

**The Relationship between Performance Pay Indicators and Student Achievement
in an Urban School District**

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Submitted to the Graduate Department and Faculty
of the School of Education of Baker University
in partial fulfillment of the requirements for the degree

Doctor of Education
in
Educational Leadership

April 30, 2014

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Dissertation Committee

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Abstract

The purpose of this study was to determine if performance pay for teachers had an effect on student achievement in Communication Arts grades four through six. In order to earn performance pay teachers were asked to participate in additional professional learning, increase teacher attendance, decrease student discipline, and increase parent engagement. The study also examined the effect of teacher type on the relationship between student achievement and each of these behaviors.

A quantitative research design was used to evaluate to what extent performance pay influences student achievement. The population and sample included teachers in grades four through six. The sample included 55 teachers from 10 elementary schools in the Kansas City Public Schools. The dependent variable was student achievement. The independent variables were teacher participation in 20 additional hours of professional learning, increased teacher attendance, a decrease in student discipline incidents, and increase in parent engagement activities. These were investigated by teacher type (tenured, non-tenured, and TFAs).

Findings indicated that overall the correlation between performance pay and student achievement was not statistically significant. Only one factor, teachers increased attendance, was found to be statistically significant. The other relationship indicator variables did not meet the level of statistical significance. Also, teacher type was found to have no effect on performance pay and student achievement.

Research studies on performance-based compensation plans are few. More empirical research must be conducted for policymakers to formulate compensation plans that include an effective performance pay component. Despite these difficulties, it is

important to note that several states and school districts continue to investigate ways to improve student achievement and classroom instruction. The impact of performance pay continues to need to be investigated.

Dedication

“My mission in life is not merely to survive, but to thrive; and to do so with some passion, some compassion, some humor, and some style.” Maya Angelou (2011, July 15)

I lovingly dedicate this dissertation to my husband, William Joseph Murillo, my daughter, Victoria Adelita Oveda Murillo, and my son, William Brandon Nicolas Murillo, who have supported me each step of the way. There is no doubt in my mind that without their continued support, I could not have completed this process. This work is evidence that all things are possible if you believe and are willing to persevere and do the work.

Acknowledgements

“For I know the plans I have for you, declares the LORD, plans for prosperity and not for evil, to give you a future and a hope” Jeremiah 29:11

I give honor, admiration and praise to God for giving me a dream, and the strength, endurance and wherewithal to complete the dream. I know He holds my future in His hands.

To my mother, Mrs. Linnie Oveda Foster, I am truly blessed to be your daughter. I am grateful for the guidance and support you have given me. You have shown me what it means to persevere and to walk according to His word.

To my husband, William Murillo, thank you for your encouragement and support. There were days I didn't believe I would finish but you would always remind me I could do it. You were right. I love you.

To my children, Torie and Brandon Murillo, thank you for believing and encouraging me. You are some incredible young people and I am truly blessed to be your mother.

To my sister, Linda Overbeck, thank you for your support and for taking care of our mother. You have gone above and beyond and I admire and appreciate you.

To my friend, Carol Majors, thank you for your support and encouragement. I don't know where I would have been if you would not have walked through this process with me. Through this process we have become more than friends, we have become family.

To my friend, Kris Collins, thank you for your encouragement, your push, and your belief in me and my purpose. You continued to speak this degree into my life and

you never let me forget I would reach the finish line! We have finally reached **this** finish line and I'm very grateful for your support and friendship.

I would like to acknowledge the guidance and support of my advisor, Dr. Verneda Edwards. Your feedback, support, and guidance were vital to me. I have learned so much from you. Thank you to Peg Waterman for your guidance, support and feedback. You continually pushed me towards excellence and it paid off.

Thank you to my superintendent, Dr. R. Stephen Green. Your advice, encouragement and support were an asset to me. Your vision and work of excellence is constantly demonstrated through your leadership and high expectation of us all.

Thank you to Michael Reynolds and Monica Landess for your help with collecting data for my research. Your assistance was crucial to my success.

Lastly, thank you to my brothers Ed Foster, Jr., Jack Foster, Bill Foster and their wives, my friends, and colleagues for every encouraging word, thoughts and prayers. It helped me reach the finish line.

To my beloved father, Edward L. Foster, Sr., you always believed that I could achieve anything that I set my mind to. Thank you for allowing me to soar.

To my beloved sister, Patricia (Treda) Simon, thank you for the tenacity you instilled in me. You showed me how to fight through life's challenges.

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Chapter One

Introduction

A renewed round of interest in performance pay has been growing for the past ten years as more states and districts have introduced directives focused on higher student achievement (Gratz, 2005). For decades teachers have climbed the traditional pay schedule, routinely earning a salary increase based on their years of experience and their educational level (Delisio, 2006). The traditional teacher single-salary schedule was designed to encourage equity in gender and racial pay. The salary schedule was also designed to protect teachers from principals who might make unpredictable employment decisions and to encourage teachers to seek graduate degrees (Center for Teaching Quality, 2007). In the discussion about teacher compensation, most policymakers, business leaders, education economists, and school reform strategists agree that the American teacher is underpaid; therefore, to ensure an established, high-quality staff, teachers' salaries must increase and the criteria on which those salaries are established need to be determined differently (Center for Teaching Quality, 2007).

According to the Consortium for Policy Research in Education (CPRE) (2012), the past two hundred years have seen changes in how teachers in the United States are paid. In the latter part of the 1800s, teacher compensation consisted of the local community providing room and board for the educator. That practice was often referred to as "Boarding Round" (CPRE, 2012). In the 1900s, teacher training became more consistent and involved advanced levels of college degrees. The education system compensated secondary teachers at a higher rate than elementary teachers, in part due to the variances in college courses required for the different teaching assignments, yet also

compensated minority and female teachers with smaller salaries than non-minority males, replicating prejudices of the time (CPRE, 2012).

During the 1990s, reforms in education led to increased content knowledge requirements for teachers. Public demands for high standards and accountability, and student populations with increasingly diverse needs, required teachers to acquire and possess high levels of professional instructional skills (Odden & Kelly, 1997). Although highly qualified teachers have been considered to be a key component in successful classrooms, there has been widespread disagreement in the educational community regarding what constitutes a highly qualified teacher and how a district would identify a highly qualified teacher (Odden, Kelley, Heneman, & Milanowski, 2001). Under the teacher single-salary schedule, a school district labels teachers as highly qualified based on their years of experience, degrees held, information secured through district or building surveys, and student test results (Odden et al., 2001). The single-salary system also provided motivations for teachers to advance their education. For example, in the early 1900s, before the teacher single-salary schedule, most teachers at the elementary level had associate degrees; the salary schedule encouraged those teachers to earn bachelor's degrees and teachers with bachelor's degrees to earn their master's degrees (Odden et al., 2001). Since 1990, teachers have had no motivation to change this single-salary system until the renewed round of interest in performance pay (Gratz, 2005).

Background

In recent years legislators and school-reform sponsors have been more and more attracted to performance pay plans (Center for Teaching Quality, 2007) and believed an incentives-based compensation would encourage teachers to participate in professional

activities that would result in quality teaching and higher student achievement.

Performance pay programs are intended to align an individual teacher's performance and student achievement to monetary incentives (Kelley, Heneman, & Milanowski, 2002).

As a result, performance standards used to support performance pay must be identified and measurable. A district considering the move to performance pay needs to assure teachers that the process will be fair and objective (Delisio, 2006). During the last 35 years, researchers have studied teacher behaviors as predictors of student achievement in order to shape a baseline of knowledge on effective teaching (Muijs et al., 2011). All performance pay programs are based on the belief that incentives, usually in the arrangement of bonuses, will prompt teachers to work harder and smarter, thereby improving their own classroom performance and increasing student achievement (Thompson & Baumann, 2011).

Performance pay is intended to solve the problem of teacher performance, which in turn could bring higher student achievement and attract and retain effective educators (Lavy, 2007). According to the Center for Teaching Quality (2007), a salary system with performance pay could benefit teachers. However, as Thompson and Baumann's (2011) research on performance pay suggested, there are no clear-cut answers on the effectiveness of performance pay, which may take more than a few years to understand its anticipated outcomes.

Past attempts to increase student achievement through enhanced teacher performance were examined by the Project on Incentives in Teaching (POINT), a three-year study conducted by Springer et al. (2010) in the Metropolitan Nashville School System. The study began during the 2006–2007 school year and ending with the 2008–

2009 school year. While teachers were paid strictly on the basis of students' score gains on standardized tests, instructional strategies were left up to the individual teachers with the belief that changing the incentive structure would be sufficient to improve student achievement. More than 70% of the eligible teachers volunteered to be in the program. Throughout its three years of implementation, the program benefited from the support of several stakeholders, including the district, the teachers' union, and community advocates.

Springer et al. (2010) found no significant differences between the student's achievement of those teachers who were part of the POINT project and those who had teachers who did not participate. Responses to the project teacher survey confirmed that the incentive received the teachers' attention, but more than 80% of those teachers confirmed that POINT had not altered their work. The conclusion from the analysis of the survey results was that the accessibility of incentives did not appear to inspire participating teachers to do a great deal more than they would have done otherwise. The authors concluded that there was little indication that POINT incentives persuaded teachers to make extensive changes to their instructional routines to increase student achievement. Because the evaluation of the POINT program documented that the project did not have a solid and permanent effect on student achievement and did not support the project, performance pay was quickly abandoned by the school district (Springer et al., 2010). In addition, the underlying assumption of this research has not yet proven which, if any, of the multiple examples of performance pay lead to the desired outcomes of improved teacher performance in the classroom and increased student achievement.

Despite the varied results on the impacts of performance pay in public schools, there is still a renewed interest in tying teacher compensation to performance. For example, school districts currently pay for veteran teachers to mentor non-tenured teachers, serve as content specialists, or become lead teachers in their buildings. In a 2004 report, *Teaching at Risk*, members of the Teaching Commission recommended that our country invest at least \$30 billion in the area of teacher compensation. The Teaching Commission suggested incentives should be based on teacher performance and tied to their evaluations, which include student growth measured by state assessments (Center for Teaching Quality, 2007).

To pay teachers incentives on the outcome of their students' standardized assessment scores is the most documented and controversial plan in performance pay (Center for Teaching Quality, 2007). At the 2009 National Education Association (NEA) convention, Secretary of Education Arne Duncan pressed teachers to back performance pay, remarking that although “test scores alone should never drive evaluation, compensation, or tenure decisions, test scores have to be part of the conversation” (Gratz, 2009, p.1). Thompson and Baumann (2011) found that performance pay plans that do not tie incentives tightly to student performance outcomes and teacher effectiveness would do little to advance and extend good instructional practices.

With the support from the Gates Foundation and the Joyce Foundation, six Teacher Incentive Funds (TIF) sites showed promising early data. Philadelphia, New Orleans, South Carolina, and Texas implemented TAP: The System for Teacher and Student Advancement. Arizona implemented Project EXCELL!, and North Carolina's model was called Mission Possible (Eckert, 2010). Although these six performance pay

systems were not examined or implemented in identical ways, they shared many common components, such as job-embedded professional learning, student achievement, teacher evaluation, career advancement, and performance-based compensation. However, because the study of the Teacher Incentive Fund (TIF) sites from 2006–2007 through 2008–2009 did not use a trial design, the data did not directly link student achievement to performance pay (Thompson & Baumann, 2011).

Despite many findings that improvement in student achievement is tied to quality teaching, Aaronson, Barrow, and Sander (2002) could not pinpoint which teachers' characteristics could be tied to improved student achievement. In contrast, Rugraff (2004) found teachers' salaries and levels of education positively affected student achievement, but teachers' years of experience had little to no effect on achievement. For example, according to Goldhaber (2002), quantifiable teacher characteristics (such as years of experience, gender, race, or education history) account for only three percent of a teacher's influence on academic achievement. Behaviors that cannot be isolated and identified represent the remaining 97%. Because teachers' degrees and experience levels are easy to measure, those two factors have become the only determinants of teachers' salaries under the single-salary schedule. However, Goldhaber (2002) found only weak evidence that teachers' degrees and experience levels consistently and positively sway student achievement. Specifically, there is little indication that classroom experience beyond the first two years makes one a better teacher. At the same time, Goldhaber (2002) indicated the effects of degrees appear to center on teachers' knowledge of their content or grade level span and is associated with high performance.

Quality teaching is undoubtedly important to improving achievement, but what makes a good teacher is far less clear. The criteria that form the basis of defining a quality teacher used in most school districts to screen applicants and determine salaries (experience, educational level, and certification) have been investigated. But there is little experiential evidence that these characteristics are associated with increased student achievement.

The Kansas City, Missouri School District (KCPS), a high-poverty, low-achieving urban school district in the state of Missouri, joined the growing number of districts around the country in investigating the use of a performance pay model in an effort to improve classroom teaching and increase student achievement (KCPS, 2011). In 2012, the district consisted of 25 kindergarten through 6th grade elementary schools, seven 7th through 12th grade secondary schools, one vocational school, two alternative schools: one kindergarten through 6th grade school and one 7th through 12th grade school. Ninety-three percent of the 14,873 students in the KCPS district qualified for free or reduced lunch status, and 23% of the district's enrollment included English language learners. Only 30% of KCPS students in grades three through six scored proficient or advanced on state test scores (KCPS, 2011).

In 2010–2011, KCPS received \$13.6 million in federal grant money to implement an initiative titled The Pay Incentives on Need for Excellent Education Reform (PIONEER). After a year of planning by the district during the 2011–2012 school year, a performance pay program was offered to certified teachers in 10 elementary schools. These participants were eligible to receive incentive pay that could amount to as much as \$10,000 per year. A teacher could earn \$5,500 for classroom

gains in student achievement and an additional \$4,500 if a set criteria were met in the following areas: increased amount of professional learning hours participated in each year, improved attendance, decreased student discipline referrals, and increased parent involvement. Teachers earned \$500 if they missed fewer than 22.5 hours of the school year, which equaled three days, and \$275 if they missed fewer than 37.5 hours, or five days. By decreasing the number of student discipline issues by 25%, teachers could earn \$500 or \$275 if they reduced the number of incidents by 15%. Teachers could earn \$500 if they increased parent engagement by having 90% of their students' parents attend parent-teacher conferences and made 10 additional parent contacts. If teachers had 90% attend parent-teacher conferences but did not make the additional 10 parent contacts, they could still earn \$200. There were a total of 55 teachers participating in 10 PIONEER schools with the 10 schools' enrollment ranging from 258 to 707 students (KCPS, 2013).

While research has shown that various districts and states are discontinuing performance pay programs, the research also cited a number of districts and states moving forward with new performance pay programs. The research also shows how performance pay strategies can be a valuable piece of reform to increase student achievement and increase the knowledge and skills of teachers (Jensen et al., 2010). KCPS, in support of their teachers, made the decision to design a performance pay plan to increase student achievement. The KCPS performance pay plan compensated educators for their contributions to student achievement, for their own professional learning, and for their contributions to a productive school environment.

Statement of the Problem

In a new period, with new challenges and new opportunities before our country, school districts need a far more creative and laser-like approach to teacher compensation, an approach that recognizes quality teaching as one of the best assurances for student achievement (Center for Teaching Quality, 2007). Research has clearly shown stakeholders do disagree with the principle that teachers who achieve at high levels warrant extra compensation for their outcomes; however, the research is mixed on the documented impact of performance pay (Jensen, Yamashiro, & Tibbetts, 2010). Models of performance pay vary according to the primary goals, the eligibility standards, the basis for monetary awards, the incentive pay rate, and the methods used to define the award. Research has not yet demonstrated which, if any, of these models will better lead to the anticipated outcomes of teacher performance and increased student achievement (Thompson & Baumann, 2011).

Purpose Statement

The purpose of this study was to determine if performance pay for teachers had an effect on student achievement in grades four through six for the 2010-2011 and 2012-2013 school years. In order to earn performance pay teachers were asked to participate in additional professional learning, increase teacher attendance, decrease student discipline, and increase parent engagement. The study also examined the effect of teacher type on the relationship between student achievement and each of these behaviors.

Significance of the Study

In the United States in 2014, there are an increasing number of school districts and states tying teacher pay to student achievement (Miami-Dade County Public Schools,

(MDCPS), 2011). The findings from the current study could provide insight for district officials in the value of providing performance pay to staff as it relates to student achievement. Specifically, the information gained through this study could provide school districts the following insights about the extent that: (a) performance pay influences student achievement, (b) performance pay influences teacher behavior as measured by participation in professional learning, (c) performance pay influences increased teacher attendance, (d) performance pay influences a reduction in classroom discipline, and (e) all of the above influenced by teacher type (tenured, non-tenured, Teach for America [TFA]).

Delimitations

Lunenburg and Irby (2008) described delimitations as “self-imposed boundaries set by the researcher on the purpose and scope of the study” (p. 134). This study was limited to certified teachers in 10 elementary schools in the Kansas City Public Schools in Missouri. The study was also limited in the use of the Missouri Communication Arts Assessment Program data, grades four through six, as the measurement of student achievement. The study focused on state assessment scores in communication arts because of persistently low test scores in this content area; plus, the district focus since 2010 has been literacy (KCPS, 2012).

Assumptions

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

1. Teachers fully understood the description of categories and how performance pay could be earned.
2. Teachers reported their professional learning hours correctly.
3. Teacher attendance was recorded without error.
4. Teachers reported their student discipline incidents, limiting the district's ability to control the accuracy of reported incidents.
5. Teachers recorded and submitted the number of parent engagement activities correctly.

Research Questions

Research questions are used to focus and formulate on an investigation and should be designed to assess the relationships among the variables (Creswell, 2009). The research questions that guided this study were originated from a review of the research literature on performance pay models. The following research questions guided the study:

RQ1. To what extent is there a relationship between teacher participation in 20 additional hours of professional learning and student achievement on the Missouri Assessment Program (MAP) Communication Arts (CA) test in grades four through six?

RQ2. To what extent is the relationship between teacher participation in 20 additional hours of professional learning and student achievement on the MAP CA test in grades four through six affected by teacher type (tenured, non-tenured, TFA)?

RQ3. To what extent is there a relationship between teacher attendance (two absences or fewer) and student achievement on the MAP CA test in grades four through six?

RQ4. To what extent is the relationship between teacher attendance (two absences or fewer) and student achievement on the MAP CA test in grades four through six affected by teacher type (tenured, non-tenured, TFA)?

RQ5. To what extent is there a relationship between student discipline (reducing discipline referrals by 25% from previous year) and student achievement on the MAP CA test in grades four through six?

RQ6. To what extent is the relationship between student discipline (reducing discipline referrals by 25% from previous year) and student achievement on the MAP CA test in grades four through six affected by teacher type (tenured, non-tenured, TFA)?

RQ7. To what extent is there a relationship between parent engagement (95% contact rate at parent-teacher conferences and additional 10 communications with parents of each child in the classroom) and student achievement on the MAP CA test in grades four through six?

RQ8. To what extent is the relationship between parent engagement (95% contact rate at parent-teacher conferences and additional 10 communications with parents of each child in the classroom) and student achievement on the MAP CA test in grades four through six affected by teacher type (tenured, non-tenured, TFA)?

RQ9. To what extent is there a relationship between level of teacher participation in performance pay and student achievement on the MAP CA test in grades four through six?

RQ10. To what extent is the relationship between level of teacher participation in performance pay and student achievement on the MAP CA test in grades four through six affected by teacher type (tenured, non-tenured, TFA)?

Definition of Terms

The following key terms are used throughout the study.

Effective Teachings. Effective teachings are practices that lead to desired results, such as student learning, as measured by standardized testing (Pianta & Hamre, 2009).

High-Needs School. A high-needs school falls within the lowest 10% of elementary and secondary schools statewide or is located in an area where at least 30% of students come from low-income families, teacher turnover rate is high, employees include a large number of out-of-field-teachers, or employees include a large number of teachers who are not certified. High-needs schools also serve residents of higher poverty rates and consist of classrooms that are influenced by the high needs and difficulties of students' lives. Most high-needs schools are found in rural or urban areas (No Child Left Behind, 2001).

Highly Qualified Teacher. In general, a highly qualified teacher is a teacher who has a bachelor's degree, demonstrated proficiency in subject knowledge, and full certification by the state in which he or she is teaching. One goal of No Child Left Behind (NCLB) was to improve teacher quality through requiring local educational agencies (LEAs) to ensure that all teachers hired to teach core academic content areas were highly qualified (NCLB, 2001).

Missouri Assessment Program (MAP). The MAP is the state assessment administered to Missouri students in the spring of each year. Students in grades three through eight are administered the MAP in Communication Arts (Missouri's Department of Elementary and Secondary Education, 2013).

Professional Learning. Professional learning is designed to improve specific professional skills or the overall competence of a teacher (Mayer & Loyd, 2011).

Teach for America (TFA). TFA is an organization whose undertaking is to shape a movement to eliminate educational inequality by developing teachers for urban schools. TFA recruits recent college graduates and professionals of all backgrounds to teach for two years in urban or rural public schools (Teach for America website, 2013).

Overview of Methodology

A method for testing theories by analyzing the relationship among variables is defined as a quantitative research study (Creswell, 2009). A quasi-experimental methodology was used to evaluate the effect on student achievement as measured by each of the following behaviors: teacher engagement in professional learning, teacher attendance, student discipline, and parent engagement. The study involved the examination of two years of data (2011–2012 and 2012–2013) in 10 elementary schools in the Kansas City Public Schools. The total number of teachers in the current study was 55. The Director of Assessment collected the state assessment data, and the district data on teachers teaching in grades four through six in the 10 elementary schools. The data were then compiled onto one worksheet. The data analysis was used to determine to what extent there was an effect of total performance pay, teacher participation in professional learning, teacher attendance, student discipline, and parent engagement on student achievement.

Organization of the Study

This dissertation is divided into five chapters. Chapter one includes the introduction, background, and statement of the problem. Additionally, the significance of the study is described along with the purpose statement and the delimitations and assumptions underlying the study. The chapter concludes with a listing of the research questions that guided the study, a brief overview of the methodology used to conduct the research, and definitions of terms. Chapter two provides the reader with a review of the literature related to performance pay, student achievement, professional learning, teacher attendance, and teacher type (tenure, non-tenure, and TFA), classroom discipline, and parent engagement. Chapter three describes the methodology used, including the research design, population, sample, and sampling procedures. Additionally, hypotheses, instrumentation, validity, reliability, and data collection procedures, are discussed. Chapter four presents the results of the analysis of the data, including the descriptive statistics and hypothesis testing. Chapter five provides a summary of the study, an overview of the problem, a restatement of the purpose, and research questions. Also, the methodology, major findings, conclusions, and recommendations for future research are presented.

Chapter Two

Review of the Literature

Most school districts and teachers around the nation recognize that long-established pay schedules are a flawed system (Delisio, 2006). Subsequently, the salary talk has become more favorable to conversations of unconventional pay structures (Delisio, 2006). Pay is a delicate issue, and districts have to move past political schemas before change can occur to teachers' single-salary schedule (Delisio, 2006). If a state or district moves too quickly in dealing with staff salaries, the outcome may be undermined and received pushback from the teachers' union. Wallace (as cited by Delisio, 2006) discussed the difficulty to secure change in the teacher salary system when the change is derived from people's pay or salary. Delisio (2006) found that there were many districts investigating and working on performance pay plans with 30 out of 50 states passing a statute requiring some type of performance pay plan be implemented. However, districts are so entrenched in the current pay system that they find change difficult, but many continue to explore the performance pay plan.

This chapter provides an overview of the history of performance pay. The review also provides an overview of professional learning, teacher attendance, student behavior, and parent engagement. Finally, the impact of teacher type on student achievement was reviewed.

Teacher Performance Pay

What constitutes a performance pay plan for teachers can be a rather broad topic. Some research has defined performance pay as any organized process for calculating teacher behavior or increasing student achievement and connecting these measurements

to modifications in teacher pay (Heneman & Milanowski, 2004). The idea of performance pay is not new, yet districts and states are still trying to determine what exactly establishes a performance pay plan (Heneman & Milanowski, 2004). Other research found refers to performance pay as attempting to link educators' salary to their classroom performance and student performance on state assessments.

During implementation of a performance plan, issues related to the validity, reliability, and the criteria of performance evaluation for teachers and students must be carefully addressed (Heneman & Milanowski, 2004). Relationships among teacher knowledge and instruction, student achievement, and compensation need to be based on sound research with measureable outcomes (Jensen et al., 2010). In addition, a RAND Education study found that, across the country, disbursements of performance pay incentives increased from \$99 million in 2006 to \$439 million in 2010 based on the belief that these incentives prompt teachers to engage in their work at a higher level, thereby refining their own classroom performance and contributing to increased student achievement (Thompson & Baumann, 2011).

Buck and Greene (2011) found that nationwide only 3.5% of school districts have some type of performance pay and that most performance pay plans are possibly figurative rather than practical and more likely to be pledged than delivered. The researchers stated that most of the performance pay plans reported were weak due to the lack of tying them to specific measurements. The study found that the performance pay plans represented no significant change in student achievement from the traditional teacher single-salary pay schedules.

The RAND Corporation, a nonprofit institution that assists with improving educational policy and decision-making through research and analysis, reported that funding for performance pay plans nationwide have shown a substantial increase from 2006 to 2010 (Marsh et. al, 2011). Officials at state and local levels have encouraged the idea of performance pay. The federal government has been offering grants in the upwards of billions of dollars to inspire states and school districts to attempt performance pay programs (Chandler, 2011).

Some performance pay programs add on bonuses or incentives rather than restructure salary systems in ways that could potentially produce increased student achievement results while costing less (Fleming, 2011). Eighty percent of districts' personnel expenditures go toward outdated payroll systems that are not linked to increasing student achievement (Fleming, 2011). Several urban districts (Charlotte-Mecklenburg School District, Nashville Public Schools and Denver Public Schools) have embraced performance pay over the previous few years and sustained the program despite limited supportive research, differences with teachers' unions, and diminishing budgets (Fleming, 2011). Many other districts and states have found it difficult to implement performance pay programs due to districts' contractual bargaining agreements (CBA) and limited structures within a school district that could tie incentives to student achievement. Rising budgetary constraints and research that has shown that performance pay has had slight or zero impact on student achievement have steered some states and districts to scale back or even suspend their programs (Fleming, 2011).

Some states encountered difficulties implementing federally funded performance pay programs that derived from Race to the Top grants, which tied teacher evaluation to

incentives (MDCPS, 2011). In New York, the state board and the teachers' union were in a legal encounter over whether state test results could be used for the student academic growth component of teacher evaluations (Cavanaugh, 2011). Other states have requested a one-year extension during the implementation stage of Race to the Top to pilot new performance pay models for teacher evaluations. Specifically, Delaware was granted an extension, but the Department of Education said that \$13.8 million of the state's \$100 million grant would be withheld if the timetable was not met. As a result, Delaware requested additional time to create measures in the teacher evaluation that were demanding, yet consistent and fair across subjects, and produced a new evaluation system within the one-year extension (Cavanaugh, 2011).

Although research shows performance pay strategies can be a valuable piece of reform, pay is not the only factor that needs to be considered (Jensen et al., 2010). The implementation of a blended plan could begin with a skills-based element and link the increased knowledge and skills of teachers desired by the district or state to compensation. Additional performance-based measures, such as increased student achievement, could be phased in after the successful implementation of reliable and valid measures and assessments had been completed (Jensen et al., 2010). Strategies that address only performance pay may not provide adequate support to motivated teachers who need additional support through professional learning. Instead, a blended approach to the expansion and execution of performance pay plans has proven not only successful but also critical in some contexts. For example, in Denver, the groundbreaking Professional Compensation System for Teachers links the school district's instructional mission to the performance pay plan. Designed in collaboration with the Denver

Classroom Teachers Association and Denver Public Schools, ProComp compensates teachers for their professional accomplishments while linking incentives to academic gains (Denver Public Schools, 2011).

Performance Pay Plans

Buck and Greene (2011), who studied a number of states and districts that have scaled back or recently suspended their performance pay plan, summarized some common difficulties states and districts have come across when attempting to introduce a performance pay plan. For example, some state laws governing teacher tenure make performance pay plans unlikely. Also, a number of policy makers believed performance pay should reduce the salaries of underperforming teachers while increasing the salary of successful teachers (Cavanaugh, 2011). In addition, teachers' unions often obstruct the execution of performance pay plans or weaken the plan provisions (Center for Educator Compensation Reform, 2011). Several of the performance pay plans end up compensating teachers for professional learning, graduate work, and national certification rather than for student achievement (Buck & Greene, 2011). Some states and school districts have weakened the performance pay idea by making incentives to teachers insignificant and setting the bar for obtaining the incentives too low, thereby generating a new system that is almost the same as single salary pay increases for all teachers (Cavanaugh, 2011). Finally, states and districts have found that developing student achievement processes that accurately evaluate teachers in grades or subjects that do not test is challenging (Buck & Greene, 2011).

Buck & Greene (2011) also found that a number of states and districts have decreased the number of or recently suspended their teacher performance pay programs

due to decreasing budgets and limited research to support increased student achievement and teacher performance. For example, New York state, which began its performance pay program during the 2007–2008 school year, eliminated its program as a result of a 2011 RAND education study that concluded performance pay incentives had no substantial effect on student performance or teachers' outlook toward their jobs (Marsh et al., 2011); however, the New York Department of Education officials have stated that they will continue to pursue an alternate, more effective model (Marsh et al., 2011).

North Carolina's performance pay program, the ABC Bonus Program, was discontinued in 2008–2009 due to lack of funding (Buck & Greene, 2011). The program was expensive, costing the state at least \$90 million a year, thus, making it unsustainable. In the first year of the program, elementary and middle school teachers were awarded an incentive of \$1,000 if their school's students demonstrated improvement in math or reading. In the second year of the program, high school teachers were awarded an incentive of \$750 to \$1,500 if their school's students made growth or higher-than-expected growth. Although the study found that there were some pockets of improvement in students' reading and math scores, the program was too expensive to maintain (Fleming, 2011).

In Texas, the District Awards for Teacher Excellence (DATE) was a statewide incentive pay program for teachers who began teaching during the 2008–2009 school year (MDCPS, 2011). DATE, was funded through a federal grant the state received. Districts were given substantial flexibility in defining how the performance plan was calculated, but 60% of the grant had to be used for teacher incentives. The remaining 40% could be used to pay teachers a stipend if they agreed to teach at hard-to-staff

schools or if teachers taught subject areas that typically had high vacancy rates. When Texas state officials decreased the program's funding by 90%, these cuts led to scaling back the incentive program during the 2008–2009 school year, allowing school districts in the state of Texas to opt into DATE rather than mandating participation (Buck & Greene, 2011). However, during the 2009–2010 school year, fewer than 20% of Texas school districts chose to participate in DATE (Buck & Greene, 2011).

While research has shown that various districts and states are discontinuing performance pay programs, the research also cited a number of districts and states moving forward with new performance pay programs. For example, 13 Tennessee school districts initiated a performance pay program during the 2011–2012 school year and were awarded \$36 million in federal Teacher Incentive Fund grants based on increased student achievement and participation in professional learning activities and training offered through the district (Fleming, 2011; Hubbard, 2011). Similarly, the state of Virginia launched its new performance pay program in the fall of 2011, including teachers from 25 schools. The performance pay incentives tied 40% of a teacher's evaluation to student achievement while the other evaluation conditions included professional knowledge and curriculum planning. The legislation authorized bonuses of up to \$5,000 for teachers earning exemplary ratings (Fleming, 2011).

During the 2010–2011 school year, the Kansas City Missouri School District (KCPS) set in motion a performance pay program, which is funded by a five-year, \$13.6 million grant from the U.S. Department of Education's Teacher Incentive Fund. The Pay Incentives based On Need for Excellent Education Reform (PIONEER) program used student achievement and additional wrap-around supports to reward effective teachers

and principals through a performance pay program. The data collected and analyzed by the PIONEER program were used to facilitate conversations related to student achievement with principals and teachers in 10 urban elementary schools. Decisions from the analysis were used to provide ongoing, targeted and personalized professional development to administration and teachers. KCPS was looking forward to seeing this portion of the performance pay plan develop throughout the year to support teachers in meeting their personal and professional goals (KCPS, 2011).

The Douglas County School District in Colorado launched a performance pay plan, which evaluates teachers based on multiple factors: student achievement on statewide assessments, evaluations, successful preparation of students for a digital workforce, parent and student surveys, and yearly curriculum goals (MDCPS, 2011). At the same time, the district developed its own Balanced Assessment System to track student achievement, with the results being used to measure the student performance component of its performance pay plan (Center for Educator Compensation Reform, 2011). Teachers choosing to move into the “total compensation” model qualified to earn up to \$100,000 a year (MDCPS, 2011).

Several states and districts have maintained their performance pay programs in spite of limited supporting research, differences with teachers’ unions, and fading finances (MDCPS, 2011). In fact, ProComp in Denver is one of the longest-enduring performance pay programs in the country. ProComp has four components that permit teachers to receive incentive pay. They are; (1) to gain knowledge and skills through professional learning; (2) to receive improved professional evaluations; (3) to promote increased student achievement; and (4) to work at hard-to-staff schools or in hard-to-fill

subjects (Denver Public Schools, 2011). Elements of the program were executed during the 2005–2006 school year, with full implementation rolling out in the 2006–2007 school year (MDCPS, 2011). One year later, ProComp was a joint partnership between the Denver Teachers Association, and Denver Public Schools financed the program with local taxes.

Another performance-based compensation system, IMPACTplus, was established collectively in 2010 by the District of Columbia Public Schools and the Washington Teachers' Union and supported through private dollars (Fleming, 2011). Under IMPACTplus, teachers who earned a highly effective rating had the potential to earn \$74,085 in their first year and could attain a maximum income of \$131,540 in nine years (MDCPS, 2011). Teachers could earn additional compensation by accepting assignments in low-income schools or teaching in a high-need subject area. Teachers who earned ratings of highly effective two years in a row, increased student achievement, and increased their commitment to the school community were also eligible for performance pay incentives (MDCPS, 2011).

Mission Possible Program (MP) in the Guilford County School District, located in North Carolina, is another district that has been able to sustain its performance pay program. Guilford County began its program in the 2006–2007 school year when the district acquired an \$8 million federal grant to pay incentives to teachers in 30 schools. Teachers had the opportunity to earn incentives up to \$10,000 in recruitment incentives and \$4,000 in performance incentives based on their students' academic achievement (Moore, 2011). The original grant expired at the end of the 2010–2011 school year; however, the Guilford County Schools was awarded a five-year, \$22.8 million grant by

the U.S. Department of Education. A Teacher Incentive Fund grant in September 2010 allowed the district to use the funding to expand the program to 20 additional schools (MDCPS, 2011).

Various school districts and states have come upon difficulties when attempting to implement performance pay plans, including resistance from educators and teacher unions, uncertainty about how to evaluate teachers who are teaching subjects and grade levels not tested yearly on state assessments, and decreasing budgets (MDCPS, 2011). Despite these difficulties, it is important to note that several states and school districts continue to investigate ways to improve student achievement and classroom instruction through performance pay. Subsequently, it appears as if compensation systems connecting teacher pay to improving student achievement will play a major role in the national educational setting for the foreseeable future (Buck & Greene, 2011).

Professional Learning

Although many factors contribute to student achievement, quality teaching is clearly an important component (Darling-Hammond & McLaughlin, 1995). The importance of a quality teacher is widely documented as one of the most critical elements for increasing academic achievement. With that focus, improving teacher performance through professional learning is gaining momentum (Goldhaber, 2002). The role professional learning plays in helping teachers acquire knowledge and instructional skills is critical. Teachers who are well prepared and receive high-quality professional development utilize effective strategies in the classroom and, therefore, have the greatest influence on student achievement (Mertens & Flowers, 2004). Because effective teachers lay the groundwork for good schools, improving teachers' content knowledge and

instructional skills is one of the most significant investments a district can make (Holland, 2005). According to Yoon, Duncan, Lee, Scarloss, and Shapley (2007), professional learning contributes to improving classroom instruction and student achievement in three ways. First, professional learning improves teacher knowledge and instructional skills. Second, increased knowledge of instructional skills, through professional learning, improves teaching and learning. Third, better-quality teaching increases student achievement. If one connection is weak or absent, increased student achievement cannot be an outcome. For example, if a teacher neglects to apply new strategies from professional learning, student learning will not profit from the teacher's professional learning (Yoon et al., 2007).

Professional learning must focus on student achievement through classroom instruction. Powerful professional learning helps the teacher acquire the instructional knowledge needed to support student learning (Guskey, 2000). Joyce and Showers (2002) claimed that teachers learning how to learn new content knowledge and instructional skills is just as important for teachers' professional learning. Also, professional learning that benefits classroom instruction should improve student learning.

Joyce and Showers (2002) conducted a study involving 48 certified teachers focusing on professional learning on elementary reading instruction. Results of the study found that teachers participating in professional learning acquired new strategies that helped improve classroom instruction. These professional learning activities involved learning new instructional strategies and sharing student data to determine the needs of the students as well as focused on content knowledge. The outcome of an informal survey given during the study indicated that teachers who took part in professional

learning also found more confidence in their classroom instruction (Joyce & Showers, 2002).

Joyce and Showers' research supported the need to investigate the relationship between quality professional learning received by teachers and student achievement. Understanding how and in what circumstances teachers learn by using research-based best practices is critical. Joyce and Showers (2002) suggested that since they first began advocating for professional learning as essential ingredients in using new information, teacher-training designs have differentiated more effectively between awareness raising and classroom instructional practices that increase student achievement.

Professional learning should allow educators to gain new knowledge and expertise and then transfer those skills into daily practice to increase student achievement. Identifying outcomes that a professional learning session is projected to achieve and selecting training components (e.g., knowledge and theory, modeling, and peer coaching) are critical (Joyce & Showers, 2002). Furthermore, experience and extensive research in professional learning recommend several practical suggestions for leaders in school districts designing their own professional learning and that of their teachers (Joyce & Showers, 2002). The design of professional learning needs to be closely aligned to its proposed outcomes. Schools should carefully evaluate the proposed outcomes in their professional learning sessions, especially in the context of their own targets and priorities.

Educators are finally realizing how important professional learning is in improving classroom instruction and increasing student achievement. Joyce and Showers (2002) stated that, if the goal of professional learning is to assist teachers with teaching

students in methods that lead to increased student achievement, leaders should think through the most effective ways to design a school-wide improvement initiative that requires the participation and commitment of everyone. Also, leaders should consider the most effective way to monitor professional learning activities, using external expertise and consultants to put coaching teams in place to evaluate the impact on student achievement (Joyce & Showers, 2002).

Demonstrating that professional learning leads to gains in the area of student achievement poses incredible challenges for districts, in spite of a logical and instinctive relationship (Borkan, Capa, Figueiredo, & Loadman, 2003). Measuring the relationship between student achievement gains and delivered professional learning has predominately been left up to districts or individual states. Much of the research suggests that districts and states are responsible for creating systems that compile data to evaluate the impact of professional learning on student achievement (Borkan et al., 2003). Therefore, to be effective, professional learning must provide opportunities for teachers to directly apply concepts and practices presented in professional learning sessions to their teaching (Mertens & Flowers, 2004).

The most important ingredient to quality professional development is what teachers learn. Professional learning should increase teachers' knowledge of their subject matter, center on research-based instructional practices, and support the use of student data to make instructional decisions (Holland, 2005). Over time, however, the need for data-driven validation and sustainability on this subject has become a priority. Research supporting quality professional learning has been increasingly sought due to the focus on highly qualified teachers in the No Child Left Behind Act of 2001 (Holland, 2005). In

addition, studies have suggested that the more time teachers spend in professional learning activities, the more those activities change teachers' instructional practices, resulting in higher student achievement (Holland, 2005).

Studies have also shown that the amount of hours spent in professional learning activities are connected to the degree to which teachers believe that their participation in those activities have improved their teaching. Ingvarson, Meiers, and Beavis (2005) studied the effects of professional learning programs on teachers' content knowledge, instructional strategies, and effectiveness by drawing on survey data of 3,250 Australian teachers who had taken part in 80 professional learning activities as part of the Australian Government Quality Teacher Program (AGQTP) during 2002–2003. Ingvarson et al., (2005) found that the most effective professional learning sessions aligned to the core content standards, student achievement, and student assessments to improve teachers' knowledge of the subjects they teach. However, the results from the surveys also revealed that feedback and collective assessment of student work seemed to have the smallest impact despite the evidence for their importance (Ingvarson, et al., 2005).

The research indicates that focused professional learning targeting content and achievement standards was more effective in increasing student achievement than a patchwork of professional learning activities. For these targets to be effective, however, school districts need to provide adequate time for teachers to work with their colleagues when implementing new instructional strategies presented during professional development and evaluating the impact of those new strategies on student achievement (Peck, Barton, & Klump, 2007). In a frequently mentioned analysis of more than 1,300 studies acknowledged as hypothetically examining the effect of professional learning in

three content areas, only nine studies met the What Works Clearinghouse standards (Yoon et al., 2007). Those nine studies focused on elementary teachers who participated in 14 or more hours of professional learning in the area of reading or mathematics. Seven of those nine studies demonstrated significant or a substantive effect on student achievement. Each study included outcome measures and a randomized controlled trial or quasi-experimental design (Yoon et al., 2007). One study, in which teachers participated in 60 hours of professional learning in the area of English Language Arts and reading over a six-month period, resulted in increased achievement by 21 percentage points as based on the Iowa Test of Basic Skills. The growth occurred in the average scores for reading (Yoon et al., 2007). As professional learning research develops, individual experimental studies of professional learning in school districts would make it possible to critique the effectiveness of individual districts' programs (Yoon et al.).

Learning Forward, an organization committed solely to enhancing educators' professional learning and connecting professional learning with student learning to improve student achievement, proposes that professional learning should be personalized with a systemic approach that is focused on results and sustainability (Slabine, 2011). In a system, professional learning should be aligned with state and district standards, and the professional learning should take place, for the most part, at the school level, based on a complete assessment of the instructional needs of teachers at that particular school. School data teams should use data to create that professional learning, and the data should provide an understanding of the students' learning needs, as well as examine and identify research-based classroom instructional practices, such as lesson design, analyzing student work, and development of formative and summative assessments

(Slabine, 2011). Data teams should evaluate the professional learning's effectiveness in teaching and learning, thereby, increasing student achievement (Slabine, 2011).

In 2009, Learning Forward began a partnership to improve professional learning with the Memphis City School District (Memphis City Schools, 2011) and quickly found that a district-wide plan for professional learning did not exist and the professional learning activities in place were fragmented. The task ahead for Memphis City Schools was more than a simple realignment of goals. The district wanted teachers at every level to know exactly what they should do for their professional learning, whether it was coaching, attending a professional learning session, or participating in an online option; they needed a deeper analysis of their teacher-training program (Slabine, 2011). The district used pre- and post-classroom observation data along with pre- and post-student achievement data to analyze gains made, including identifying the areas in which those gains were made. Using that data, a district-wide system plan of professional learning was developed, changing the district's goals to a focus on improving instructional practices through professional learning in order to increase student achievement (Slabine, 2011).

During their work with Learning Forward, the Memphis City Schools experienced a paradigm shift in how teachers participated in professional learning after evaluating their district's professional learning activities. The Board of Education approved a policy in June 2010 requiring the district's 7,000 teachers to participate yearly in 57 hours of professional learning. In January 2011, when the Tennessee Department of Education released its annual comprehensive report card on pre-K–12 education, Memphis was one of many Tennessee districts that showed significant progress in student achievement

(Memphis City Schools, 2011). One factor contributing to this increased student achievement was the district's strong focus on professional learning. Although the district still needed to improve several areas, the district achieved a milestone on improving student achievement. The district continues to compile data to evaluate and track the impact of professional learning on student achievement in Memphis (Slabine, 2011).

Districts no longer allow teachers to go into their classroom, close the door, and teach in isolation. Professional learning has the ability to improve classroom instruction and increase student achievement (DeMonte, 2013). Despite the challenges, effective teaching is a craft that can be learned through professional learning activities, which will change the way teachers teach and how much students learn (DeMonte, 2013).

Teacher Attendance

Common sense tells us that when a teacher is absent, learning is interrupted and when that teacher is consistently absent, student achievement will be impacted. Manlove and Elliott (1979), in one of the first studies on the impact of teacher attendance on student achievement, found that the overall achievement scores of a school were adversely affected when a classroom had a teacher with a high absenteeism rate. In fact, a school's academic performance on several standards declined with higher teacher absenteeism. The study also found that substitutes who temporarily took the place of certified teachers could not completely compensate for the interruption in the standard procedures in a classroom, thus, furthering negative effect on student achievement (Manlove & Elliott, 1979).

Similarly, Woods and Montagno (1997) conducted a study in two school districts and examined the relationship between student achievement and teacher absenteeism. The study examined the variation in the student test scores on a state assessment between the third and fourth grades and related the test scores to teacher absences categorized into three groups: low absence 0–4 days, medium absence 5–11 days, high absence 11.5–29 days. While the students in the low-teacher-absence group made grade equivalent progress, students with teachers who had higher absences showed less growth. Woods and Montagno (1997) found that student achievement is negatively affected when a teacher is absent, confirming a general belief among educators that teacher absenteeism had a negative impact on student achievement. The more a teacher is absent, the less of the curriculum is taught to students and the more likely students are to act out (Woods & Montagno, 1997).

Bruno (2002) also found that substitute teachers placed in classrooms of chronically absent teachers had a difficult time measuring up to the standards of a regular classroom teacher, including not knowing the students or the curriculum in a given school. Similarly, a study conducted in North Carolina concluded that students whose teachers were absent more than 10 days because of sickness scored lower on state assessments (Clotfelter, Ladd, & Vigdor, 2008). Specifically, in the content area of communication arts, 10 days of teacher absences was linked to a drop by 1 to 2% of a standard deviation in student achievement on North Carolina's state assessment. This finding, however, aligns to the average effect across urban, rural, and suburban. Clotfelter et al. (2008) focused on one urban district, where the significance of high quality instruction and the negative effects of teacher absence was especially large

because most students lived with families that lack the resources to compensate for poor school-based instruction. The study also found that these elementary schools had lower test scores when they had a teacher who has a high absenteeism rate.

The summative findings of research completed on teacher attendance have indicated that high absenteeism can be harmful to students' education and levels of individual achievement. Focusing on the Civil Rights Data Collection dataset on teacher attendance, Miller (2012) raised questions and reopened debates on the area of teacher absence. The dataset included building-level information on teacher absenteeism and the percentage of teachers who were absent 10 or more times during a school year (Miller, 2012). The Department of Education called teacher attendance an important indicator, a rational label given the relationship between teacher absenteeism and student achievement (Peters, 2012).

Peters (2012) also found a large discrepancy in teacher absenteeism. On the national average, 36% of teachers were absent more than 10 days during the 2009–2010 school year. The percentages submitted by schools range from 0 percent to 100%, with 62% of the variation in the measure taking place between districts and 30% occurring at schools within districts. This statistic could be significant because all schools within a district function under the same absentee policies, and teacher absence levels well above a district average may be a symptom of a climate issue at the building level. State averages of teacher absences can range from a low of 20.9% in Utah to a high of 50.2% in Rhode Island (Peters, 2012).

Another important factor in the study was the school's grade-level configuration as it related to teachers' absence behavior. On average, 33.3% of high school teachers

and 37.8% of middle school teachers missed more than 10 days per year (Miller, 2012). Schools with high populations of African American or Latino students reported excessively high teacher absences. A school with its percentage of African American students in the 90th percentile had a teacher absenteeism rate that is 3.5 percentage points higher than a school in the 10th percentile. The corresponding discrepancy based on proportions of Latino students was 3.2 percentage points (Miller, 2012).

With these findings and other conclusions, the current study draws attention to the topic of teacher absence and its effect on student achievement. Undeniably, more research is needed, especially in the area of district factors that shape absence behavior, including school leadership and school environment.

Student Discipline

Student discipline has been a topic discussed in public opinion for many years. Howard, Howell, and Brainard (1987) described a successful classroom as one that is welcoming, safe, and free of student discipline incidents. Clearly, a teacher who spends a great deal of time dealing with discipline issues is not spending quality time on classroom instruction. While teachers are charged with the responsibility of ensuring that the students in their classrooms demonstrate growth as measured by state assessments, teachers must also manage a small number of students who continually disrupt the learning environment. Unavoidably, all students in a disruptive environment suffer when classroom behaviors hamper the ability of classroom teachers to instruct and students to learn (Darling-Hammond, 1999).

According to Thompson and Walter (1998), schools must provide a safe environment for students to learn; however, when students are concerned for their own

individual safety, they are unable to engage in the lesson, reducing their ability to learn. Nevertheless, for schools to be effective, the environment must be free of distractions, allowing teachers to provide a nurturing learning environment, which promotes higher student achievement. Unfortunately, frequent classroom discipline problems threaten a school's climate and affect a student's capacity to learn (Borkan et al., 2003).

Although challenging at times, teachers play a large role in constructing an environment that encourages learning, improves student behavior, and creates better academic achievement (Borkan et al., 2003). While negative behaviors have been linked to the lack of student achievement, studies have shown that positive and socially appropriate behaviors such as appropriate conduct and interactions with peers, plus compliance with classroom rules, are contributors to higher student achievement (Skiba & Rausch, 2004). Taking steps to increase academic achievement starts with improving the behavior of students in the classroom. Setting high standards for behavior in the classroom is a simple strategy that helps students remain engaged and fosters a class culture of achievement (Warren, 2007).

The relationship between disruptive behaviors and student achievement is real and, if addressed by the teacher and school administration, could improve student achievement (Skiba & Rausch, 2004). Logically, however, removing students with disruptive behaviors from the classroom for long period of time will not likely help their academic progress because less instruction equals less academic progress (Skiba & Rausch, 2004). Therefore, efforts implementing character education and increasing student engagement should be continued and strengthened. At the same time, these

programs and strategies must be supported by increased focus on finding impartial ways to decrease student discipline issues in the classroom (Warren, 2007).

Most teachers believe that effective conduct policies and appropriate student behavior are qualifications for successful schools and classrooms (Public Agenda, 2004) as classroom environments can have a positive influence on student achievement as well as on a student's ability to learn. If a classroom reflects the daily school experiences with limited discipline disruptions, a school environment where all students feel safe, supported, and cared for will lead to more effective teaching and learning with higher student achievement (Borkan et al., 2003). A healthy school environment with little or no student discipline incidents will result in teachers providing their students with effective instructions and will lead to increased student achievement (Warren, 2007).

According to Lee, Cornell, Gregory, and Fan (2011), districts can substantially increase student achievement by reducing the rate of suspensions with high numbers of disruptive pupils as indicated in a study of suspension rates in Wisconsin in 2010–2011 when more than 48,000 Wisconsin students were suspended for one or more days. The disruptive conduct leading to these suspensions was a negative factor for teachers, school cultures, and, eventually, student achievement. Decreasing those discipline rates by five percentage points produced an almost five percentage point increase in math proficiency, and a three and one-half percentage point increase in reading proficiency on the Wisconsin Knowledge and Concepts Exam (Lee et al., 2011). The relationship between student discipline behavior and low academic performance is well known according to Lee et al. (2011), who found that students who were expelled suffer academically because of being excluded from classroom instruction. Overall, the learning environment

might be hurt due to a disruptive student resulting in decreased teacher effectiveness (Lee et al., 2011).

Parent Engagement

In 1998, Hara and Burke found a substantial body of literature supporting parent engagement in schools but questioned the impact of parent engagement in an urban setting. Over a two-year period, Hara and Burke (1998) studied an elementary school in the Chicago Public Schools. The elementary school had no framework in place to build a parent engagement program. Working with the district, a parent engagement program outline from Epstein's (1995) framework for building parent partnerships was approved by the Local School Council (LSC). The framework was presented to the eight faculty members, parents of the students in grade three, 175 third graders, and community and business partners before the work began (Hara & Burke, 1998).

One of the most important needs was identifying which parent engagement activities and events would attract parents. To address that need, Hara and Burke (1998) produced a needs assessment survey, interviewed parents, received input from administration, and used literature reviews. Because many of their children were reading below grade level, reading was a key academic component in the school; therefore, a popular activity the school quickly found was workshops in which parents had the opportunity to learn how to create a story with their children. The parents were also provided with techniques on how to read with their children and assist their children with homework assignments (Hara & Burke, 1998). To increase and support parent engagement, the need for a close teacher-parent relationship evolved in which parents asked for more communication from teachers and opportunities for individual meetings

with the teacher. Without a structured program parent engagement opportunities would have continued their minimal involvement in school-related activities (Hara & Burke, 1998).

The study also provided evidence that the population that received the most value of the new engagement programs were students.

The third grade reading scores improved by four months as measured by the Iowa Tests of Basic Skills (ITBS). The reading grade equivalent mean scores increased from a gain of 2 years, 7 months in 1995 to 3 years, 1 month in 1998. Parent engagement increased over the two-year period from 5% in 1996 to 48% in 1998. (Hara & Burke, 1998 p. 225)

The study began through a needs assessment survey, which created a direction for both short- and long-term goals. The study also found that effort and commitment by schools are required to build a strong parent engagement program (Hara & Burke, 1998).

Families can influence their student's learning, and when schools and parents collaborate to support learning, children tend to do better in school. In fact, a body of research has found an encouraging and credible relationship between parent engagement and benefits for students, including student achievement. Sanders and Harvey (2000) found that when teachers reached out to parents to support their students' education at home there were academic gains in student performance in both reading and math. These effective parent engagement activities included one-on-one meetings, sending informational materials home and providing weekly student progress reports (Sanders & Harvey, 2000).

Henderson and Mapp (2002) examined the following characteristics of high-performing schools: (1) parent and community involvement and its role in impacting student achievement, (2) identifying key areas that should be discussed if research is to assist all stakeholders, and (3) collaboration of families, schools, and communities in working together to develop high standards and academic growth for all children. From their review, Henderson and Mapp (2002) concluded that no matter what income level or background, students with parents who are engaged are expected to have a higher success rate in school.

Henderson and Mapp (2002) also cited three categories that supported student success. The first category focused on the impact of parent engagement on student achievement. The results supported the belief that the more parents are engaged in their children's learning and the education system, the better their children do. The second category focused on effective program strategies to connect schools and families. Specifically, the outcomes from a focused program to engage schools and parents found the following characteristics: (1) they were welcoming and addressed specific parenting needs; (2) they addressed diversity, respect, and cultural differences; and (3) they embraced a philosophy of partnership and collaboration among parents and school staff. The third and final category of this study focused on engaging parents through special programs, such as workshops on specific subject areas and strategies these parent activities increased the level of parent/student engagement in the areas targeted by each school. The schools found parents were interested workshops that assisted them with insight on how to help their student in subject areas. The parents particularly liked attending these session with their students.

Henderson and Mapp (2002) also found that districts should design activities that support parents' ability to monitor their students' learning from early learning through high school. In birth through preschool programs with classes at a central location and through home visits, mothers, through parent engagement provided by the district or state, learn ways to encourage their children's mental, emotional, and physical development at home (Henderson & Mapp, 2002). A literacy program in Minnesota made available home and school events for kindergartners and their families in 17 sites, studying about 3,000 children and their families (Henderson & Mapp, 2002). In sessions held at the school, qualified parent educators coached parents in developing literacy skills and worked with parents on strategies to assist their children with homework. In one year, the children in the project made more meaningful gains on language scores than students in a control group. The more activities completed by a family, the more their students showed academic gains. In addition, students who began with the lowest skills showed the highest gains (Henderson & Mapp, 2002).

At elementary and middle schools, a study on parent engagement used an advanced numerical method to examine the relationship between parent engagement and assessment scores (Henderson & Mapp, 2002). The study analyzed the relationship between student test scores and instructional strategies, teacher preparation and content knowledge, professional learning, district standards policies, and outreach to parents. The research found that, when teachers reached out to parents of low-performing students, there was a relationship with academic gains in both reading and math. Test scores increased at a rate 40% higher in schools where teachers reported extensive outreach to parents than schools who do not have an extensive outreach to parents

(Henderson & Mapp, 2002). Also, the results indicated that districts need to acknowledge that all parents, regardless of socio-economic status, level of education, or cultural background, want to be involved in their students' learning and want their students to do well (Henderson & Mapp, 2002).

Parental engagement is associated with increased student achievement (Jaynes, 2005). A meta-analysis review of over 77 studies that included more than 300,000 students examined the overall effects of parental involvement and student achievement to determine which components of parental engagement were most beneficial to children. The study examined the achievement level of students whose parents were actively involved compared to the achievement level of students whose parents were not involved. The findings were rated on a scale of 0 (lowest) to 3 (highest). The results of this meta-analysis indicated that parental engagement is associated with increased student achievement as measured by standardized tests and overall grade point average (GPA). Although the study was designed to encourage parental engagement in the students' schooling, these results included achievement measured by classroom grades, district assessments, state assessments, and national test scores. The academic gain for students whose parents were highly engaged in their students' education averaged .5 to .6 of a standard deviation for comprehensive educational outcomes. In other words, students whose parents were highly involved in their education scored substantially higher than that of their counterparts whose parents were less involved (Jaynes, 2005).

Overall, the results were substantial and supported the notion that parental engagement had a significant impact on student achievement. Furthermore, research

consistently supports strategies to encourage parental involvement in their students' schooling (Jaynes, 2005).

Cohen and Geier (2010) found that workshops specifically conducted for parents on ways to assist their children with schoolwork at home were connected to higher math and reading scores. When parents felt comfortable working with their students in the areas of math and reading, students' success was higher, thereby increasing student achievement. Not only did student achievement increase in math and reading, but the study also showed that student achievement increased in other academic areas, based on standardized test scores, grades, and teacher ratings. The evidence is consistent: parents have a major impact on their students' academic achievement in school (Cohen & Geier, 2010).

Studies conducted in this area indicate there is solid evidence that parent engagement can improve students' academic performance in school. These studies examined high-achieving students from diverse backgrounds found that parents discussed school with their students, encouraged them, worked on plans for higher education with them, and kept them motivated and focused on learning. The research also examined the ways parents are involved at school by participating in programs designed to develop collaborative relationships between families and teachers and by informing parents on the development of their children and the strategies that enhance student learning (Henderson & Mapp, 2002).

When parents engage with their children's school, parents are provided the opportunity to monitor school and classroom activities as well as to coordinate efforts with teachers to encourage acceptable classroom behavior and support classroom

instruction (Child Trends, 2013). In turn, teachers of students with highly engaged parents tend to give greater attention to those students. Finally, research shows that students perform better in school if their parents are engaged with their children's classroom teachers (Child Trends, 2013).

Teacher Type (Tenured, Non-Tenured, TFA)

Tenure was established during the early part of the 20th century to create guidelines that would protect teachers from capricious, biased, and unfair dismissal practices (McGuinn, 2010). New Jersey enacted the first United States tenure law in 1909. By the 1940s about 70% of public school teachers experienced some type of job security. Today, every state except Wisconsin, requires that teachers obtain some form of tenure (McGuinn, 2010). Unfortunately, existing studies in the area of highly qualified teachers have dedicated little attention to the implementation or representation of tenure reforms. There are few instances in which researchers have concentrated on tenured versus non-tenured teachers specifically and on ways that tenure policies could be improved or whether tenure should or should not be eliminated (McGuinn, 2010).

Presently, public school teachers can earn tenure after completing a provisional period of three to five years. Before teachers complete the probationary period, they carry the status of non-tenured (Aaronson et al., 2002). Limited studies concentrated directly on the effect of tenured versus non-tenured teachers and their performance. Aaronson et al. (2002) examined tenure status in a regression model, clarifying the influence of teacher characteristics on student achievement. Utilizing data composed from Chicago Public High Schools, Aaronson et al. (2002) aimed to identify teacher characteristics associated with academic gains in math and to study the relationship

between the quality of a teacher and increased student achievement. The authors found that variables that controlled compensation in Chicago, years of experience/tenure, graduate degrees, and certification, explained only a small percent of the disparity of teacher quality. Tenure status had no statistically significant correlation with teacher quality. However, the outcome of tenure on teacher quality was projected without completely addressing the complex correlation between teaching experience and the effects of tenure.

Buddin and Zamarro (2009) analyzed the relationship between teacher type (tenured and non-tenured) and student achievement by examining five years of math and reading standardized tests in Los Angeles Unified School District (LAUSD), which is the second largest district in the United States (behind New York City Public Schools) with about 700,000 students and 35,000 teachers. The study also compared the data with teacher type and the LAUSD licensure certification scores for teachers who have taught less than two years, graduate degrees, and years of experience as well as focused on value-added measures of elementary academic achievement.

In LAUSD, about 84% of students are eligible for free/reduced school lunch, and almost 40% come from families in which neither mother nor father completed high school. Seventy-six percent of students are Hispanic and another 9% are African American. Fifty percent of the elementary students are English language learners (ELLs) and receive supplemental instruction to improve their English proficiency (Buddin & Zamarro, 2009). The results of the study demonstrated that, while the classroom teacher is an important factor of a student's achievement, there was no direct correlation between tenured or non-tenured teachers and student achievement. Although some of the teachers

proved to be more effective than others increasing student achievement, the traditional measures of teacher quality did not predict classroom performance nor did the teacher type (Buddin & Zamarro, 2009).

Education also offers alternative types of certifications with one of those alternatives being Teach for America (TFA), a program that recruits graduates from a variety of universities and colleges to teach for two years in low-income rural and urban school districts (Randall, 2010). Heilig and Jez (2010) found that the effect of TFA on student achievement is mixed, at best. Their study found that TFA teachers perform fairly well compared to other teachers in hard-to-staff urban or rural schools in which teachers are less likely to have state certification or traditional preparation. On the other hand, their study also found that TFA teachers struggle with classroom management, which can lead to a low academic performance. Overall, TFA teachers have some advantages and disadvantages. Although TFA teachers are college graduates, they experience an abbreviated training process than found in traditional teacher education programs. TFA graduates teach in hard-to-staff schools and generally complete only their two-year contract, thus, putting districts at a disadvantage due to the constant turnover of staff (Heilig & Jez, 2010). Some people might assume that TFA teachers would demonstrate outcomes worse than fully trained teachers or experienced teachers, but the research has shown that TFA teachers' classroom effectiveness typically improved as they developed and become more fully trained. By the second year, when most TFA teachers become certified, student achievement for elementary math and middle school reading increased. However, TFA teachers exerted a significant adverse influence on the reading scores of their students in the elementary grades due to the

teachers' lack of education in elementary reading. By the third year of teaching, the influence was still negative, but not statistically significant (Randall, 2010).

TFA teachers do improve skills in delivering instruction and managing classrooms if they continue long enough to become state certified, a process that takes three to four years depending on the TFA teacher's undergraduate degree (Heilig & Jez, 2010). Unfortunately, more than half of TFA teachers resign after two years, and more than 80% resign after three years. In addition, the high rate of resignations of TFA teachers results in substantial expenses for districts in the area of training and recruiting their replacements, creating hardships that do not provide school districts with a long-term advantage (Randall, 2010). Hence, this lack of consistency should point that TFA is not likely the magic bullet that many believe will decrease inequalities in educational outcomes (Heilig & Jez, 2010).

Summary

The importance of a quality teacher is widely documented as one of the most critical elements for increasing academic achievement. With that focus, policies that focus on increasing teacher performance using bonuses, such as performance pay, are gaining momentum (Goldhaber, 2002). Research supports the use of multiple measures to consider when recognizing the quality of a teacher. However, quantifiable teacher characteristics (such as years of teaching, gender or race) make up only 3% of a teacher's influence on student achievement (Goldhaber, 2002). A new teacher's knowledge and lack of experience is not significantly associated with student achievement the first few years in the classroom (Rivkin, Hanushek, & Kain, 2005).

Research also points out that while most single-salary systems reward teachers for their years of experience and degrees held, traditional single-salary systems might provide too small of an incentive for the more effective teachers to distribute their best classroom teaching performance (Goldhaber, 2002). While such characteristics as years of experience and high levels of education degrees should remain valued, other incentives, such as performance pay plans, could motivate teachers in the classroom, regardless of teacher type, to improve their classroom teaching performance and increase student achievement (Buddin & Zamarro, 2009).

A recurring theme in most of the performance pay programs across the United States has been largely focused on increasing student achievement coupled with improving teacher quality. Some additional variations tie to increasing professional learning, improving teacher attendance, decreasing student discipline, and increasing parent engagement. Components with those variations have led to improve student achievement (Thompson & Baumann, 2011). Opponents of performance pay programs suggest that there are no clear-cut answers to the question of the effectiveness of those programs in improving teaching and student achievement and that performance pay incentives alone may not be enough to prompt improvement in teachers and student performance (Thompson & Baumann, 2011).

Chapter Three

Methods

The purpose of this study was to determine if performance pay for teachers had an effect on student achievement in grades four through six for the 2010-2011 and 2012-2013 school years. In order to earn performance pay teachers participated in additional professional learning, increased teacher attendance, decreased student discipline, and increased parent engagement. The study also examined the effect of teacher type on the relationship between student achievement and each of these behaviors. This chapter includes an explanation of the research design, population and sample, sampling procedures, instrumentation, measurement, validity and reliability, data collection procedures, data analysis and hypothesis testing, and limitations of the research.

Research Design

Given the objective of the study, a quantitative study was designed to collect and analyze data using statistical analyses (Cozby, 2001). In this study the dependent variable was student achievement, and the independent variables were the number of professional learning hours teachers participated in, an increase in teacher attendance, a decrease in student discipline incidents, an increase in parent engagement activities, and teacher type (tenured, non-tenured, and TFA).

Population

The population eligible for performance pay in this study was 55 certified teachers in grades four through six grades, who consisted of tenured, non-tenured, and TFA teachers in 10 urban elementary schools in the Kansas City Public Schools. The sample studied were certified teachers in grades four through six. Of the 55 teachers participating in the performance pay program at the 10 urban elementary schools, 44

were tenured teachers, 11 were non-tenured teachers, and none were TFAs. During the construction of the data set the researcher found that the TFAs in the 10 elementary schools were assigned to the primary classroom levels, Kindergarten through third grade. Tenured teachers are those who taught for more than five years, non-tenured teachers taught for fewer than five years, and TFA teachers received an alternative certification and taught fewer than five years.

Sampling Procedures

Purposive sampling, which includes selecting a sample based on a researcher's experience or knowledge of the group sampled (Lunenburg & Irby, 2008), was used to identify teachers within the population who met the criteria for this study. The sampling of teachers was based on the grade level taught in the 10 elementary schools participating in the performance pay program.

Instrumentation

Student achievement data for this study was collected from the Missouri state assessments. The Missouri Assessment Program (MAP), which is the annual state assessment given to all third through eighth grade students in the state of Missouri, was designed to measure students' knowledge of communication arts and math. The MAP assessment, which is administered every spring, requires three to five hours of test administration time and is a paper/pencil assessment that uses selective-response items, constructed-response items, and performance-event type questions. The selected-response, also known as multiple-choice, provides students with a question followed by three to four options. The constructive-response questions require students to provide a response in their own words by showing their work when answering the question.

Performance events require students to work through multi-step questions, thus, allowing students to explore more than one approach to the correct answer. The number of questions on the MAP varies from year to year (DESE, 2013). Student performance is reported in the format of four performance or achievement levels (Advanced, Proficient, Basic, or Below Basic), which describe what students did in terms of the content and skills assessed at that grade level, as described in the Grade Level Expectations (GLEs) (DESE, 2013).

The MAP was designed to measure student progress toward mastering Missouri's Show-Me Standards, consists of 73 rigorous academic standards adopted by the Missouri State Board of Education in January 1996 (DESE, 2013). The Show-Me-Standards are grouped by predetermined grade level expectations (GLEs) that students in Missouri public schools are taught as they move through the elementary grade levels (DESE, 2013). The Missouri's Show-Me Standards have been refined to better describe content standards, process standards, and grade-level expectations (DESE, 2013).

In order for teachers to qualify for additional performance pay, teachers who participated reported their professional learning activities into My Learning Plan, recorded student discipline referrals into the district's student information system, and submitted a log of their parent engagement activities to the director of the PIONEER Grant at the end of the school year. Teacher attendance was recorded and entered into the district's records by school secretaries. Teachers could earn \$2,800 if they completed 20 additional hours of professional learning during the school year. Teachers earned \$500 if they missed fewer than 22.5 hours of the school year. By decreasing the number

of student discipline issues by 25%, teachers could earn \$500. Teachers could also earn \$500 if they increased their parent engagement attendance activities.

Measurement. To measure student achievement, data from the state's Missouri Assessment Program (MAP) communication arts test, grades four through six in Missouri were utilized. The assessment, which was developed and scored by CTB/McGraw-Hill, applies the students' correct responses to obtain a MAP scale score. These scores range in value from 455 to 875 for communication arts. The MAP scale score establishes each student's achievement level. A student receives a MAP scale score when he or she makes a valid attempt in any content area. A student must attempt items in one or more sections of the MAP test to receive a scale score (DESE, 2013). The study examined data used to measure the six independent variables. The study included data from the state's Missouri Assessment Program (MAP) communication arts test, grades four through six in Missouri. The assessment, which was developed and scored by CTB/McGraw-Hill, applies the students' correct responses to obtain a MAP scale score. These scores range in value from 455 to 875 for communication arts. The MAP scale score establishes each student's achievement level (DESE, 2013). The assessment, which was developed and scored by CTB/McGraw-Hill, applies the students' correct responses to obtain a MAP scale score. These scores range in value from 455 to 875 for communication arts. The MAP scale score establishes each student's achievement level. A student receives a MAP scale score when he or she makes a valid attempt in any content area. A valid attempt is defined as a student marking at least one assessment item (DESE, 2013). Professional learning was categorized as teachers who participated in 20 additional hours of professional learning or teachers who did not. Teacher attendance was categorized as

increased teacher attendance or did not increase. Student discipline was categorized as decreased student discipline incidents or did not. Parent engagement was categorized as increased parent engagement or did not increase. Teacher participation in performance pay was calculated by adding together the amount of money each teacher earned in the four categories. Teacher type was a categorical variable with three categories: tenured, non-tenured, TFA.

Validity and Reliability. Validity and reliability are two key components of a good assessment instrument. Both these components are essential. Validity means effectiveness or dependability. Validity is the degree to which a test item measures what it claims to measure. Reliability means consistency of measurement. Reliability deals with the level of internal consistency of the test item. The reliability of an assessment is usually expressed as a coefficient that indicates the degree of correlation between two sets of data obtained from the same subjects under different conditions. Reliability coefficient ranges between 0 and 1 (Lunenburg & Irby, 2008).

In 2009, the Missouri Department of Elementary and Secondary Education [DESE], in accordance with CTB/McGraw-Hill, published a technical report providing evidence of the validity and reliability of MAP test scores. In terms of validity, DESE reported, “validity is an overarching component of the MAP testing program” (DESE, 2009, p. 4). To understand whether a test score is being used properly, one must first understand the purpose of the test. No test provides a perfect assessment of a student’s ability; thus, all tests have a known standard error of measurement (SEM), which reports the amount of variability that can be expected in a student’s test score due to the inherent imprecision of the test (DESE, 2013). Classification is based on the level of student

achievement demonstrated on the MAP for each content area. For example, the purpose of the MAP communication arts score is to demonstrate student achievement in only that content area. DESE ensures the validity of MAP scores as indices of proficiency relative to the Show-Me Standards by using methodical and rigorous test-development procedures. The process of collecting evidence for the validity of assessment data is ongoing, as is the process of ensuring meaningfulness through sound test-development procedures. CTB and DESE continue to conduct validity studies on future the MAP assessment and to build meaning into results by adhering to industry standards during test-development stages (DESE 2013).

The reliability of scores on the MAP test was evaluated using Cronbach's Alpha (DESE, 2009). Cronbach's Alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. A high value of alpha is used as evidence that the items measure an underlying construct. However, a high alpha does not imply that the measure is one-dimensional. In theory, Cronbach is not a statistical test, it is a coefficient of reliability. The reliability coefficient is a ratio of the variance of true test scores to those of the observed scores, with the values ranging from 0 to 1. The closer the value of the reliability coefficient is to 1, the more consistent the scores (DESE, 2009). As a general rule, reliability coefficients that are equal to or greater than 0.9 are considered acceptable for tests of lengths similar to the MAP test. Total test reliability measures, such as Cronbach's Alpha and standard error of measurement, reflect the consistency (reliability) of performance over all test questions in a set format, and the results infer how well the questions measure the content and could continue to do so over repeated administrations. The number of questions on the test influence statistics, the

more questions on a test increases the reliability of the test. DESE reported reliability coefficients above 0.90 for all tests at all grade levels in communication arts (DESE, 2009).

The PIONEER grant included federal guidelines that outlined the process of data collection. According to the grant, the director of the PIONEER grant was responsible for following the procedures to collect the data according to the guidelines specified. The director of the PIONEER grant submitted all the documentation to the federal auditors, and the federal auditors checked the district's compliance with the procedures for data collection set forth in the grant. Collecting district data in the areas of professional learning, teacher attendance, student discipline, and parent engagement, the district was operating under what they termed an "honor system"; therefore, the district trusted that the hours logged and documents submitted for professional learning hours, teacher attendance, student discipline incidents, and parent engagement were recorded correctly. The reliability of the data submitted in the study could have been compromised. The district has made every effort and put in place guidelines to ensure the data collection and the measurements of these variables was valid.

Data Collection Procedures

The researcher verbally requested and received permission from the superintendent of Kansas City Public Schools to conduct the research study for performance pay. KCPS's Request for Permission to Conduct Research Form was completed and approved (see Appendix A). The researcher also requested and received approval from the Baker University Institutional Review Board (IRB). Approval was granted by Baker University's IRB committee on January 15, 2014 (see Appendix B).

The data were requested and received from the Director of the PIONEER grant regarding participating teachers' records of professional learning hours, teacher attendance, classroom discipline, and parent engagement activities. The PIONEER director provided the information on spreadsheets by school for professional learning, teacher attendance, student discipline, parent engagement, and teacher type (tenure, non-tenured and TFA). The Director of Assessment provided the MAP CA scores, grades four through six, by teacher for the students in the 10 elementary schools participating in the PIONEER grant during the 2011–2012 and 2012–2013 school years. The director merged all data sets by teacher into one worksheet.

Data Analysis and Hypothesis Testing

The following research questions, corresponding hypotheses and data analyses guided this study:

RQ1. To what extent is there a relationship between teacher participation in 20 additional hours of professional learning and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six?

H1. There is a relationship between teacher participation in 20 additional hours of professional learning and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six.

The first two-factor analysis of variance (ANOVA) was conducted to test H1. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were professional learning (participated in 20 additional hours of professional learning, did not participate) and teacher type (tenured, non-tenured). The two-factor ANOVA can be used to test three hypotheses including a

main effect for participated in professional learning, a main effect for teacher type, and a two-way interaction effect (professional learning x teacher type). The main effect for professional learning was used to test H1. The level of significance was set at .05.

RQ2. To what extent is the relationship between teacher participation in 20 additional hours of professional learning and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six affected by teacher type (tenured, non-tenured, TFA)?

H2: The relationship between teacher participation in 20 additional hours of professional learning and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six is affected by teacher type (tenured, non-tenured, TFA).

The first two-factor (ANOVA) was also conducted to test H2. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were professional learning (increased professional learning, did not increase professional learning) and teacher type (tenured, non-tenured, TFA). The interaction effect for teacher attendance by teacher type was used to test H2. The level of significance was set at .05.

RQ3. To what extent is there a relationship between teacher attendance and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six?

H3: There is a relationship between teacher attendance and student achievement on the Missouri Assessment Program Communication Arts test.

A second two-factor analysis of variance (ANOVA) was conducted to test H3. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were teacher attendance (increased teacher attendance, did not increase attendance) and teacher type (tenured, non-tenured). The two-factor ANOVA can be used to test three hypotheses including a main effect for teacher attendance, a main effect for teacher type, and a two-way interaction effect (teacher attendance x teacher type). The main effect for teacher attendance was used to test H3. The level of significance was set at .05.

RQ4. To what extent is the relationship between teacher attendance and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six affected by teacher type (tenured, non-tenured)?

H4. The relationship between teacher attendance and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six is affected by teacher type (tenured, non-tenured, TFA).

The second two-factor (ANOVA) was also conducted to test H4. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were teacher attendance (increased teacher attendance, did not increase attendance) and teacher type (tenured, non-tenured, TFA). The interaction effect for teacher attendance by teacher type was used to test H4. The level of significance was set at .05.

RQ5. To what extent is there a relationship between student discipline and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six?

H5: There is a relationship between student discipline and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six.

A third two-factor analysis of variance (ANOVA) was conducted to test H5. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were student discipline (decreased student discipline, did not decrease student discipline) and teacher type (tenured, non-tenured, TFA). The two-factor ANOVA can be used to test three hypotheses including a main effect for student discipline, a main effect for teacher type, and a two-way interaction effect (student discipline x teacher type). The main effect for student discipline was used to test H5. The level of significance was set at .05.

RQ6. To what extent is the relationship between student discipline and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six affected by teacher type (tenured, non-tenured, TFA)?

H6: The relationship between student discipline and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six is affected by teacher type (tenured, non-tenured, TFA).

The third two-factor (ANOVA) was also conducted to test H6. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were student discipline (decreased student discipline, did not decrease student discipline) and teacher type (tenured, non-tenured, TFA). The interaction effect for student discipline by teacher type was used to test H6. The level of significance was set at .05.

RQ7. To what extent is there a relationship between parent engagement and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six?

H7: There is a relationship between parent engagement and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six.

A fourth two-factor analysis of variance (ANOVA) was conducted to test H7. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were parent engagement (increased parent engagement, did not increase parent engagement) and teacher type (tenured, non-tenured). The two-factor ANOVA can be used to test three hypotheses including a main effect for parent engagement, a main effect for teacher type, and a two-way interaction effect (parent engagement x teacher type). The main effect for parent engagement was used to test H7. The level of significance was set at .05.

RQ8. To what extent is the relationship between parent engagement and student achievement on the Missouri Assessment Program Communication Arts test grades four through six affected by teacher type (tenured, non-tenured, TFA)?

H8: The relationship between parent engagement and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six is affected by teacher type (tenured, non-tenured, TFA).

The fourth two-factor (ANOVA) was also conducted to test H8. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were parent engagement (increased parent engagement,

did not increase parent engagement) and teacher type (tenured, non-tenured, TFA). The interaction effect for parent engagement by teacher type was used to test H8. The level of significance was set at .05.

RQ9. To what extent is there a relationship between level of teacher participation in performance pay and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six?

H9: There is a relationship between the level of teacher participation in performance pay and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six.

A Pearson product moment correlation coefficient was calculated to index the strength and direction of the relationship between teachers' participation in performance pay and student achievement. A *t* test for one correlation was conducted to address RQ9. The level of significance was set at .05.

RQ10. To what extent is the relationship between level of teacher participation in performance-pay student achievement on the Missouri Assessment Program Communication Arts test in grades four through six affected by teacher type (tenured, non-tenured, TFA)?

H10: The relationship between levels of teacher participation in performance pay and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six is affected by teacher type (tenured, non-tenured, TFA).

A Pearson product moment correlation coefficient was calculated by teacher type (tenured, non-tenured, TFA) to index the strength and direction of the relationship between teachers' participation in performance pay and student achievement. A Fisher's

z test was conducted to address H10. The two sample correlations were compared. The level of significance was set at .05.

Limitations

Limitations are not in the control of the researcher but are real factors that may have an effect on the interpretation of the findings or generalization of the results (Luneburg & Irby, 2008). Seventy percent of the district's students scored in the Below Basic or Basic achievement levels on the state assessment. The mobility of students moving from one school to another within the district increased the difficulty of establishing links between student performance and individual teachers. Another limitation was teachers' self-reporting of these results might be biased or skewed if teachers were neglectful in reporting their professional learning hours, student discipline incidents, or parent engagement activities. Since the teachers are the subjects, the fact that they were constructing and entering their own professional learning activities/hours and student discipline incidents might introduce some bias in the study. These limiting factors had to be acknowledged during the research and during the interpretation of the results.

Summary

This chapter restated that the purpose of the study was to determine if performance pay had an effect on student achievement. The study employed a quantitative research design. Chapter three explained the research design, sampling procedures, and instrumentation utilized in the study. Measurement, validity, reliability, data collection procedures, data analysis, and limitations were described. Chapter four presents the results of the hypothesis testing. Chapter five provides a summary of the

study, an overview of the problem, a restatement of the purpose, and research questions.

Additionally, the methodology, major finding, literature connections, conclusions,

recommendations for future research, and concluding remarks are presented.

Chapter 4

Results

The primary purpose of this study was to determine if performance pay for teachers had an effect on student achievement. The study examined two years of Missouri State Assessment Data (MAP) in Communication Arts (CA) (2011–2012 and 2012–2013) grades four through six in 10 elementary schools in the Kansas City Public Schools. Teachers could earn performance pay by participating in professional learning, improving teacher attendance, decreasing student discipline, and increasing parent engagement. The study looked at the impact of teacher type on these variable by teacher type (tenured, non-tenured, Teach for America [TFA]). This chapter contains a statement of each research question (RQ), the hypothesis tested to address it, the statistical analyses conducted to address each research questions, and the results of hypotheses testing.

Hypothesis Testing, Descriptive Statistics, and Additional Analysis

During the analysis, the definition of the independent variable teacher type was modified due to the absence of TFA teachers assigned to grades four through six. A personal interview with the district's Director of Assessment provided details on staff and grade level assignments at the elementary school levels. Building administrators in KCPS have the autonomy of staff assignments within their schools. The results of the analysis indicated that TFA teachers in the 10 elementary schools were not assigned to grades four through sixth.

RQ1. To what extent is there a relationship between teacher participation in 20 additional hours of professional learning and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six?

H1. There is a relationship between teacher participation in 20 additional hours of professional learning and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six.

The first two-factor analysis of variance (ANOVA) was conducted to test H1 and H2. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were professional learning (participated in 20 additional hours of professional learning, did not participate) and teacher type (tenured, non-tenured). The two-factor ANOVA can be used to test three hypotheses including a main effect for professional learning, a main effect for teacher type, and a two-way interaction effect (professional learning x teacher type). The main effect for teachers participating in professional learning was used to test H1. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between the means, $F = .239$, $df = 1, 59$, $p = .627$. See Table 1 for the descriptive statistics for the test of H1. Growth scores on the Missouri Assessment Program Communication Arts test for students of teachers who did not participate in 20 additional hours of professional learning ($M = -2.21$) were not significantly different than growth scores for students of teachers who did participate in 20 additional hours of professional learning ($M = -2.02$).

Table 1

Descriptive Statistics for the Results of the Test for H1

20 Additional Hours of PL	<i>M</i>	<i>SD</i>	<i>N</i>
Participated	-2.02	46.77	50
Did not Participate	-2.21	7.83	13

Note: PL = Professional learning

RQ2. To what extent is the relationship between teacher participation in 20 additional hours of professional learning and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six affected by teacher type (tenured, non-tenured)?

H2: The relationship between teacher participation in 20 additional hours of professional learning and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six is affected by teacher type (tenured, non-tenured).

The second research question (RQ2) could not be addressed using a hypothesis test because of a sample size issue. Only one non-tenured teacher did not participate in the 20 additional professional learning hours. The results of the interaction effect for the ANOVA were not interpreted. Table 2 below contains the descriptive statistics for the interaction between professional learning and student achievement on the Missouri Assessment Program Communication.

Table 2

Descriptive Statistics for the Results of the Test for H2

20 Additional Hours of PL	Teacher Type	<i>M</i>	<i>SD</i>	<i>N</i>
Participated	Tenured	3.40	17.42	39
	Non-Tenured	-21.26	95.09	11
Did not Participate	Tenured	-3.02	17.42	39
	Non-Tenured	-7.50	0.00	1

RQ3. To what extent is there a relationship between teacher attendance and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six?

H3: There is a relationship between teacher attendance and student achievement on the Missouri Assessment Program Communication Arts test.

A second two-factor analysis of variance (ANOVA) was conducted to test H3. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were teacher attendance (increased teacher attendance, did not increase attendance) and teacher type (tenured, non-tenured). The two-factor ANOVA can be used to test three hypotheses including a main effect for teacher attendance, a main effect for teacher type, and a two-way interaction effect (teacher attendance x teacher type). The main effect for teacher attendance was used to test H3. The level of significance was set at .05. The results of the analysis indicated there was a statistically significant difference between the two means, $F = 4.76$, $df = 1$, 59 , $p = .03$. See Table 3 for the descriptive statistics for this analysis. Growth scores on the Missouri Assessment Program Communication Arts test for students of teachers who increased their attendance ($M = 6.42$) were higher than growth scores for students of

teachers who did not increase their attendance ($M = -8.42$). In fact, students of teachers who did not increase attendance on average experienced a decrease in their students' MAP scores.

Table 3

Descriptive Statistics for the Results of the Test for H3

Teacher Attendance	<i>M</i>	<i>SD</i>	<i>N</i>
Increased	6.42	18.17	27
Did not Increase	-8.42	52.35	36

RQ4. To what extent is the relationship between teacher attendance and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six affected by teacher type (tenured, non-tenured)?

H4. The relationship between teacher attendance and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six is affected by teacher type (tenured, non-tenured).

The second two-factor (ANOVA) was also conducted to test H4. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were teacher attendance (increased teacher attendance, did not increase attendance) and teacher type (tenured, non-tenured). The interaction effect for teacher attendance by teacher type was used to test H4. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = 2.40$, $df = 1, 59$, $p = .13$. See Table 4 for the means and standard deviations for this analysis. Although the interaction effect was not statistically significant, growth scores on the Missouri

Assessment Program Communication Arts test for students of tenured teachers who increased their attendance ($M = 6.73$) and non-tenured teachers who increased their attendance ($M = 5.33$) appeared to be higher than the negative growth scores for students of tenured teachers who did not increase their attendance ($M = -1.500$) and non-tenured teachers who did not increase their attendance ($M = -43.06$).

Table 4

Descriptive Statistics for the Results of the Test for H4

Teacher Attendance	Teacher Type	M	SD	N
Increased	Tenured	6.73	20.55	21
	Non-Tenured	5.33	5.08	6
Did not Increase	Tenured	-1.50	10.61	30
	Non-Tenured	-43.06	129.63	6

RQ5. To what extent is there a relationship between student discipline and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six?

H5: There is a relationship between student discipline and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six.

A third two-factor analysis of variance (ANOVA) was conducted to test H5. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were student discipline (decreased student discipline, did not decrease student discipline) and teacher type (tenured, non-tenured). The two-factor ANOVA can be used to test three hypotheses including a main effect for student discipline, a main effect for teacher type, and a two-way interaction effect (student

discipline x teacher type). The main effect for student discipline was used to test H5.

The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between the two means, $F = 3.063$,

$df = 1, 59, p = .085$. See Table 5 for the means and standard deviations for this analysis.

The average growth score for students of teachers who had decreased discipline

($M = -4.24$) was not different from the average growth score for students of teachers who had not decreased discipline ($M = -2.61$).

Table 5

Descriptive Statistics for the Results of the Test for H5

Student Discipline	<i>M</i>	<i>SD</i>	<i>N</i>
Decreased	-4.24	49.78	43
Did not Decrease	-2.61	12.99	20

RQ6. To what extent is the relationship between student discipline and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six affected by teacher type (tenured, non-tenured)?

H6: The relationship between student discipline and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six is affected by teacher type (tenured, non-tenured).

The third two-factor (ANOVA) was also conducted to test H6. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were student discipline (decreased student discipline, did not decrease student discipline) and teacher type (tenured, non-tenured). The interaction effect for student discipline by teacher type was used to test H6. The level of

significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = 3.72$, $df = 1, 59$, $p = .056$. See Table 6 for the means and standard deviations for this analysis. Though not statistically different it is interesting to note that the average growth score for students of tenured teachers who had decreased discipline ($M = 2.60$), students of tenured teachers who had not decreased discipline ($M = .1974$), and students of non-tenured teachers who had not decreased discipline ($M = 9.85$) appear to be higher than the average growth score for students of non-tenured teachers who had decreased discipline ($M = -39.37$).

Table 6

Descriptive Statistics for the Results of the Test for H6

Discipline	Teacher Type	<i>M</i>	<i>SD</i>	<i>N</i>
Decreased	Tenured	2.60	16.66	36
	Non-Tenured	-39.37	118.34	7
Did not Decrease	Tenured	.20	14.08	15
	Non-Tenured	9.85	4.54	5

RQ7. To what extent is there a relationship between parent engagement and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six?

H7: There is a relationship between parent engagement and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six.

A fourth two-factor analysis of variance (ANOVA) was conducted to test H7. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were parent engagement (increased parent

engagement, did not increase parent engagement) and teacher type (tenured, non-tenured). The two-factor ANOVA can be used to test three hypotheses including a main effect for parent engagement, a main effect for teacher type, and a two-way interaction effect (parent engagement x teacher type). The main effect for parent engagement was used to test H7. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between the means, $F = 2.42$, $df = 1, 59$, $p = .125$. See Table 7 for the means and standard deviations for this analysis. Though not statistically different, the average growth score for students of teachers who had increased parent engagement ($M = 4.10$) was positive and the average growth score for students of teachers who had not increased parent engagement ($M = -6.39$) was negative.

Table 7

Descriptive Statistics for the Results of the Test for H7

Parent Engagement	<i>M</i>	<i>SD</i>	<i>N</i>
Increased	4.10	14.69	26
Did Not Increase	-6.39	52.93	37

RQ8. To what extent is the relationship between parent engagement and student achievement on the Missouri Assessment Program Communication Arts test grades four through six affected by teacher type (tenured, non-tenured)?

H8: The relationship between parent engagement and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six is affected by teacher type (tenured, non-tenured).

The fourth two-factor (ANOVA) was also conducted to test H8. The two categorical variables used to group the dependent variable, student achievement on the MAP Communication Arts test, were parent engagement (increased parent engagement, did not increase parent engagement) and teacher type (tenured, non-tenured). The interaction effect for parent engagement by teacher type was used to test H8. The level of significance was set at .05. The results of the analysis indicated there was not a statistically significant difference between at least two of the means, $F = 1.87$, $df = 1, 59$, $p = .177$. See Table 8 for the means and standard deviations for this analysis. Though not statistically different it is interesting to note that the average growth score for students of tenured teachers who had increased parent engagement ($M = 3.37$) and students of non-tenured teachers who had increased parent engagement ($M = 8.08$) appear to be higher than the average growth score for students of tenured teachers who had not increased parent engagement ($M = .77$) and students of non-tenured teachers who had not increased parent engagement ($M = -32.34$).

Table 8

Descriptive Statistics for the Results of the Test for H8

Parent Engagement	Teacher Type	<i>M</i>	<i>SD</i>	<i>N</i>
Increased	Tenured	3.37	15.54	22
	Non-Tenured	8.08	9.12	4
Did not Increase	Tenured	.77	17.42	39
	Non-Tenured	-32.34	111.21	8

RQ9. To what extent is there a relationship between level of teacher participation in performance pay and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six?

H9: There is a relationship between the level of teacher participation in performance pay and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six.

A Pearson product moment correlation coefficient was calculated to index the strength and direction of the relationship between teachers' participation in performance pay and student achievement. A *t* test for one correlation was conducted to address RQ9. The sample correlation was tested against a null value of 0. The level of significance was set at .05. The results of the test for the correlation indicated that the correlation was not statistically significant, $t = .27$, $df = 62$, $p = .797$. The correlation for teacher participation in performance pay ($r = .03$) was not significantly different.

RQ10. To what extent is the relationship between level of teacher participation in performance pay student achievement on the Missouri Assessment Program Communication Arts test in grades four through six affected by teacher type (tenured, non-tenured)?

H10: The relationship between levels of teacher participation in performance pay and student achievement on the Missouri Assessment Program Communication Arts test in grades four through six is affected by teacher type (tenured, non-tenured).

Two Pearson product moment correlation coefficients were calculated to index the strength and direction of the relationship between teachers' participation in performance pay and student achievement for tenured or for non-tenured teachers. A Fisher's *z* test was conducted to address H10. The two sample correlations were compared. The level of significance was set at .05. The results of the Fisher's *z* test for the two correlations indicated no statistically significant difference between the two

values, $z = .752$, $p = .452$. The correlation for teacher participation in performance pay and student achievement for tenured teachers ($r = .207$, $n = 51$) was not significantly different from correlation between teacher participation in performance pay and student achievement for non-tenured teachers ($r = -.063$, $n = 12$).

Summary

Chapter four provided an analysis and review of the findings from the data analysis. The result of the analysis of the effect of increased attendance showed a statistically significant difference in growth scores of those teachers who participated. No other analyses produced statistically significant differences in growth scores due to participation in the performance pay incentives or due to teacher type. It is interesting to note that the average growth score for students of tenured teachers who had decreased discipline appeared to be higher than the average growth score for students of non-tenured teachers who had decreased discipline. Another interesting note, though not statistically significant, was the average growth score for students of tenured teachers who had increased parent engagement and students of non-tenured teachers who had increased parent engagement appeared to be higher than the average growth score than those teachers (tenured, non-tenured) who had not increase parent engagement. Chapter five includes the study summary, overview of the problem, review of the methodology, major findings, implications for action, the conclusion, and recommendations for further studies as they related to performance pay and increasing student achievement.

Chapter Five

Interpretation and Recommendations

One of the common criticisms of performance pay programs is the lack of a strong research base. This section presents the findings of the current study as related to performance pay for teachers and its effect on student achievement in grades four through six. In order to earn performance pay, teachers were asked to participate in additional professional learning, increase teacher attendance, decrease student discipline, and increase parent engagement. The study also examined the effect of teacher type on the relationship between student achievement and each of these behaviors. In chapter four, the findings of the study were presented. This chapter provides a summary of the findings and recommendations for future research related to performance pay plans.

Study Summary

In a new period, with new challenges and new opportunities before our country, school districts have more creative and laser-like approach to teacher compensation, an approach that recognizes quality teaching as one of the best assurances for student achievement (Center for Teaching Quality, 2007). In the discussion about teacher compensation, most policymakers, business leaders, education economists, and school reform strategists agree that the American teacher is underpaid; therefore, to ensure an established, high-quality staff, teachers' salaries must increase and the criteria on which those salaries are established need to be determined differently (Center for Teaching Quality, 2007). Models of performance pay vary according to the state or district's primary goals. Additional professional learning, increasing teacher attendance,

decreasing student discipline, and increasing parent engagement to increase student achievement are examples districts have used in their performance pay plans. Research has not yet demonstrated which, if any, of these models will better lead to the anticipated outcomes of teacher performance and increased student achievement (Thompson & Baumann, 2011).

Overview of the problem. Several states and districts across the nation have implemented performance pay plans with the goal of improving teaching and learning, thereby increasing student achievement (Center for Teaching Quality, 2008). Legislators and school-reform promoters have been gradually attracted to performance pay plans for teachers and have believed an incentives-based salary system will inspire professional behaviors that result in better teaching and higher student achievement (Center for Teaching Quality, 2008). Specifically, the research maintains that a teacher's behavior can change to meet the criteria of a performance pay program in order to receive the additional supplemental income, but the desired outcome of increased student achievement has not always been met (Lavy, 2007).

Performance pay plans are designed to tie teacher compensation closely to meaningful measures of increasing teacher quality and academic gains, although the plans differ according to states' or districts' overarching goals, the teachers' eligibility, the plans' structures and criteria, and the measures for awarding the incentive (Progress Education Reform, 2011). Research has not yet demonstrated which, if any, of these variations will lead to the desired outcomes of improved student achievement through professional learning: increasing teacher attendance, decreasing student discipline incidents, and increasing parent engagement. However, despite the difficulties met when

implementing performance pay plans, states and school districts continue to investigate the use of performance pay as a way to increase student achievement and improve teacher quality (MDCPS, 2011).

Purpose Statement and Research Questions. As stated in chapter one, the purpose of this study was to determine if performance pay for teachers had an effect on student achievement as measured by the Missouri Assessment Program, Communication Arts in grades four through six for the 2010–2011 and 2012–2013 school years. In order to earn performance pay, teachers were asked to participate in additional professional learning, increase teacher attendance, decrease student discipline, and increase parent engagement. A second purpose of the study was to examine the effect of teacher type on the relationship between each of these behaviors and student achievement. Data were collected to determine if there was a relationship between performance pay for teachers and student achievement. Specifically, the current study examined these relationships and student achievement. To investigate these ideas, 10 research questions guided the study.

Review of the Methodology. A quasi-experimental and correlational methodology was used to evaluate the effect of the performance pay program. The population consisted of teachers in grades four through six at 10 urban elementary schools. The variables of interest in this study included additional hours of professional learning, increased teacher attendance, decreased student discipline and increased parent engagement. Data was collected through the district's assessment department, organized into a spreadsheet, and uploaded into Statistical Package for the Social Sciences (SPSS) for analysis. Four different two-factor ANOVA, a *t* test and a Fisher's *z* test for difference were used to evaluate the ten hypotheses.

Major Findings

The first hypothesis of this study stated that there was a relationship between teacher participation in 20 additional hours of professional learning and student achievement. There was not a difference in the growth scores of students whose teachers participated in 20 additional hours of professional learning as compared to those students whose teachers did not participate. The second hypothesis of this study stated that the relationship between teacher participation in 20 additional hours of professional learning and student achievement was affected by teacher type (tenured, non-tenured). However, the second hypothesis could not be tested because of a sample size issue, as only one non-tenured teacher did not participate in the 20 additional professional learning hours.

The third hypothesis of this study stated that there was a relationship between teacher attendance and student achievement. Based on the data there was a statistically significant difference. The growth scores on the Missouri Assessment Program Communication Arts test for students of teachers who increased their attendance were higher than growth scores for students of teachers who did not increase their attendance. In fact, students of teachers who did not increase attendance on average experienced a decrease in their students' scores. The fourth hypothesis of this study stated that the relationship between teacher attendance and student achievement was affected by teacher type (tenured, non-tenured). There was not a statistically significant difference.

The fifth hypothesis of this study stated that there was a relationship between student discipline and student achievement. Based on the analysis of the data there was not a difference in the growth scores of students whose teachers decreased their student discipline as compared to those students whose teachers did not participate. The sixth

hypothesis of this study stated the relationship between student discipline and student achievement was affected by teacher type (tenured, non-tenured). There was not a statistical difference. It was interesting to note that the average growth score for students of tenured teachers who had decreased discipline, students of tenured teachers who had not decreased discipline, and students of non-tenured teachers who had not decreased discipline appear to be higher than the average growth score for students of non-tenured teachers who had decreased discipline.

The seventh hypothesis of this study stated that there was a relationship between parent engagement and student achievement. The analysis of the data did not find a statistically significant difference; however, the average growth score for students of teachers who had increased parent engagement was positive, and the average growth score for students of teachers who had not increased parent engagement was negative.

The eighth hypothesis of this study stated the relationship between student engagement and student achievement was affected by teacher type (tenured, non-tenured). There was not a statistically significant difference. It was interesting to note that the average growth score for students of tenured teachers who had increased parent engagement and students of non-tenured teachers who had increased parent engagement appear to be higher than the average growth score for students of tenured teachers who had not increased parent engagement and students of non-tenured teachers who had not increased parent engagement.

The ninth hypothesis of this study stated there was a relationship between the level of teacher participation in performance pay and student achievement. The correlation was not statistically significant between the relationship of teacher

participation in performance pay and increased student achievement. The tenth hypothesis of this study stated the relationship between levels of teacher participation in performance pay and student achievement was affected by teacher type (tenured, non-tenured). Based on the data there was no difference from the correlation between teacher participation in performance pay and student achievement for non-tenured teachers.

Findings Related to the Literature

While there was no statistically significant relationship between performance pay and student achievement, the components of additional hours of professional learning, increasing teacher attendance, decreasing student discipline, and increasing parent engagement on student achievement did have one significant relationship and several interesting findings in the relationship to student achievement. The findings of this study was varied with the literature that was reviewed, but there were noteworthy connections that could be made. One of those areas was teacher attendance. This section provides some of those connections.

The current study was designed to analyze the impact of improved teacher attendance and student achievement. Teachers who improved their attendance did improve student achievement. Manlove and Elliott (1979), in one of the first studies on the impact of teacher attendance on student achievement, found that the overall achievement scores of a school were adversely affected when a classroom had a teacher with a high absenteeism rate. The summative findings of research completed on teacher attendance indicate that high absenteeism can be harmful to students' education and levels of individual achievement (Miller, 2012). With these findings, the current study draws attention to the topic of teacher absence and its effect on student achievement.

Furthermore, the current study found that teacher attendance in terms of teacher type did not show a statistically significant difference on student achievement. Undeniably, more research is needed on teacher attendance especially in the area of why teachers are absent during the school year.

Although many factors contribute to student achievement, quality teaching is clearly an important component (Darling-Hammond & McLaughlin, 1995). Because effective teachers lay the groundwork of good schools, improving teachers' content knowledge and instructional skills is one of the most significant investments a district can make (Holland, 2005). This research supported the need to investigate the relationship between quality professional learning received by teachers and its impact on student achievement. Understanding how and in what circumstances teachers learn by using research-based best practices is critical. The research was clear that teachers need professional learning to grow in their content and instructional knowledge. Even though much of the research discussed the need for professional learning, little research tied professional learning to increased student achievement (Yoon et al.). In KCPS, the nature and types of the professional learning activities in which teacher could participate were not defined nor were teachers required to directly align the professional learning activities to activities that directly support student achievement. Demonstrating that professional learning causes gains in the area of student achievement poses incredible challenges to districts, in spite of a logical and intuitive relationship (Borkan, et al., 2003). Much of the research suggests that districts and states should be responsible for creating systems that compile data to evaluate the impact of professional learning on student achievement (Borkan et al., 2003). Therefore, to be effective, professional

learning must provide opportunities for teachers to apply concepts and practices presented in professional learning sessions directly to their teaching (Mertens & Flowers, 2004).

The current study also analyzed the effect of decreasing student discipline incidents on student achievement. Students in a disruptive environment suffer when classroom behaviors hamper the ability of classroom teachers to instruct and impact the students' ability to learn (Darling-Hammond, 1999). The district's performance pay plan did not focus on types of discipline incidents. The criteria focused on reducing the number of overall incidents. Nevertheless, for schools to be effective, the environment must be free of distractions, allowing teachers to provide a nurturing learning environment, which promotes higher student achievement. Unfortunately, frequent classroom discipline problems threaten a school's climate and affect a student's capacity to learn (Borkan et al., 2003). Taking steps to increase academic achievement starts with improving the behavior of students in the classroom (Warren, 2007). Furthermore, the current study found that decreased student discipline by teacher type did not show a significant difference in students' academic achievement. However, it is interesting to note that the average growth score for students of tenured teachers who had decreased discipline and tenured teachers who had not decreased their discipline appeared to be higher than the average growth for students of non-tenured teachers who had decreased their discipline. Another interesting note was students of non-tenured teachers who had not decreased discipline appear to be higher than the average growth score for students of non-tenured teachers who had decreased discipline.

Teachers who increased parent engagement, regardless of socio-economic status, level of education, or cultural background supported the notion that parental engagement had a significant impact on student achievement (Sanders & Harvey, 2000). The evidence is consistent: parents have a major impact on their students' academic achievement in school (Cohen & Geier, 2010). The current study analyzed the difference between student achievement and increasing parent engagement. However, the current study found that increased parent engagement and teacher type did not show a significant difference in student achievement. The criteria, once again, were not clear on the type of activities teachers should use to engage parents. In much of the research parent engagement was a school-wide focus, unlike the criteria set up in KCPS's performance pay program. Individual teachers within the same building could choose whether or not to participate in increasing parent engagement. Interestingly, even though not statistically significant, the average growth score for students for both tenured and non-tenured teachers who had increased parent engagement appear to be higher than the average growth score for students of tenured and non-tenured teachers who had not increased parent engagement.

Heneman and Milanowski (2004) has defined performance pay as any organized process for calculating teacher behavior or increasing student achievement and connecting these measurements to modifications in teacher pay (Heneman & Milanowski, 2004). Buck and Greene (2011) found that most performance pay plans are possibly figurative rather than practical and more likely to be pledged than delivered. The current study analyzed the effect of teacher participation in performance pay on student achievement and found no significant difference from the traditional teacher

single-salary pay schedule with the exception of increased teacher attendance. Other research refers to performance pay as attempting to link educators' salary to their classroom performance and student performance on state assessments (Heneman & Milanowski, 2004). Although research shows performance pay strategies can be a valuable piece of reform, pay is not the only factor that needs to be considered (Jensen et al., 2010). Furthermore, the current study found that participation in performance pay and teacher type showed no difference from the correlation between teacher participation in performance pay and student achievement for teacher type (tenured, non-tenured) (Jensen et al., 2010). Limited studies concentrated directly on the effect of tenured versus non-tenured teachers and their performance. Aaronson et al. (2002) examined tenure status in a regression model, clarifying the influence of teacher characteristics on student achievement. In that study tenure status had no statistically significant correlation with teacher quality. However, the outcome of tenure on teacher quality was projected without completely addressing the complex correlation between teaching experience and the effects of tenure. Buddin and Zamarro (2009) analyzed the relationship between teacher type (tenured and non-tenured) and student achievement by examining five years of math and reading standardized tests. The results of the study demonstrated that, while the classroom teacher is an important factor of a student's achievement, there was no direct correlation between tenured or non-tenured teachers and student achievement. Although some of the teachers proved to be more effective than others in increasing student achievement, the traditional measures of teacher quality did not predict classroom performance nor did the teacher type (Buddin & Zamarro, 2009).

Conclusions

This section includes implications for action that school districts may want to consider prior to the implementation of performance pay plans to improve student achievement. Recommendations are also made for future studies in this area.

Implications for action. The findings of this study have implications for all who are involved in education. The performance pay plan should be clear and the guidelines easily understood by all teachers and administrators. The components of the plan should be research-based and aligned to the district's goals. The criteria for each component in the performance pay plan should be clearly laid out in the guidelines and all components should be tied to increasing student achievement. A patchwork of activities will not move a state or district forward in meeting the goal of increasing student achievement. With these findings, the current study encourages additional researchers to examine the topic of teacher absence and its effect on student achievement.

Recommendations for future research. After examining the results of this study and understanding its implications, recommendations can be made regarding further research. The following recommendations are related to implementing performance pay and increasing student achievement. The first recommendation is to conduct a multiple year study to examine the professional learning activities provided by a district. District focused professional learning activities should align with the critical student learning needs identified through district data. Formal dialogues with teachers on how to improve instructional practices and professional learning workshops and how many additional hours of professional learning would impact their classroom instruction

could prove insight to districts. Research should also be conducted to see if teachers' perceptions of what is needed actually make a difference in student achievement.

A second recommendation is to look further into teacher attendance, which was the only component that had a statistically significant effect on student achievement in the current study. Additional insight might be gained by surveying teachers on their opinions regarding teacher absenteeism. Students cannot learn if the teachers are not in the classroom; therefore, minimizing the time teachers are away from the classroom should be a goal of every district.

A final recommendation would be to complete a study that focused on decreasing student discipline incidents through increasing parent engagement activities. This combined study could provide findings by identifying ways in which parent engagement impacts student achievement by decreasing student discipline incidents. These findings could then be used by a state or district to develop criteria to decrease student discipline through increased parent engagement in the district.

Concluding Remarks

With the current emphasis on increased student achievement, more states and school districts are tying teacher pay to student performance. The presence of performance pay plans seems to help states and districts focus on increasing student achievement, but the results are mixed at best. Some research findings provide evidence that the presence of performance pay contributes to states and districts developing a culture where teachers have high expectations for both their learning and student learning, but because performance pay plans are implemented differently outcomes are not the same nor are performance pay plans guaranteed to increase student achievement.

The methods and means for developing and rewarding teachers through a performance pay program need to be clearly defined and the criteria of the performance pay plan directly aligned to district and/or state goals. The performance pay plan in this study did not have goals aligned to the district's strategic plan, and teachers were given the latitude to design their own method for meeting the district's criteria to receive performance pay. The findings of the current study point to no significant correlation between the performance pay plan and increased student achievement in an urban school district.

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Appendices

Appendix A: District Approval Form



Document Provided to Intended Researcher by:

Signature Vickie Murillo
(Building Principal for District Employee
or Central Office Staff for Out-of-district Researchers)

Date: January 7, 2014

DISTRICT ASSESSMENT TEAM
Kansas City Public Schools
1211 McGee
Kansas City, Missouri 64106

REQUEST FOR PERMISSION TO CONDUCT RESEARCH/GATHER DATA IN THE KANSAS CITY PUBLIC SCHOOLS

DIRECTIONS: The applicant should complete this form, obtain the necessary approval and signatures, and return to:
Kristina Collins, Administrative Assistant to Cabinet
kcollins@kcmsd.net, 418-7528
Kansas City Public Schools
1211 McGee
Kansas City, Missouri 64106

It may take up to three weeks for requests to be processed; please plan accordingly in order to meet course deadlines.

1. Please describe concisely the basic concepts and goals of your proposed project, and how it is relevant to the field of education.
The findings of this study have implications for all who are involved in education. The results of this study could support decisions that districts make in the future regarding performance pay plans.
2. List the names of all data collection instruments you intend to use and enclose a copy of each with this application. Also, enclose a copy of each parent/student

consent form, if needed. Please describe in detail the distribution, implementation, and collection methods you intend to use in your data collection.

- Student achievement in grades four through six for the 2010–2011 and 2012–2013 school years.
 - Data on teachers who taught in the fourth through six grades in the 10 elementary schools participating in the performance pay program. Data for the following areas: participate in additional professional learning, increase teacher attendance, decrease student discipline, and increase parent engagement. The study will also examine the effect of teacher type (tenured, non-tenured, Teach for America [TFA]) on the relationship between student achievement and each of these behaviors. Data will also be collected on the same teachers mentioned above by teacher type (tenured, non-tenured, TFA).
3. Give the names of the Kansas City Public School(s) you intend to involve to meet the project requirements. Are there certain demographics required for the project (i.e., grade level, gender, etc.)? The study will only focus on the ten elementary schools participating in the performance pay program.
 4. What amount of time would be required of staff or students in the schools in order to meet project requirements? Zero
 5. Are there any other school records you would require (for example, achievement test scores or attendance)? No student identifiers will be made available including student names or ID numbers. However a method to distinguish students is available. No
 6. Give the name of each person who will enter the schools. For non-district employees, please provide existing background checks for individuals or a plan to ensure background checks are in place prior to entry in schools. N/A
 7. What is the date you wish to begin? January 18, 2014.
 8. By what date do you anticipate being finished? March 1, 2014
 9. Name of applicant (please print) Vickie Murillo

Vickie S. Murillo

Signature

5404 NE Holiday Drive
Assistant Superintendent

Lee's Summit, MO 64064
vmurillo@kcmsd.net

1.15.14
Date

816.418.7462
Phone Number

CRITERIA FOR APPROVAL OR DISAPPROVAL

The approval or disapproval of requests will be made within the following general guidelines.

1. The only projects which will generally be approved are those which:
 - a) contribute to the improvement of education in the Kansas City Public Schools;
 - b) contribute to the improvement of education in general.
2. Even within the above categories, studies will generally be disapproved if they:
 - a) appear to infringe on the privacy of pupils, parents, or staff members;
 - b) present a burden to pupils or staff members;
 - c) threaten school-community relations in any way.
3. Research solely for a course requirement will be considered only for the Kansas City Public School District staff.
4. At any point in the research process, Kansas City Public Schools staff can terminate the study if determined necessary for any reason.
5. Any results or product created as a result of this project which uses data from the district's students, staff, or facilities must be made available to the Kansas City Public Schools.

PARTICIPATION OF THE SCHOOLS

Generally, participation in any research study conducted by an outside agency or individual will be completely voluntary on the part of the principals, teachers, pupils and any other personnel involved.

Project Approval Signature *Mr. Earl Muenks* Date 1.17.14

Director of Assessment and Research, 816-418-7428

Appendix B: IRB Proposal



**SCHOOL OF EDUCATION
GRADUATE DEPARTMENT**

IRB PROTOCOL NUMBER

Date:

(IRB USE ONLY)

IRB REQUEST

Proposal for Research

Submitted to the Baker University Institutional Review Board

I. Research Investigator(s) Vickie Murillo

Department(s) School of Education Graduate Department

Name

Signature

1. Dr. Verneda Edwards

V. Edwards

Major Advisor

2. Margaret Waterman

Margaret Waterman

Research Analyst

3. Dr. Donald Hatcher

University Committee Member

4.

External Committee Member

Principal Investigator: Vickie Murillo

Phone: 816.423.3382

Email: v4murillo@yahoo.com

Mailing address: 5404 NE Holiday Drive, Lee's Summit, MO 64064

Faculty sponsor: Dr. Verneda Edwards

Phone: 913.344.1227

Email: vedwards@bakeru.edu

Expected Category of Review: X Exempt ___ Expedited ___ Full

II: Protocol: (Type the title of your study)

The Relationship Between Performance Pay Indicators and Student Achievement in an Urban District

Summary

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

An increasing number of states and school districts across the country, with encouragement from both the federal and state governments, are investigating the use of performance pay as a way to improve student and teacher performance (Blazer, 2011). The researcher will examine the relationship between performance pay indicators and student achievement. The independent variables that will be investigated include: teacher participation in 20 additional hours of professional learning, improved teacher attendance, reduced student discipline issues, and increased parent engagement. Each variable will be measured against teacher type (tenure, non-tenure, or Teach for America).

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

No conditions or manipulations are used in this study. The researcher will examine the relationship between student achievement and teacher engagement in professional learning, teacher attendance, student discipline, and parent engagement.

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.

Data measuring student achievement will be accessed using archival Missouri Assessment Program (MAP) data. Data for the independent variables has been self-reported by the teachers participating in the study. The study will use archival data and will not utilize an instrument.

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.

The subjects will encounter no psychological, social, physical or legal risk.

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

No, there will not be any stress to the subjects of this study.

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

No, the subjects in this study will not be misled in anyway.

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

Subjects will not be asked to volunteer any sensitive or personal information for this study.

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

The subjects will not be contacted as part of this study.

Approximately how much time will be demanded of each subject?

The study will not ask for any time from the subjects.

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.

Teachers participating in the performance pay initiative of the Kansas City Public Schools are the subjects in the study and since archival data will be used the teachers will not be contacted.

What steps will be taken to insure that each subject's participation is voluntary?

No solicitation for participation will take place.

How will you insure 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. What if any inducements will be offered to the subjects for their participation?

No consent is required. All data is archival. No inducements will be offered.

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.

Permanent records of student assessment data will be used but the study will not be tied to teachers' names or employee numbers.

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.

No, the subjects will not be identified in anyway.

What steps will be taken to insure the confidentiality of the data? Where will it be stored? How long will it be stored? What will be done with it after the study is completed?

Data generated for this study will not be used for any other purposes. No names or other identification will be available to identify the subjects in this study. All data will be stored on a district server during the duration of the study. Aggregate data collected will be shared with Baker University and the Kansas City Public School District once the study is completed. Based on Baker University research guidelines, the data collected from this study will be stored on a CD-ROM for at least three years, after which, it will be destroyed.

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

There is not a risk to the subjects as part of conducting the study.

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

Yes, data from the district's MAP communication arts assessment will be compiled to identify student achievement, by teacher and grade level in grades three through six. An Excel data file regarding teacher participation in 20 additional hours of professional learning, improved teacher attendance, reduced student discipline issues, and increased parent engagement will be provided to the researcher by the district. This data will also include teacher type (tenured, non-tenured, and Teach for America) for each of the years included in the study.

IRB Approval Letter



Jan. 15, 2013

Dear Ms. Murillo,

The Baker University IRB has reviewed your research project application and approved this project under Expedited 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,

Thomas Peard
Chair, Baker University IRB

CC: Verneda Edwards