examining the pre-test collective teacher efficacy with post-test collective teacher efficacy after a collective teacher efficacy professional development workshop.
- Conduct a study in a Spanish speaking country (translating the survey instruments to Spanish) to examine PIL and CTE between public and private schools.

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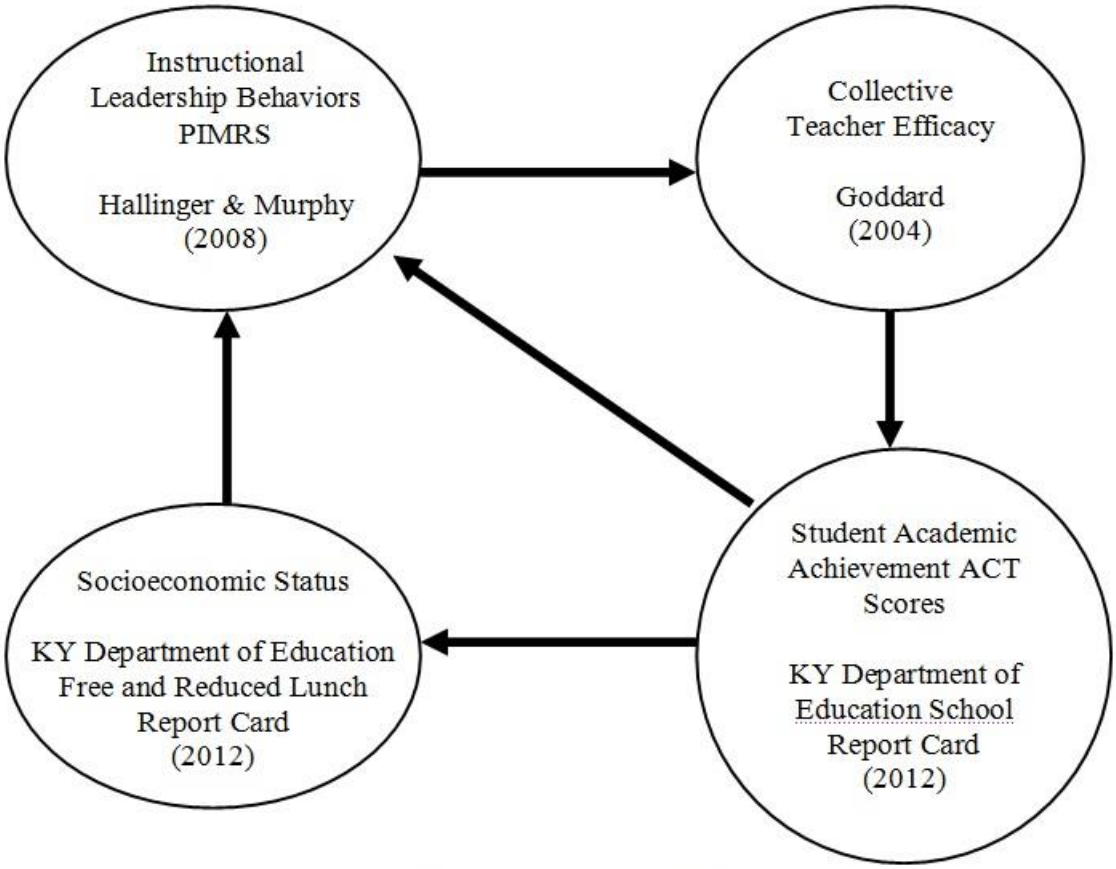
APPENDIX A

Research Conceptualization Model

Research Conceptualized Model - Principal Instructional Leadership Effects on Teacher Collective Efficacy

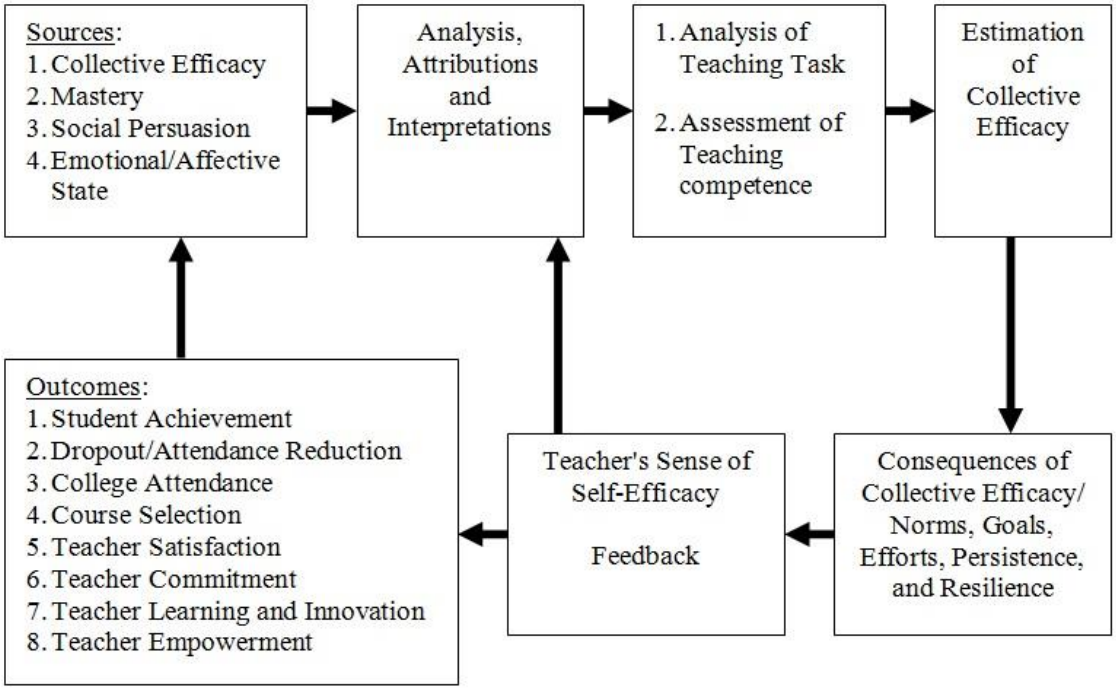


Research conceptualized model.
Salazar, 2013

APPENDIX B

Teacher Collective Efficacy Conceptionalization Model

Teacher Collective Efficacy Conceptualized Model

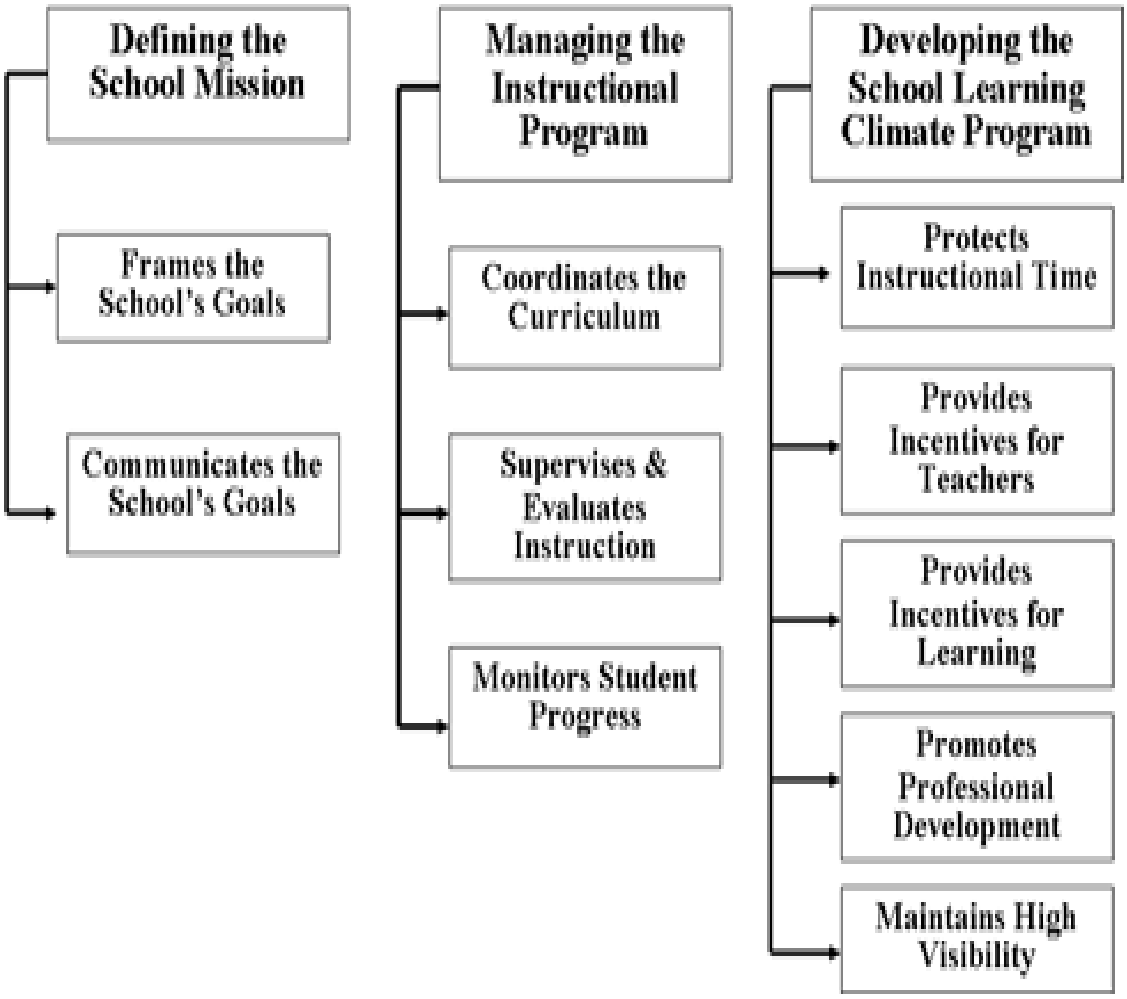


Model of the formation, influence and change of perceived collective efficacy in schools.
Goddard et. al. 2004

APPENDIX C

Principal Instructional Management Rating Scale

Principal Instructional Management Rating Scale (PIMRS)
Hallinger & Murphy, 1985



Principal Instructional Management Rating Scale,
Hallinger & Murphy, 1986.

APPENDIX D:

Letter to Principals

April 3, 2013

Dear Principal:

This letter is to ask for your support on my dissertation survey. My dissertation requires me to survey your teachers/staff.

I am a doctoral student working with the EKU Educational Leadership and Policy Studies program. I am asking for your consent and help in asking your faculty to take this survey via your faculty email List.

I will work with your Curriculum Coordinator or Counselor to send out the Survey Monkey Web link to your faculty. The survey takes 12 minutes.

I am conducting research on, "**The Effects of Principal Instructional Leadership and Collective Teacher Efficacy on Student Academic Achievement accounting for SES."**No one has conducted research of this type or magnitude in Kentucky Appalachian schools. This project will survey 80 Appalachia Kentucky schools.

This research project will use the **Principal Instructional Management Rating Survey** designed by Hallinger, (1985), and the **Collective Teacher Scale** designed by Goddard (2004). This survey is an excellent opportunity for your school district to get solid data, and a detailed analysis in two critical areas: Instructional leadership and collective teacher efficacy.

Please response to this email with your affirmative answer:w.salazar@moreheadstate.edu

Sincerely,

William Salazar, EKU graduate student

APPENDIX E

Permission Letter to Use PIMRS

William:

Thank you for your interest in using the PIMRS in your research. To date it has been used successfully to collect data in over 200 Master and Doctoral dissertations as well as in other studies. The PIMRS is available to graduate student researchers for a reduced user fee of $100.

For the fee I will send you:

permission to make copies of the instrument for your study,

master copies of the instrument,

a user manual, and

related support materials.

I also require that registered users supply me with a copy of their data set and a soft file copy of their completed study for use in further instrument development.

If you wish to purchase the instrument for your study, please send a personal check in my name to me at:

Philip Hallinger7250 Golf Pointe Way
Sarasota, FL, 34243

Please inform me by email because I am not physically at that address. I will send the materials by email once you confirm your intent to purchase the right to use PIMRS. I will follow up with an email granting you permission to make copies of the instrument for your research once the check is received. Then I will send you a final letter granting you permission to reproduce the scale as an appendix in your dissertation once the data set and soft file copy of your completed study have been received. I am attaching recent papers that will be of interest to you. I will send some more with the scale if you decide to use it. Thanks for your interest and please give my best to your supervisors whom I hold in high regard. You are fortunate to have the opportunity to work with them.
Prof. Hallinger

APPENDIX F

Permission Letter to Use CTE

March 15, 2012

Mr. Salazar,

You may use the scale. Please cite the journal in which it was published, as I believe they require this.

Good luck.

RG

On Mar 6, 2012, at 3:19 PM, "William H. Salazar" <w.salazar@moreheadstate.edu> wrote:

Dr. Goddard-

I am working with Dr. Bliss at Eastern Kentucky University.
Will you honor my request?
I need your permission to use the survey instrument Collective Teacher Efficacy – as it is vital for my dissertation.
Your help will be appreciated as I plan to defend in May.
Thanks,
Salazar

APPENDIX G:

The Principal Instructional Management Rating Scale (PIMRS) and

Teacher Perceptions of Student's Motivation to Learn (CTE) Survey 2013

THE PRINCIPAL INSTRUCTIONAL MANAGEMENT (PIMRS) AND TEACHER PERCEPTIONS OF STUDENT'S MOTIVATION TO LEARN (CTE) SURVEY 2013

(1) School Name:

(2) Years that you have worked with the current principal:

2a. 1-4 2b. 5-9 2c. 10-15 2c. 15+

(3) Years experience as a teacher/administrator:

3a. 1-4 3b. 5-9 3c. 10-15 3d. 15+

4a. Female 4b. Male

Education:

5a .Bachelors 5b. Masters 5c. Rank one 5d. Ed.D/Ph.D

Percent of Students who are eligible for Free/Reduced Lunch

6a. 40-50% 6b. 51-60% 6c. 61-70% D. 70% plus

Read each statement carefully.

Choose the number that best fits the specific job behavior or practice. In some cases, these responses may seem awkward; use your judgment in selecting the most appropriate response.

To what extent does your principal ... ?

	Almost Never				Almost Always
	1	2	3	4	5
1. Develop a focused set of annual school-wide goals	1	2	3	4	5

2. Frame the school's goals in terms of staff responsibilities for meeting them

1 2 3 4 5

3. Use needs assessment or other formal and informal methods to secure staff input on goal development?

1 2 3 4 5

4. Use data on student performance when developing the school's academic goals?

1 2 3 4 5

5. Develop goals that are easily understood and used by teachers in the school?

1 2 3 4 5

6. Communicate the school's mission effectively to members of the school community?

1 2 3 4 5

7. Discuss the school's academic goals with teachers at faculty meetings?

1 2 3 4 5

8. Refer to the school's academic goals when making curricular decisions with teachers?

1 2 3 4 5

9. Ensure that the school's academic goals are reflected in highly visible displays in the school (e.g., posters or bulletin boards emphasizing academic progress)?

1 2 3 4 5

10. Refer to the school's goals or mission in forums with students (e.g., in assemblies or discussions)?

1 2 3 4 5

11. Ensure that the classroom priorities of teachers are consistent with the goals and direction of the school?

1 2 3 4 5

12. Review student work products when evaluating classroom instruction?

1 2 3 4 5

13. Conduct informal observations in classrooms on a regular basis?

1 2 3 4 5

14. Point out specific strengths in teacher's instructional practices in post-observation feedback (e.g., in conferences or written evaluations)?

1 2 3 4 5

15. Point out specific weaknesses in teacher instructional practices in post-observation feedback (e.g., in conferences or written evaluations)?

1 2 3 4 5

16. Make clear who is responsible for coordinating the curriculum (e.g., the principal, vice principal, or curriculum coordinator)?

1 2 3 4 5

17. Draw upon the results of school-wide testing when making curricular decisions?

1 2 3 4 5

18. Monitor the classroom curriculum to see that it covers the school's curricular objectives?

1 2 3 4 5

19. Assess the overlap between the school's curricular objectives and the school's achievement tests?

1 2 3 4 5

20. Participate actively in the review of curricular materials?

1 2 3 4 5

21. Meet individually with teachers to discuss student progress?

1 2 3 4 5

22. Discuss academic performance results with the faculty to identify curricular strengths and weaknesses?

1 2 3 4 5

23. Use tests and other performance measure to assess progress toward school goals?

1 2 3 4 5

24. Inform teachers of the school's performance results in written form (e.g., in an email or newsletter)?

1 2 3 4 5

25. Inform students of school's academic goal?

1 2 3 4 5

26. Limit interruptions of instructional time by public address announcements?

1 2 3 4 5

27. Ensure that students are not called to the office during instructional time?

1 2 3 4 5

28. Ensure that tardy and truant students suffer specific consequences for missing instructional time?

1 2 3 4 5

29. Encourage teachers to use instructional time for teaching and practicing new skills and concepts?

1 2 3 4 5

30. Limit the intrusion of extra- and co-curricular activities on instructional time?

1 2 3 4 5

31. Take time to talk informally with students and teachers during recess and breaks?

1 2 3 4 5

32. Visit classrooms to discuss school issues with teachers and students?

1 2 3 4 5

33. Attend/participate in extra- and co-curricular activities

1 2 3 4 5

34. Cover classes for teachers until a late or substitute teacher arrives?

1 2 3 4 5

35. Tutor students or provide direct instruction to classes?

1 2 3 4 5

36. Reinforce superior performance by teachers in staff meetings, newsletters, and/or emails?

1 2 3 4 5

37. Compliment teachers privately for their efforts or performance?

1 2 3 4 5

38. Acknowledge teachers' exceptional performance by writing memos for their personnel files?

1 2 3 4 5

39. Reward special efforts by teachers with opportunities for professional recognition?

1 2 3 4 5

40. Create professional growth opportunities for teachers as a reward for special contributions to the school?

1 2 3 4 5

41. Ensure that in-service activities attended by staff are consistent with the school's goals?

1 2 3 4 5

42. Actively support the use in the classroom of skills acquired during in-service training?

1 2 3 4 5

43. Obtain the participation of the whole staff in important in-service activities?

1 2 3 4 5

44. Lead or attend teacher in-service activities concerned with instruction?

1 2 3 4 5

45. Set aside time at faculty meetings for teachers to share ideas or information from in-service activities?

1 2 3 4 5

46. Recognize students who do superior work with formal rewards/special assembly/or mention on the school's website?

1 2 3 4 5

47. Use assemblies to honor students for academic accomplishments or for behavior or citizenship?

1 2 3 4 5

48. Recognize superior student achievement or improvement by seeing in the office the students with their work?

1 2 3 4 5

49. Contact parents to communicate improved or exemplary student performance or contributions?

1 2 3 4 5

50. Support teachers in their recognition of student accomplishments/contributions to learning?

1 2 3 4 5

Please indicate your level of agreement about your students:

51. Teachers in the school are able to get through to the most difficult students.

1 2 3 4 5

52. Teachers here are confident they will be able to motivate their students.

1 2 3 4 5

53. If a child doesn't want to learn teachers here give up.

1 2 3 4 5

54. Teachers here don't have the skills needed to produce meaningful student learning

1 2 3 4 5

55. Teachers in this school believe every child can learn.

1 2 3 4 5

56. These students come to school ready to learn.

1 2 3 4 5

57. Home life provides so many advantages that students here are bound to learn.

1 2 3 4 5

58. Student here just aren't motivated to learn.

1 2 3 4 5

59. Teachers in this school do not have the skills to deal with student disciplinary problems.

1 2 3 4 5

60. The opportunities in this community help ensure that these students will learn.

1 2 3 4 5

61. Learning is more difficult at this school because students worried about their safety.

1 2 3 4 5

62. Drug and alcohol abuse in the community make learning difficult for students here.

1 2 3 4 5