

**The Effect of Collective Teacher Efficacy and Expectations on Student Achievement
in High-Poverty Elementary Schools in the State of Missouri**

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Abstract

The purpose of this research was to determine the nature of the relationship between a faculty's collective efficacy and student achievement in communication arts and mathematics. An additional purpose of this research was to determine the nature of the relationship between a faculty's collective expectations for student learning and student achievement in communication arts and mathematics. The sample for this study was Missouri elementary schools with a free and reduced lunch rate of more than 70 percent that participated in the Missouri School Improvement Program Advance Questionnaire during the academic years of 2009-10 and 2010-11. The independent variables of collective efficacy and collective expectations for student learning were measured using the Advance Questionnaire. The dependent variable of student achievement was measured using the percentage of students scoring in the Proficient and Advanced proficiency levels on the Missouri Assessment Program (MAP) tests in the content areas of communication arts and mathematics from the academic years of 2009-10 and 2010-11.

Analysis revealed mixed results for the relationships existing between collective efficacy and student achievement in communication arts and mathematics in high-poverty elementary schools in Missouri. A positive relationship exists between collective high expectations for student learning by faculty and student achievement in both communication arts and mathematics in high-poverty elementary schools in Missouri. School administrators can use the results of this study to focus professional development efforts toward creating a positive impact on student achievement. Recommendations for further research include extending the study to include all Missouri elementary schools

and examining the relationship between individual teacher efficacy scores and student achievement. Additionally, the student responses to the Sense of Efficacy and Expectations Scale of the Advance Questionnaire could be used to determine the relationship between student self-efficacy and student achievement.

Dedication

This dissertation is dedicated to my husband, Todd, and to my sons, Ian and Alex. The blessings they offer me each day with their loving support are more than I could have imagined. Without them by my side, this journey would not have been possible.

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“Remember your upbringing” are wise words written by my father at the conclusion of my senior year, and ones that I am reminded of at the end of this journey toward the culmination of my doctoral degree. To my parents, James and Sheryl George, I want to thank you for providing me the kind of upbringing that is worthy of remembering, centered on the importance of education and striving toward excellence.

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Chapter One

Introduction

Longitudinal research indicates that students in high-poverty schools continue to score significantly lower than their peers in higher socio-economic settings (Barr, 2010). High-poverty schools with an intensely focused curriculum partnered with high expectations for student achievement show growth in academic achievement (Marzano, Pickering, & Pollock, 2004). Classroom teachers in schools with high levels of poverty need quality professional development focused explicitly on counter-balancing the effects of poverty on students (Jensen, 2009). However, in high-poverty schools, resources for providing professional development to teachers in order to strengthen the curriculum and to increase teacher expectations for student achievement are often limited. Professional development is also an important factor to impacting a teacher's sense of efficacy, which, in turn, impacts a teacher's expectations for students' academic growth (Jensen, 2009).

Along with a widening achievement gap between high-poverty schools and those in higher socio-economic settings, federal funding for high-poverty schools continues to decrease. Mandates set forth by the No Child Left Behind (NCLB) Act of 2001 make it necessary for high-poverty schools receiving federal Title I funding to set aside large portions of the school budget to fund consequences if Adequate Yearly Progress (AYP) is not met (US Department of Education, 2001). These consequences entail offering parents the opportunity to send their children to neighboring schools that have met AYP requirements and include paying for the transportation costs to those schools, offering and funding tutoring services, and restructuring staff in the low-performing school (US Department of Education, 2001). Due to these mandates for budgetary measures,

teachers in high-poverty schools that receive sanctions under NCLB often must raise student achievement with fewer financial resources.

Case studies have indicated the existence of high-poverty schools that find success in raising levels of academic achievement despite limited professional development resources (Chenoweth, 2009). These high-poverty, high-achieving schools share common characteristics, including a sense of collective efficacy among the school personnel and collective high expectations for student achievement (Tileston & Darling, 2009). Teacher self-efficacy has been defined as teachers' "beliefs in their ability to have a positive effect on student learning" (Ashton, 1985). Teachers who believe that they will be successful set higher goals for themselves and their students, are more likely to implement remediation techniques for struggling learners, and will persist beyond obstacles in order to find success (Ross & Bruce, 2007). Placing these quality teachers who believe in themselves in schools with high levels of poverty is essential if educational systems are to realize success in increasing student learning and achievement.

Conceptual Framework and Background

Despite the presence of research stating that high-poverty, high-achieving schools are defined in part by their high levels of collective staff efficacy and elevated expectations for students, administrators struggle to replicate these conditions in their own schools (Tileston & Darling, 2009). During the 2010-11 academic year, in the state of Missouri alone, 82 percent of school districts receiving Title I funding failed to meet the AYP requirements set forth by NCLB (Missouri Department of Elementary and Secondary Education [DESE], 2011a). Failure to meet AYP requirements by these Missouri school districts is a significant issue. The districts' failures have resulted in

consequences directly affecting their Title I funding which originally was intended to be used to offer additional academic support to students in situations of poverty (US Department of Education, 2001).

School administrators in Missouri can measure the level of collective efficacy among their faculties and their faculty's collective expectations for student achievement using the Advance Questionnaire, a survey administered by each Missouri school district once every five years during the Missouri School Improvement Program accreditation process. Scores from the Advance Questionnaire are used to provide information about the school district in a variety of areas, including collective teacher efficacy and collective faculty expectations for student achievement (Missouri DESE, 2011b).

Statement of the Problem

As a group, students who are born into families of poverty fail to demonstrate high levels of academic achievement when compared to state and national averages (Barr, 2010). With the requirements set forth by NCLB, high-poverty schools must not only set student achievement targets that mirror those of schools with high socio-economic levels, but these high-poverty schools must also discover ways to engage their population of students coming from economically disadvantaged homes (US Department of Education, 2001). Included in the NCLB (2001) legislation is the mandate that 100 percent of students reach proficiency in both communication arts and mathematics by the year 2014. Each year, the NCLB mandated percentage of students who must achieve a proficient score on state tests increases toward the 100 percent goal. As the student achievement standard for making AYP increases annually, fewer schools are able to achieve this goal (Missouri DESE, 2011a). Even when financial support for additional

resources has greatly diminished, teachers are charged with the responsibility of raising academic achievement. School administrators feel additional pressure as well, as they are responsible for creating a school environment in which high levels of student achievement is possible. In order to inform professional development efforts, school administrators could benefit from a predictor of potential academic success for students in situations of high-poverty. Thus, school administrators could target professional development efforts toward identified predictors of academic success in order to attain growth in student achievement. Professional development for teachers is critical to student success because student achievement success is determined to a large extent by what the teacher knows and is able to do (Wong, 2001).

Previous studies have indicated a positive relationship between collective teacher efficacy and student achievement, as well as a positive relationship between a faculty's collective high expectations for academics and student achievement (Goddard, Hoy, & Woolfolk Hoy, 2004). Collective teacher efficacy impacts student achievement because efficacious teachers view low student achievement as an incentive to put forth greater effort rather than to perceive low achievement as an issue beyond teacher control (Ross & Bruce, 2007). Studies measuring the relationship between collective teacher efficacy and student achievement have examined specific content areas and widespread teacher populations, but have not focused intensely on the case of the high-poverty school (Reeves, 2004). It is prudent to investigate the effect of collective teacher efficacy and collective faculty expectations for student learning on student achievement in high-poverty environments. Not only is improvement in student achievement mandated by

law for high-poverty schools, it is also a moral imperative to provide a quality education for all students.

Purpose Statement

While it is known that collective teacher efficacy has a relationship with student achievement (Goddard, et al., 2004), it is unknown whether this holds true in high-poverty schools throughout Missouri. It is also known that collective faculty expectations have a relationship with student achievement (Thomas & Bainbridge, 2001), but it is unknown whether this holds true in high-poverty schools throughout Missouri. The purpose of this research was to determine the nature of the relationship between a faculty's collective efficacy and student achievement in communication arts and mathematics. An additional purpose of this research was to determine the nature of the relationship between a faculty's collective expectations for student learning and student achievement in communication arts and mathematics. This study focused on high-poverty elementary schools throughout Missouri. For the purpose of this study, elementary schools with a free and reduced lunch rate higher than 70 percent were considered to be high-poverty schools.

Significance of the Study

School administrators in high-poverty elementary schools in Missouri must carefully take measures to create an environment conducive for high levels of student achievement. To assist in the removal of NCLB sanctions in these high-poverty schools due to failure to make Adequate Yearly Progress (AYP), the learning environment must promote higher levels of academic achievement. The significance of this study is that the results may provide school administrators with increased knowledge of factors that have

statistically significant relationships with student achievement success in high-poverty elementary schools. Results from the study will also add to the body of research used to advise professional development efforts in high-poverty elementary schools.

Additionally, this study provides Missouri administrators with a guide for analyzing the results of the Advance Questionnaire, a survey that provides schools with stakeholder input, in ways that can impact student achievement.

Delimitations

Delimitations are “self-imposed boundaries set by the researcher on the purpose and scope of the study” (Lunenburg & Irby, 2008, p. 134). For this study, the researcher set the following delimitations:

1. This study was conducted in elementary schools. The results of this study potentially cannot be generalized to middle and high schools.
2. This study was conducted in high-poverty schools. The results of this study potentially cannot be generalized to all elementary schools.
3. Student achievement data for this study was collected from grades three through six. The results of this study potentially cannot be generalized to all grade levels.
4. This study focused on the content areas of communication arts and mathematics. The results of this study potentially cannot be generalized to other content areas.

Assumptions

Lunenburg & Irby (2008) defined assumptions as the “postulates, premises, and propositions that are accepted as operational for purposes of the research” (p. 135). The following assumptions were made in this study:

1. All MAP data retrieved from the Missouri Department of Elementary and Secondary Education (DESE) were complete and accurate.
2. Teachers understood the vocabulary and concepts presented within the Missouri School Improvement Program Advance Questionnaire questions.
3. Teachers responded to the Missouri School Improvement Program Advance Questionnaire questions honestly and accurately.

Research Questions

Creswell (2009) stated research questions (RQ) “shape and specifically focus the purpose of the study” (p. 132). The following research questions were addressed in this study:

RQ1. To what extent is there a relationship between a faculty’s collective efficacy and student achievement in communication arts in high-poverty Missouri elementary schools?

RQ2. To what extent is there a relationship between a faculty’s collective efficacy and student achievement in mathematics in high-poverty Missouri elementary schools?

RQ3. To what extent is there a relationship between a faculty’s collective expectations for student learning and student achievement in communication arts in high-poverty Missouri elementary schools?

RQ4. To what extent is there a relationship between a faculty's collective expectations for student learning and student achievement in mathematics in high-poverty Missouri elementary schools?

Definition of Terms

Advance Questionnaire. The Advance Questionnaire is a survey administered to Missouri school districts once every five years in conjunction with their accreditation process. The survey, created by the Missouri Office of Social and Economic Data Analysis (OSED), is given to students, parents, and school staff. The faculty version of the Advance Questionnaire survey consists of 104 questions grouped into 14 categories, called scales (Missouri DESE, 2011b).

Collective efficacy. Collective efficacy is defined as the perception of the elementary faculty as a whole that it has the capability to have a positive effect on students (Woolfolk & Hoy, 1990).

High-poverty. For the purpose of this study, high-poverty elementary schools are defined as those in which more than 70 percent of students receive free and reduced lunch costs.

Missouri Assessment Program (MAP). Created by CTB/McGraw-Hill, the MAP is a series of assessments administered in communication arts, mathematics, and science in grades three through eight. The MAP measures student proficiency on academic standards in Missouri. It is comprised of multiple choice and constructed-response questions (Missouri DESE, 2012a).

Missouri School Improvement Program (MSIP). The Missouri School Improvement Program (MSIP) is the process and performance measures by which all public schools in Missouri are evaluated for accreditation (Missouri DESE, 2012b).

No Child Left Behind (NCLB). Public Law No. 107-110, also known as the No Child Left Behind Act of 2001, was enacted with the purpose of ensuring that all children reach proficiency on challenging state academic assessments by the year 2014 (No Child Left Behind, 2001).

Teacher self-efficacy. Teacher self-efficacy is defined as teachers' "beliefs in their ability to have a positive effect on student learning" (Ashton, 1985).

Overview of the Methodology

The population in this study included all high-poverty public elementary schools in Missouri. From all elementary schools in Missouri, a purposive sample was taken of high-poverty elementary schools in which the Advance Questionnaire was administered during the academic years of 2009-10 and 2010-11 (Missouri DESE, 2011c). The independent variables for each school in the study included the collective faculty sense of efficacy and the faculty's collective expectations for student achievement. The dependent variables for each school in the study included student achievement in communication arts and in mathematics. In order to determine an elementary faculty's perceptions of their ability to impact student achievement, the faculty's collective efficacy and collective expectations for student learning were measured using the Sense of Efficacy and Expectations Scale from the Advance Questionnaire. The percentage of third through sixth grade students who scored Proficient or Advanced (to be explained in Chapter 3) on the communication arts and mathematics portions of the Missouri

Assessment Program (MAP) test from the academic years of 2009-10 and 2010-11 was the standard used to measure student achievement at each school. A Pearson product moment correlation coefficients was calculated to determine the strength and direction of the relationship between each pair of independent variables and dependent variables.

Organization of the Study

In this first chapter, an introduction was provided that included the problem, purpose, and significance of the study. Additionally, delimitations and assumptions were stated, terms were defined, and research questions were given. An overview of the methodology for the study was presented. Chapter two of this study will present literature relevant to the research questions, including the topics of collective efficacy and expectations for student learning, as well as the impacts of poverty upon student achievement. Chapter three presents the methodology of the study in further detail. Chapter four includes the results of hypotheses testing relating to the research questions. Chapter five is the concluding chapter of the study and includes a summary of the study, relates the findings to the literature, gives implications for action, and makes recommendations for future research.

Chapter Two

Review of Literature

The purpose of this research was to determine the nature of the relationship between a faculty's collective efficacy and student achievement in communication arts and mathematics. An additional purpose of this research was to determine the nature of the relationship between a faculty's collective expectations for student learning and student achievement in communication arts and mathematics. The relationship between these variables provides a course of action for administrators in these schools. Results from the study can be used to advise future professional development efforts in high-poverty elementary schools in Missouri.

In this chapter, research is examined regarding six topics applicable to the study. First, research is explored surrounding the presence of an achievement gap between high-poverty and low-poverty schools in the United States. Secondly, research is presented regarding the impacts of poverty on student achievement. Next, research is examined in the area of teacher preparation for placement in high-poverty schools, as well as teacher resiliency in high-poverty schools. Then, research about self-efficacy and collective efficacy is explored, including general definitions and ways that efficacy is shaped. In addition, research is explored which links both efficacy and faculty expectations to student achievement in high-poverty schools. Finally, research is presented that examines the characteristics of high-performing, high-poverty schools.

Achievement Gaps Between High-Poverty and Low-Poverty Schools

Regardless of which data set is examined, be it from national tests or state tests, a considerable achievement gap exists among students living in poverty, middle-class

students, and affluent students (Tileston & Darling, 2009). Schools continue to fail to find ways to close the achievement gaps among students, causing achievement gaps to persist at the local, state, and national level (Tileston & Darling, 2009). A few rare high-poverty schools have managed to close the achievement gap, and such examples of high-performing, high-poverty schools will be the topic of exploration later in this chapter. Since these examples of high-performing, high-poverty schools are the exception to the rule, all educators who are interested in positively impacting the low academic achievement rates of the nation's children of poverty must address the differences between these high-achieving schools and their low-achieving counterparts. Changes in the economy and labor market of the United States over the past 25 years have made demands for a good education especially crucial for all children (Murnane, 2007). In 1950, over half of the total available employment in the United States was found in the area of industry and labor, and by the year 2000 that number had fallen to less than one-quarter of the available jobs (United States Department of Health and Human Services, 2000). The United States is transitioning from a "nation that works to a nation that works its minds" (Wolff, 2006, p. 2). The need for all children to have access to a quality education grows as advancements in technology create changing demands in the labor market.

Politicians in the United States often speak about equal educational opportunity for our nation's children. Contrary to this common rhetoric, however, is the reality that families who are living in poverty, especially those of diverse cultural backgrounds, are often concentrated in certain residential areas of a community. These children most often attend the same local school adjacent to their neighborhood. Frequently, the schools that

are located in these economically depressed areas are equipped with inadequate resources and poorly skilled teachers (Murnane, 2007). With the established pattern of students from underprivileged families attending school together in an impoverished neighborhood while students of wealthy families attend school together in an affluent neighborhood, stark contrast is found between the expectation of an equal opportunity to education for all of the nation's children and the reality. Students living in poverty spend the critical, formative years of their educational experience in home and school environments without necessary resources. While families living in poverty are forced to choose their homes based on what they are able to afford, many affluent and middle-class families have the luxury of choosing a home based on the academic performance or courses offered by local schools that these mid- to high-income parents wish their children to attend. Because the families can afford the tuition to these exclusive educational opportunities, if affluent or middle-class families are unable to find a public school they deem suitable, many are able to choose private schools for their children. Families in poverty lack the prerequisite resources for educational tuition and, thus, are unable to access private school educational opportunities or public schools in affluent areas. Poor families are often trapped in underfunded, failing schools (Nathan, 1989, 1998).

An example of the lack of financial resources available to high-poverty schools is that the per-pupil funding in less affluent school districts is significantly lower than in more affluent areas. In Missouri, the affluent Ladue School District (with a free and reduced lunch rate of 9.3%) spends \$16,235.54 annually per student. In contrast with Ladue, the St. Joseph School District (with a free and reduced lunch rate of 62%) spends

only \$8,184.16 annually per student (Hauke, 2010). With the majority of school funding sources coming from personal and business property taxes, areas of depressed home values and limited business enterprises lead to lower availability of funds for schools. Perhaps largely due to lower funding, quality of materials, and quality of teachers, students living in poverty are assigned to special education and are retained in disproportionate amounts as compared to affluent peers. Frequently, students with learning difficulties act out in frustration or anger. In the case of high-poverty schools, the loss of instructional time, desperately needed by economically-disadvantaged children, is increased when frustrated and angry students are assigned to in-school and out-of-school suspensions at higher rates than their peers in affluent schools (Barr, 2010). The loss of instructional time perpetuates the cycle as these students with learning difficulties fall further behind their peers, resulting in potential referrals for special education or for retention.

One of the largest failures of the American public education system is the limited effectiveness of teaching children with low socio-economic status. Although isolated examples of excellence in academic achievement exist in high-poverty schools, these schools stand as the exceptions to the norm. The stark reality is that the students attending school in high-poverty communities have but one hope for success: a quality education. When there is an absence of effective instruction, the chance for a child to achieve both in the classroom and in life is diminished. When there is quality instruction present, the playing field to succeed alongside affluent peers is more level for children living in poverty (Barr, 2010).

All children deserve the opportunity to be successful. In order for our public school system to truly offer an equal education for all and a level playing field to achieve academic success, the case of the high-poverty school must be studied. Successful high-poverty elementary schools need to be studied in order to determine factors that support them to achieve beyond expectations. These factors for success could then be implemented in other high-poverty elementary schools. Additionally, teachers in high-poverty schools should receive professional development regarding strategies to counteract the impact of poverty on student achievement.

Impacts of Poverty on Student Achievement

According to the United States Census Bureau report in 2005, the number of children living in poverty had risen to over 18 percent of all children in the United States, or over 13 million children (U.S. Census Bureau, 2005). In 2003 the federal poverty level for a family of four in the United States was \$18,400 with 23 percent of America's families living at or below that level. The National Center for Children in Poverty disputes the amount of \$18,400 being the poverty level, claiming that it takes at least twice that amount to provide adequate food and housing in most parts of the nation. The National Center for Children in Poverty also reports that 64 percent of all Latino children are living in poverty, along with 37 percent of all African-American children and 34 percent of all white children (Cauthen, 2006).

One issue that arises from a rising number of families living in poverty is a decrease in parent involvement in schools. In 2000 the United States Department of Health and Human Services reported that only 36 percent of low-income families become involved with their children's school, with parental involvement defined as attending at

least three or more school activities in one academic calendar year. Often, parents in low-income families do not attend school events due to a lack of transportation, working multiple jobs, experiencing language barriers, or facing insecurities about entering the educational institution itself (Lee & Bowen, 2006). Also, many parents of low-income families experienced limited success in school themselves, causing these parents to have feelings of intimidation about interacting with educators. In contrast to the 36 percent of families living in poverty, 59 percent of families living above the poverty line were reportedly involved in their children's school by attending three or more activities per year (U.S. Department of Health and Human Services, 2000). According to the Teachability Index, defined by Greene and Forster (2004), parental involvement in school is one of six categories of critical factors for student success. This index includes 16 individual success predictor factors organized into six main categories: school readiness, community support, race, socio-economic level, overall health, and parent involvement. Each of these predictive factors identified in the six categories for student success has a stand-alone impact on the potential achievement a child will find at school, but the presence of multiple factors creates greater challenges for instructors to provide effective instruction.

A family's limited financial resources can result in lower levels of school readiness and overall health. Children of poverty come from homes that demonstrate little capability to provide school readiness skills. Few books are present in the home, and little or no technology is available beyond a television. Children of poverty often suffer from poor nutrition because they consume food that requires fewer materials in the kitchen, is less expensive, and is easier to prepare. Additionally, children of poverty

suffer poor health due to lack of appropriate medical care. Often, the only avenue available to families in poverty is the local hospital emergency room, but without available transportation, even this option becomes nonexistent (Barr, 2010). Research has documented that due to inadequate education levels of parents, children come to school with a limited vocabulary and fewer readiness skills than their affluent peers (Barr, 2010). As a result of the handicapping effects of limited materials and medical resources, students of poverty exist on a low level on the Teachability Index and are in jeopardy of being successful in school (Greene & Forster, 2004).

Hart and Risley (1995) studied the vocabulary development of children from varying socio-economic backgrounds and determined that by age three, children in welfare families were building their vocabularies at half the rate of children of professional parents. As Hart and Risley followed the same children through childhood, intelligence tests administered years later to the same children showed the welfare students' scores continuing to fall behind those of their affluent peers by as much as 29 percent. As the children grew older, the welfare children developed a vocabulary at half the rate of the affluent children and then scored at least one standard deviation below affluent children on intelligence tests. Hart and Risley also determined that the quality and quantity of phrases used in conversation with children were directly correlated with the income level of the parents. Specifically, the children in welfare homes were spoken to less often and with a lower phrasing quality than were affluent children. The issue of vocabulary development is critical for further success in reading, both in the areas of literary and informational text.

By the time most middle class and affluent children start school, they will have been exposed to five million words and should be able to use about 13,000 of them (Huttenlocher, 1998). As demonstrated by Hart and Risley's study (1995), exposure to vocabulary does not often happen in impoverished homes. Both the research of Hart and Risley (1995) and Weizman and Snow (2001) agree that low-income caregivers speak in shorter, more grammatically simple sentences, engage in less conversation, and ask fewer questions than in the homes of more affluent children. Children raised in poverty homes have less exposure to books and printed materials and, consequently, parents in these homes are less likely to read with their children (Weizman & Snow, 2001). As a result, children raised in poverty experience a drastically limited range of vocabulary and language expansion capabilities.

In accordance with the research of Weizman and Snow, as well as Hart and Risley, Payne and DeVol (2009) completed a study in Australia that linked family education and economic level to language development. In this study, which looked specifically at the intergenerational transfer of knowledge, the children of 8,556 women in poverty were followed from their first prenatal clinic visit, again at age five, and finally at age 14. The study reported that the children's verbal comprehension levels at age five and their non-verbal reasoning scores at age 14 could be independently predicted by the maternal grandfather's occupational status. Payne and DeVol explained this phenomenon of intergenerational transfer of knowledge by stating that the occupation of the mother's father would be a good predictor of the stability of the mother's home during her own childhood. The mother would develop vocabulary and demonstrate school readiness based on her father's income and occupation level. In turn, the mother

would demonstrate the same skills in her own parenting, creating the intergenerational trend. Payne and DeVol's study of the intergenerational transfer of knowledge is in agreement with both Hart and Risley's study and the Teachability Index, which all speak to the impact family income has on a child's ability to achieve in school. Poverty-stricken families struggle to provide their children with the appropriate health care, nutrition, educational resources, technology, and vocabulary acquisition to help the children experience school success (Payne & DeVol, 2009).

Poverty has an even deeper effect than impacting a family's ability to access resources. It has been determined that poverty actually impacts the wiring of the brain (Payne & DeVol, 2009). The significant impact of poverty upon the human brain is in the prefrontal/executive functions and in the perisylvian/language systems of the brain (Payne & DeVol, 2009). In order to function in school, the human brain uses an operating system that is a collection of neurocognitive systems that allow students to pay attention, display persistence during a task, process and sequence content, and think critically during reading and problem solving. Noble, Norman, & Farah (2005) identify five key brain systems at work making all these functions happen in tandem with one another. The first is the medial temporal/memory system, which allows humans to process explicit learning gained from texts, spoken words, and pictures, and to store that learning for later access. The second system is the parietal/spatial cognition system, which allows people to organize, sequence, and visualize information. This system is especially critical for mathematics and music. The third brain system is the occipitotemporal/visual cognition system, which makes it possible for people to recognize patterns and create visual mental images, thereby attaching new information to

existing factual knowledge. The final two systems of the brain, the perisylvian/language system and the prefrontal/executive system, are the two systems most impacted by poverty. The perisylvian/language system of the brain holds the semantic, syntactic, and phonological aspects of language development. The perisylvian/language system is the foundation for reading, writing, spelling, and pronunciation skills (Noble et al., 2005). The Hart and Risley study (1995), the Teachability Index (Greene & Forster, 2004), and the intergenerational transfer of knowledge study (Payne & DeVol, 2009) all demonstrate the impact poverty plays on the perisylvian/language brain system. The final system damaged by poverty is the prefrontal/executive system, which promotes the ability to create plans, make decisions and hold onto thoughts. The prefrontal/executive system also permits humans to defer gratification and to modify behavior to the set of rules governing a current location. For example, there is a set of school rules that governs the way people behave as well as the way they speak. Rules that govern behavior are different at home, at school, as well as at church, or during casual social interaction with friends (Noble et al., 2005). The executive system of the brain allows people to easily switch sets of vocabulary to match any location and its unique set of rules.

To explain the impact of poverty on the executive function of the brain, researchers at the University of California, Berkeley, used electroencephalography (EEG) to compare the brains of children living in poverty with the brains of middle-class and affluent children (Kishiyama, Boyce, Jimenez, Perry, & Knight, 2009). The researchers found that the brains of children living in poverty presented similar features as the brains of stroke victims, with lesions appearing in the prefrontal cortex (executive function of the brain). The lesions indicated broken or absent synapse connections that affect

attention to detail and decision-making capabilities (Thimble, 1990). These lesions are likely the result of malnutrition and repeated exposures to stressful environments.

Additional issues seen on the EEG reports indicated areas affected that would impact a child's ability to have working memory, to self-regulate behavior, to process rewards, and to solve problems (Kishiyama et al., 2009).

In addition to these cognitive issues, children from impoverished homes face a variety of social and emotional issues that impact their achievement in the classroom. In order to grow up emotionally healthy, children under the age of three need a primary caregiver that is reliable and provides consistent love, guidance, and support. A child under the age of three also needs a safe and predictable environment, as well as ten to 20 hours each week of conversation and interaction (termed *attunement*), which is especially critical between the ages of six and 24 months. Through the attunement process, infants and toddlers develop a wider range of emotions, including gratitude, forgiveness, and empathy (Jensen, 2009). Children in poverty-stricken homes are less likely to have these critical social and emotional needs met, thereby suffering further consequences in brain development. As a result, these children living in poverty become prone to emotional dysfunction as their brains are under-developed in social and emotional areas (Gunnar, Frenn, Wewerka, & Van Ryzin, 2009).

Children in impoverished homes can fall short of the emotional intelligence of their affluent peers if they have missed out on the key attunement process. "The brains of infants are hardwired for only six emotions: joy, anger, surprise, disgust, sadness, and fear" (Ekman, 2003). Beyond these six central emotions, all other emotional responses such as cooperation, patience, empathy, gratitude, embarrassment, and forgiveness must

be taught to children. All are critical to success in working in small groups in a classroom setting. Students who are lacking these key emotional responses may become easily frustrated if they have not honed the skill of persistence and may, therefore, give up on a task before completion (Jensen, 2009).

Additionally, children from poverty-stricken homes are more likely to display impatience and impulsivity, which are often regarded as behavioral outbursts in the classroom and met with negative consequences. Children from poverty homes may lack politeness or social graces, may demonstrate inappropriate emotional responses, or may lack empathy for the problems of others. Each of these responses stems from a lack of attunement. Without other available options, the child resorts to the six basic hardwired emotional responses. Often, teachers and administrators interpret these emotional displays by poverty students as misbehavior, when they may be the result of a narrower range of appropriate emotional responses than what we would expect (Jensen, 2009). It is essential for teachers in high-poverty schools to understand the areas of need presented by their students and the impacts of poverty in order to be equipped to provide interventions for areas of psychological and social needs that stretch far beyond the instructional curriculum.

Teacher Preparation and Retention in High-Poverty School Environments

Teacher preparation programs must prepare new teachers to be able to address the impact poverty has upon students. More than one hundred thousand new teachers enter classrooms each fall. These beginning teachers vary in the skills and experiences they bring with them into the classroom. Some have attended traditional institutions, have participated in student teaching experiences, and may have already earned advanced

degrees in education. Others have taken alternative tracks to gaining teacher certification, especially in the areas of business, mathematics, and science. In these alternative tracks, pre-service teachers take few, if any, classes in instructional pedagogy. While in training, pre-service teachers have also developed dispositions about what it means to be a teacher. Few university programs offer explicit training to pre-service teachers in diagnostics, such as evaluating what is problematic for a student and then prescribing specific instruction to meet those needs. This lack of training has the potential to become an area of future consideration for colleges and universities (Darling-Hammond & Baratz-Snowden, 2007).

In the selection of teachers to fill open positions, building administrators may have the option of being present in an interview, even though placement decisions are often made at the central office administrative level. Placement decisions for teachers are frequently made by taking into consideration the grade level or content preferences of the incoming new teachers, rather than assessing the strengths of each particular candidate and matching those strengths with the needs of the district. Administrators placing teachers in high-poverty school environments need to identify teacher candidates with effective skills for working with poverty students such as differentiation of instruction and empathy. Even when a building administrator has more specific input on candidate choice, the administrator is likely to make a selection based on personality, judged from the interview, than on the particular skill level of the candidate (Howard, Dresser, & Dunklee, 2009).

Partly due to this random placement of teacher candidates, many urban districts become frustrated with attracting and retaining quality teachers (Darling-Hammond,

2000). The National Commission for Teaching and America's Future reported in 2002 that 50 percent of teachers placed in high-poverty schools leave the profession within the first five years of their careers. The percent of teachers leaving the profession in high-poverty schools is higher than the rate in low-poverty schools, where one-third of teachers leave their careers within the first five years. Teachers who leave the profession after being placed in a high-poverty school give one main reason for their choice: the lack of preparation for the demands of teaching in an urban school (Graziano, 2005). What these new teachers found in their classrooms were a continual disruption of classroom instruction by student behavior problems and a lack of administrative support to adequately handle those behaviors. Some urban districts report an even shorter teacher turnover rate of three years or fewer (Haberman, 1995, 2005). The shorter turnover rate leads to students in high-poverty schools being educated by new, under-prepared, or less-experienced teachers (Darling-Hammond, 2000). This cycle perpetuates the achievement gap between high-poverty and low-poverty schools by continually exposing students of poverty to under-qualified or inexperienced instructional staff.

The burnout of a teacher in a high-poverty setting within the first five years of teaching is most likely caused by increased emotional exhaustion and reduced personal achievement (Maslach, Jackson, & Leiter, 1996), which are correlated with declining levels of teacher self-efficacy (Skaalvik & Skaalvik, 2010). Novice teachers placed in high-poverty schools often experience a decline in their own sense of efficacy within the first year of teaching (Chester & Beaudin, 1996). This decline in their sense of efficacy results in a decrease of the teacher's confidence in the ability to help every student be

successful. Agreeing with Maslach, Jackson, & Leiter, Bandura (1997) found that one potential consequence of a teacher having low self-efficacy is burnout for that teacher.

Resilience of Teachers in High-Poverty Schools.

A critical element of retaining teachers in high-poverty schools is the level of resilience held by the teachers. Teacher resilience is defined as “the ability to adjust to varied situations and increased competence in the face of adverse conditions” (Bobek, 2002). In order to build resilience, a teacher must learn to adjust to negative conditions, such as those present in high-poverty schools, and recognize options for coping with these negative factors (Bobek, 2002). Two ways teachers can build resilience include improving their own teaching experience and building strong relationships with colleagues. By developing strong mentoring relationships with other staff, teachers build a support system that helps them persist through difficult situations.

The development of resilience leads to higher levels of self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2001). Individuals with high resilience also tend to have high levels of personal efficacy. This is important to the development of strong teachers in situations of high poverty. Resilient teachers react positively to stressful situations and become efficacious teachers who learn to become proactive in negative situations (Tait, 2008).

Self-Efficacy

According to Alfred Adler, the father of individual psychology, the most important shaping mechanism for an individual is the desire to move away from a feeling of inferiority and toward a feeling of superiority (Ansbacher & Ansbacher, 1956). Building on this concept, Albert Bandura (1997) introduced the idea of self-efficacy, or

the “belief in one’s capacity to organize and execute the courses of action required to produce given attainments” (p. 3). In order for an individual to be successful, the person must not only have the capacity to perform the task, but also must maintain a personal belief that the task can be accomplished. This personal belief about accomplishment is self-efficacy, or the stimulus that drives an individual toward meeting his or her potential.

While self-esteem generally refers to an individual’s overall sense of self-worth, self-efficacy is an individual’s belief in what one can accomplish (Bandura, 1997). Self-efficacy has a greater impact on an individual than self-esteem because self-efficacy is built on past experiences. Self-efficacy refers to the truth of the adage, “Success breeds success.” An individual with high self-efficacy recognizes a task as difficult, yet persists because of the knowledge of prior successes with similar tasks (Tileston & Darling, 2009).

An individual’s level of self-efficacy differs in different contexts. An example could be that an individual has a high level of self-efficacy in the areas of reading or riding horses and a low level of self-efficacy in the areas of math or mountain climbing (Goddard, et al., 2004). Since self-efficacy is built based on success in prior experiences, the level of a person’s efficacy differs in all areas based on his or her prior successes with a given task.

Self-efficacy can be shaped in four different ways: mastery experience, vicarious experience, social persuasion, and affective state (Bandura, 1997). The first way to shape self-efficacy is through mastery experience, which is the most powerful medium to impact an individual’s self-efficacy. The concept of mastery experiences follows the ideas set forth by B. F. Skinner (1965), who stated strengthening of behavior through

positive reinforcement makes a response more probable and more frequent. Like Skinner's ideas, mastery experience involves completing a task successfully, which raises an individual's efficacy beliefs about future similar tasks (Goddard et al., 2004). Mastery experience is especially important in teaching. When an instructional practice brings forth student achievement, a teacher's efficacy in that practice increases. The second way to shape self-efficacy is through vicarious experience. Vicarious experience happens when the skill to be performed is modeled by someone else who has mastery experience at that particular skill. When an individual watches someone else masterfully perform a task, the individual's self-efficacy increases somewhat. Through mastery and vicarious experiences, an individual's self-efficacy can be permanently altered, either positively or negatively (Goddard et al., 2004). Social persuasion can also shape an individual's self-efficacy. Social persuasion may include discussions about an individual's ability to perform a skill, such as during a performance review or even between colleagues in the faculty lounge. When an individual becomes more successful based on the influence of someone else that holds a high level of credibility, the individuals' self-efficacy increases, though minimally (Bandura, 1986). Finally, self-efficacy can be influenced by the individual's affective state. A common example of this would be the level of anxiety or excitement that surrounds high-stakes testing or a championship athletic event. A heightened level of anxiety or excitement can temporarily increase or decrease an individual's self-efficacy (Goddard et al., 2004). The concepts of social persuasion and affective state generally do not provide lasting changes to an individual's self-efficacy in any area.

An individual's efficacy beliefs can be predictors of overall behavior (Goddard et al., 2004). For example, a person with high self-efficacy will put forth substantial effort to achieve a goal because of the belief that it can be done. In contrast, a person with low self-efficacy is likely to give up before the task is completed because of the belief that it cannot be done. Research suggests that individuals with low levels of self-efficacy also have low levels of ambition and low accountability to the task. In turn, these low levels of ambition and accountability allow individuals to feel unattached to the task at hand (Allinder, 1994). Individuals with higher levels of self-efficacy are highly motivated and are more likely to initiate complex tasks and to hold themselves accountable to highly challenging goals (Guskey, 1984). Additionally, individuals with high self-efficacy become more accomplished and have an increased capability to manage stress and pressure during a task (Greenwood, Olejnik, & Parkay, 1990).

For teachers, self-efficacy can take two forms. The first is general teacher efficacy (GTE), which is the teacher's overall belief that teaching and the education system as a whole can help a student be successful. The second is personal teacher efficacy (PTE), which is the individual belief that an impact can be made to help students be successful (Gibson & Dembo, 1984). Personal teacher efficacy is content specific, and levels of personal teacher efficacy can vary between different academic content areas (Goddard, Hoy, & Woolfolk Hoy, 2000). For example, a teacher may hold higher personal efficacy levels for teaching math than for teaching science.

Both general and personal teacher efficacy beliefs are shaped significantly in the first five years of a teacher's experience. A pre-service teacher, new teacher, or an inexperienced teacher can easily change efficacy beliefs based on continually changing

mastery experience, vicarious experiences, or situations of social persuasion. However, an experienced teacher has difficulty altering efficacy beliefs after years of teaching experience (Henson, 2002). Since efficacy beliefs are built by prior experiences, established efficacy beliefs have significant impact on an experienced teacher's willingness to implement new initiatives. In order to encourage an experienced teacher to implement innovative and new instructional practices, an administrator should work to provide mastery and vicarious experiences in order to positively impact the teacher's self-efficacy (Yost, 2002).

It is essential for an administrator to positively impact teachers' levels of efficacy because efficacious teachers often become "turnaround teachers." Turnaround teachers are efficacious teachers that display high levels of self-efficacy and, in turn, build positive self-efficacy in their students (Tileston & Darling, 2009). Turnaround teachers carefully build strong and supportive relationships with their students by listening and responding to both the students' educational and personal needs. Efficacious teachers are ideal for high-poverty schools in which teachers must answer to a higher calling and be willing to go above and beyond what is expected in order to provide basic needs to their students who may come to school lacking the skills necessary to be successful. In fact, turnaround teachers must follow the ideal set forth by Maslow's hierarchy of needs. In order to take a student to the level of self-actualization, the teacher must first attend to a student's physiological, security, social, and esteem needs (Maslow, Frager, & Fadiman, 1987). Turnaround teachers encourage their students to look into the future for college and career readiness (Tileston & Darling, 2009) and help their students see that the obstacles presented in the students' current situations are temporary ones that can be

overcome through being exposed to a solid education (Tileston & Darling, 2009). The presence of turnaround teachers among an elementary faculty positively impacts the collective efficacy of the entire faculty.

Collective Efficacy

In this study, the term *collective efficacy* is used to represent the perceptions a group of teachers in a school has that the faculty can do what needs to be done in order to positively impact student achievement (Goddard & Goddard, 2001). Elton Mayo, who has been called the founder of industrial sociology, stated that a group as a whole affects the behavior of individuals within the group (Pugh & Hickson, 2007). In agreement with Mayo's ideas, Bandura (1986) developed the construct of collective efficacy, noting that the idea requires group judgment and effort along with the persistence and willingness of each member of a group to remain together. A faculty's collective efficacy beliefs can influence the group's performance as a whole by increasing the level of social persuasion and, therefore, the affective state of individual teachers in the school. Through this cyclical process, the collective efficacy of a school can shape the behavioral and normative environment of the school building as a whole (Goddard, 2001).

The study of collective efficacy is grounded in social cognitive theory, which refers to the way that humans, both individually and in groups, exercise control over their futures. Social cognitive theory assumes that humans are strongly influenced by their efficacy beliefs (Bandura, 2006). The lower a human's sense of efficacy, the less likely he or she is to put forth the effort to reach goals. In contrast, the higher a human's sense of efficacy, the more likely he or she is to strive toward goals with the persistence and effort required to find success (Goddard & Skrla, 2006). The social cognitive theory

asserts that a teacher is influenced by both individual self-efficacy beliefs and the collective efficacy of the faculty (Tschannen-Moran & Barr, 2004).

Collective efficacy builds among an elementary faculty as a result of mastery experiences of individual teachers within the instructional staff. Once this collective efficacy begins to develop, it continues to grow and thrive. An elementary faculty's collective efficacy is influenced by past successes of the group as well as successes of individual teachers (Goddard & Goddard, 2001). As individual teachers attain success through mastery experiences, others within the faculty perceive their own levels of success. This symbiotic sharing of mastery experiences results in an increase in personal self-efficacy of individual faculty members. As teachers continue to judge themselves as having the capability to be successful, the collective efficacy continues to grow among the entire faculty (Evans, 2009).

Besides the use of mastery experiences, another way to build collective efficacy among an elementary faculty is to allow teachers to participate in instructionally relevant school decisions (Goddard et al., 2004). The more opportunities teachers have to participate in the decisions surrounding instruction, the higher the level of collective efficacy among the faculty. In order to maintain the high level of collective efficacy, the teachers must believe that they can generate the procedures and strategies necessary to achieve academic goals for students (Evans, 2009).

One noted factor that can diminish collective efficacy of an elementary faculty is the threat of sanctions, which cause negative emotional climates within schools. Examples of such sanctions are those found among the recent No Child Left Behind legislation, including being labeled as a failing school, enduring school restructuring, and

losing school funding (Evans, 2009). When an elementary faculty faces negative sanctions based on student achievement, the belief in their ability to generate procedures and strategies necessary to achieve academic goals diminishes, and the result is a lower level of collective efficacy (Evans, 2009).

Collective efficacy can be measured in terms of two key elements: analysis of the teaching task and assessment of teaching competence, hereafter referred to as task and competence (Goddard, et al., 2004). In analyzing a teaching task, teachers assess what external factors will be required. The teachers contemplate what constitutes successful teaching in their school, resources that are available, and limitations and barriers to instruction (McCoach & Colbert, 2010). In assessing teaching competence, teachers analyze internal factors, such as teaching skills, training, expertise, and efficacy beliefs of individual teachers among the faculty (Goddard, et al., 2000). When measuring the collective efficacy of a faculty, both the external factors of the task and the internal factors of competence come into play. For example, individual teachers can be rated high on task but low on competence or high on competence but low on task or high on both areas or low on both areas.

The measurements of task and competence of an elementary faculty have multiple professional development implications for school administration. Teachers who are high-task but low-competence perceive few external barriers to their success, but lack effective training to deliver quality instruction (McCoach & Colbert, 2010). As a result, these teachers need professional development in instructional pedagogy in order to increase their effectiveness leading to mastery experiences. Teachers who are low-task and high-competence have the skills necessary to deliver instruction but perceive multiple barriers

to success. Removing these barriers by providing adequate resources and time for instruction can ensure mastery experiences and promote the growth of collective efficacy. Teachers who are low in both task and competence lack the external factors necessary to deliver quality instruction and also have low levels of self-efficacy. These teachers are likely struggling to meet the needs of their students and, therefore, require intervention on the part of the administrator through coaching and the development of targeted growth plans (McCoach & Colbert, 2010). School faculties composed of teachers scoring high in both task and competence generally have high levels of collective efficacy. These faculties perceive limited barriers to instructional success and also possess confidence in their abilities to reach academic achievement goals. Teachers who score high in both task and competence may serve as mentors for teachers who are struggling.

Assessing an elementary faculty to determine the levels of task and competence of individual teachers gives a school administrator a course of action for professional development. Developing the collective efficacy of a faculty is an important ideal, as dire consequences exist for maintaining low collective efficacy beliefs. One characteristic of a faculty with low collective efficacy is that the teachers place blame for academic failure on external student demographic factors. Instead of accepting responsibility for teaching all students, teachers with low efficacy beliefs avoid instructional situations in which they perceive they will fail. For students of poverty in these teachers' classrooms, instructional strategies used to counteract the effects of poverty may not be present. The result of low collective efficacy beliefs is a faculty that is hesitant to try differentiated strategies or to implement current professional development initiatives (Evans, 2009). As failures continue, stress levels rise among

staff members and lower the sense of job satisfaction (Klassen, 2010), which, in turn, leads to a diminished level of effort to gain knowledge of interventions that may increase student achievement and, then, perpetuate the cycle of academic defeat.

A brighter picture is that of the elementary faculty with a high level of collective efficacy, which leads to a positive school climate that bolsters staff morale (Gibson & Dembo, 1984). A faculty with high levels of collective efficacy is more likely to accept challenging goals, set high expectations for student achievement, and display persistence toward meeting these goals (Goddard, et al., 2000). Faculties with high levels of efficacy believe that all children can learn and persist to design appropriate interventions for students who have not yet mastered the instructional content. These faculties do not accept external student demographic characteristics as excuses for low student achievement. Instead, they develop a strong work ethic to do whatever it takes to bring all students to the expected levels of achievement (Tschannen-Moran & Barr, 2004). Additionally, teachers in schools with high levels of collective efficacy experience high levels of job satisfaction. These teachers learn to adapt and cope with difficulties that arise by counting on their peers for support (Manthey, 2006). In faculties with high levels of collective efficacy, teachers develop student discipline plans that further the teachers' own levels of job satisfaction by increasing time-on-task and minimizing classroom disruptions (Klassen, 2010).

Ultimately, the success of a school lies with the collective efficacy beliefs of the faculty. When an elementary faculty believes they have the capability to impact student achievement, then in actuality they do so (Tschannen-Moran & Barr, 2004). Schools with high collective efficacy ratings both in task and competence have higher student

achievement than schools with low collective efficacy ratings (Ross & Gray, 2006). This positive relationship between collective efficacy and student achievement is documented in both reading and mathematics (Goddard, 2001). One reason for the link between collective efficacy and student achievement is that a faculty with high efficacy will put forth greater effort to design interventions for students in need of instructional remediation (Allinder, 1994). Once high levels of collective efficacy are achieved and student achievement makes positive gains, the faculty's sense of collective efficacy begins to thrive.

Once a sense of positive or negative collective efficacy is established, it can be difficult to change (Tschannen-Moran & Barr, 2004). Only through concentrated professional development efforts can school administrators combat established negative collective efficacy patterns in order to change a school's climate and culture. One way that administrators can build a sense of positive collective efficacy is to lead instructional staff in ways that promote mastery experiences for teachers. To do this, professional development targeted toward instructional content, pedagogy, and remediation strategies must be implemented, and time must be given for faculty to implement new initiatives (Manthey, 2006). Administrators can also build collective efficacy levels through social persuasion by providing visionary, inspirational messages to the staff in professional development (Ross & Gray, 2006). Inspirational messages also positively impact the affective state of the faculty. It is essential that inspirational messages accompany mastery experience since the strength of social persuasion and a positive affective state to impact collective efficacy is less than that of mastery experiences. Vicarious experiences also build collective efficacy. In order to provide vicarious experiences, administrators

can build professional development time into the daily schedule in order to allow teachers to observe one another and experience mastery techniques others use (Ross & Gray, 2006).

Analyzing the collective efficacy of an elementary faculty provides powerful data for a school administrator. By assessing the task and competence levels of individual teachers, an administrator is able to plan a course of action to remediate the content and pedagogy needs of teachers as well as remove instructional barriers. By building the personal self-efficacy of individual teachers, the collective efficacy of the group will increase. It is essential for a school administrator to build collective efficacy levels of the faculty, as high levels of collective efficacy have a positive impact upon employee job satisfaction, staff morale, a staff's work ethic, and student achievement.

Connection Between Teacher Efficacy and Student Achievement

Studies have shown that a teacher's self-efficacy belief is directly connected to the teacher's perceived ability to impact student achievement through a variety of instructional practices (Gibson & Dembo, 1984). This perceived ability to make a difference in student achievement is one of the most influential factors on the quality of teaching. It directly affects a teacher's motivation and efforts in preparation for instruction as well as during the teacher's delivery of instruction (Ross, Cousins, & Gadalla, 1996). A teacher's self-efficacy rating also positively or negatively impacts the teacher's sense of satisfaction with the teaching profession as a whole and teacher efficacy can add to the retention or loss of teachers from the teaching profession (Caprara, Barbaranelli, Borgogni, & Steca, 2003).

A teacher's sense of efficacy has been identified as a predictor of the teacher's capability to produce quality teaching practices that ultimately benefit students in the classroom (Goddard et al., 2004). The first of these quality teaching practices is to maintain appropriate organizational skills and to plan adequately for instruction (Allinder, 1994). A teacher with high levels of self-efficacy maintains instructional records, grades assignments and delivers feedback to students in a timely manner, and plans lessons based on student needs as well as curriculum demands. The second teaching practice impacted by a teacher's self-efficacy is the use of activity-based learning (Enochs, Scharmann, & Riggs, 1995). A teacher with a high sense of self-efficacy is more likely to expand the learning opportunity into the realm of active learning because the teacher possesses more confidence about the lesson content itself. In contrast, a teacher with a lower sense of self-efficacy has a diminished sense of confidence about the capability to lead student discussion and is more likely to end lessons quickly with a pencil and paper task. The third quality teaching practice impacted by a teacher's self-efficacy is the use of student-centered learning (Czerniak & Schriver, 1994). A teacher with higher levels of self-efficacy will be more confident in allowing the students' needs to drive the instruction rather than allowing the curriculum to continually dominate the lesson plans. Finally, the fourth quality teaching practice that is impacted by a teacher's self-efficacy is the use of a humanistic approach to student behavior control (Woolfolk & Hoy, 1990). A teacher with a higher level of self-efficacy has the belief that student behavior can be managed because success has been found with previous behavior concerns. Therefore, a teacher with higher levels of self-efficacy allows the student to have more control in the behavior management system, and the

instructor is confident that any situations that arise will be handled effectively as they have in the past. A teacher with lower self-efficacy blindly follows a list of rules and consequences when handling student misbehavior.

As displayed in the four key quality teaching behaviors, a teacher's sense of self-efficacy effectively changes the manner in which a teacher behaves in the classroom. When a teacher with high levels of self-efficacy is organized, plans sufficiently for teaching to include both student needs and curriculum demands, uses activity-based and student-centered learning, and uses a humanistic approach to student behavior management, the students in the classroom benefit. Students modify their own perceptions of their academic abilities based on the teacher's perceptions of the students' capabilities (Ross & Bruce, 2007). The result is a harmonious balance of all four shaping mechanisms of self-efficacy. After an instructional task is modeled and the students experience it vicariously, then the teacher provides the students with authentic, well-planned, mastery experiences. The students in the classroom develop a sense of collective efficacy, causing a positive increase in the social persuasion among peers in the classroom, which impacts the affective state of all students in the classroom. The end result of the four self-efficacy shaping mechanisms working together is the creation of a classroom of students who are capable of achieving at higher levels simply because their teacher believes that the students can attain the higher expectations (Bandura, 1997).

Teachers with high levels of self-efficacy display persistence to remediate instruction when students do not comprehend (Tschannen-Moran & Woolfolk Hoy, 2001). The efficacious teacher continually searches for a new way to present the information. In the mind of a teacher with high self-efficacy, student failure is perceived

as a challenge for the teacher to work even harder, to put forth more effort, and to persist in the search for a solution rather than giving up (Ross & Bruce, 2007). Teachers with low self-efficacy are likely to perceive student failure as the combined result of factors beyond the teacher's control, such as family, social, and emotional factors present in the lives of students in situations of poverty.

Combined with persistence, another quality of teachers with high levels of self-efficacy is that they carefully attend to the needs of students with lower abilities (Ross & Bruce, 2007). Instead of simply offering answers to struggling students, these efficacious teachers will persist at helping the students find alternative strategies to completing the instructional task (Gibson & Dembo, 1984). By providing alternative strategies, the teachers create a cycle of building positive efficacy within the classroom. Students experience higher levels of self-efficacy through the mastery of a rigorous, authentic curriculum. The more success found by students, the higher levels of personal self-efficacy is experienced by the teacher, who in turn continues building the self-efficacy of students within the classroom.

Other superior qualities of teachers with high levels of self-efficacy include a higher commitment to teaching, for building strong parent partnerships, and for motivating students. Studies indicate that teachers who successfully spend the majority of their career in high-poverty schools also have high levels of self-efficacy (Coladarci, 1992). These teachers are also more willing to incorporate parents into their classrooms (Hoover-Dempsey, Bassler, & Brissie, 1992). Teachers with high levels of self-efficacy acknowledge the need for parental involvement in school and reach out to parents in an effort to build positive partnerships to better support the students. Additionally, research

shows that teachers with high levels of self-efficacy help students maintain motivation and a curiosity to learn (Boufard-Bouchard, 1990).

Martin Haberman (2005) conducted a 30-year study of these efficacious teachers and focused specifically on the characteristics of teachers in high-poverty schools that were helping students reach unprecedented levels of academic success; as a result, Haberman identified 15 characteristics of highly effective teachers in high-poverty school environments. The first of these teacher characteristics was to protect instructional time. Effective teachers minimized disruptions to classroom instruction and maximized time-on-task. The second characteristic of effective teachers was to be persistent and to strive toward finding any means necessary to achieve student success. Persistent teachers find alternative strategies for students who need additional help learning concepts. Another characteristic of highly effective teachers in high-poverty school environments was to maintain an appropriate professional and personal relationship with students. An effective teacher demonstrated caring for the whole child as well as attending to the student's basic needs and instructional needs, while also maintaining appropriate professional distance. Other characteristics of effective teachers in high-poverty environments included having a passion for serving at-risk students, recognizing student success, and implementing instructional innovations with fidelity. Haberman (2005), Enochs, Scharmann, & Riggs (1995), and Czerniak & Schriver (1994) all agreed that effective teachers made use of active and student-centered teaching strategies. Both Haberman and Allinder (1994) agreed that an effective teacher had strong organizational skills. A final characteristic noted by Haberman was that an effective teacher in a high-poverty school environment needed to possess emotional and physical stamina evidenced daily as the teacher guarded

instructional time and was energetic in the presentation of instructional content to students. Both Haberman and Allinder (1994) stated that an effective teacher maintained the stamina to continually plan and seek out new strategies, analyze data, meet with parents, and collaborate with colleagues in order to ensure student success. Emotional stamina became significant when serving at-risk students who come to school daily with a variety of unmet needs. Attending to multiple sets of student needs can be emotionally stressful for a teacher, and stamina is paramount to persisting in a high-poverty school environment.

Connection Between High Expectations and Student Achievement

Many of the nation's successful high-poverty schools are characterized by cultures of quality and high expectations (Lee, 2003). Students' expectations for their own academic achievement represent their future goals for success (Liu, Cheng, & Wu, 2009). As expectations are closely linked to self-efficacy, building students' expectations levels is a critical need for high-poverty schools. Once a student sets academic expectations, the student creates plans of action based on these goals (Ozturk & Debelak, 2008). Academic goals that are higher will result in more effort put forth on the part of students. This, in turn, results in higher academic achievement. Students with higher educational expectations for themselves have better long-term academic outcomes, including graduating from high school, enrolling in college classes, and graduating from college (Liu, et al., 2009). The creation of high expectations becomes a self-fulfilling prophecy for the students as they make a plan of action based upon their own expectations and display persistence in working toward the expected goals.

In 1928, William Isaac Thomas created a theorem for the social sciences that stated, “If men define situations as real, they are real in their consequences” (Merton, 1948). The Thomas theorem, as it came to be named, spoke to the path set forth by having expectations for oneself. The Thomas theorem was expanded upon and further defined by Robert K. Merton (1948), who said the theorem led to a self-fulfilling prophecy, a situation in which a human being’s beliefs lead to the actual fulfillment of those beliefs. In essence, people will become what it is they believe themselves to be. A self-fulfilling prophecy starts with a false definition of the current situation and leads to a change in behavior that will change the false definition into actual truth. Self-fulfilling prophecies have the potential to create change in student performance. Being influenced by Merton, the researcher determines it to be logical that teachers set forth high expectations, which are a false definition of the current ability level of students. The students, along with the teacher, then create a plan of action to make the expectation become a reality. In this way, the effort put forth by the students becomes a changed behavior that impacts student achievement.

Two different kinds of self-fulfilling prophecy effects exist. The first, the Golem effect, named for the Golem of Jewish and Polish folklore, is undesirable to changing human behavior. The Golem effect occurs when people believe themselves to be capable of less than what they really are able to become; this belief of limited capabilities has a negative effect on the actions of the individual. One example of the Golem effect in a classroom is a teacher who sets low expectations for student achievement. When the students have low ambition set by low teacher expectations, limited or no academic growth occurs. The other kind of effect in a self-fulfilling prophecy is a Galatea effect,

named for the Galatea of Greek mythology, which is a positive and desirable effect leading to change in human behavior (Rubie-Davies, et al., 2006). A teacher who sets high expectations and pushes students to reach those expectations creates Galatea effects in the classroom. In both the Golem and the Galatea effects, expectations of success and outcomes of achievement have a cyclical influence on each other. Student's expectations for achievement lead to the students' actual achievement level, and this new achievement level defines further expectations (Liu, et al., 2009).

The push for high expectations in schools began with Ronald Edmonds, who is credited with beginning the effective schools movement in 1978. Edmonds defined five characteristics that are consistently evident among effective schools, with one of these defining characteristics being the existence of high expectations for student achievement (Thomas & Bainbridge, 2001). Since the beginning of the effective schools movement, the relationship between high expectations and high academic achievement has been a recurring theme in education reform discussions (Ozturk & Debelak, 2008). The existence of high expectations has been found to be exceptionally critical for students in high-poverty school environments (Hoy, Tarter, & Woolfolk Hoy, 2006). The students in high-poverty schools typically enter school with a sense of the Golem effect and, therefore, embody the low expectations set for them by their families and society. Schools must work toward the Galatea effect of the self-fulfilling prophecy for students living in poverty in order to assist these students in changing their plan of action for academic success.

High-poverty schools that are instructionally effective must have climates of high expectations that allow no children to fall below proficient levels of achievement

(Edmonds, 1979). These high expectations must be both clearly communicated and genuinely achievable for the students. The highest levels of student engagement come when academic expectations are set at an appropriate level, a level that balances what is achievable with what is also a challenge. Students who achieve goals experience a sense of competence and accomplishment (Akey, 2006). As students strive to meet expectations, they continually set higher standards for their own accomplishments. The continual reach for higher standards perpetuates a positive cyclic Galatea effect. In order for schools to choose expectation levels that are both achievable and challenging, the faculty must use formative assessment and the resulting data to determine both current academic levels and paths for progress (Ozturk & Debelak, 2008). The use of actual student data allows instructional staff to assess the current academic reality, set goals, and create plans for students who are in jeopardy of not meeting the established goals.

Motivation is increased when students are presented with high, but achievable, expectations as well as a realistic curriculum connected to real-world problems. Challenging, authentic learning experiences are motivating for students and perpetuate their drive to succeed in the academic task. The students are able to see the connection between what they are learning and how their learning applies to life beyond the school doors. The longer a school keeps a realistic curriculum with high expectations for achievement in place, the more frequently exemplary models of student achievement are produced (Lee, 2003). These student exemplars of achievement act as a guide for other students and allow the students to visually access the path to meeting expectations. The result is a student body that understands what is expected of them, visualizes the path to meeting the expectations, and creates action plans for meeting those expectations (Lee,

2003). The collective efficacy of the student body grows, expectations are met through the Galatea effect of self-fulfilling prophecy, and expectations may be set at continually higher levels. In this cycle, expectations and efficacy become linked together as partners in changing the school climate and culture surrounding academic achievement.

Although the climate and culture of a school building have impact upon a student's expectations for achievement, the classroom teacher is ultimately responsible for setting high expectations for students. Expectations for achievement are often communicated to students through the behavior of teachers (Marzano, 2010). When teachers expect their students to achieve, the teachers interact with students in ways that will lead to achievement (Rubie-Davies, Peterson, Irving, Widdowson, & Dixon, 2010). Teachers who hold their students to high expectations design curriculum around real-world problems, engage students in the learning, and design remediation for students in need. In contrast, teachers with low expectations for student achievement are more likely to seek the assistance provided by the course textbook, assign independent tasks with written assignments, and grade the work with little feedback given to students (Lee, 2003).

School administrators can also help communicate an atmosphere of high expectations by guiding instructional staff through the process of setting high expectations for all students. Marzano (2010) identified a four-step process for communicating high academic expectations for all students. The first step in the process is for teachers to identify the specific students for whom the teachers currently have low expectations for academic success. It is important that this step takes place early in the school year because once the teacher sets expectations for a student; it can be difficult to

change the perception of ability. The second step is to identify similarities among the students for whom the teacher holds low expectations, such as students receiving special services or English language learners. This can be difficult for a teacher to admit, but is a necessary step toward identifying natural biases or predispositions that exist for the teacher. The third step in Marzano's process is to identify, through honest reflection of teaching practices, the differential treatment given to the students in the low expectation group. The final step in the process is to make a plan to treat low-expectancy students in the same manner as high-expectancy students. In this process, identifying differential practices for students raises awareness for teachers and brings about change in teacher behavior. Marzano's four-step process for discovery of differential treatment for students in terms of academic expectations is an important part of changing a school culture toward high expectations. A culture of high expectations is one defining characteristic of high-poverty, high-performing schools.

Characteristics of High-Poverty, High-Performing Schools

Multiple studies have been conducted on schools that defy odds by falling into the category of high-poverty, high-performing schools. In this review, five specific studies were used to determine a set of common characteristics found in high-poverty, high-performing schools. The first study, entitled "Closing the Achievement Gap: Lessons from Illinois' Golden Spike High-Poverty, High-Performing Schools," was completed in 2004 by the Northern Illinois Center for Governmental Studies and took an analytical look at Illinois schools that were exceeding expectations (McGee, 2004). The second study, the "Louisiana School Effectiveness Study" conducted in 1993, determined the reasons students in some of Louisiana's poorest communities were achieving at the same

level of and beyond that of students in some of the state's most affluent communities (Teddlie & Stringfield, 1993). The third study, completed in 2003 by the Louisiana Staff Development Council, entitled "The Secrets of 'Can-Do' Schools," centers on Louisiana schools with at least 80 percent poverty rates (Richardson, 2003). The fourth study, completed in 2003 by the Learning First Alliance, "Beyond Islands of Excellence," researched five high poverty school districts where consistent and improved achievement was occurring in reading and mathematics in the states of Texas, California, Maryland, Minnesota, and Rhode Island (Togneri & Anderson, 2003). Finally, the fifth study, conducted in 2005, entitled "Inside the Black Box of High-Performing, High-Poverty Schools," completed by the Prichard Committee for Academic Excellence, focused on schools in Kentucky that were achieving consistently at top levels despite being located in areas of high-poverty within the state (Kannapel & Clements, 2005).

Throughout these five studies, ten common characteristics could be determined as those present in schools that maintained high levels of achievement despite low socio-economic status: an administrator with high standards of excellence, routine classroom walk-throughs to supervise instruction, curriculum focused on state standards, an emphasis on literacy development, a culture of high expectations for student achievement, a school-wide focus on discipline management, high levels of collective efficacy among the faculty, a focus on professional development, the use of formative assessment and data analysis, and an adjusted daily schedule to allow for maximum instructional time (Kannapel & Clements, 2005; McGee, 2004; Richardson, 2003; Teddlie & Stringfield, 1993; Togneri & Anderson, 2003).

The first common characteristics of the studies were the presence of an administrator who had high standards of excellence and who used routine classroom walkthroughs in order to supervise instruction. School administrators in high-poverty, high-performing schools facilitated the creation of a school vision focused on student learning and instructional improvement (Togneri & Anderson, 2003). A strong and visible building administrator advocated high learning standards and nurtured a culture of success for all (McGee, 2004). In accordance with the other two studies, Teddlie and Stringfield (1993) noted that the presence of a motivating building administrator worked to build the efficacy of the faculty as a whole. Through setting a vision for high standards of excellence, creating a culture of success, and motivating staff, an administrator can impact the level of achievement in poverty schools. In high-poverty, high-performing schools, building administrators visited classrooms regularly in order to maintain a continual monitoring system of instructional strategies, enabling students to experience a daily visible presence of the building administrator (Richardson, 2003).

Along with characteristics of the administrator, the use of curriculum focused on state standards that emphasized literacy development positively impacted student success in high-poverty, high-performing schools. The curriculum common in these schools maintained a focus on standards-based instruction, keeping the curriculum true to the state standards (Richardson, 2003). Rather than lowering expectations to meet current levels of student achievement, the curriculum was presented to students at maximum levels along with high support for the students. By empowering students to find success with the curriculum standards, the students' self-efficacy levels grew through authentic success with mastery experiences (Kannapel & Clements, 2005). Students in poverty

often possess a deficiency in school readiness and language acquisition (McGee, 2004). High-poverty, high-performing school faculties focused a majority of their instructional time in the area of reading and employed instructional aides to support teachers in organizing small-group remediation when necessary (Teddlie & Stringfield, 1993).

Other characteristics found common in high-poverty, high-performing schools dealt with their culture and climate. A culture of high expectations for student achievement, a school-wide focus on discipline management, and high levels of collective efficacy defined these high-performing schools (Kannapel & Clements, 2005; Richardson, 2003; Teddlie & Stringfield, 1993). Teachers implemented high expectations by building mastery experiences for students without “watering down” the curriculum demands (Teddlie & Stringfield, 1993). The presence of high academic expectations built a strong sense of collective efficacy within each school through sharing a commitment to academic excellence. Additionally, a culture of respectful relationship-building among the students and adults was present in these schools. This positive culture impacted instructional time. The presence of these strong relationships helped to deter student misbehavior, thereby minimizing instructional disruption (Kannapel & Clements, 2005). In each of the five studies, the presence of a strong level of faculty collective efficacy was stated as a defining characteristic in high-poverty, high-performing schools. The faculty of these high-performing schools believed in the power of their teaching as well as in their own abilities to ensure that every student learned regardless of obstacles provided by situations of poverty (Richardson, 2003).

Additional characteristics found among high-poverty, high-performing schools included a focus on professional development, the use of formative assessment and data

analysis, and modifications made to the daily schedule to allow for maximum instructional time. A majority of these high-performing schools implemented a professional development schedule for staff within the constraints of the school day. This job-embedded professional development schedule allowed for continual collaborative work among instructional staff within grade levels as well as vertical curricular alignment among multiple grade levels (Richardson, 2003). The result of this professional development was the fidelity of implementation of strategies resulting in academic success (Togneri & Anderson, 2003). Another characteristic found among these high-performing schools was the analysis of formative assessment data that was then used to plan instruction. Much of this analysis took place within the job-embedded professional development schedule (Richardson, 2003). The student data was then used to inform decisions for daily classroom instruction (Togneri & Anderson, 2003). Along with arranging the schedule to allow for job-embedded professional development, the high-performing schools found creative ways to increase instructional time by rearranging schedules to allow for maximum use of the available school day (McGee, 2004).

While multiple common characteristics were found among the five studies, some characteristics were found to be present in only a few isolated examples of high-poverty, high-performing schools. In an Illinois study, McGee (2004) stated that engaging parents in the academic process helped a school reach high levels of student achievement; this was the only study that included parent involvement as a defining characteristic leading to achievement. Another isolated characteristic found to promote academic success was the use of autonomous hiring processes on the part of the school administrator. By carefully selecting teaching candidates, building administrators were able to add to the

collective efficacy of their faculty team with motivated and persistent teaching staff (Kannapel & Clements, 2005). Both parent involvement and hiring practices were isolated characteristics named in few studies.

Among all five studies, the most commonly noted characteristic was collective efficacy. A positive learning environment that generates collective efficacy among an entire faculty is purposefully created by building administration (Howard et al., 2009). This type of atmosphere builds resiliency among staff to work in high-poverty school environments and to stay in those schools for multiple years of their teaching careers (Luthar, Cicchetti, & Becker, 2000). In every school that was studied, the building administrators believed that the key to systematic school change lived in the hearts and minds of the elementary faculty. Sustainable system change is not about programs; instead, it is about collective attitudes (Howard et al., 2009). An essential key to success in high-poverty, high-performing schools is to engender collective efficacy among the faculty, beginning with the development of high levels of self-efficacy for individual teaching staff (Howard et al., 2009).

A staff that is highly committed to success for all students transforms into a “turnaround” staff, which, in turn, inspire students to reach higher levels of self-efficacy themselves. Students in high-poverty environments must be inspired to see beyond their current conditions and into the possibilities of academic success that leads to college and career readiness. Turnaround faculties provide the types of environments for students in which students are safe, their needs are met, and they are academically successful (Benard, 2003). Students in high-poverty schools need to be presented with hope for the future, and turnaround teachers provide this necessary hope, which needs to be seen,

heard, and felt daily in the academic lives of students who will be successful in high-poverty schools. In the case of each turnaround school studied, there existed for students and staff a no-excuses, high-expectations mind-set that is embraced and enforced by all faculty (Jensen, 2009).

Summary

In this chapter, research was examined regarding topics applicable to the study. First, research was explored surrounding the presence of an achievement gap between high-poverty and low-poverty schools in the United States. Secondly, research was presented regarding the impacts of poverty on student achievement. Next, research was examined in the area of teacher preparation for placement in high-poverty schools, as well as teacher resiliency in high-poverty schools. Then, research about self-efficacy and collective efficacy was explored; including providing general definitions and ways that efficacy is shaped. In addition, research was explored that links both efficacy and faculty expectations to student achievement in high-poverty schools. Finally, research was presented that examines the characteristics of high-performing, high-poverty schools. Through the research presented in this chapter, connections were established in the literature between levels of collective efficacy and student achievement, as well as between faculty high expectations for student learning and student achievement.

Chapter Three

Methods

The purpose of this study was to determine the extent of the relationship between a faculty's collective efficacy and student achievement in the areas of communication arts and mathematics in high-poverty elementary schools. An additional purpose was to determine the extent of the relationship between a faculty's collective expectations for student learning and actual student achievement in the areas of communication arts and mathematics in high-poverty elementary schools. The Missouri School Improvement Program Advance Questionnaire was used to measure each elementary faculty's sense of collective efficacy and collective expectations for student learning (Missouri DESE, 2011b). Student achievement in communication arts was measured by the percentage of students scoring Proficient and Advanced on the communication arts portion of the Missouri Assessment Program (MAP) test in the academic years of 2009-10 and 2010-11. Student achievement in mathematics was measured by the percentage of students scoring Proficient and Advanced on the mathematics portion of the MAP test in the academic years of 2009-10 and 2010-11. Chapter three of this study includes the design of the research study; an explanation of the population, sample, and sampling procedures; and the instrumentation used in the research. Additionally, the data collection procedures are discussed, validity and reliability are explained, and limitations for the study are presented.

Research Design

The researcher used a correlational research design in order to determine the strength and direction of the relationship between two numerical variables. The

correlational design was appropriate to this study because the relationships were analyzed between two numerical measurements for each school in the sample. The numerical independent variables in this study included the elementary faculty's collective efficacy and the faculty's collective expectations for student learning. The independent variables were measured using the Sense of Efficacy and Expectations Scale of the Advance Questionnaire (Appendix A) for each school in the sample to determine each elementary faculty's collective sense of efficacy as well as the faculty's collective expectations for student learning. The numerical dependent variables in this study included the percentage of students scoring in the Proficient and Advanced proficiency levels of the communication arts and mathematics MAP tests.

Population and Sample

The population for this research included all high-poverty elementary schools in Missouri. From this population, a purposive sampling was taken of high-poverty elementary schools that participated in the Missouri School Improvement Program Advance Questionnaire during the 2009-10 and 2010-11 academic years. For the 2009-10 academic year, a total of 229 elementary schools participated in the Advance Questionnaire. Of these 229 schools, 45 had more than 70 percent of students receiving free and reduced lunch. Appendix B includes a list of these 45 elementary schools that met the criteria to be included in the study's sample from the academic year 2009-10. For the 2010-11 academic year, a total of 254 elementary schools participated in the Advance Questionnaire. Of these 254 schools, 59 had more than 70 percent of students receiving free and reduced lunch. Appendix C includes a list of 59 elementary schools that met the criteria to be included in the study's sample from the academic year 2010-11.

Sampling Procedures

Lunenburg and Irby (2008) stated that purposive sampling is a type of nonrandom sampling used when the researcher has experience and knowledge of the independent and dependent variables that drive the sample selection. In this study, the sample was selected based on Missouri elementary schools with more than 70 percent of students receiving free or reduced lunch costs and that also participated in the 2009-10 and 2010-11 Missouri School Improvement Program Advance Questionnaire. A total of 104 elementary schools were included in the sample.

Instrumentation

The faculty version of the Advance Questionnaire, which is available in Appendix D, is used by the Missouri Department of Elementary and Secondary Education in conjunction with other data collected during the Missouri School Improvement Program (MSIP) school accreditation process. Although scores from the Advance Questionnaire do not apply to whether or not a district gains accreditation, the data are collected in order to provide guidance to district leaders for needed improvement within schools. Every school in Missouri participates in the Advance Questionnaire once every five years during the semester before its MSIP review is to be completed (K. A. Jamtgaard, personal communication, January 18, 2012). The Advance Questionnaire was developed and revised by a team from the Department of Elementary and Secondary Education, staff from the Missouri Office of Social and Economic Data Analysis (OSED) and practicing educators during each five-year MSIP cycle. The questions included on the Advance Questionnaire are determined based on current research into school effectiveness and best practices (Preis, 2009). The most current version of the Advance Questionnaire

incorporates measures derived from the work of Robert Marzano (2004) and his meta-analyses of the teacher factors that are associated with improvements in student achievement. These factors include classroom management, the degree of collegiality and professionalism among faculty, communication between school and parents, the use of data to inform classroom practices, collective efficacy, and expectations for student learning (K. A. Jamtgaard, personal communication, January 18, 2012).

The Advance Questionnaire is available for six different stakeholder groups and is designed to involve all stakeholders in the improvement process of a school. The available questionnaires include those designed for elementary students in grades three through six, secondary students in grades six through 12, parents, faculty, support staff, and board of education members. All of the available questionnaire versions address each of 14 question scales, or categories, of the Advance Questionnaire. Differences among the versions include the method of administration and the reading complexity of the questions. The faculty, support staff, board of education, and student versions of the Advance Questionnaire are all administered electronically. The parent version of the questionnaire is administered through a paper copy that is sent home with a student, completed by the parent, sent back to school, and then mailed to DESE for scoring (K. A. Jamtgaard, personal communication, January 18, 2012).

Individual questions on the Advance Questionnaire are grouped by similarities into common themes, called scales. One of these, the Sense of Efficacy and Expectations Scale, is the focus of this study. The Sense of Efficacy and Expectations Scale is measured on the faculty, parent, and student versions of the Advance Questionnaire. For this study, the responses made by elementary faculty in the Sense of Efficacy and

Expectations Scale were analyzed. In the faculty version of the Advance Questionnaire, the Sense of Efficacy and Expectations Scale identifies the degree to which an elementary faculty believes that they are capable of impacting student achievement. Additionally, the faculty version of the Sense of Efficacy and Expectations Scale identifies the degree to which teachers hold students accountable for high academic learning outcomes. Table 1 presents the seven survey items in the faculty version of the Sense of Efficacy and Expectations Scale.

Table 1

Survey Items Included in the Faculty AQ Sense of Efficacy and Expectations Scale

Number	Survey Item Description
3	There are effective supports in place to assist students who are in jeopardy of academic failure.
4	I emphasize the importance of effort with students.
44	I have the skills necessary to meet the needs of all learners in my classroom.
45	I believe that I can positively impact student performance.
52	Students are held accountable for doing quality work.
54	All staff in our school hold high expectations for student learning.
56	There are avenues for recognizing and rewarding the accomplishments of all students.

Note. Adapted from the Advance Questionnaire for Faculty, 2011, available at

http://dese.mo.gov/divimprove/sia/dar/advance_questionnaire_surveys.html

The variable, student achievement, was measured in the area of communication arts by examining the percentage of third through sixth grade students at each school scoring Proficient or Advanced on the Missouri Assessment Program (MAP) test for the

academic years of 2009-2010 and 2010-2011. The variable, student achievement, was measured in the area of mathematics by examining the percentage of third through sixth grade students at each school scoring Proficient or Advanced on the MAP test for the academic years of 2009-2010 and 2010-2011. The communication arts and mathematics sections of the MAP test are administered annually to all elementary students in third, fourth, fifth, and sixth grades in Missouri. The MAP test is a standardized, criterion-referenced test and, thus, is an appropriate measure of student achievement data for this research study. Criterion-referenced tests are designed to “yield measurements that are directly interpretable in terms of specified performance standards” (Glaser & Nitko, 1971, p. 653).

The MAP test is administered in April of each year through multiple testing sessions and includes multiple-choice and constructed-response questions (Missouri DESE, 2012a). Upon completion of the tests, districts submit the test booklets for scoring, and practicing educators from throughout the state score the tests. These educators are selected by the Missouri Department of Elementary and Secondary Education and receive training prior to the onset of the scoring process (Missouri DESE, 2008). DESE uses the results of the communication arts and mathematics MAP tests to determine whether or not a district has met the requirements of Adequate Yearly Progress (AYP) as mandated by No Child Left Behind (US Department of Education, 2001).

Measurement.

The Sense of Efficacy and Expectations Scale of the Advance Questionnaire is appropriate for use with this specific population as it provides a measure of an elementary faculty’s collective sense of efficacy as well as their collective expectations for student

learning (K. A. Jamtgaard, personal communication, January 18, 2012). Survey participants make responses to individual questions in the Sense of Efficacy and Expectations Scale by scoring on a Likert-type scale. The possible responses of *strongly disagree*, *disagree*, *neutral*, *agree*, and *strongly agree* are assigned a numerical value of one through five, respectively. Possible mean values for individual survey items and for the scale as a whole can range between one and five. A mean was calculated for the collective responses to each of the seven individual survey items within the Sense of Efficacy and Expectations Scale. Next, a mean was calculated for responses to the group of survey items specifically addressing efficacy (numbers 44 and 45, as displayed in Table 1). A mean closer to five indicated a stronger sense of collective efficacy while a mean closer to one indicated a weaker sense of collective efficacy (Missouri DESE, 2011b). A mean was also calculated for responses to the group of questions specifically addressing expectations for student achievement (numbers 3, 4, 52, 54, and 56, as noted in Table 1). A mean closer to five indicated a higher level of collective expectations for student learning while a mean closer to one indicated a lower level of collective expectations for student learning (Missouri DESE, 2011b).

The MAP test is administered to all third through sixth grade students in Missouri. Based on the overall score received, student scores are placed into one of four categories: Below Basic, Basic, Proficient, or Advanced. Scale score bands for each of these four categories are included in Table 2. For this study, the percentage of third through sixth grade students scoring in the Proficient and Advanced categories was a collective measure of a school's student achievement in communication arts and mathematics.

Table 2

MAP Scale Score Achievement Bands

Grade	Content	Below Basic	Basic	Proficient	Advanced
3	Comm. Arts	455-591	592-647	648-672	673-790
	Mathematics	450-567	568-627	638-666	667-780
4	Comm. Arts	470-611	612-661	662-690	691-820
	Mathematics	465-595	596-650	651-687	688-805
5	Comm. Arts	485-624	625-674	675-701	702-840
	Mathematics	480-604	605-667	668-705	706-830
6	Comm. Arts	505-630	631-675	676-703	704-855
	Mathematics	495-627	628-680	681-720	721-845

Note. Adapted from information provided by the Missouri Comprehensive Data System through the Missouri Department of Elementary and Secondary Education, 2012.

Reliability and validity.

Reliability refers to the “degree to which an instrument consistently measures whatever it is measuring” (Lunenburg & Irby, 2008, p. 182). One way of reporting the internal reliability of a survey or questionnaire is with the use of Cronbach’s alpha (Cronbach, 1951). The internal reliability of a survey refers to the relationship between the response to each item on the survey and the overall response or score for the instrument itself (Lunenburg & Irby, 2008). Cronbach’s alpha is an index of the internal

consistency of the instrument on a scale of zero to one, with higher scores indicating higher levels of internal consistency (Santos, 1999). The Office of Social and Economic Data Analysis (OSED) reported a Cronbach's alpha value for the faculty portion of the Sense of Efficacy and Expectations Scale of the Advance Questionnaire to be 0.79 (K. A. Jamtgaard, personal communication, January 18, 2012). A Cronbach's alpha value of 0.70 is considered acceptable evidence of reliability in the social sciences (Santos, 1999).

The MAP test was created by CTB/McGraw-Hill and is evaluated periodically for reliability. Each time reliability tests are conducted, a sample is used that contains representative distributions of socio-economic status, racial/ethnic categories, and school and district size from throughout Missouri. The sample size ranged from 2000 to 4000 students (CTB/McGraw-Hill, 2004). Cronbach's alpha coefficients for the 2009-10 MAP test are presented in Table 3.

Table 3

*Internal Consistency Reliability Coefficients for the 2009-2010 MAP Test in
Communication Arts and Mathematics*

Grade	Content	Cronbach's Alpha
3	Communication Arts	0.91
	Mathematics	0.92
4	Communication Arts	0.93
	Mathematics	0.92
5	Communication Arts	0.91
	Mathematics	0.91
6	Communication Arts	0.91
	Mathematics	0.92

Note. Adapted from *Missouri Assessment Program Grade-Level Assessments Technical Report 2010*, produced by the Missouri DESE, 2010.

As noted previously, Cronbach's alpha coefficient scores above .70 are considered to be acceptable evidence for the internal reliability of an instrument (Santos, 1999). For the test administration year of 2009-10, the MAP test had a high level of internal reliability (0.91 – 0.93), meaning that the test was consistently measuring student achievement levels in communication arts and mathematics.

Validity refers to “the degree to which an instrument measures what it purports to measure” (Lunenburg & Irby, 2008, p. 181). There are three main kinds of validity, including content validity, criterion-related validity, and construct validity (Lunenburg & Irby, 2008). The Office of Social and Economic Data Analysis (OSED) has addressed the validity of the Advance Questionnaire by looking at both content and convergent validity. First, OSED addressed content validity during revisions and pilot testing by asking a panel of experts from both the Department of Elementary and Secondary Education and Missouri school districts to participate in discussions and to review the Advance Questionnaire in order to ensure that the items included have appropriate wording for the intended audiences of the questionnaire. OSED also strives toward convergent validity, through which OSED obtains information regarding issues that are the focus of each scale included in the Advance Questionnaire. For example, for the Sense of Efficacy and Expectations Scale, OSED researched the topics of collective teacher efficacy and faculty expectations for student learning and gained the perspectives of teachers, parents, and students in order to present an integrated view of multiple perspectives within the questionnaire (K. A. Jamtgaard, personal communication, January 18, 2012).

The Department of Elementary and Secondary Education in Missouri reported two main reasons that the MAP test is a valid test. First, the MAP test is created by hiring classroom teachers to write test items similar to items teachers use to assess student performance (Missouri DESE, 2000). The second reason that the MAP test is considered to have validity is that the established levels of achievement of the test were created by a partnership between the Missouri legislature and the Department of

Elementary and Secondary Education, thus, reflecting the student achievement abilities intended by legislature and the education department of Missouri (Missouri Department of Elementary and Secondary Education, 2000). The state legislature has the authority to define the standard of proficiency and test validity due to the local control of education set forth in the United States Constitution.

Data Collection Procedures

Permission to conduct this study was obtained from the Institutional Review Board at Baker University as noted in Appendix G. The researcher contacted the Missouri Department of Elementary and Secondary Education's school improvement division to collect a list of school districts that participated in the Advance Questionnaire for the academic years of 2009-10 and 2010-11. Once the list was obtained, the researcher used the DESE website to access the School Report Card for each elementary school within the surveyed districts. The School Report Card was also used to gather data for each school's free and reduced lunch rate. Finally, for each elementary school identified to participate in the study, the School Report Card was used to obtain the percentage of third through sixth grade students scoring Proficient and Advanced in the areas of communication arts and mathematics on the MAP test during the same academic year in which the Advance Questionnaire was taken.

The scores from the Advance Questionnaire are available through the Missouri Comprehensive Data System on the DESE website. By searching for individual districts participating in the Advance Questionnaire, the researcher was able to download and print the frequency distribution report for each elementary school in the sample in order to view responses to individual questions within the faculty version of the Sense of

Efficacy and Expectations Scale of the Advance Questionnaire. One example of a frequency distribution report is available in Appendix E. The names of each participating elementary school, MAP scores, means for each of the seven questions in the Efficacy and Expectations Scale, means for the combined efficacy questions, and means for the combined expectations questions were compiled into an Excel spreadsheet.

Data Analysis and Hypothesis Testing

This study used quantitative methods of data collection and data analysis. The quantitative data collected for each elementary school in the study included the free and reduced lunch rate and the percentage of students scoring Proficient and Advanced on the MAP test in the areas of communication arts and mathematics. Additionally calculated for each school was the overall mean on the Sense of Efficacy and Expectations Scale of the Advance Questionnaire, the mean for each of the seven individual questions in the scale, the mean for the group of efficacy questions, and the mean for the group of questions addressing expectations for student achievement.

In this study, the independent variables for each elementary school in the sample population were a faculty's collective sense of efficacy and the faculty's collective expectations for student achievement. Dependent variables were student achievement levels in communication arts and mathematics. A Pearson's product moment correlation coefficient, r , was calculated to analyze each of the linear relationships between the independent and dependent variables. The Pearson's product moment correlation coefficient ranges in value between -1 and +1. Coefficient values between -1 and 0 indicate a negative association, meaning that as one variable increases, the other variable decreases. Coefficient values between 0 and +1 indicate a positive association, meaning

that as one variable increases, the other variable increases. The closer the correlation coefficient value falls to +1 or -1, the stronger the strength of the linear relationship between the variables. A coefficient value of +1 is indicative of a perfect positive relationship while a value of -1 indicates a perfect negative relationship and a value of 0 indicates no relationship at all (Lunenburg & Irby, 2008). The correlation coefficient was also used in the calculation of Cohen's *d*, a measure of effect size. The effect size was analyzed for each calculated correlation between the independent and dependent variables.

The first research question for this study is the following:

To what extent is there a relationship between a faculty's collective efficacy and student achievement in communication arts in high-poverty Missouri elementary schools? In order to address this research question, the following research hypothesis was tested:

Research Hypothesis 1: A relationship exists between a faculty's collective sense of efficacy and student achievement in communication arts in high-poverty Missouri elementary schools.

In order to analyze the relationship between a faculty's collective sense of efficacy and student achievement in communication arts, a Pearson's product moment correlation coefficient was calculated between the mean of the collective efficacy questions from the Advance Questionnaire and the percentage of third through sixth grade students scoring Proficient or Advanced on the communication arts MAP test. The correlation coefficient was analyzed in order to determine the strength and direction of the linear relationship between collective efficacy and student achievement in

communication arts in each school. A hypothesis test was conducted to determine if the correlation was statistically significant at $\alpha = .05$.

The second research question for this study is the following:

To what extent is there a relationship between a faculty's collective efficacy and student achievement in mathematics in high-poverty Missouri elementary schools? In order to address this research question, the following research hypothesis was tested: Research Hypothesis 2: A relationship exists between a faculty's collective sense of efficacy and student achievement in mathematics in high-poverty Missouri elementary schools.

In order to analyze the relationship between a faculty's collective sense of efficacy and student achievement in mathematics, a Pearson's product moment correlation coefficient was calculated between the mean of the collective efficacy questions from the Advance Questionnaire and the percentage of third through sixth grade students scoring Proficient or Advanced on the mathematics MAP test. The correlation coefficient was analyzed in order to determine the strength and direction of the linear relationship between collective efficacy and student achievement in mathematics in each school. A hypothesis test was conducted to determine if the correlation was statistically significant at $\alpha = .05$.

The third research question for this study is the following:

To what extent is there a relationship between a faculty's collective expectations for student learning and student achievement in communication arts in high-poverty Missouri elementary schools? In order to address this research question, the following research hypothesis was tested:

Research Hypothesis 3: A relationship exists between a faculty's collective expectations for student learning and student achievement in communication arts in high-poverty Missouri elementary schools.

In order to analyze the relationship between a faculty's collective expectations for student learning and student achievement in communication arts, a Pearson's product moment correlation coefficient was calculated between the mean of the expectations questions from the Advance Questionnaire and the percentage of third through sixth grade students scoring Proficient or Advanced on the communication arts MAP test. The correlation coefficient was analyzed in order to determine the strength and direction of the linear relationship between a faculty's collective expectations for student learning and student achievement in communication arts in each school. A hypothesis test was conducted to determine if the correlation was statistically significant at $\alpha = .05$.

The fourth research question for this study is the following:

To what extent is there a relationship between a faculty's collective expectations for student learning and student achievement in mathematics in high-poverty Missouri elementary schools? In order to address this research question, the following research hypothesis was tested:

Research Hypothesis 4: A relationship exists between a faculty's collective expectations for student learning and student achievement in mathematics in high-poverty Missouri elementary schools.

In order to analyze the relationship between a faculty's collective expectations for student learning and student achievement in mathematics, a Pearson's product moment correlation coefficient was calculated between the mean of the expectations questions

from the Advance Questionnaire and the percentage of third through sixth grade students scoring Proficient or Advanced on the mathematics MAP test. The correlation coefficient was analyzed in order to determine the strength and direction of the linear relationship between a faculty's collective expectations for student learning and student achievement in mathematics in each school. A hypothesis test was conducted to determine if the correlation was statistically significant at $\alpha = .05$.

Limitations

The limitations of a study are “factors that may have an effect on the interpretation of the findings or on the generalizability of the results” (Lunenburg & Irby, 2008, p. 133). The researcher does not control limitations. Limitations of this study include the following:

1. The use of the MAP test for evaluating student achievement limits the measure to a single annual achievement score. The use of one assessment may be an incomplete representation of what students are capable of achieving.
2. Student achievement scores are affected by a multitude of factors. Student achievement on the MAP test was potentially influenced by many factors other than the faculty's collective efficacy and the faculty's collective expectations for student learning.
3. Conditions surrounding the administration of the MAP test may vary between schools. The instruction, test preparation, and the test-taking environment may have been inconsistent among schools included in the study.

4. This is a correlational study, and causal effects cannot be determined.

Summary

This study was a quantitative analysis using a correlational research design to determine the relationship between an elementary faculty's collective sense of efficacy and student achievement. In addition, the correlational research design was used to determine the relationship between an elementary faculty's collective expectations for student learning and student achievement. The population for the study was all low socio-economic elementary schools in Missouri. A purposive sample was taken from the population to include high-poverty elementary schools in which the Advance Questionnaire was administered in the academic years of 2009-10 and 2010-11. The Sense of Efficacy and Expectations Scale from the Advance Questionnaire was used to collect data regarding each school's sense of collective efficacy as well as the faculty's collective expectations for student achievement. Student achievement data connected to each elementary school in the sample were measured as the percentage of students scoring Proficient and Advanced on the MAP test in the areas of communication arts and mathematics for the same academic year that the Advance Questionnaire was administered in the school. Pearson product correlation coefficients were calculated in order to determine the strength and direction of the relationship between each pair of variables. Results of the quantitative data analysis for this study are presented in the following chapter.

Chapter Four

Results

The purpose of this research was to determine the nature of the relationship between a faculty's collective efficacy and student achievement in communication arts and mathematics. An additional purpose of this research was to determine the nature of the relationship between a faculty's collective expectations for student learning and student achievement in communication arts and mathematics. The population for this study included all high-poverty elementary schools in Missouri. From this population, the sample was selected based on high-poverty elementary schools that participated in the 2009-10 and 2010-11 Missouri School Improvement Program Advance Questionnaire. In previous chapters, the background of the study was clarified, relevant literature was reviewed, methodology was identified, and research questions and hypotheses were stated. In this chapter, descriptive statistics are given for the study's variables, and the results of quantitative analysis are presented for each of the study's research questions. Also included in this chapter are additional analyses of the individual survey items from the Sense of Efficacy and Expectations Scale of the Advance Questionnaire.

Descriptive Statistics

The Missouri Assessment Program (MAP) test was used as a measure of student achievement in communication arts and mathematics. Student scores on the MAP test are categorized into four proficiency levels: Advanced, Proficient, Basic, and Below Basic. For the purpose of this study, student achievement was defined as the percentage of students whose scores fell in the Proficient and Advanced proficiency levels. A breakdown of scale scores in each of the MAP proficiency levels is found in Table 2.

Table 4 includes descriptive statistics for the percentage of students scoring Proficient and Advanced for the MAP content areas of communication arts and mathematics.

Table 4

Descriptive Statistics for Percentage of Students Scoring Proficient and Advanced as Measured by MAP

Content Area	<i>M</i>	<i>SD</i>	<i>N</i>
Communication Arts	38.56	9.41	104
Mathematics	42.12	11.49	104

In the 104 schools included in the study's sample, more students scored Proficient and Advanced in mathematics than in communication arts. Below, Table 5 includes the mean, standard deviation, and sample size for collective efficacy and collective expectations scores as measured by the Advance Questionnaire.

Table 5

Descriptive Statistics for Collective Efficacy and Collective Expectations Scores as Measured by AQ

AQ Scale	<i>M</i>	<i>SD</i>	<i>N</i>
Collective Efficacy	4.49	0.18	104
Collective Expectations	4.35	0.26	104

The Advance Questionnaire uses a Likert-type scale for responses to survey items. The mean for each Advance Questionnaire scale may range between one and five. For the collective efficacy score, a mean closer to one indicates low levels of collective

efficacy while a mean closer to five indicates high levels of collective efficacy. For the faculty collective expectations for student learning score, a mean closer to one indicates low levels of faculty collective expectations for student learning while a mean closer to five indicates high levels of faculty collective expectations for student learning. Results of hypothesis testing are presented in the next section of this chapter.

Hypothesis Testing

RQ 1: To what extent is there a relationship between a faculty's collective efficacy and student achievement in communication arts in high-poverty Missouri elementary schools? In order to address this research question, the following research hypothesis was tested:

H 1: A relationship exists between a faculty's collective sense of efficacy and student achievement in communication arts in high-poverty Missouri elementary schools. In order to analyze the relationship between a faculty's collective sense of efficacy and student achievement in communication arts, a Pearson's product moment correlation coefficient was used. The coefficient was calculated between the mean of the responses to the combined collective efficacy questions from the Advance Questionnaire and the percentage of third through sixth grade students scoring Proficient or Advanced on the communication arts MAP test. The Pearson's product moment correlation coefficient was calculated to determine the strength and direction of the linear relationship between collective efficacy and student achievement in communication arts in each school. The results of the calculation of the correlation and the critical r value are reported in Table 6 below.

Table 6

SPSS Output for Correlation Between Collective Efficacy and Percentage of Students Scoring Proficient and Advanced in Communication Arts

	<i>r</i>	critical <i>r</i>	<i>df</i>
Collective Efficacy	.189	.195	102

Note. The tabled critical *r* value is calculated with $\alpha = .05$.

The “degrees of freedom value,” *df*, is equivalent to two less than the sample size (Steinberg, 2008). For this study, the *df* is calculated as 104 minus two, or 102. The critical *r* value is the minimum correlation coefficient needed to state with certainty that a relationship exists in the population (Siegle, 2009). For this study, the critical *r* value is used at a significance level of .05 and *df* = 100. Appendix F includes critical *r* values for selected degrees of freedom values (Steinberg, 2008). The value for a *df* of 100 is used, as it is the closest number to 102 on the critical value chart (Siegle, 2009). For a *df* value of 100, the critical *r* value at a significance of .05 is .195. The calculated correlation between collective efficacy and student achievement in communication arts was found to be .189, which is less than the critical *r* value of .195. There is not sufficient evidence to support the research hypothesis; thus, a statistically significant relationship was not found between collective efficacy and student achievement in communication arts.

Although the calculated correlation value was less than the critical *r* value, the effect size for the correlation could still be analyzed. In order to interpret the impact of the correlation between collective efficacy and student achievement in communication arts, the correlation coefficient of .189 was converted into Cohen’s *d*, a measure of effect size. Calculating the effect size between two correlated means allows for interpretation

in terms of student achievement gain (Furr, 2008). Using Furr's formula for calculating Cohen's d from the correlation coefficient [$r/\sqrt{(1 - r^2)}$], the d value was calculated to be 0.19. According to Cohen (1988), d values between 0.20 and 0.49 are considered to be "small" effect sizes. The research of Geoff Cumming, in *Understanding the New Statistics: Effect Sizes, Confidence Intervals, and Meta-Analyses* (2012), was used to interpret the impact upon achievement. Multiplying the effect size and the standard deviation results in a description of the level of impact (Cumming, 2012). When interpreting effect size, it is first essential to define the effect size in terms of a standardizer. According to Cumming (2012), the standardizer is the standard deviation that is chosen as the unit of measurement for the effect size (p. 282). The standardizer of the mean collective efficacy scores from the Advance Questionnaire was used when calculating the effect size for the impact of collective efficacy on student achievement in communication arts. With a d value of 0.19 and a standard deviation in percentage of students scoring Proficient and Advanced in communication arts of 9.41%, the product of these two values was calculated to be 1.79%. If the mean of the combined responses to the collective efficacy questions increases one unit (from 3.00 to 4.00, for example), as measured by the Advance Questionnaire, then the percentage of students scoring Proficient and Advanced on the MAP test in communication arts will increase 0.19 standard deviations, which translates to a percentage gain for the school of 1.79%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in communication arts could experience an increase to 51.79% of students scoring Proficient and Advanced.

RQ 2: To what extent is there a relationship between a faculty's collective efficacy and student achievement in mathematics in high-poverty Missouri elementary schools? In order to address this research question, the following research hypothesis was tested:

H 2: A relationship exists between a faculty's collective sense of efficacy and student achievement in mathematics in high-poverty Missouri elementary schools. In order to analyze the relationship between a faculty's collective sense of efficacy and student achievement in mathematics, a Pearson's product moment correlation coefficient was used. The coefficient was calculated between the means of the responses to the combined collective efficacy questions from the Advance Questionnaire and the percentage of third through sixth grade students scoring Proficient or Advanced on the mathematics MAP test. Also, the Pearson's product moment correlation coefficient was analyzed in order to determine the strength and direction of the relationship between collective efficacy and student achievement in mathematics. The results of the calculation of the correlation and the critical r value are reported in Table 7 below.

Table 7

SPSS Output for Correlation Between Collective Efficacy and Percentage of Students Scoring Proficient and Advanced in Mathematics

	r	critical r	df
Collective Efficacy	.167	.195	102

Note. The tabled critical r value is calculated with $\alpha = .05$.

The calculated correlation between collective efficacy and student achievement in mathematics was found to be .167, which is less than the critical r value of .195. There is

not sufficient evidence to support the research hypothesis; thus, a statistically significant relationship was not found between collective efficacy and student achievement in mathematics.

Although the calculated correlation value was less than the critical r value, the effect size for the correlation could still be analyzed by converting the correlation coefficient into Cohen's d . Using Furr's formula for calculating Cohen's d from the correlation coefficient, the d value was calculated to be 0.17. The standardizer of the mean collective efficacy scores from the Advance Questionnaire was used when calculating the effect size for the impact of collective efficacy on student achievement in mathematics. With a d value of 0.17 and a standard deviation in percentage of students scoring Proficient and Advanced in mathematics of 11.49%, the product of these two values was calculated to be 1.95%. If the mean of the combined responses to the collective efficacy questions increases one unit, as measured by the Advance Questionnaire, then the percentage of students scoring Proficient and Advanced on the MAP test in mathematics will increase 0.17 standard deviations, which translates to a percentage for the school of 1.95%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in mathematics could experience an increase to 51.95% of students scoring Proficient and Advanced.

RQ 3: To what extent is there a relationship between a faculty's collective expectations for student learning and student achievement in communication arts in high-poverty Missouri elementary schools? In order to address this research question, the following research hypothesis was tested:

H 3: A relationship exists between a faculty's collective expectations for student learning and student achievement in communication arts in high-poverty Missouri elementary schools. In order to analyze the relationship between a faculty's collective expectations for students and student achievement in communication arts, a Pearson's product moment correlation coefficient was used. The coefficient was calculated between the mean of the responses to the combined collective expectations questions on the Advance Questionnaire and the percentage of third through sixth grade students scoring Proficient or Advanced on the communication arts MAP test. Also, the Pearson's product moment correlation coefficient was analyzed in order to determine the strength and direction of the relationship between collective expectations for students and the actual student achievement scores in communication arts in each school. The results of the calculation of the correlation and the critical r value are reported in Table 8 below.

A positive relationship exists between expectations and student achievement in communication arts. Since the calculated correlation between expectations and student achievement in communication arts was found to be .291, which is higher than the critical r value of .195, there is enough evidence to support the research hypothesis.

Table 8

SPSS Output for Correlation Between Collective Expectations and Percentage of Students Scoring Proficient and Advanced in Communication Arts

	r	critical r	df
Collective Expectations	.291	.195	102

Note. The tabled critical r value is calculated with $\alpha = .05$.

In order to further interpret the impact of the correlation between collective expectations and student achievement in communication arts, the correlation coefficient of .291 was converted into Cohen's d . Using Furr's formula for calculating Cohen's d from the correlation coefficient, the d value was calculated to be 0.30. The standardizer of the mean collective expectations scores from the Advance Questionnaire was used when calculating the effect size for the impact of faculty collective expectations on student achievement in communication arts. With a d value of 0.30 and a standard deviation in percentage of students scoring Proficient and Advanced in communication arts of 9.41%, the product of these two values was calculated to be 2.82%. If the mean response to the combined collective expectations questions increases one unit, as measured by the Advance Questionnaire, then the percentage of students scoring Proficient and Advanced on the MAP test in communication arts will increase 0.30 standard deviations, which translates to a percentage gain for the school of 2.82%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in communication arts could experience an increase to 52.82% of students scoring Proficient and Advanced.

RQ 4: To what extent is there a relationship between a faculty's collective expectations for student learning and student achievement in mathematics in high-poverty Missouri elementary schools? In order to address this research question, the following research hypothesis was tested:

H 4: A relationship exists between a faculty's collective expectations for student learning and student achievement in mathematics in high-poverty Missouri elementary schools. In order to analyze the relationship between a faculty's collective expectations

for students and student achievement in mathematics, a Pearson's product moment correlation coefficient was used. The coefficient was calculated between the mean of the responses to the combined collective expectations questions from the Advance Questionnaire and the percentage of third through sixth grade students scoring Proficient or Advanced on the mathematics MAP test. Also, the Pearson's product moment correlation coefficient was analyzed in order to determine the strength and direction of the relationship between collective expectations for students and student achievement in mathematics in each school. The results of the calculation of the correlation and the critical r value are reported in Table 9 below.

A positive relationship exists between collective expectations and student achievement in mathematics. Since the calculated correlation between expectations and student achievement in mathematics was found to be .199, which is higher than the critical r value of .195, there is enough evidence to support the research hypothesis.

Table 9

SPSS Output for Correlation Between Collective Expectations and Percentage of Students Scoring Proficient and Advanced in Mathematics

	r	critical r	df
Collective Expectations	.199	.195	102

Note. The tabled critical r value is calculated with $\alpha = .05$.

In order to further interpret the impact of the correlation between collective expectations and student achievement in mathematics, the correlation coefficient of .199 was converted into Cohen's d . Using Furr's formula for calculating Cohen's d from the correlation coefficient, the d value was calculated to be 0.20. The standardizer of the

mean collective expectations from the Advance Questionnaire was used when calculating the effect size for the impact of faculty collective expectations on student achievement in mathematics. With a d value of 0.20 and a standard deviation in percentage of students scoring Proficient and Advanced in mathematics of 11.49%, the product of these two values was calculated to be 2.30%. If the mean on the combined collective expectations questions increases one unit, as measured by the Advance Questionnaire, then the percentage of students scoring Proficient and Advanced on the MAP test in mathematics will increase 0.20 standard deviations, which translates to a percentage gain for the school of 2.32%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in mathematics could experience an increase to 52.32% of students scoring Proficient and Advanced.

Additional Analyses

The Sense of Efficacy and Expectations Scale of the Advance Questionnaire contains seven individual questions, which are provided in detail in Table 1 above. The seven questions were divided into two categories to provide a set of questions related to collective efficacy and another set of questions related to collective expectations for achievement. For each of the seven questions, analysis was completed to determine the correlation between the mean response to each question and student achievement in both communication arts and mathematics. Results of the analysis for each individual question are summarized below.

Table 10

SPSS Output for Correlations Between Individual AQ Collective Efficacy Questions and Percentage of Students Scoring Proficient and Advanced in Communication Arts

Question	<i>r</i>	critical <i>r</i>	<i>df</i>
Q44	.242	.195	102
Q45	.078	.195	102

Note. The tabled critical *r* value is calculated with $\alpha = .05$.

Question 44 of the Advance Questionnaire asked teachers to respond to the statement, “I have the skills necessary to meet the needs of all learners in my classroom.” A positive relationship exists between question 44 and student achievement in communication arts since the calculated correlation between the mean response to question 44 and student achievement in communication arts was found to be .242, which is higher than the critical *r* value of .195.

In order to further interpret the impact of the correlation between the mean response to question 44 and student achievement in communication arts, the correlation coefficient of .242 was converted into Cohen’s *d*. Using Furr’s formula for calculating Cohen’s *d* from the correlation coefficient, the *d* value was calculated to be 0.25. The standardizer of the mean response to question 44 was used when calculating the effect size for question 44 and student achievement in communication arts. With a *d* value of 0.25 and a standard deviation in percentage of students scoring Proficient and Advanced in communication arts of 9.41%, the product of these two values was calculated to be 2.35%. If the mean response to question 44 increases one unit, then the percentage of students scoring Proficient and Advanced on the MAP test in communication arts will

increase 0.25 standard deviations, which translates to a percentage gain for the school of 2.35%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in communication arts could experience an increase to 52.35% of students scoring Proficient and Advanced.

Question 45 of the Advance Questionnaire asked teachers to respond to the statement, “I believe that I can positively impact student performance.” With a correlation of .078, a statistically significant relationship cannot be established between the mean response to question 45 and student achievement in communication arts. Pearson r at 102 degrees of freedom is less than the critical r of .195.

Although a statistically significant relationship was not determined between question 45 and student achievement in communication arts, the effect size for the correlation could still be analyzed. In order to interpret the impact of the correlation between the mean response to question 45 and student achievement in communication arts, the correlation coefficient of .078 was converted into Cohen’s d . Using Furr’s formula for calculating Cohen’s d from the correlation coefficient, the d value was calculated to be 0.08. The standardizer of the mean for question 45 was used when calculating the effect size for question 45 and student achievement in communication arts. With a d value of 0.08 and a standard deviation in percentage of students scoring Proficient and Advanced in communication arts of 9.41%, the product of these two values was calculated to be 0.75%. If the mean on question 45 increases one unit, then the percentage of students scoring Proficient and Advanced on the MAP test in communication arts will increase 0.08 standard deviations, which translates to a percentage gain for the school of 0.75%. For example, a school with 50% of students

scoring Proficient and Advanced on the MAP test in communication arts could experience an increase to 50.75% of students scoring Proficient and Advanced.

Additional correlations were calculated between the mean response to each of the collective efficacy questions on the Advance Questionnaire and student achievement in mathematics. Results of these analyses are presented in Table 11 below.

Table 11

SPSS Output for Correlations Between Individual AQ Efficacy Questions and Percentage of Students Scoring Proficient and Advanced in Mathematics

Question	<i>r</i>	critical <i>r</i>	<i>df</i>
Q44	.188	.195	102
Q45	.104	.195	102

Note. The tabled critical *r* value is calculated with $\alpha = .05$.

Question 44 of the Advance Questionnaire asked teachers to respond to the statement, “I have the skills necessary to meet the needs of all learners in my classroom.” With a correlation of .188, a statistically significant relationship cannot be established between the mean response to question 44 and student achievement in mathematics. Pearson *r* at 102 degrees of freedom is less than the critical *r* of .195.

Although a statistically significant relationship was not determined between the mean response to question 44 and student achievement in mathematics, the effect size for the correlation could be analyzed by converting the correlation coefficient of .188 into Cohen’s *d*. Using Furr’s formula for calculating Cohen’s *d* from the correlation coefficient, the *d* value was calculated to be 0.19. The standardizer of the mean response to question 44 was used when calculating the effect size for question 44 and student

achievement in mathematics. With a d value of 0.19 and a standard deviation in percentage of students scoring Proficient and Advanced in mathematics of 11.49%, the product of these two values was calculated to be 2.18%. If the mean on question 44 increases one unit, then the percentage of students scoring Proficient and Advanced on the MAP test in mathematics will increase 0.19 standard deviations, which translates to a percentage gain for the school of 2.18%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in mathematics could experience an increase to 52.18% of students scoring Proficient and Advanced.

Question 45 of the Advance Questionnaire asked teachers to respond to the statement, "I believe that I can positively impact student performance." With a correlation of .104, a statistically significant relationship cannot be established between the mean response to question 45 and student achievement in mathematics. Pearson r at 102 degrees of freedom is less than the critical r of .195.

Although a statistically significant relationship was not determined between question 45 and student achievement in mathematics, the effect size for the correlation could still be analyzed. In order to interpret the impact of the correlation between question 45 and student achievement in mathematics, the correlation coefficient of .104 was converted into Cohen's d . Using Furr's formula for calculating Cohen's d from the correlation coefficient, the d value was calculated to be 0.11. The standardizer of the mean response to question 45 was used when calculating the effect size for question 45 and student achievement in mathematics. With a d value of 0.11 and a standard deviation in percentage of students scoring Proficient and Advanced in mathematics of 11.49%, the product of these two values was calculated to be 1.26%. If the mean on question 45

increases one unit, then the percentage of students scoring Proficient and Advanced on the MAP test in mathematics will increase 0.11 standard deviations, which translates to a percentage gain for the school of 1.26%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in mathematics could experience an increase to 51.26% of students scoring Proficient and Advanced.

Additional correlations were calculated between the mean responses to each of the collective expectations questions on the Advance Questionnaire and student achievement in communication arts. Results of these analyses are presented in Table 12 below.

Table 12

SPSS Output for Correlations Between Individual AQ Collective Expectations Questions and Percentage of Students Scoring Proficient and Advanced in Communication Arts

Question	<i>r</i>	critical <i>r</i>	<i>df</i>
Q3	.234	.195	102
Q4	.176	.195	102
Q52	.235	.195	102
Q54	.311	.195	102
Q56	.235	.195	102

Note. The tabled critical *r* value is calculated with $\alpha = .05$.

Question 3 of the Advance Questionnaire asked teachers to respond to the statement, “There are effective supports in place to assist students who are in jeopardy of academic failure.” With a calculated correlation of .234, a positive relationship can be

established between the mean response to question 3 and student achievement in communication arts. Pearson r at 102 degrees of freedom is more than the critical r of .195.

In order to interpret the impact of the correlation between the mean response to question 3 and student achievement in communication arts, the correlation coefficient of .234 was converted into Cohen's d . Using Furr's formula for calculating Cohen's d from the correlation coefficient, the d value was calculated to be 0.24. The standardizer of the mean response to question 3 was used when calculating the effect size for question 3 and student achievement in communication arts. With a d value of 0.24 and a standard deviation in percentage of students scoring Proficient and Advanced in communication arts of 9.41%, the product of these two values was calculated to be 2.26%. If the mean on question 3 increases one unit, then the percentage of students scoring Proficient and Advanced on the MAP test in communication arts will increase 0.24 standard deviations, which translates to a percentage gain for the school of 2.26%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in communication arts could experience an increase to 52.26% of students scoring Proficient and Advanced.

Question 4 of the Advance Questionnaire asked teachers to respond to the statement, "I emphasize the importance of effort with students." A statistically significant relationship was not found between the mean response to question 4 and student achievement in communication arts since the calculated correlation was .176, which was less than the critical r value of .195.

Although a statistically significant relationship was not established between question 4 and student achievement in communication arts, the effect size for the correlation could still be analyzed. In order to interpret the impact of the correlation between the mean response to question 4 and student achievement in communication arts, the correlation coefficient of .176 was converted into Cohen's *d*. Using Furr's formula for calculating Cohen's *d* from the correlation coefficient, the *d* value was calculated to be 0.18. The standardizer of the mean for question 4 was used when calculating the effect size for question 4 and student achievement in communication arts. With a *d* value of 0.18 and a standard deviation in percentage of students scoring Proficient and Advanced in communication arts of 9.41%, the product of these two values was calculated to be 1.69%. If the mean on question 4 increases one unit, then the percentage of students scoring Proficient and Advanced on the MAP test in communication arts will increase 0.18 standard deviations, which translates to a percentage gain for the school of 1.69%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in communication arts could experience an increase to 51.69% of students scoring Proficient and Advanced.

Question 52 of the Advance Questionnaire asked teachers to respond to the statement, "Students are held accountable for doing quality work." With a correlation of .235, a positive relationship can be established between question 52 and student achievement in communication arts. Pearson *r* at 102 degrees of freedom is more than .195.

In order to interpret the impact of the correlation between question 52 and student achievement in communication arts, the correlation coefficient of .235 was converted into

Cohen's d . Using Furr's formula for calculating Cohen's d from the correlation coefficient, the d value was calculated to be 0.24. The standardizer of the mean for question 52 was used when calculating the effect size for question 52 and student achievement in communication arts. With a d value of 0.24 and a standard deviation in percentage of students scoring Proficient and Advanced in communication arts of 9.41%, the product of these two values was calculated to be 2.26%. If the mean on question 52 increases one unit then the percentage of students scoring Proficient and Advanced on the MAP test in communication arts will increase 0.24 standard deviations, which translates to a percentage gain for the school of 2.26%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in communication arts could experience an increase to 52.26% of students scoring Proficient and Advanced.

Question 54 of the Advance Questionnaire asked teachers to respond to the statement, "All staff in our school hold high expectations for student learning." With a correlation of .311, a positive relationship can be established between the mean response to question 54 and student achievement in communication arts. Pearson r at 102 degrees of freedom is more than the critical r of .195.

In order to interpret the impact of the correlation between the mean response to question 54 and student achievement in communication arts, the correlation coefficient of .311 was converted into Cohen's d . Using Furr's formula for calculating Cohen's d from the correlation coefficient, the d value was calculated to be 0.33. The standardizer of the mean for question 54 was used when calculating the effect size for question 54 and student achievement in communication arts. With a d value of 0.33 and a standard deviation in percentage of students scoring Proficient and Advanced in communication

arts of 9.41%, the product of these two values was calculated to be 3.11%. If the mean on question 54 increases one unit, then the percentage of students scoring Proficient and Advanced on the MAP test in communication arts will increase 0.33 standard deviations, which translates to a percentage gain for the school of 3.11%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in communication arts could experience an increase to 53.11% of students scoring Proficient and Advanced.

Question 56 of the Advance Questionnaire asked teachers to respond to the statement, “There are avenues for recognizing and rewarding the accomplishments of all students.” With a correlation of .235, a positive relationship can be established between the mean response to question 56 and student achievement in communication arts. Pearson r at 102 degrees of freedom is more than the critical r of .195.

In order to interpret the impact of the correlation between the mean response to question 56 and student achievement in communication arts, the correlation coefficient of .235 was converted into Cohen’s d . Using Furr’s formula for calculating Cohen’s d from the correlation coefficient, the d value was calculated to be 0.24. The standardizer of the mean for question 56 was used when calculating the effect size for question 56 and student achievement in communication arts. With a d value of 0.24 and a standard deviation in percentage of students scoring Proficient and Advanced in communication arts of 9.41%, the product of these two values was calculated to be 2.26%. If the mean on question 56 increases one unit, then the percentage of students scoring Proficient and Advanced on the MAP test in communication arts will increase 0.24 standard deviations, which translates to a percentage gain for the school of 2.26%. For example, a school

with 50% of students scoring Proficient and Advanced on the MAP test in communication arts could experience an increase to 52.26% of students scoring Proficient and Advanced.

Additional correlations were calculated between the collective expectations questions on the Advance Questionnaire and student achievement in mathematics. Results of these analyses are presented in Table 13 below.

Table 13

SPSS Output for Correlations Between Individual AQ Collective Expectations Questions and Percentage of Students Scoring Proficient and Advanced in Mathematics

Question	<i>r</i>	critical <i>r</i>	<i>df</i>
Q3	.134	.195	102
Q4	.198	.195	102
Q52	.200	.195	102
Q54	.199	.195	102
Q56	.128	.195	102

Note. The tabled critical *r* value is calculated with $\alpha = .05$.

Question 3 of the Advance Questionnaire asked teachers to respond to the statement, “There are effective supports in place to assist students who are in jeopardy of academic failure.” A statistically significant relationship was not found between the mean response to question 3 and student achievement in mathematics since the calculated correlation was .134, which was less than the critical *r* value of .195.

Although a statistically significant relationship was not established between the mean response to question 3 and student achievement in mathematics, the effect size of the correlation could still be analyzed. In order to interpret the impact of the correlation between the mean response to question 3 and student achievement in mathematics, the correlation coefficient of .134 was converted into Cohen's d . Using Furr's formula for calculating Cohen's d from the correlation coefficient, the d value was calculated to be 0.14. The standardizer of the mean for question 3 was used when calculating the effect size for question 3 and student achievement in mathematics. With a d value of 0.14 and a standard deviation in percentage of students scoring Proficient and Advanced in mathematics of 11.49%, the product of these two values was calculated to be 1.61%. If the mean on question 3 increases one unit, then the percentage of students scoring Proficient and Advanced on the MAP test in mathematics will increase 0.14 standard deviations, which translates to a percentage gain for the school of 1.61%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in mathematics could experience an increase to 51.61% of students scoring Proficient and Advanced.

Question 4 of the Advance Questionnaire asked teachers to respond to the statement, "I emphasize the importance of effort with students." With a correlation of .198, a positive relationship can be established between the mean response to question 4 and student achievement in mathematics. Pearson r at 102 degrees of freedom is more than the critical r of .195.

In order to interpret the impact of the correlation between the mean response to question 4 and student achievement in mathematics, the correlation coefficient of .198

was converted into Cohen's d . Using Furr's formula for calculating Cohen's d from the correlation coefficient, the d value was calculated to be 0.20. The standardizer of the mean for question 4 was used when calculating the effect size for question 4 and student achievement in mathematics. With a d value of 0.20 and a standard deviation in percentage of students scoring Proficient and Advanced in mathematics of 11.49%, the product of these two values was calculated to be 2.30%. If the mean on question 4 increases one unit, then the percentage of students scoring Proficient and Advanced on the MAP test in mathematics will increase 0.20 standard deviations, which translates to a percentage gain for the school of 2.30%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in mathematics could experience an increase to 52.30% of students scoring Proficient and Advanced.

Question 52 of the Advance Questionnaire asked teachers to respond to the statement, "Students are held accountable for doing quality work." With a correlation of .200, a positive relationship can be established between the mean response to question 52 and student achievement in mathematics. Pearson r at 102 degrees of freedom is more than the critical r of .195.

In order to interpret the impact of the correlation between the mean response to question 52 and student achievement in mathematics, the correlation coefficient of .200 was converted into Cohen's d . Using Furr's formula for calculating Cohen's d from the correlation coefficient, the d value was calculated to be 0.20. The standardizer of the mean for question 52 was used when calculating the effect size for question 52 and student achievement in mathematics. With a d value of 0.20 and a standard deviation in percentage of students scoring Proficient and Advanced in mathematics of 11.49%, the

product of these two values was calculated to be 2.30%. If the mean on question 52 increases one unit, then the percentage of students scoring Proficient and Advanced on the MAP test in mathematics will increase 0.20 standard deviations, which translates to a percentage gain for the school of 2.30%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in mathematics could experience an increase to 52.30% of students scoring Proficient and Advanced.

Question 54 of the Advance Questionnaire asked teachers to respond to the statement, “All staff in our school hold high expectations for student learning.” With a correlation of .199, a positive relationship can be established between the mean response to question 54 and student achievement in mathematics. Pearson r at 102 degrees of freedom is more than the critical r of .195.

In order to interpret the impact of the correlation between the mean response to question 54 and student achievement in mathematics, the correlation coefficient of .199 was converted into Cohen’s d . Using Furr’s formula for calculating Cohen’s d from the correlation coefficient, the d value was calculated to be 0.20. The standardizer of the mean for question 54 was used when calculating the effect size for question 54 and student achievement in mathematics. With a d value of 0.20 and a standard deviation in percentage of students scoring Proficient and Advanced in mathematics of 11.49%, the product of these two values was calculated to be 2.30%. If the mean on question 54 increases one unit, then the percentage of students scoring Proficient and Advanced on the MAP test in mathematics will increase 0.20 standard deviations, which translates to a percentage gain for the school of 2.30%. For example, a school with 50% of students

scoring Proficient and Advanced on the MAP test in mathematics could experience an increase to 52.30% of students scoring Proficient and Advanced.

Question 56 of the Advance Questionnaire asked teachers to respond to the statement, “There are avenues for recognizing and rewarding the accomplishments of all students.” A statistically significant relationship was not found between the mean response to question 56 and student achievement in mathematics since the calculated correlation was .128, which was less than the critical r value of .195.

Although a statistically significant relationship was not established between the mean response to question 56 and student achievement in mathematics, the effect size for the correlation could still be analyzed. In order to interpret the impact of the correlation between the mean response to question 56 and student achievement in mathematics, the correlation coefficient of .128 was converted into Cohen’s d . Using Furr’s formula for calculating Cohen’s d from the correlation coefficient, the d value was calculated to be 0.13. The standardizer of the mean for question 56 was used when calculating the effect size for question 56 and student achievement in mathematics. With a d value of 0.13 and a standard deviation in percentage of students scoring Proficient and Advanced in mathematics of 11.49%, the product of these two values was calculated to be 1.49%. If the mean on question 56 increases one unit, then the percentage of students scoring Proficient and Advanced on the MAP test in mathematics will increase 0.13 standard deviations, which translates to a percentage gain for the school of 1.49%. For example, a school with 50% of students scoring Proficient and Advanced on the MAP test in mathematics could experience an increase to 51.49% of students scoring Proficient and Advanced.

Summary

The purpose of this research was to determine the nature of the relationship between a faculty's collective efficacy and student achievement in communication arts and mathematics. Additionally, the relationship was examined between a faculty's collective expectations for student learning and student achievement in communication arts and mathematics. Additional analyses were completed for each of the individual questions within the Sense of Efficacy and Expectations Scale of the Advance Questionnaire. A summary of the effects of the collective efficacy variable score and the mean responses to the individual questions on the percentage of students scoring Proficient and Advanced on the MAP test in communication arts and mathematics is shown below in Table 14.

Table 14

Summary of Collective Efficacy Effect Sizes for the Percentage of Students Scoring Proficient and Advanced on the MAP Test

Collective Efficacy Variable	Communication Arts Percentage	Math Percentage
Collective Efficacy	1.79	1.95
Q44: I have the skills necessary to meet the needs of all learners in my classroom.	2.35	2.18
Q45: I believe that I can positively impact student performance.	0.75	1.26

Note. Scores listed in bold were calculated using a statistically significant correlation.

A summary of the effects of the collective expectations variable score and the mean responses to the individual questions on the percentage of students scoring

Proficient and Advanced on the MAP test in communication arts and mathematics is shown below in Table 15.

Table 15

Summary of Collective Expectations Effect Sizes for the Percentage of Students Scoring Proficient and Advanced on the MAP test

Collective Expectations Variable	Communication Arts Percentage	Math Percentage
Collective Expectations	2.82	2.32
Q3: There are effective supports in place to assist students who are in jeopardy of academic failure.	2.26	1.61
Q4: I emphasize the importance of effort with students.	1.69	2.30
Q52: Students are held accountable for doing quality work.	2.26	2.30
Q54: All staff in our school hold high expectations for student learning.	3.11	2.30
Q56: There are avenues for recognizing and rewarding the accomplishments of all students.	2.26	1.49

Note. Scores listed in bold were calculated using a statistically significant correlation.

This chapter presented results of correlations used to address the research questions. Results of the hypothesis testing indicated mixed results of statistically significant relationships between collective efficacy and student achievement in communication arts and mathematics. Results of the hypothesis testing also indicated a positive relationship between collective expectations for student achievement and actual achievement in both communication arts and mathematics. Chapter five contains major findings from the study, connections between the findings and the literature presented in chapter two, implications for action, and recommendations for future study.

Chapter Five

Interpretation and Recommendations

The first chapter of this study introduced the conceptual framework and background for the research as well as the problem, purpose, and significance of the investigation. The second chapter presented a review of relevant literature, including the relationship between collective efficacy and student achievement, the relationship between faculty collective expectations and student achievement, as well as analyzing research relating to characteristics of high-poverty, high-performing schools. The third chapter reviewed the methodology for the study, including the sampling procedures, instrumentation used, and data collection procedures. In the fourth chapter, the results of descriptive statistics, hypothesis testing, and additional analyses were presented. In this fifth chapter, a brief review of the problem, purpose, methodology, and major findings is presented. Additionally, the major findings are connected to the relevant literature, and implications for action as well as recommendations for future study are given.

Study Summary

In this section, a brief overview is given of chapters one through four of the study. The overview will contain a review of the problem, the purpose statement and research questions, a review of the methodology, and the major findings of the study.

Overview of the Problem.

In 2010, Barr published the results of a study of the growing achievement gap between students born into families of poverty and those students' peers from families of higher socio-economic status (Barr, 2010). According to Barr (2010), in general, students who are born into families of poverty tend to fail to demonstrate high levels of

academic achievement when compared to state and national averages (Barr, 2010). The growing achievement gap between students from poverty and their peers in higher socioeconomic groups has received increased public scrutiny with the onset of requirements set forth by No Child Left Behind (NCLB) legislation. The NCLB legislation requires high-poverty schools to set student achievement targets that mirror those of schools with high socio-economic levels (US Department of Education, 2001). In Missouri, 82 percent of school districts receiving Title I funding failed to meet the Adequate Yearly Progress (AYP) requirements set forth by NCLB during the 2010-11 academic year (Missouri DESE, 2011a). Failure to meet AYP requirements resulted in the loss of partial Title I funding, in accordance with NCLB's consequences to schools failing to meet the prescribed achievement standards. Consequences include sanctions such as providing transportation for students to a school meeting AYP standards and offering supplemental tutoring services (No Child Left Behind Act, 2001).

In the pursuit of identifying teacher and school characteristics that impact student achievement, previous studies have indicated a positive relationship between collective efficacy and student achievement (Goddard, Hoy, & Woolfolk Hoy, 2004). Studies have also indicated a positive relationship between collective faculty expectations for student learning and resulting student achievement (Goddard, Hoy, & Woolfolk Hoy, 2004). As a result, further investigation is needed regarding the relationship between collective efficacy and student achievement in high-poverty Missouri school environments. Additional investigation is also needed regarding the relationship between faculty collective expectations for student learning and student achievement in high-poverty Missouri school environments.

Purpose Statement and Research Questions.

The purpose of this research was to determine the nature of the relationship between a faculty's collective efficacy and student achievement in communication arts and mathematics. An additional purpose of this research was to determine the nature of the relationship between a faculty's collective expectations for student learning and student achievement in communication arts and mathematics. The focus of this study was high-poverty elementary schools in Missouri. The results of this study will add to the body of research available surrounding the impact made upon student achievement of both collective efficacy and faculty collective expectations for student learning. Further understanding of the impact made upon student achievement by both collective efficacy and faculty collective expectations for student learning will also inform professional development practices for elementary school faculties in high-poverty elementary schools. Four research questions were posed to determine the relationship between the following: collective efficacy as measured by the Sense of Efficacy and Expectations Scale of the Advance Questionnaire and the percentage of students scoring Proficient and Advanced on the communication arts and mathematics MAP tests, and collective expectations as measured by the Sense of Efficacy and Expectations Scale of the Advance Questionnaire and the percentage of students scoring Proficient and Advanced on the communication arts and mathematics MAP tests.

Review of the Methodology.

This quantitative correlational study examined all high-poverty elementary schools in Missouri that participated in the Missouri School Improvement Program Advance Questionnaire in the academic years of 2009-10 and 2010-11 (Missouri DESE,

2011c). Archived data from the Missouri Department of Elementary and Secondary Education was used for the study. The independent variable of collective efficacy was measured using the Sense of Efficacy and Expectations Scale from the Advance Questionnaire. The independent variable of collective faculty expectations for student learning was also measured using the Sense of Efficacy and Expectations Scale from the Advance Questionnaire. The percentage of students scoring in the Proficient and Advanced proficiency levels of the 2009-10 and 2010-11 Missouri Assessment Program (MAP) test were used to measure the dependent variables of student achievement in communication arts and mathematics. Pearson product moment correlation coefficients were calculated to determine the strength and direction of the relationships between each pair of independent variables and dependent variables. Additionally, the correlation coefficients were used to calculate Cohen's d in order to analyze the effect size for each correlation. Additional analyses were conducted on individual survey questions within the Sense of Efficacy and Expectations scale by calculating Pearson product moment correlation coefficients to determine the strength and direction of the relationship between each question and student achievement in communication arts and mathematics. The correlation coefficients were used to calculate Cohen's d in order to analyze the effect size for the relationship between the responses to each question and student achievement in communication arts and mathematics.

Major Findings.

The researcher studied the relationship between collective efficacy and student achievement in communication arts and mathematics. In the case of the Missouri elementary schools included in the sample for this study, collective efficacy did not have

a statistically significant relationship with student achievement in communication arts or in mathematics, except for in the case of one individual survey item on the Advance Questionnaire. A statistically significant relationship was found between faculty perception of possessing the necessary skills to meet the needs of all learners and student achievement in communication arts. Although the majority of the correlations were not found to be statistically significant, the researcher examined the effect sizes associated with the relationships between collective efficacy and student achievement in communication arts and mathematics. Increasing collective efficacy was found to have a minimal effect upon student achievement in communication arts and mathematics.

The researcher also examined the relationship between collective faculty expectations for student achievement and student achievement in communication arts and mathematics. A statistically significant positive relationship was established between collective expectations for student achievement and the resulting student achievement in both communication arts and mathematics. In the case of the Missouri elementary schools included in the sample for this study, high collective faculty expectations for student learning resulted in student achievement gains in both communication arts and mathematics. The effect sizes associated with the relationships between collective faculty expectations for student learning and student achievement in communication arts and math were examined. Increasing collective faculty expectations for student learning had a somewhat limited effect upon student achievement in communication arts and mathematics.

Additional analysis was completed to determine the relationship and effect size between the mean responses to each of the individual efficacy questions from the Sense

of Efficacy and Expectations Scale of the Advance Questionnaire and student achievement in communication arts and mathematics. In the high-poverty elementary Missouri schools in this study's sample, the faculty perception of having the necessary skills to meet the needs of all learners had an effect on student achievement in communication arts, but not in mathematics. However, the faculty perception of their ability to positively impact student performance showed no statistically significant relationship with student achievement in communication arts or in mathematics.

Additional analysis was also completed to determine the relationship and effect size between the mean response to each of the individual collective expectations questions from the Sense of Efficacy and Expectations Scale of the Advance Questionnaire and student achievement in communication arts and mathematics. In the high-poverty elementary Missouri schools in the study, the following faculty perceptions had a statistically significant relationship with student achievement in communication arts: effective supports were implemented for failing students, students were held accountable for quality work, all school staff held high expectations for student learning, and avenues were in place for recognizing and rewarding the accomplishments of all students. In the high-poverty elementary Missouri schools in the study, the following faculty perceptions had a statistically significant relationship with student achievement in mathematics: an emphasis was placed on student effort, students were held accountable for quality work, and all school staff held high expectations for student learning.

Findings Related to the Literature

In this section, connections are made between the results of this study and those found in previous studies reported in the review of literature in chapter two. The first

area for examination in this study was the relationship between collective efficacy and student achievement in communication arts and mathematics. The result of data analysis showed no statistically significant relationships between levels of collective efficacy and student achievement in communication arts and mathematics in high-poverty Missouri elementary schools, except for a positive relationship found between the staff perception of their skills to meet the needs of all learners in their classrooms and student achievement in communication arts. Even though not statistically significant, analysis of the effect sizes associated with the correlations between collective efficacy and student achievement in communication arts and mathematics showed an increase in the percentage of students scoring Proficient and Advanced on MAP testing. The lack of statistically significant results is in contrast to findings presented in the review of literature. In 2004, Tschannen-Moran and Barr found that when an elementary faculty believes it has the capability to impact student achievement, then the faculty, in fact, does impact student achievement (Tschannen-Moran & Barr, 2004). Additionally, Ross & Gray (2006) found that schools with high collective efficacy ratings have higher student achievement than schools with low collective efficacy ratings. A possible explanation for the discrepancy between the current study's findings and those of Ross & Gray (2006) is that this study focused explicitly on high-poverty schools, which was not the case in the Ross & Gray study. Also, different methodology was used in the Ross & Gray study in which characteristics of high-performing schools were examined rather than a comparison between variables such as was completed in this study. In 2001, Goddard concluded that the positive relationship between collective efficacy and student achievement could be documented both in reading and in mathematics. In contrast, the

current study found no statistically significant relationships between collective efficacy and the percentage of students scoring Proficient and Advanced on the mathematics MAP test. Also, in contrast to the findings in the current study, the presence of high levels of collective efficacy was reported in several studies examining the characteristics of high-poverty, high-performing schools. In one such study, “The Secrets of ‘Can-Do’ Schools” in Louisiana, it was found that the most important common characteristic among successful high-poverty schools was the strong sense of collective efficacy among the instructional staff (Richardson, 2003). A potential reason for the difference between the results for the current study and Richardson’s study findings is in the methodology used. Richardson used a filter to examine only high-performing schools after the fact, while the current study looked at all high-poverty schools regardless of the level of student achievement and quantitatively compared collective efficacy, collective expectations, and achievement.

The researcher determined four potential causes for the overall differences in the findings of this study compared to the studies examined in the literature. First, the methodology and measurement used in the current study differs from those used in other studies. This study was a correlational study between numerical variables, while an example study of the studies presented in the review of literature used a filter to look only at high-performing schools and to then examine their characteristics (Richardson, 2003). Another potential cause for the difference in the findings of this study is the population used in each study. While this study focused on high-poverty elementary schools, example studies of those presented in the review of literature examined all elementary schools (Ross & Gray), or only high-performing elementary schools (Richardson, 2003).

A third potential cause for the difference in the findings of this study compared to other studies presented is the manner in which collective efficacy was measured. In this study, the Advance Questionnaire measured the competence efficacy of staff through the perceptions of the ability to meet the needs of all learners and to impact student achievement. Other studies presented may have measured task efficacy by looking at the staff perception of barriers present in instruction. Finally, a fourth potential cause for the discrepancy between the findings of this study and other studies may be related to the rigor of the state assessments. Although federal law demands testing in communication arts and mathematics, the responsibility of developing the tests is left to the states. In a 2012 comparison of state tests conducted by *Time* magazine, the Missouri Assessment Program (MAP) was determined to be more rigorous than the tests conducted in all of the states included in other studies in the review of literature, for example, the Louisiana test. The rigor of the state tests was measured by comparing the percentage of fourth grade students performing at or above proficiency on state assessments with that of NAEP (National Assessment of Educational Progress), a national assessment given to students in fourth grade. A comparison of the Missouri and Louisiana scores is presented as an example. In Missouri, the percentage of fourth grade students scoring at or above proficiency on the MAP test was only two percent higher than on the NAEP test. In contrast, the percentage of Louisiana students scoring at or above proficiency on state communication arts assessments was 44 percent higher than on the NAEP test, indicating that the Louisiana state assessment may be less rigorous than Missouri's assessment. In mathematics, the percentage of Missouri students scoring at or above proficiency on the MAP test was 10 percent lower than on the NAEP test. In contrast, the percentage of

Louisiana students scoring at or above proficiency on state mathematics assessments was 35 percent higher than on the NAEP test, indicating that the Louisiana state assessment may be less rigorous than Missouri's assessment. Similar collective efficacy ratings in Missouri and Louisiana might indicate differing relationships with student achievement due to the discrepancy between the rigor of the state assessments. This example demonstrates the researcher's possible conclusion that the discrepancy between this study and other studies conducted could be attributed to the differing rigor of state assessments used in the studies. A comparison of the rigor of communication arts and mathematics state assessments of the states included in the examined studies is presented in Table 16.

Table 16

Percentage of Fourth Grade Students Scoring With Proficiency on State Tests and NAEP

State	Communication Arts			Mathematics		
	NAEP	State	Difference	NAEP	State	Difference
California	21	47	-26	22	37	-15
Illinois	29	63	-34	29	54	-25
Kentucky	31	68	-37	23	36	-13
Louisiana	20	64	-44	16	51	-35
Maryland	32	82	-50	30	52	-22
Minnesota	38	81	-43	43	76	-33
Missouri	33	35	-2	26	16	+10
Rhode Island	30	60	-30	24	39	-15
Texas	29	79	-50	31	61	-30

Note: Adapted from *How Do Children in Your State Test?* From

www.time.com/time/interactive/0,31813,1625123,00.html

The second area of examination in this study was the relationship between faculty collective expectations for student learning and the resulting student achievement in communication arts and mathematics. The result of data analysis indicated a statistically significant positive relationship between high faculty expectations for student learning and actual achievement levels in both communication arts and mathematics. Additional analysis of the effect sizes of the correlations between faculty expectations for student learning and student achievement in communication arts and mathematics showed an increase in the percentage of students scoring Proficient and Advanced on the MAP tests. The findings of this study are in accordance with other studies presented in the review of

literature in chapter two. According to Lee (2003), many of the nation's successful high-poverty schools are characterized by a culture of high expectations and Liu, et al, (2009) found high faculty expectations for student learning impact student academic success. As early as 1948, Merton described high expectations to be similar to a self-fulfilling prophecy, in which persons will become what it is that they believe themselves to be (Merton, 1948). Collective faculty expectations of success and outcomes of achievement have a cyclical influence on each other. Collective faculty expectation levels for student learning lead to their actual achievement level, and then this achievement level defines further expectations for the students (Liu, et al., 2009).

Ronald Edmonds is credited with the beginning of the effective schools movement in 1978. Edmonds stated that one of the five characteristics that are consistently evident among effective schools is the existence of high expectations for student achievement (Thomas & Bainbridge, 2001). The findings of the current study support Edmonds's research by concluding that the presence of high expectations had a positive impact upon student achievement. Extending the effective schools research specifically to high-poverty schools, Hoy, et al. (2006) stated that the existence of high expectations has been found to be exceptionally critical for students in high-poverty school environments. Since this study centered on high-poverty elementary schools, the findings of this study draw a parallel with those of Hoy, Tarter, and Woolfolk Hoy (2006).

The presence of high expectations for student achievement was supported in other studies documenting characteristics of high-performing, high-poverty schools. The authors of the Louisiana School Effectiveness Study concluded that successful schools

implemented high expectations by building mastery experiences for students without watering down the curriculum demands (Teddlie & Stringfield, 1993). The authors of another study, in Kentucky, “Inside the Black Box of High-Performing, High-Poverty Schools,” (Kannapel & Clements, 2005) found that the presence of high expectations for students has a positive impact on student achievement levels. In 2009, Jensen stated that a common characteristic of all high-poverty, high-performing schools is the presence of a no-excuses, high-expectations mind-set that is embraced and enforced by all faculty for all students. The results of this study reinforce the research of Teddlie & Stringfield (1993), Kannapel & Clements (2005), and Jensen (2009) by indicating a positive relationship between high expectations and student achievement. Additional data analysis indicating a positive relationship between the faculty behavior of all staff holding high expectations for student learning and the resulting student achievement in communication arts and mathematics also reinforces Jensen’s research.

Conclusions

This final section of chapter five gives closure to the study. In this section, the researcher presents implications for action based on the major findings of the study. Suggestions are given for future research to extend the study, and concluding remarks are made.

Implications for Action.

High-poverty elementary schools in Missouri face consequences for not meeting AYP requirements set forth by NCLB. These consequences result in the partial loss of Title I funding, making it imperative that these elementary schools determine ways to positively impact student achievement despite decreasing amounts of available funding.

School administrators can use the results of this study to inform professional development practices with their faculties.

One implication for action for school administrators in high-poverty elementary schools is to analyze faculty collective efficacy in terms of task and competence. Analyzing the levels of task and competence for faculty members provides administrators with a course of action for changing the faculty's collective efficacy. Chapter two presents the research foundation that collective efficacy can be measured in terms of task and competence. "Task" refers to the external factors required of a teacher as he or she engages in teaching, such as available resources and barriers to instruction. "Competence" refers to internal factors required of a teacher as he or she engages in teaching, such as teaching skills, training, expertise, and efficacy beliefs (McCoach & Colbert, 2010). Individual teachers may measure high on task but low on competence, high on competence but low on task, high on both areas, or low on both areas. Identifying the task and competence factors of collective efficacy can inform a school administrator about professional development needs for the faculty. For example, teachers that score low in the area of task perceive many external barriers to their teaching. Identifying the perceived barriers for instruction may help build the efficacy of these teachers, and, in turn, contribute to the collective efficacy of the staff (McCoach & Colbert, 2010). Teachers who score low in the area of competence lack the effective training to deliver quality instruction. Identifying the needed areas for training and addressing those areas through professional development allows administrators a course of action for professional development that will positively impact instructional practices (McCoach & Colbert, 2010). Additionally, teachers identified as high in both task and

competence can serve as mentors to teachers who are struggling to meet the needs of their students.

A second implication for action for school administrators in high-poverty elementary schools is to lead their elementary faculty through a process for increasing academic expectations. The established presence of a relationship between high faculty collective expectations for students and the resulting student achievement in communication arts and mathematics provides reason for school administrators to engage their faculties in methods for increasing expectations for student learning. Marzano defined a four-step process that can be of use to school administrators for raising academic expectations for all students (Marzano, 2010). The first of the four steps is to guide teachers through the process of identifying the specific students for whom the teachers have low expectations for academic success. Marzano stated that this step must occur early in the school year, as once expectations are set for students, those expectations are difficult to change. The second step in Marzano's process is to identify the similarities among the students for whom the teacher holds low expectations. Although difficult to do, it is necessary for a teacher to identify the natural biases and predispositions held for students in the classroom (e.g., students that receive special education support or are second language learners). The third step is, through careful reflection of teaching practices, to honestly identify the differential treatment that is given to the students in the low expectation group. The fourth and final step in the process is to make specific plans to treat the students in the low expectations group in the same manner as all other students in the classroom (Marzano, 2010). This four-step process, which has been shown to positively impact student achievement, is critical to changing

the atmosphere of expectations in classroom environments. School administrators may use professional development time built into the school calendar to lead their faculties through this four-step process.

Analyzing a faculty's collective efficacy and a faculty's collective expectations for student learning provides school administrators in high-poverty elementary schools with a course of action for improving student achievement in communication arts and mathematics. Through examining individual teachers for their levels of task and competence efficacy in teaching, school administrators can prescribe professional development that meets the needs of individual staff members. This differential professional development can impact the levels of collective efficacy for the elementary faculty. Although the majority of relationships between collective efficacy and student achievement were not found at a statistically significant level in this particular study, the body of research available that supports collective efficacy as a change medium provides reason for a school administrator to examine its presence among faculty. Through careful and honest scrutiny of practice with students, a school administrator can lead faculty through a change process to increase levels of expectations for student achievement. The positive relationship between high levels of faculty collective expectations for student learning and the resulting achievement in communication arts and mathematics has been documented in this and other studies. The positive relationship between high levels of faculty collective expectations for student learning and the resulting student achievement gives reason for school administrators to carefully consider their own faculty's levels of collective expectations for student learning.

Recommendations for Future Research.

The researcher examined the relationship between collective efficacy and student achievement in communication arts and mathematics. Additionally, the relationship was examined between faculty collective expectations for student learning and the resulting student achievement in communication arts and mathematics.

Recommendations for future research to improve and extend this research include the following:

1. A researcher could conduct a case study of a high-poverty Missouri elementary school in which high collective expectations for student learning are present and the resulting impact on student achievement in communication arts and mathematics. In the case study, a researcher could examine the school culture and determine behaviors of the faculty and students that result in high levels of collective expectations for student learning.
2. A researcher might conduct a comparative study between high-poverty and low-poverty Missouri elementary schools with high levels of collective efficacy in order to determine the differences in impact upon student achievement in students of varying socioeconomic status.
3. A researcher could analyze individual teachers for levels of task efficacy and competence efficacy. The task efficacy and competence efficacy levels of individual teachers could be compared to the collective efficacy of the faculty as a whole.
4. A researcher should use the Teacher Sense of Efficacy Scale developed by Megan Tschannen-Moran and Anita Woolfolk Hoy to examine the relationship between

individual teacher efficacy and student achievement. Individual teacher efficacy offers insight into the impact of individual teachers upon student achievement, rather than the average of all teacher efficacy scores included in a collective efficacy score.

5. A researcher might expand the study to include all elementary schools in Missouri rather than focusing specifically on high-poverty schools.
6. From the Advance Questionnaire, a researcher could examine the relationship between the student responses on the Sense of Efficacy and Expectations Scale and student achievement.
7. While this study focused on high-poverty elementary schools regardless of academic performance, a researcher might expand the study by including only high-performing schools or low-performing schools.

Concluding Remarks.

This study examined the relationship between a faculty's collective efficacy and student achievement in communication arts and mathematics. Additionally, the relationship was examined between collective faculty expectations for student learning and the resulting student achievement in communication arts and mathematics. The schools included in this study were Missouri elementary schools that participated in the Missouri School Improvement Program Advance Questionnaire in the academic years of 2009-10 and 2010-11 and that also had a free and reduced lunch rate of more than 70 percent. The results of data analysis indicated mixed results of relationships between collective efficacy and student achievement in communication arts or in mathematics. A positive relationship was found between high levels of collective faculty expectations for

student achievement in both communication arts and mathematics. School administrators can use the results of this study to plan appropriate professional development for their own school faculties. Increasing a faculty's collective expectations for student learning can positively impact student achievement in high-poverty elementary schools in Missouri. School administrators in high-poverty elementary schools can increase student achievement in communication arts and mathematics by focusing professional development efforts on practices that increase collective expectations for student learning.

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Appendices

**Appendix A: Sense of Efficacy and Expectations Scale of the Faculty Advance
Questionnaire**

MSIP AQ Report for BUNKER R-III district, 02/24/2010

6.5 The efficacy and expectations scale from the faculty Advance Questionnaire identifies the degree to which teachers believe that they are capable of impacting student achievement. The Faculty scale for Efficacy & Expectations consists of seven questions. The original questions and a summary of district responses follow:

Faculty	percentile	mean	std_dev	n
There are avenues for recognizing and rewarding the accomplishments of all students.	32	4.19	0.69	32
There are effective supports in place to assist students who are in jeopardy of academic failure.	69	4.34	0.60	32
I emphasize the importance of effort with students.	32	4.69	0.47	32
I have the skills necessary to meet the needs of all learners in my classroom.	29	4.19	0.70	31
All staff in our school hold high expectations for student learning.	73	4.35	0.75	31
I believe that I can positively impact student performance.	12	4.50	0.57	32
Students are held accountable for doing quality work.	72	4.22	0.71	32

A summary of results for the district and its buildings regarding the Faculty Efficacy & Expectations scale:

district	school	school_name	source	percentile	mean	std_dev	n
BUNKER R-III		DISTRICT	fac	61	4.36	0.43	32
BUNKER R-III	1050	BUNKER HIGH	fac	57	4.26	0.47	17
BUNKER R-III	4020	BUNKER ELEM.	fac	61	4.45	0.36	14
BUNKER R-III	1000	CENTRAL OFFICE	fac	.	.	.	1

No observations were generated from the results on the preceding table because the district and its schools had values that were in the middle of the state distribution for this scale.

Appendix B: 2009-10 Elementary Schools Included in the Sample

Elementary Schools Included in the Study from the 2009-10 Academic Year

School Name	School District	Percentage of Free and Reduced Lunch
Iveland Elementary	Ritenour	74.6
Kratz Elementary	Ritenour	88.5
Marion Elementary	Ritenour	78.4
Marvin Elementary	Ritenour	81.1
Wyland Elementary	Ritenour	74.0
Naylor Elementary	Naylor R-II	74.3
Richwoods Elementary	Richwoods R-VII	77.1
Verona Elementary	Verona R-VII	81.9
Bunker Elementary	Bunker R-III	72.4
Columbian Elementary	Carthage R-IX	81.3
Fairview Elementary	Carthage R-IX	79.4
Clearwater Elementary	Clearwater R-I	71.3
Clearwater Middle	Clearwater R-I	71.3
Blue Ridge Elementary	Columbia 93	71.8
Eugene Field Elementary	Columbia 93	89.0
Thomas Benton Elem.	Columbia 93	90.8
West Blvd. Elementary	Columbia 93	81.6

Couch Elementary	Couch R-I	74.3
Craig Elementary	Craig R-III	76.5
Doniphan Elementary	Doniphan R-I	76.6
Glasgow Elementary	Glasgow	73.8
Hartville Elementary	Hartville R-II	73.6
Hollister Elementary	Hollister R-V	71.9
Hollister Middle	Hollister R-V	74.7
Callaway Hills Elementary	Jefferson City	70.3
East Elementary	Jefferson City	81.1
South Elementary	Jefferson City	73.6
Kingston Elementary	Kingston K-14	72.7
Lockwood Elementary	Lockwood R-I	73.1
Manes Elementary	Manes R-V	80.3
Noel Elementary	McDonald County R-I	84.6
Rocky Comfort Elem.	McDonald County R-I	77.6
Southwest City Elementary	McDonald County R-I	77.5
White Rock Elementary	McDonald County R-I	71.9
Milan Elementary	Milan C-2	73.8
Benton Elementary	Neosho R-V	73.4

Central Elementary	Neosho R-V	75.4
Goodman Elementary	Neosho R-V	78.4
North Daviess Elementary	North Daviess R-III	78.7
Norwood Elementary	Norwood R-I	71.6
Heber Hunt Elementary	Sedalia 200	78.3
Horace Mann Elementary	Sedalia 200	73.7
Washington Elementary	Sedalia 200	91.7
South Iron Elementary	South Iron County R-I	79.2
Westview Elementary	Westview C-6	75.9

Appendix C: 2010-11 Elementary Schools Included in the Sample

Elementary Schools Included in the Study from the 2010-11 Academic Year

School Name	School District	Percentage of Free and Reduced Lunch
Calhoun Elementary	Calhoun R-VIII	77.6
Warren E. Hearnese	Charleston R-I	87.3
Charleston	Charleston R-I	80.1
Williamsville Elementary	Greenville R-II	83.3
Arrowpoint Elementary	Hazelwood	76.7
Grannemann Elementary	Hazelwood	85.8
Jury Elementary	Hazelwood	70.5
Keeven Elementary	Hazelwood	78.2
Larimore Elementary	Hazelwood	83.9
Townsend Elementary	Hazelwood	72.7
Twillman Elementary	Hazelwood	90.2
Ross Elementary	North Pemiscot County R-I	83.7
Kosh Konong Elementary	Oregon-Howell R-III	83.3
Sheldon Elementary	Sheldon R-VIII	73.2
Ava Elementary	Ava R-I	76.8
Ava Middle School	Ava R-I	70.8
Bosworth Elementary	Bosworth R-V	73.5

Bronaugh Elementary	Bronaugh R-VII	73.9
Blanchard Elementary	Cape Girardeau 63	81.1
Franklin Elementary	Cape Girardeau 63	86.7
Jefferson Elementary	Cape Girardeau 63	90.9
Central Middle	Cape Girardeau 63	70.7
Boone Elementary	Center 58	71.4
Center Elementary	Center 58	94.4
Indian Creek Elementary	Center 58	81.7
Bunceton Elementary	Cooper County R-IV	70.8
East Carter County R-II	East Carter County R-II	74.9
Triway Elementary	East Newton County R-VI	70.6
Greenfield Elementary	Greenfield R-IV	73.1
Lutie Elementary	Lutie R-VI	86.5
Central Elementary	Miller R-II	71.7
Eugene Field Elementary	Poplar Bluff R-I	87.7
Lake Road Elementary	Poplar Bluff R-I	86.7
SW Livingston County R-I	SW Livingston County R-I	70.3
Bingham Elementary	Springfield R-XII	77.6
Bissett Elementary	Springfield R-XII	83.8

Bowerman Elementary	Springfield R-XII	88.9
Boyd Elementary	Springfield R-XII	77.3
Campbell Elementary	Springfield R-XII	94.2
Fremont Elementary	Springfield R-XII	76.3
Holland Elementary	Springfield R-XII	71.7
McGregor Elementary	Springfield R-XII	90.4
Portland Elementary	Springfield R-XII	80.0
Robberson Elementary	Springfield R-XII	94.4
Watkins Elementary	Springfield R-XII	80.5
Weaver Elementary	Springfield R-XII	90.2
Weller Elementary	Springfield R-XII	88.5
Westport Elementary	Springfield R-XII	86.9
Williams Elementary	Springfield R-XII	91.3
York Elementary	Springfield R-XII	90.7
Edison Elementary	St. Joseph	88.0
Hall Elementary	St. Joseph	80.6
Hosea Elementary	St. Joseph	81.1
Humboldt Elementary	St. Joseph	92.6
Lake Contrary Elementary	St. Joseph	85.0

Lindbergh Elementary	St. Joseph	79.4
Mark Twain Elementary	St. Joseph	75.5
Noyes Elementary	St. Joseph	85.4
Success Elementary	Success R- VI	73.2

Appendix D: Faculty Version of the Missouri School Improvement Program
Advance Questionnaire

Advance Questionnaire

Certificated Faculty Questionnaire

1. Record the type of assignment which best reflects your primary assignment (you may choose more than one).

- School Guidance Counselor Classroom Teacher
 Library Media Specialist Administrator
 Special Education Teacher Other

Indicate how much you agree or disagree with each statement by clicking one of the circles. If you have no experience on which to base a response or the item is not applicable to you, leave it blank.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
2. My school collaborates with community agencies to meet the needs of students.	<input type="radio"/>				
3. There are effective supports in place to assist students who are in jeopardy of academic failure.	<input type="radio"/>				
4. I emphasize the importance of effort with students.	<input type="radio"/>				
5. In our school, there is adequate support for classroom teachers to address special education students' IEP goals.	<input type="radio"/>				
6. There is adequate collaboration between special education staff and classroom teachers in our school.	<input type="radio"/>				
7. There is adequate professional development for teachers working with special education students in our school.	<input type="radio"/>				
8. Instructional time available to teachers is protected from all types of interruptions.	<input type="radio"/>				
9. Our principal uses classroom management as part of our evaluation.	<input type="radio"/>				
10. Clear rules that promote good behavior are enforced in our school.	<input type="radio"/>				

Indicate how much you agree or disagree with each statement by clicking one of the circles. If you have no experience on which to base a response or the item is not applicable to you, leave it blank.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11. Clear rules regarding behavior have been established in my classroom.	<input type="radio"/>				
12. Educators in our school use effective practices to promote positive behavior.	<input type="radio"/>				

- 13. Teachers in our school use effective practices to keep all students actively engaged in learning.
- 14. Educators in our school respond to inappropriate behaviors quickly and effectively.
- 15. Norms for conduct that foster collegiality and professionalism among professional staff and administrators are clear and routinely followed.
- 16. Teachers in my school are routinely involved in formulating schoolwide decisions and policies.
- 17. Teachers are routinely engaged in collaborative problem solving around instructional issues.
- 18. Effective vehicles are in place for parents and community to communicate with the school.
- 19. In our school we communicate effectively to parents and the community.
- 20. Parents are encouraged to discuss their child's educational needs with the school.

Indicate how much you agree or disagree with each statement by clicking one of the circles. If you have no experience on which to base a response or the item is not applicable to you, leave it blank.

Strongly Disagree **Disagree** **Neutral** **Agree** **Strongly Agree**

- 21. I routinely analyze disaggregated student data and use it to plan my instruction.
- 22. An assessment system is used that provides timely feedback on specific knowledge and skills for individual students.
- 23. My school administers assessments throughout the school year that are used to guide instruction.
- 24. My school uses assessment data to evaluate and align the curriculum.
- 25. Emphasis is placed on valuing and respecting differences among students and their families in our school.
- 26. Student opinions are valued by teachers and administrators.
- 27. Faculty and staff solicit input from diverse student groups regarding the improvement of our school.
- 28. I feel comfortable having discussions regarding racial / ethnic issues with my colleagues.
- 29. Individual student differences are appreciated at our school.
- 30. Students are provided with opportunities to construct and work on long-term projects of their own design.

Indicate how much you agree or disagree with each statement by clicking one of the circles. If you have no experience on which to base a response or the item is not applicable to you, leave it blank.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
31. In our school teachers are encouraged to be instructional leaders.	<input type="radio"/>				
32. My school's principal fosters shared beliefs and a sense of community and cooperation.	<input type="radio"/>				
33. My school's principal monitors the effectiveness of school practices and their impact on student learning.	<input type="radio"/>				
34. Our principal identifies issues in the school that could potentially become problems.	<input type="radio"/>				
35. My school's principal systematically engages faculty and staff in discussions about current research on teaching and learning.	<input type="radio"/>				
36. Our school teaches and reinforces student self-discipline and responsibility.	<input type="radio"/>				
37. Students who are prone to violence are systematically identified.	<input type="radio"/>				
38. Our school promotes an environment of mutual respect among students.	<input type="radio"/>				
39. The content considered essential for all students to learn versus that considered supplemental has been identified and communicated to teachers.	<input type="radio"/>				
40. My school systematically ensures that teachers address essential content.	<input type="radio"/>				
Indicate how much you agree or disagree with each statement by clicking one of the circles. If you have no experience on which to base a response or the item is not applicable to you, leave it blank.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
41. The amount of essential content that has been identified can be addressed in the instructional time available to teachers.	<input type="radio"/>				
42. The essential content is organized and sequenced in a way that students have ample opportunity to learn it.	<input type="radio"/>				
43. Our principal promotes innovation.	<input type="radio"/>				
44. I have the skills necessary to meet the needs of all learners in my classroom.	<input type="radio"/>				
45. I believe that I can positively impact student performance.	<input type="radio"/>				
46. I have received violence prevention training.	<input type="radio"/>				
47. Our professional development improves student achievement.	<input type="radio"/>				

- | | | | | | |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 48. I have received adequate training in using computers and other technology to support my work with students. | <input type="radio"/> |
| 49. The professional development activities I attend are related to my district's Comprehensive School Improvement Plan. | <input type="radio"/> |
| 50. I have received professional development on differentiating instruction for learners. | <input type="radio"/> |

Indicate how much you agree or disagree with each statement by clicking one of the circles. If you have no experience on which to base a response or the item is not applicable to you, leave it blank.

- | | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Neutral</i> | <i>Agree</i> | <i>Strongly Agree</i> |
|--|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 51. My school adequately prepares all students for post-secondary education, and/or successful entry into the workforce. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 52. Students are held accountable for doing quality work. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 53. The mission of this school is clearly defined. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 54. All staff in our school hold high expectations for student learning. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 55. There are open channels of communication among students, staff and administrators. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 56. There are avenues for recognizing and rewarding the accomplishments of all students. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 57. There are sufficient library media materials to support my program. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 58. Career-Technical education is an essential part of the district's program of studies. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 59. I feel safe at this school. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 60. The library media center materials are current and in good condition. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Indicate how much you agree or disagree with each statement by clicking one of the circles. If you have no experience on which to base a response or the item is not applicable to you, leave it blank.

- | | <i>Strongly Disagree</i> | <i>Disagree</i> | <i>Neutral</i> | <i>Agree</i> | <i>Strongly Agree</i> |
|--|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 61. In our community, people tend to trust each other. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 62. My professional development has improved the way I teach. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 63. My school provides suggestions to parents on ways to assist at home with their child's learning. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 64. My school views parents as partners in the educational process. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

- 65. My school has created specific strategies to better involve parents in the education of their child.
- 66. The board has high expectations for student achievement.
- 67. Students are treated fairly in this school.
- 68. The community is proud of this school.
- 69. This school makes students feel they belong.
- 70. If students in this school have a problem, teachers will listen and help.

Indicate how much you agree or disagree with each statement by clicking one of the circles. If you have no experience on which to base a response or the item is not applicable to you, leave it blank.

- | | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 71. I usually look forward to each working day as a teacher. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 72. Discipline is handled fairly in this school. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 73. Collaboration with classroom teachers to integrate library and media resources and skills into classroom instruction is adequate. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 74. The librarian/media specialist requests my input into the selection of resources. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 75. There is adequate instruction in the use of library and media resources for classes and individual students. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 76. There is systematic collaboration across subject areas in our building. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 77. Individual counseling services are available to students. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 78. The board establishes policies and permits administrators to implement these policies on a day to day basis. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 79. The community provides enough money to adequately provide quality educational programs to children. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 80. Overall, my school building is in good condition. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 81. If I had a chance to choose all over again, I would still choose teaching as a career. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 82. There is systematic collaboration between the academic and career education programs in our district. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 83. How much homework time do you assign your students each day: | | | | | |

**Appendix E: Sample Frequency Distribution Report for the Faculty Version of the
Missouri School Improvement Program Advance Questionnaire**

**Cycle 4 Advance Questionnaire - Certificated Faculty
Frequency Distribution Report
BUNKER ELEM., BUNKER R-III School District**

2

Question	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Number Missing
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	
2 - My school collaborates with community agencies to meet the needs of students	4	28.6	7	50.0	3	21.4	0	0.0	0	0.0	0
3 - There are effective supports in place to assist students who are in jeopardy of academic failure	6	42.9	6	42.9	2	14.3	0	0.0	0	0.0	0
4 - I emphasize the importance of effort with students	11	78.6	3	21.4	0	0.0	0	0.0	0	0.0	0
5 - In our school, there is adequate support for classroom teachers to address special education students' IEP goals	3	21.4	5	35.7	5	35.7	1	7.1	0	0.0	0
6 - There is adequate collaboration between special education staff and classroom teachers in our school	3	21.4	6	42.9	4	28.6	1	7.1	0	0.0	0
7 - There is adequate professional development for teachers working with special education students in our school	0	0.0	4	28.6	5	35.7	3	21.4	2	14.3	0
8 - My school's administration protects instructional time available to teachers from interruptions.	5	35.7	6	42.9	2	14.3	1	7.1	0	0.0	0
9 - Our principal uses classroom management as part of our evaluation	7	53.8	4	30.8	2	15.4	0	0.0	0	0.0	1
10 - Clear rules that promote good behavior are enforced in our school	7	50.0	6	42.9	1	7.1	0	0.0	0	0.0	0
11 - Clear rules regarding behavior have been established in my classroom	10	76.9	2	15.4	1	7.7	0	0.0	0	0.0	1
12 - Educators in our school use effective practices to promote positive behavior	6	42.9	8	57.1	0	0.0	0	0.0	0	0.0	0
13 - Teachers in our school use effective practices to keep all students actively engaged in learning	7	50.0	6	42.9	1	7.1	0	0.0	0	0.0	0
14 - Educators in our school respond to inappropriate behaviors quickly and effectively	8	57.1	6	42.9	0	0.0	0	0.0	0	0.0	0
15 - Norms for conduct that foster collegiality and professionalism among professional staff and administrators are clear and routinely followed	4	28.6	8	57.1	1	7.1	1	7.1	0	0.0	0
16 - Teachers in my school are routinely involved in formulating schoolwide decisions and policies	2	15.4	6	46.2	3	23.1	2	15.4	0	0.0	1
17 - Teachers are routinely engaged in collaborative problem solving around instructional issues	4	30.8	8	61.5	1	7.7	0	0.0	0	0.0	1
18 - Effective vehicles are in place for parents and community to communicate with the school	4	28.6	8	57.1	2	14.3	0	0.0	0	0.0	0
19 - In our school we communicate effectively to parents and the community	6	42.9	8	57.1	0	0.0	0	0.0	0	0.0	0
20 - Parents are encouraged to discuss their child's educational needs with the school	8	57.1	6	42.9	0	0.0	0	0.0	0	0.0	0
21 - I routinely analyze disaggregated student data and use it to plan my instruction	4	36.4	6	54.5	1	9.1	0	0.0	0	0.0	3

**Data Collected in Fall, 2009
Tables Generated January 28, 2010**

**Cycle 4 Advance Questionnaire - Certificated Faculty
Frequency Distribution Report
BUNKER ELEM., BUNKER R-III School District**

3

Question	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Number Missing
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	
22 - An assessment system is used that provides timely feedback on specific knowledge and skills for individual students	2	15.4	11	84.6	0	0.0	0	0.0	0	0.0	1
23 - My school administers assessments throughout the school year that are used to guide instruction	3	21.4	9	64.3	0	0.0	2	14.3	0	0.0	0
24 - My school uses assessment data to evaluate and align the curriculum	6	42.9	5	35.7	3	21.4	0	0.0	0	0.0	0
25 - Emphasis is placed on valuing and respecting differences among students and their families in our school	5	35.7	7	50.0	2	14.3	0	0.0	0	0.0	0
26 - Student opinions are valued by teachers and administrators	4	28.6	8	57.1	2	14.3	0	0.0	0	0.0	0
27 - Faculty and staff solicit input from diverse student groups regarding the improvement of our school	2	15.4	3	23.1	6	46.2	1	7.7	1	7.7	1
28 - I feel comfortable having discussions regarding racial / ethnic issues with my colleagues	4	28.6	7	50.0	2	14.3	0	0.0	1	7.1	0
29 - Individual student differences are appreciated at our school	4	28.6	7	50.0	2	14.3	1	7.1	0	0.0	0
30 - Students are provided with opportunities to construct and work on long-term projects of their own design	2	15.4	6	46.2	3	23.1	2	15.4	0	0.0	1
31 - In our school teachers are encouraged to be instructional leaders	7	50.0	7	50.0	0	0.0	0	0.0	0	0.0	0
32 - My school's principal fosters shared beliefs and a sense of community and cooperation	6	42.9	5	35.7	2	14.3	1	7.1	0	0.0	0
33 - My school's principal monitors the effectiveness of school practices and their impact on student learning	3	21.4	10	71.4	1	7.1	0	0.0	0	0.0	0
34 - Our principal identifies issues in the school that could potentially become problems	2	14.3	9	64.3	3	21.4	0	0.0	0	0.0	0
35 - My school's principal systematically engages faculty and staff in discussions about current research on teaching and learning	3	21.4	7	50.0	3	21.4	0	0.0	1	7.1	0
36 - Our school teaches and reinforces student self-discipline and responsibility	5	35.7	9	64.3	0	0.0	0	0.0	0	0.0	0
37 - Students who are prone to violence are systematically identified	3	23.1	4	30.8	6	46.2	0	0.0	0	0.0	1
38 - Our school promotes an environment of mutual respect among students	2	14.3	9	64.3	3	21.4	0	0.0	0	0.0	0
39 - The content considered essential for all students to learn versus that considered supplemental has been identified and communicated to teachers	4	28.6	9	64.3	1	7.1	0	0.0	0	0.0	0
40 - My school systematically ensures that teachers address essential content	6	42.9	8	57.1	0	0.0	0	0.0	0	0.0	0

*Data Collected in Fall, 2009
Tables Generated January 28, 2010*

*Cycle 4 Advance Questionnaire - Certificated Faculty
Frequency Distribution Report
BUNKER ELEM., BUNKER R-III School District*

4

Question	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Number Missing
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	
41 - The amount of essential content that has been identified can be addressed in the instructional time available to teachers	0	0.0	10	76.9	2	15.4	1	7.7	0	0.0	1
42 - The essential content is organized and sequenced in a way that students have ample opportunity to learn it	1	7.7	11	84.6	1	7.7	0	0.0	0	0.0	1
43 - Our principal promotes innovation	4	28.6	8	57.1	2	14.3	0	0.0	0	0.0	0
44 - I have the skills necessary to meet the needs of all learners in my classroom	5	38.5	7	53.8	1	7.7	0	0.0	0	0.0	1
45 - I believe that I can positively impact student performance	7	50.0	6	42.9	1	7.1	0	0.0	0	0.0	0
46 - I have received violence prevention training	3	21.4	5	35.7	3	21.4	2	14.3	1	7.1	0
47 - Our professional development improves student achievement	1	7.7	7	53.8	4	30.8	1	7.7	0	0.0	1
48 - I have received adequate training in using computers and other technology to support my work with students	4	28.6	6	42.9	3	21.4	1	7.1	0	0.0	0
49 - The professional development activities I attend are related to my district's Comprehensive School Improvement Plan	4	28.6	10	71.4	0	0.0	0	0.0	0	0.0	0
50 - I have received professional development on differentiating instruction for learners	7	50.0	7	50.0	0	0.0	0	0.0	0	0.0	0
51 - My school adequately prepares all students for post-secondary education, and/or successful entry into the workforce	2	15.4	9	69.2	2	15.4	0	0.0	0	0.0	1
52 - Students are held accountable for doing quality work	5	35.7	9	64.3	0	0.0	0	0.0	0	0.0	0
53 - The mission of this school is clearly defined	7	50.0	6	42.9	1	7.1	0	0.0	0	0.0	0
54 - All staff in our school hold high expectations for student learning	8	57.1	6	42.9	0	0.0	0	0.0	0	0.0	0
55 - There are open channels of communication among students, staff and administrators	3	21.4	5	35.7	3	21.4	2	14.3	1	7.1	0
56 - There are avenues for recognizing and rewarding the accomplishments of all students	5	35.7	9	64.3	0	0.0	0	0.0	0	0.0	0
57 - There are sufficient library media materials to support my program	3	21.4	9	64.3	1	7.1	0	0.0	1	7.1	0
58 - Career-Technical education is an essential part of the district's program of studies	2	16.7	7	58.3	3	25.0	0	0.0	0	0.0	2
59 - I feel safe at this school	11	78.6	3	21.4	0	0.0	0	0.0	0	0.0	0
60 - The library media center materials are current and in good condition	3	21.4	8	57.1	1	7.1	2	14.3	0	0.0	0
61 - In our community, people tend to trust each other	6	42.9	6	42.9	1	7.1	0	0.0	1	7.1	0
62 - My professional development has improved the way I teach	6	42.9	6	42.9	1	7.1	1	7.1	0	0.0	0

*Data Collected in Fall, 2009
Tables Generated January 28, 2010*

Cycle 4 Advance Questionnaire - Certificated Faculty
Frequency Distribution Report
BUNKER ELEM., BUNKER R-III School District

5

Question	Strongly Agree		Agree		Neutral		Disagree		Strongly Disagree		Number Missing
	N	Pct.	N	Pct.	N	Pct.	N	Pct.	N	Pct.	
63 - My school provides suggestions to parents on ways to assist at home with their child's learning	7	50.0	7	50.0	0	0.0	0	0.0	0	0.0	0
64 - My school views parents as partners in the educational process	7	50.0	7	50.0	0	0.0	0	0.0	0	0.0	0
65 - My school has created specific strategies to better involve parents in the education of their child	4	28.6	9	64.3	1	7.1	0	0.0	0	0.0	0
66 - The board has high expectations for student achievement	5	38.5	6	46.2	2	15.4	0	0.0	0	0.0	1
67 - Students are treated fairly in this school	5	35.7	7	50.0	2	14.3	0	0.0	0	0.0	0
68 - The community is proud of this school	10	71.4	4	28.6	0	0.0	0	0.0	0	0.0	0
69 - This school makes students feel they belong	6	42.9	7	50.0	1	7.1	0	0.0	0	0.0	0
70 - If students in this school have a problem, teachers will listen and help	7	50.0	7	50.0	0	0.0	0	0.0	0	0.0	0
71 - I usually look forward to each working day as a teacher	5	35.7	5	35.7	4	28.6	0	0.0	0	0.0	0
72 - Discipline is handled fairly in this school	2	14.3	8	57.1	3	21.4	1	7.1	0	0.0	0
73 - Collaboration with classroom teachers to integrate library and media resources and skills into classroom instruction is adequate	2	14.3	4	28.6	7	50.0	1	7.1	0	0.0	0
74 - The librarian/media specialist requests my input into the selection of resources	7	50.0	4	28.6	2	14.3	1	7.1	0	0.0	0
75 - There is adequate instruction in the use of library and media resources for classes and individual students	1	7.7	6	46.2	3	23.1	3	23.1	0	0.0	1
76 - There is systematic collaboration across subject areas in our building	4	30.8	8	61.5	0	0.0	1	7.7	0	0.0	1
77 - Individual counseling services are available to students	4	28.6	8	57.1	1	7.1	1	7.1	0	0.0	0
78 - The board establishes policies and permits administrators to implement these policies on a day to day basis	3	23.1	9	69.2	1	7.7	0	0.0	0	0.0	1
79 - The community provides enough money to adequately provide quality educational programs to children	1	7.7	7	53.8	5	38.5	0	0.0	0	0.0	1
80 - Overall, my school building is in good condition	6	46.2	6	46.2	1	7.7	0	0.0	0	0.0	1
81 - If I had a chance to choose all over again, I would still choose teaching as a career	5	35.7	5	35.7	4	28.6	0	0.0	0	0.0	0
82 - There is systematic collaboration between the academic and career education programs in our district.	0	0.0	5	38.5	8	61.5	0	0.0	0	0.0	1

Data Collected in Fall, 2009
Tables Generated January 28, 2010

Appendix F: Critical r Values

Levels of Significance for a Two-Tailed Test					Levels of Significance for a Two-Tailed Test				
<i>df</i>	.10	.05	.02	.01	<i>df</i>	.10	.05	.02	.01
1	.988	.977	.9995	.9999	30	.296	.349	.409	.449
2	.900	.950	.980	.990	32	.287	.339	.397	.436
3	.805	.878	.934	.959	34	.279	.329	.386	.424
4	.729	.811	.882	.917	36	.271	.320	.376	.413
5	.669	.754	.833	.874	38	.264	.312	.367	.403
6	.622	.707	.789	.834	40	.257	.304	.358	.393
7	.582	.666	.750	.798	42	.251	.297	.350	.384
8	.549	.632	.716	.765	44	.246	.291	.342	.376
9	.521	.602	.685	.735	46	.240	.285	.335	.368
10	.497	.576	.658	.708	48	.235	.279	.328	.361
11	.476	.553	.634	.684	50	.231	.273	.322	.354
12	.458	.532	.612	.661	55	.220	.261	.307	.339
13	.441	.514	.592	.641	60	.211	.250	.295	.325
14	.426	.497	.574	.623	65	.203	.240	.284	.313
15	.412	.482	.558	.606	70	.195	.232	.274	.302
16	.400	.468	.542	.590	75	.189	.224	.265	.292
17	.389	.456	.528	.575	80	.183	.217	.256	.283
18	.378	.444	.516	.561	85	.178	.211	.249	.275
19	.369	.433	.503	.549	90	.173	.205	.242	.267
20	.360	.423	.492	.537	95	.168	.200	.236	.260
21	.352	.413	.482	.526	100	.164	.195	.230	.254
22	.344	.404	.472	.515	120	.150	.178	.210	.232
23	.337	.396	.462	.505	150	.134	.159	.189	.208
24	.330	.388	.453	.496	200	.116	.138	.164	.181
25	.323	.381	.445	.487	300	.095	.113	.134	.148
26	.317	.374	.437	.479	400	.082	.098	.116	.128
27	.311	.367	.430	.471	500	.073	.088	.104	.115
28	.306	.361	.423	.463	1000	.052	.062	.073	.081
29	.301	.355	.416	.456					

Note. Steinberg, W. J. (2008). *Statistics Alive!* Thousand Oaks, CA: Sage Publications.

Appendix G: IRB Application



SCHOOL OF EDUCATION

GRADUATE DEPARTMENT
(USE ONLY)Date: January 23, 2012
IRB PROTOCOL NUMBER _____

(IRB

IRB REQUEST
Proposal for Research
Submitted to the Baker University Institutional Review Board

I. Research Investigator(s) (Students must list faculty sponsor first)**Department(s)** **School of Education Graduate Department**

Name	Signature
1. Elizabeth Ann Sanders	_____, Major Advisor
2. Margaret Waterman	_____, Research Analyst
3. Carolyn Doolittle	_____, University Committee Member
4. Laura Nelson	_____, External Committee Member

Principal Investigator: Jennifer Patterson
 Phone: (816) 351-1202
 Email: jennifer.patterson@sjsd.k12.mo.us
 Mailing address: 2911 North 39th Terrace, St. Joseph, MO, 64506

Faculty sponsor: Elizabeth Ann Sanders
 Phone: (913) 344-1227
 Email: elizabeth.sanders@bakerU.edu
 Expected Category of Review: Exempt Expedited Full

II: Protocol Title

The Effect of Collective Teacher Efficacy and Expectations on Student Achievement in High-Poverty Elementary Schools in Missouri

Summary

The following summary must accompany the proposal. Be specific about exactly what participants will experience, and about the protections that have been included to

safeguard participants from harm. Careful attention to the following may help facilitate the review process:

In a sentence or two, please describe the background and purpose of the research.

School districts are receiving increasing sanctions through No Child Left Behind, which have serious and devastating effects on the funding of high-poverty elementary schools. The purpose of this correlational study is to determine the effect of an elementary faculty's collective sense of efficacy and expectations on student achievement in the areas of communication arts and mathematics in high-poverty elementary schools in Missouri.

Briefly describe each condition or manipulation to be included within the study.

There are no conditions or manipulations for the study. Archival data will be used.

What measures or observations will be taken in the study? If any questionnaire or other instruments are used, provide a brief description and attach a copy.

The Advance Questionnaire, administered by the Missouri Department of Elementary and Secondary Education (DESE), will be used to obtain a building score of the faculty's collective sense of efficacy and expectations for the 2009-10 and 2010-11 academic years. The Advance Questionnaire is administered to 100 school districts in Missouri each year. The Advance Questionnaire consists of 104 individual questions. The responses to these questions are grouped into categories by theme, called a scale. There are 14 scales measured by the Advance Questionnaire. This study focuses on the Sense of Efficacy and Expectations Scale. The Advance Questionnaire for elementary faculty is included in this document in Appendix D. Additionally, archival data for student achievement will be collected for the 104 elementary school buildings from the districts used in this study. For each of the buildings in the 200 school districts participating in the Advance Questionnaire, a score will also be obtained for the Missouri Assessment Program (MAP) test in the content areas of communication arts and mathematics. Data for the Advance Questionnaire and the MAP test is publicly available on the DESE website.

Will the subjects encounter the risk of psychological, social, physical, or legal risk? If so, please describe the nature of the risk and any measures designed to mitigate that risk.

There will be no risk of psychological, social, physical, or legal risk. Archival data will be used in the study.

Will any stress to subjects be involved? If so, please describe.

There will not be any stress to subjects involved in the study.

Will the subjects be deceived or misled in any way? If so, include an outline or script of the debriefing.

Subjects will not be deceived or misled in any way.

Will there be a request for information that subjects might consider to be personal or sensitive? If so, please include a description.

All data included in this study is publicly available on the DESE website.

Will the subjects be presented with materials that might be considered to be offensive, threatening, or degrading? If so, please describe.

There will be no materials presented to subjects in the study.

Approximately how much time will be demanded of each subject?

No time will be asked of subjects in the study.

Who will be the subjects in this study? How will they be solicited or contacted? Provide an outline or script of the information which will be provided to subjects prior to their volunteering to participate. Include a copy of any written solicitation as well as an outline of any oral solicitation.

The subjects in this study are the faculty and students of high-poverty schools in Missouri. The data used in the study is publicly available through the DESE website. No contact is needed to gain permission to use the information.

What steps will be taken to ensure that each subject's participation is voluntary? What if any inducements will be offered to the subjects for their participation?

The data used in the study is archival data, released to the public for every school district in Missouri.

How will you ensure that the subjects give their consent prior to participating? Will a written consent form be used? If so, include the form. If not, explain why not.

No consent is needed in the study.

Will any aspect of the data be made a part of any permanent record that can be identified with the subject? If so, please explain the necessity.

Scores from the Advance Questionnaire and the MAP test are already part of the permanent record for schools included in the study. For the purposes of this study, no individual permanent records of teachers or students will be identified.

Will the fact that a subject did or did not participate in a specific experiment or study be made part of any permanent record available to a supervisor, teacher or employer? If so, explain.

Records of data used in this study are permanent but at the aggregated level, not at the individual level.

What steps will be taken to ensure the confidentiality of the data?

Data used in the study is publicly released on the DESE website.

If there are any risks involved in the study, are there any offsetting benefits that might accrue to either the subjects or society?

There are no risks involved in this study.

Will any data from files or archival data be used? If so, please describe.

Scores from the Advance Questionnaire in the 2009-10 and 2010-11 academic years will be used to measure a faculty's collective sense of efficacy and expectations for student achievement. Scores from the Missouri Assessment Program (MAP) Communication Arts and Mathematics tests will be used to measure student achievement for schools participating in the Advance Questionnaire.

Appendix H: IRB Approval

January 27, 2012

Jennifer Patterson
2911 North 39th Terrace
St. Joseph, MO 64506



BAKER
UNIVERSITY
Over Christ

Dear Ms. Patterson:

The Baker University IRB has reviewed your research project application (M-0125-0126-0127-G) and approved this project under Exempt Review. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

The Baker University IRB requires that your consent form must include the date of approval and expiration date (one year from today). Please be aware of the following:

1. At designated intervals (usually annually) until the project is completed, a Project Status Report must be returned to the IRB.
2. Any significant change in the research protocol as described should be reviewed by this Committee prior to altering the project.
3. Notify the OIR about any new investigators not named in original application.
4. Any injury to a subject because of the research procedure must be reported to the IRB Chair or representative immediately.
5. When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity. If you use a signed consent form, provide a copy of the consent form to subjects at the time of consent.
6. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.

Please inform Office of Institutional Research (OIR) or myself when this project is terminated. As noted above, you must also provide OIR with an annual status report and receive approval for maintaining your status. If your project receives funding which requests an annual update approval, you must request this from the IRB one month prior to the annual update. Thanks for your cooperation. If you have any questions, please contact me.

Sincerely,

Carolyn Doolittle, EdD
Chair, Baker University IRB