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Effects Of A Bonus On Quality Improvement For Pre-school Classroom Educators

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EFFECTS OF A BONUS ON QUALITY IMPROVEMENT FOR PRE-SCHOOL CLASSROOM EDUCATORS

by

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ABSTRACT

Interest in teacher effectiveness and merit pay has continued to be a high priority for major stakeholders in the field of education as well as the public. The focus of this research was to test the hypothesis that the implementation of a classroom bonus plan would improve the observable attributes and behaviors of teaching that have been determined to be effective in improving student learning. Specifically, the study was conducted to measure intentional teacher-student interactions, classroom quality, environment and organization as well as emotional and instructional support in Pre-K classrooms as measured by Classroom Assessment Scoring System (CLASS).

During a summer Voluntary PreK program, six eligible classroom teams (teacher and teacher assistant) were randomly divided into either a bonus or non-bonus group. A pre- and post-CLASS was completed on each classroom team of participants to evaluate the quality of their instruction. The CLASS score assesses team versus individual participation, resulting in a compiled score based on the performance of all classroom staff members, i.e., teacher and teacher assistant. There was no statistical significance of the CLASS post-assessment score between the bonus and non-bonus group. However, two of the four bonus group participant teams achieved the targeted scores needed to receive a bonus. None of the non-bonus group achieved the targeted score.

Additionally, pre- and post-assessment data for the entire student population of the Agency Summer VPK program was examined. There was no significance in student post-assessment scores between the three groups (bonus, non-bonus, and non-participants).

This dissertation is dedicated to my parents, Milton and Gerri Kilberg

who inspired my lifelong love of learning;

my children: Mark, Ray, Christine, Shawn, Bradford, Brittany and Jake;

and my grandchildren: Alec, Jacob, Madeline, Jacqueline,

Devin, Miranda, Haley, Connor and Joshua who are our future.

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It is good to have an end to journey toward:

but it is the journey that matters, in the end

--Ursula LeGuin

As this stage of my education comes near an end, at the risk of sounding 'cliché", it has been the journey that has meant the most to me. I have learned so much and stretched my knowledge base to places I could not have even imagined when I began. My learning journey will not be ending, but I do laugh as I realized how little I knew when I began this program just over four years ago.

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CHAPTER 1
THE PROBLEM AND ITS CLARIFYING COMPONENTS

Introduction

As school districts in the United States have moved to a system of increased accountability and commitment to closing the achievement gap, there has been a strong emphasis on the use of alternative methods of compensating education staff as a potential strategy to increase and direct motivation towards these goals. President Barack Obama, the U. S. Department of Education and many other educational stakeholders have given these educational reform initiatives tremendous national and statewide support. In his March 2009 White House speech, President Obama stated,

> Let me be clear: If a teacher is given a chance, or two chances, or three chances, and still does not improve, there is no excuse for that person to continue teaching. I reject a system that rewards failure and protects a person from its consequences. (Obama, 2010)

School districts have experimented with different kinds of pay structures for teachers for over 200 years with mixed results. In the early 1800s, teachers were paid based on the performance of their students; by the 1900s, as a way to simplify pay, most districts had moved to a single salary scale (Gratz, 2005). The latter system pays teachers for their years of experience and advanced degrees or education credits earned, so teachers receive the same pay (based on their experience and level of education) regardless of their performance (Odden & Kelley, 2002). The current single salary compensation system offers many advantages including its relative simplicity, low

administrative cost and high level of transparency (Storey, 2000). The majority of the 15,000 school districts still utilize the single salary scale (Hanushek, Kain, & Rivkin, 1999). However, researchers have found that years of experience, college credit, or degrees alone have not positively influenced student achievement (Odden & Kelley, 2002). Additionally, this system has failed to consistently motivate teachers to achieve desirable results for their schools. Teacher who expend extra effort and achieve results have been compensated in the same way as have teachers who have exerted minimum effort.

The teacher has been identified as one of the strongest predictors of student achievement and learning (Darling-Hammond & Baratz-Snowden, 2007). A teacher's effectiveness has more impact on student learning than any other factor under the control of school systems including class and school size (Rivkin, Hanushek & Kain, 2005). Specifically, an effective teacher has been determined to help students achieve a grade level equivalent gain of 1.5 in contrast with students studying under an ineffective teacher whose gain has been limited to 0.5 year for a single academic year (Hanushek, 2007).

Overall, however, the United States has continued to rank poorly compared to other industrialized countries on student achievement (Murnane & Steele, 2007). A 2005 study by the Organization for Economic Cooperation and Development revealed that the United States pupil allocation was tied for first place in the world--increasing over 212% (inflation adjusted) from 1960 to 1995 (Bennett, 1999). These results of more money spent yielding less positive outcomes seems to support the notion that the current

education system in the United States was not working and that an immediate need for reform and more accountability was warranted (Stigler & Stevenson, 1999).

In the private sector, pay has typically been linked to performance since the 1980s. In 2007, 90% of businesses in the private and public sector have used some kind of performance pay system with bonuses and raises tied to results (Hewitt Study, 2007). The transition by the private sector to utilizing a pay for performance plan has had a significant role in the growth of productivity and improved quality in US firms over the past decades (Malanga, 2001).

In 2010, the federal Teacher Incentive Fund, which has financed innovative merit-pay programs across the country, was increased from $97 million to $400 million. Additionally, states that were interested in competing for a piece of the $4.3 billion "Race to the Top" fund were required to develop a system that connected teachers' compensation to evaluation systems using multiple criteria for measuring teacher performance such as student achievement information and teacher observation. The largest portion of the 500-point Race to the Top rubric for grading state applications was pay for performance (U.S. Department of Education, 2009).

The emphasis on accountability has also extended to early childhood school programs (La Paro, Pianta, & Stuhlman, 2004). This closely aligns with the research over the last 10 years regarding the impact of the first three years of life for learning and brain growth (White House Conference on Early Childhood, 1997). A 2010 report by the New America Foundation's Early Education Initiative recommended that the education system should begin at the age of three in order to create a seamless system between early

childhood and K-12 programs (Guernsey & Mead, 2010). Researchers have shown that a high quality early childhood experience has critical short and long-term impacts on children's development, enhancing children's cognitive and social development and setting the stage for future academic success (Burchinal & Cryer, 2003; Dearing, McCartney, & Taylor, 2009; Peisner,-Feinberg et al., 2001; Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2004;). Quality early childhood services make sense fiscally creating long-term economic benefits for children and society (Diefendorf & Goode, 2005, Peisner-Feinberg, Burchinal, Clifford, Culkin, Howes, Kagan, Yazejian, Byler, Rustici, & Zelazo, 1999). According to Nores, Belfield, Barnett, & Schweinhart, (2005), the cost benefit of high quality programs with improved outcome ranged from $2.50 saved per $1 spent to $12.06 saved per $1 spent, further validating the value of the investment in early childhood education.

Purpose of the Study

The purpose of the study was to test the hypothesis that the implementation of a classroom bonus plan would improve the observable attributes and behaviors of teaching that have been determined to be effective in improving student learning. Specifically, the study was conducted to measure intentional teacher-student interactions, classroom quality, environment and organization as well as emotional and instructional support in Pre-K classrooms as measured by Classroom Assessment Scoring System (CLASS). The CLASS has been used to measure program quality and teachers' interactions with

children in over 671 Pre-Kindergarten classrooms across 11 different states (Mashburn, Pianta, Hamre, Downer, Barbarin, & Bryant, 2008).

Historically, assessment of the quality level of an early childhood classroom has focused on the structural features of the environment, such as availability of materials, teacher qualifications, class size and ratio, and health and safety factors (La Paro et al., 2004), The core theory behind the development of the CLASS assessment was that student and teacher interactions were the key component to student learning. (Greenberg, Domitrovich, & Bumbarger, 2001; Hamre & Pianta, 2007; Morrison & Connor, 2002; Rutter & Maughan, 2002). This focus on teacher interactions is a shift from other definitions because it focuses on what teachers actually do with the materials they have and the interactions they have with students, rather than the presence of materials, the physical environment, or the curriculum that is used (Pianta, LaParo, & Hamre, 2006). In this current study, the results of a classroom team-based performance bonus were examined. The bonus was implemented in four Pre-K Charter Schools located in the southeast United States. The researcher sought to determine if motivation to improve teaching quality could be positively influenced using a classroom team bonus system.

Significance of the Study

At the time of the present study, interest in developing alternative systems of pay for teachers and other school-based staff was at an all-time high on both a statewide and national level. In a recent survey conducted by Phil Delta Kappa and the Gallop

Organization, 70% of those surveyed said teachers should be paid based on the quality of their work rather than a traditional salary schedule (*Education Week*, September 1, 2010).

Although there has been prior increased interest in the use of performance pay for teachers and schools, the majority of the research has focused on using test scores, other measures of student achievement, teacher competitions, additional responsibilities, principals' appraisals or the willingness to take on more challenging teaching positions (Zhang, 2002). There has been limited research on utilizing a bonus program to change and improve specific teacher behaviors and interactions that are linked to student learning. The results of research focused on child-teacher interactions have suggested that students in classrooms with higher scores on child-teacher interactions had higher academic and social gains throughout the school year (Hamre & Pianta, 2001). Lastly, the majority of research has taken place in K-12 grade-level programs. Before altering traditional compensations practices, it is important to know whether this is an effective path to improving teaching and learning. The scholarly base of knowledge that supports the effectiveness of bonus compensation plans is relatively small. Beer & Cannon (2004) found an opposite result in determining that a new performance pay system did more harm than good by not achieving planned outcomes. The previous studies did not examine such topics as job satisfaction, staff morale, turnover or intrinsic motivation. (Springer 2009). The limited, school-related research that exists has been focused, for the most part, on the effects of performance pay for individual teachers. There is additional evidence that individual bonus systems discourage collaboration and incentives for teachers to work together and create destructive competition (Jackson, Kirabo, &

Bruegmann, 2009). Stiglers (2010) discussed the successful strategy that has been used in Japan where all teachers meet informally to review results of student assessments and use each other as resources to brainstorm strategies for improved results.

This current study was conducted to provide information on whether financial incentives would influence teachers and paraprofessionals to focus their efforts on changing behaviors that improve the quality of their teaching. Odden (2001), a proponent for merit pay systems, has expressed the belief that merit pay can motivate and influence teacher behavior. Although he has acknowledged that merit pay has not worked well in the past, he has been a proponent that with the proper structure and implementation process, merit pay can successfully replace the seniority pay system. In addition to the research on performance-based pay, research on motivational theory and incentives was also part of the conceptual framework. The present research was conducted to develop a thorough understanding of how various incentives used in performance-based pay plans may or may not motivate teachers to improve their teaching and thus improve student achievement. The findings of this research were intended to be helpful for policymakers considering the implementation of merit pay system.

This study was also conducted to provide assistance in identifying the factors that improve the acceptance and implementation of a bonus system by school administrators and provide recommendations for maximizing the value of these factors. It is also important to learn how to develop a system of implementation that does not create an unduly burden of time on administrators.

This study was intended to provide opportunities to learn what bonus pay program components and practices contribute to improving staff performance. Odden and Kellor (2000) learned that the degree to which staff participates in the development of a bonus plan significantly increased the buy-in and ultimate success of the plan. Additionally, individuals participating in the plan must believe that they have the tools needed to accomplish the goals, i.e., professional development and training, as well as feeling they have a high level of support and trust from their managers. (Bullock & Tubbs, 1990).

Research Questions

The study was guided by the following research questions:

1. Does the ability to earn a financial incentive/bonus for each classroom team member change CLASS quality rating scores in their Pre-K classes?
2. Does the ability to earn a financial incentive/bonus for each classroom team member change student achievement scores in their Pre-K classes?

Limitations of the Study

The study's design contained the following limitations.

1. Participants in this study had higher levels of education compared to other early childhood education staff. The teachers in this study were required to have a bachelor's degree or higher, be certified teachers and highly qualified. The lead teacher assistant was required to have at least a high school diploma though most had at least a Child Development Associate (CDA) or an

Associate Degree. Most early childhood teachers have been required to have only a high school diploma or CDA. Thus, results of the study could be generalized only to teachers who had similar levels of education.

2. Charter schools were determined to be more likely to use performance pay as part of their system of compensation than other public schools (Podgursky, 2006). Participating study schools were all public charter schools operated by a non-profit agency; therefore, results could not be generalized to private pre-schools or other public pre-schools.
3. The school climate may also have had an impact on this study. If the team does not trust their administrators, they may not believe that they will receive the financial reward even if they achieve their targeted goals.
4. The placement of the students was not randomized. There was a disproportionate distribution of types and intensities of disabilities in classrooms.

Operational Definitions

Single Salary Scale. The single-salary schedule is a type of payment schedule that pays the same annual salary to the employees with the same qualifications (Milanowski, 2003)

School-based performance award programs (SBPA). A system that provides teachers and other school staff with pay bonuses when their school as a whole achieves specific educational objectives" (Kelley et al., 2002)

Incentive Plan. A system which provides bonus pay or bonuses based on merit (Johnson, 2000).

Bonus. A bonus shall mean any lump sum, continual, or periodic payment to a teacher above one's normal salary. Bonuses can be incentives for performance, payments for serving in a hard to-fill position, extra compensation for working at hard to-staff schools, or any other reason not associated with one's placement on the traditional single salary schedule (Johnson, 2000).

Knowledge and Skills-Based Pay. A compensation system where teachers earn financial increases for acquiring and applying new skills (Chait, 2007).

Merit Based Pay. The system of appointing and promoting personnel based on merit (Johnson, 2000).

Achievability. Teachers' perception that they are able to earn the rewards used in the performance-based rewards plan.

CHAPTER 2
REVIEW OF THE LITERATURE AND RELATED RESEARCH

Introduction

The debate on how to effectively educate children in the United States has gone on since the founding fathers landed on Plymouth Rock. The United States of America's commitment to education dates back to the country's democratic roots and beliefs that a quality educational system resulting in an educated citizenry was essential for the nation's survival and enhanced economic production.

The State of Education

Initially, schools were only for wealthy children. However, in 1647, the creation of the Old Deluder Satan Act in Massachusetts mandated that every town of 50 families or more support an elementary school and every town of 100 or more families support a grammar school, to teach Latin to boys to prepare them for college (Ye Old Deluder Satan Law). Horace Mann in Massachusetts and Henry Barnard in Connecticut created the first statewide common school system in the 1840s (Butts, 1978). The common law school system increased opportunities for children to learn in a free elementary school financed by public funds ("Only a Teacher," 2010). By 1918, all states had passed laws requiring children to attend at least elementary school (Butts, 1978).

The nation's commitment to improve and finance public schools increased significantly after the launch of the first earth orbiting satellite, Sputnik, by the Soviet Union in 1957 (McLeskey, 2007). Congress subsequently passed the National Defense

Education Act (NDEA) of 1958 and the Elementary and Secondary Education Act (ESEA) of 1965. In these two landmark statutes, Congress addressed for the first time such broad issues as expanding educational opportunities for low-income children and children with special needs as well as focusing on developing stronger math, science and foreign language instruction programs.

Beginning in the 1960s, several national research studies brought the next wave of unprecedented attention to the inadequacies of the U. S. education system. The Coleman Report (Coleman, 1966) was a comprehensive report of research on 600,000 students across the country. Findings indicated that schools had little impact on the success of a child, and that students' success was a result of family income or parent education. In 1983, The National Commission on Excellence in Education continued the criticisms of public education when it released its report, *A Nation at Risk: The Imperative for Educational Reform*. The report indicated there was very low academic achievement in public schools and that American students were outperformed on academic tests by almost every other industrial country (National Commission on Excellence in Education, 1983).

In 1996, the Third International Mathematics and Science Study (TIMSS), a large-scale international comparison of the educational systems of 41 countries, further validated the poor performance of United States students compared to those students of other industrialized countries with published student achievement rankings (Murnane & Steele, 2007).

The 2005 study by the Organization for Economic Cooperation and Development showed that the United States pupil allocation was tied for first place in the world increasing over 212% (inflation adjusted) from 1960 to 1995 (Bennett, 1999). Results of more money spent for less positive outcomes appeared to support the notion that the United States current educational system was not working and needed immediate reform and more accountability (Stigler & Stevenson, 1999).

Early Childhood Program Quality Issues

Until the end of the 19th century, children were viewed as miniature adults (Aries, 1962). Researchers and theorists such as Gesell and Piaget led the child study movement, contributing to a new way of looking at early childhood education. Instruction began to be tailored based on the natural development of young children with respect for their individual differences (Peltzman, 1998). Additionally, universities and colleges such as Columbia University and Yale University created laboratory nursery schools to further research and enhance the development of early childhood education (Henniger, 2005). In 1926, a pioneer in the kindergarten movement, Patty Smith Hill, invited a multidisciplinary group of 25 early educators to New York and formed the National Committee on Nursery Schools. The group eventually became the National Association for the Education of Young Children (NAEYC), a guiding force in establishing research-based standards and providing resources to improve early childhood program quality (Wolfe, 2000).

During the Great Depression and World War II, the Lanham Act funded the Works Progress Administration (WPA). The WPA set up emergency nursery schools to provide work for unemployed teachers. These nurseries were originally custodial in nature, focusing primarily on basic care and supervision of children. However, these programs later began to address the needs of the growing numbers of women in the labor force, who wanted quality and affordable care for their children. In the 1960s, Head Start, a Title I Pre-School, and other state-funded pre-school programs were developed to provide high-quality early education programs to address the needs of low-income children and their families (Ramey, Campbell, Burchinal, Skinner, Gardner, & Ramey, 2000)

As the proportion of children in the United States attending some kind of preschool program rose dramatically over the past four decades, researchers and policy makers began to extend the emphasis on accountability to early childhood programs (La Paro, et al., 2004). In 2008, 74% of four-year-olds attended a pre-school program, as compared with only 23% in 1971 (Barnett, Epstein, Freidman, Sansanelli & Hustedt, 2009; Magnuson et al. 2004). By 2009, 38 states offered publicly funded state pre-schools (Barnett et. al., 2009). Nationally, in 2008-2009, the United States spent over $5 billion annually on Pre-school programs (Barnett et al., 2009).

The interest in accountability in pre-school programs has been closely aligned with the research over the last 10 years and has emphasized the impact of the first three years of life for learning and brain growth (White House Conference on Early Childhood 1997). According to Shonkoff and Phillips (2000), there are certain critical periods when

presenting a child with certain stimuli and experiences facilitate the normal development of a certain pattern of responses. Their research indicated that from the time of conception to the first day of kindergarten, the brain develops at a faster pace than at any other time in one's life.

There has been substantial research evidence to suggest a causal link between a high quality early childhood experience and children's developmental outcomes. The experiences in a high quality early childhood program enhance children's cognitive and social development and set the stage for future academic success (Burchinal & Cryer, 2003; Peisner-Feinberg, et al, 2001; Sylva et al., 2004;). Two major studies, the Carolina Abecedarian Project and the High Scope Perry Preschool Study, have often been cited as evidence for the benefits of quality early childhood programs (Schweinhart, Berrueta-Clement, Barnett, Epstein & Weikart, 1985). In both studies, children from low-income families were randomly assigned to participate in high quality early education interventions, from infancy to age five in the Abecedarian study, and for three- and four-year-olds in the Perry Preschool study. Longitudinal data from both studies indicated high quality early childhood program significantly improved the long-term success of children born into poverty with long-lasting positive cognitive and developmental outcomes. For example, the Abecedarian project found higher math and reading scores in the treatment group from the toddler years through young adulthood. Children in the treatment group also completed more years of education, and were more likely to attend a four-year college *(*Ramey et al., 2000). La Paro et al (2004) found that pre-schoolers who

attended a high quality program entered kindergarten with higher ratings of social skills, enhanced knowledge of verbal and numerical concepts, and a better ability to cope with school related tasks.

The National Institute of Child Heath and Human Development (NICHD), in its Study of Early Child Care (SECC), collected data from over 1,300 families from 10 locations throughout the United States beginning with the birth of children in 1991. The NICHD longitudinal study examined the possible associations between early child programs and child outcomes. A 2002 SECC study found that even after controlling for demographic and family characteristics, higher-quality pre-school programs correlated with better pre-academic skills and language performance at 4.5 years of age. It was found, in a 2005 follow-up study, that higher scores continued in math, reading, and memory through the end of third grade for children who attended higher quality pre-school programs (NICHD, 2005).

In a 2009 study by Dearing, McCartney, and Taylor examined reading and math achievement of 1,300 fifth graders. The students that participated in a quality pre-school program had higher math and reading scores.

The research of Diefendorf and Goode (2005) and Peisner-Feinberg et al. (1999) has shown that funding quality early childhood services is a sound economic investment. The cost benefit, according to Nores et al. (2005) of a high quality program with improved outcomes ranged from $2.50 saved for each $1 spent to $12.06 saved per $1 spent. The Perry Preschool Study showed increased economic benefits experienced by the treatment group, including higher levels of home ownership and higher monthly

earnings, ultimately returning seven times the original investment to taxpayers (Schweinhart et al.,2005).

The definition of quality of care has been conceptualized in many different ways, but two dimensions generally define quality: process quality and structural quality (Clifford et al., 2005). Structural components are variables such as teacher level of education, ratio of student teacher, length of the school day and year, use of a standardized curriculum, physical environment and class size, which are changeable or are able to be regulated (Clifford et al., 2005; Hamre & Pianta, 2007; Howes, Phillips, & Whitebrook, 1992). Process quality involves the distinct social, emotional, physical, or instructional interactions that occur between teachers and children in the classroom and have a high correlation to a child's development. (Bronfenbrenner & Morris, 1998; Pianta, 2005).

In the past, most assessments of pre-school classroom quality utilized the Early Childhood Environment Rating Scale-Revised (ECERS-R). The ECERS-R, developed by the Frank Porter Graham Child Development Research Institute, has been used for over 20 years in the United States and internationally to measure program quality for children between the ages of two and six years (Cassidy, Hestenes, Hegde, Hestenes & Mims, 2005). The revised instrument, created in 2005, added indicators to measure quality in classrooms including children with and without special needs as well as culturally diverse classroom (Harms, Clifford & Cryer, 2005). The ECERS-R has 43 items divided into seven subscales addressing seven various areas of quality dimension:

(a) space and furnishing, (b) personal care routine, (c) language-reasoning, (d) activities, (e) interaction, (f) program structure, and (g) parents and staff.

Historically, early childhood literature researchers indicated that structural quality measured by tools such as the ECERS-R was linked to higher global quality (Howes, Phillips & Whitebrook, 1992; LaParo, Sexton & Snyder, 1998). Assessment of classrooms focused on the physical and organizational aspects of the environment such as the types of materials and equipment, playgrounds, and health and safety (La Paro et al., 2004). Pre-school programs were evaluated based on whether they adhered to recommended minimum standards related to programs' infrastructure and design such as class size or teacher qualifications (Barnett, Lamy, & Jung, 2005). As part of its accreditation criteria, the National Association for the Education of Young Children (NAEYC, 2005) has mandated minimum standards related to teacher preparation, curricula, class size, and child-to-teacher ratio. In addition, NAEYC standards have required all teacher assistants to have a minimum of a high school diploma or General Educational Development (GED) certification and participate in professional development. The belief has been that such standards contribute to better experiences and higher learning outcomes for children (Shonkoff & Phillips, 2000).

The National Institute of Child Health and Human Development (NICHD) Study of Early Child Care and Youth Development (2006) studied children who were six, 15, 24 and 36 months of age and enrolled in a pre-school program. Children who were in centers that met more of the structural standards had "advanced cognitive, language, and

preacademic outcomes at every age and better socio-emotional and peer outcomes at some ages" (p. 99).

Most previous research of early childhood programs has linked teacher level of education to higher global quality (Burchinal, Cryer, Clifford, & Howes, 2002; Pianta et al., 2005; Cassidy et al., 2005). Tout, Zaslow, and Berry (2005) reviewed the literature that compared early childhood teachers' education and classroom quality. Their review found that although a higher teacher education level correlated to better classroom quality, there was no threshold education level translating into higher quality. Early et al. (2006) initially studied a group of state-funded pre-school programs and found there was a null association between teacher education and quality. In a follow up, Early et al. (2007) used seven large and diverse data sets to determine whether the highest degree obtained by the lead teacher predicted classroom quality and children's academic gains. A null or contradictory association between teacher education and quality was found in this research.

In a California study of 231 classrooms sponsored by 122 agencies, researchers found that in private non-profit programs and Head Start, a higher level of teachers' education did predict classroom quality (Vu, Jeon, & Howes, 2008). However, school district and state sponsored pre-school classrooms did not have the same strength of correlation between a higher level of teacher education and quality of classrooms.

Howes et al. (2008) suggested that structural program aspects have fewer links to children's growth in pre-academic skills or to correlations with measures of process quality. These results were in contrast to Clifford et al. (2005) who suggested that good

structural quality was associated with better process quality. In addition to a safe and well-equipped early learning environment, it is the characteristics and behaviors of the teachers themselves that appear to have contributed most to the quality of the program and its effectiveness for young children and their families. Both the type of instruction and child-teacher interactions in early childhood programs have had a reliable and detectable effect on children's academic achievement and social and behavior competence (Hamre & Pianta, 2001; La Paro, et al., 2004; Peisner-Feinberg et al., 1999).

In 1998, La Paro, Sexton and Snyder used both survey instruments and the ECERS-R to determine whether there was a relationship between teachers' education, demographic variables, and years of experience and program quality in 58 community-based early childhood programs. There was no statistically significant relationship found among any of the above variables and global program quality.

Another longitudinal study, the Cost, Quality and Child Outcomes in Child Care Centers (CQO), was conducted to investigate the relationship between children's experiences in a pre-school program and their social, emotional, and cognitive outcomes. The CQO study began in 1992 and included over 700 children from Pre-school through second grade in four states. CQO evaluated classroom observations, individual child assessments and reports from parents. The results of this study showed that classroom practices such as teacher sensitivity and responsiveness were the strongest predictors of language and math development in early school years. Researchers also learned that a positive early relationship with their teachers most strongly contributed to social and behavior skills such as sociability and thinking/attention skills (Peisner-Feinberg et al.,

2001). Pianta, LaParo, Payne, Cox and Bradley (2002), in a study of the relationships between kindergarten students and teachers, found that students in a more child-centered climate appeared to be on task and engaged in learning more often.

One of the largest studies to date of quality across state programs for preschoolers (LoCasale-Crouch et al., 2007) described multi-dimensional profiles of observed quality across 694 classrooms in 11 states and examined variations in teacher, program, and classroom characteristics associated in these profiles. The results of this study showed that although classrooms met the standards of good structural quality such as adult-to-child ratios and use of formal curriculum, the classrooms generally had poor process quality. The teachers observed did not engage in focused instruction using a variety of methods nor did they have discussion with children that encouraged the children to use (a) higher-order thinking skills and cognition such as hypothesis testing and predicting, (b) integration with previously learned concepts, and (c) connections to the real world. Associations between teacher characteristics and program characteristics were generally not significant.

For this study, the Classroom Assessment Scoring System (CLASS) was used to determine the quality of interactions. The CLASS is an observational instrument developed by National Center for Research on Early Childhood Education (NCRECE) to assess classroom quality in pre-school through third-grade classrooms ("CLASS PreK Technical Appendix," n.d.). There are two versions of the CLASS that were widely used at the time of the present study: a Pre-K version and a K-3 version. The core theory behind the development of the CLASS assessment was that student and teacher

interactions were the key component to student learning. (Greenberg, Domitrovich, & Bumbarger, 2001; Hamre & Pianta, 2007; Morrison & Connor, 2002; Rutter & Maughan, 2002). The focus on teacher interactions has been a shift from other definitions because it focuses on what teachers actually do with materials and the interactions they have with students, rather than the presence of materials, the physical environment, or reported use of a curriculum (Pianta et al., 2006). A positive relationship was found between a high score on the model and an improvement in student achievement (Mashburn et al., 2008). The CLASS measures 10 dimensions that fall under one of three domains: emotional support, classroom organization and instructional support.

Howes et al. (2008) used data from the National Center for Early Development and Learning's (NCEDL) Multi-State Study and the NCEDL-NIEER State-wide Early Education Programs Study (SWEEP) to validate that classroom quality translates into better learning gains for pre-school students. Learning gains were measured utilizing the Peabody Picture Vocabulary Test (PPVT-III, 3rd edition) (Dunn & Dunn, 1997); the Oral & Written Language Scale (OWLS) (Carrow-Woofolk, 1995), and the Woodcock-Johnson III Tests of Achievement: Applied Problems Subtest (WJ III) (Woodcock, McGrew, & Mather, 2001). The structural program aspects such as student-teacher ratio, length of program day, or teacher qualifications did not made a difference in learning gains for the students. Results from these studies indicated that:

> gains in language-related academic skills are greater largely as a function of classroom processes directly experienced by children, particularly the instructional climate of the classroom and the teacher-child relationship quality,

elements that are controlled or at least affected by the teacher. (Howes et al., 2008, p 45)

Mashburn et al. (2008) studied 2,439 children enrolled in 671 pre-k classrooms across 11 states using three different measurements: (a) features of program infrastructure and design (utilizing the NIEER standards), (b) observations of overall classroom quality (utilizing ECERS-R), and (c) the observations of teachers' emotional and instructional interactions with children (utilizing the CLASS). Children's social competence, behavior problems, receptive language, expressive language, rhyming, letter naming, and applied problem solving were analyzed in relationship to scores on the ECERS-R, the CLASS, and the nine NIEER standards. Adjusting for prior skill levels, child and family characteristics, program characteristics and state requirements, statistically significant results were found between: (a) the CLASS domains of emotional support and children's social competence and behavior problems; (b) the CLASS domains of instructional support and children's receptive language, expressive language, rhyming, letter naming, and applied problem solving; (c) the ECERS-R and children's expressive language; and (d) children's social competence and teachers having a bachelor's degree. There were no statistically significant relationships between children's skills and their performance on other domains on the CLASS, the ECERS-R, or the other NIEER standards.

In 2009, Curby et al., studied over 2000 pre-school children in over 700 classrooms to examine changes in their skills in pre-literacy, math, and language as well as social competence. The findings suggested that relatively small differences in teacher-child interactions played a significant role in student's achievement gains.

Effectiveness of Teachers:

Clearly, one of the strongest predictors of students' achievement and learning has been the teacher (Darling-Hammond & Youngs, 2002; Gitomer, 2007; Koedel and Betts, 2007; Rivkin et al., 2005). Contradictory to earlier research, more recent researchers have consistently suggested that teachers significantly affect student achievement, possibly more than any other single factor (Koedel & Betts, 2007). According to Rivkin et al. (2005), a teacher's effectiveness has more impact on student learning than any other factor under the control of school systems, including the size of classes or the size of the school. In a study of the Denver Public Schools, Meyer (2001) found that teachers accounted for more than twice the total variation in student test score changes. Darling-Hammond and Youngs (2002) stated "Studies using value added student achievement data have found that student achievement gains are much more influenced by a student's assigned teacher than other factors like class size and class composition" (p. 13).

A 2003 longitudinal study of all students enrolled and teachers working in 88 Chicago Public School high schools from 1996-97 compared student achievement to teacher characteristics including education, types of teaching licensees and selectivity of undergraduate college (Aaronson, Barrow & Sanders, 2003). Researchers have determined that only 10% of the high student achievement correlated to one of these characteristics. They found that that one semester with a teacher rated two standard deviations higher in quality could add 0.3 to 0.5 grade equivalents, or 25-45% of an average school year, to a student's math score performance (Aaronson et al., 2003).

Nye, Konstantopoulos, and Hedges (2004) analyzed data from the Tennessee Class Size Experiment or Project STAR (Student-Teacher Achievement Ratio) involving students in 79 elementary schools in 42 school districts in Tennessee. The researchers used random assignments of students to classes, controlling for a number of factors including class size, socioeconomic status, previous achievement of students, gender, and ethnicity. In their review, Nye et al. (2004) stated:

> These findings would suggest that the difference in achievement gains between a 25th percentile teacher (a not so effective teacher) and a 75th percentile teacher (an effective teacher) is over one third of a standard deviation (0.35) in reading and almost half a standard deviation (0.48) in mathematics. Similarly, the difference in achievement gains between having a 50th percentile teacher (an average teacher) and a 90th percentile teacher (a very effective teacher) is about one third of a standard deviation (0.33) in reading and somewhat smaller than half a standard deviation (0.46) in mathematics. These effects are certainly large enough effects to have policy significance. (p. 253)

In their research, Nye et al. (2004) found that replacing an average teacher with a very good one nearly erased the gap in math performance between students from low-income and high-income households (Hanushek et al., 1999). Rivkin et al. (2005) estimated that an increase of one standard deviation in teacher quality raised student achievement in reading and math by about 10% of a standard deviation.

In 2007, Koedel and Betts (2007) also used a value-added technique, where teachers' quality is measured based on the value that they add to a student test score

(Sanders & Horn, 1994). While analyzing data from elementary schools in San Diego, California, they found that "in math, the average effect on student performance of a one-standard deviation improvement in teacher quality in a given year corresponds to 0.26 average within-grade standard deviations in test scores. In reading, the same improvement in teacher quality corresponds to 0.19 average within-grade standard deviations" (Koedel and Betts, 2007, p. 34).

Goldhaber and Hansen (2009), reported findings suggesting that a very good teacher as opposed to a very bad one can make as much as a full year's difference in learning growth for students. Data for this study were collected by the North Carolina Department of Public Instruction (NCDPI) and included information on student performance on standardized tests in math and reading from 1996-2006. In their review of the economic case for performance related pay in education, Podgursky and Springer (2007) concluded, "Any type of policy that can retain and sustain highly effective teachers and enhance or discard non effective teachers has the potential for substantial effects on student achievement" (p. 559).

Performance Pay

In order to retain and sustain these highly effective teachers, school districts have experimented with different kinds of pay structures with mixed results for over 200 years. In the early 1800s, communities compensated teachers by providing room and board in a system called the boarding round compensation system. Teachers rotated their residences

weekly from house to house of their students and were expected to adhere to strict high moral and integrity standards (Odden & Kelley, 2002).

The late 1880s brought changes to school organization and increased requirements for teaching as well as the transition to cash as the most common form of bartering. The boarding round system was replaced with a position-based system where teachers were paid based on years of experience, grade level taught, race, and gender (Odden & Kelley, 2002). This system paid elementary teachers less than secondary teachers because there was a belief that the skill level was less and elementary students were easier to educate.

In the 1900s, most districts moved to a single salary scale as a way to simplify pay and meet the need for increased teacher skills (Gratz, 2005). In this type of pay system, originally called the "position-automatic schedule", teachers with the same qualifications received the same pay regardless of their performance. The single-salary system compensated teachers for their years of experience and advanced degrees or educational credits earned (Odden & Kelley, 2002). When it was first adopted, the single-salary was seen as an improvement on a the previous system which had discriminated based on race, gender, and grade levels (Dee & Keys, 2004;) The single salary system also delivered many advantages including its relative simplicity, low administrative cost, and high level of transparency (Storey, 2000). The single-salary system has remained virtually unchanged. At the time of the present study, it was in use by a majority of school districts across the United States (Podgursky & Springer, 2007).

As the national focus on accountability and school performance has intensified, many school leaders in the United States and internationally have explored performance-related pay in an effort to increase and direct motivation towards these goals (Sclafani &Tucker, 2006). Many of these teacher-level incentive plans have been stimulated by the Department of Education's Teacher Incentive Fund (TIF) which provides money annually on a competitive basis to school districts, charter schools, and states to fund experiments and pilot performance-based pay projects (Podgursky & Springer, 2007).

According to Hanushek (2007), the traditional single salary system only rewards experience and the attainment of advanced degrees, two variables weakly correlated at best with student outcomes. An educator who expends extra effort and achieves results is paid the same and given the same annual salary increases as another educator who exerts minimum effort. Supporters for merit pay have expressed the belief that monetarily rewarding the best teachers will lead to a higher number of high quality teachers and positively influence student learning. Rewarding the best teachers may also encourage them to stay in the profession because excellence will be rewarded (King, Swanson, & Sweetland, 2003). In the current system, new teachers may be discouraged because they cannot advance based on their skills but only by their experience and degrees. This may lead to teachers being attracted to other professions where they can advance based on the quality of their work (Dee & Keys, 2004).

In its 2004 report, *Teaching at Risk,* The Teaching Commission, chaired by a former IBM chief executive, recommended "that the nation invest an additional $30 billion per year in teacher compensation, giving every teacher a 10% increase and

providing a 30% increase to the top half of teachers" (p. 35). In its report, the commission indicated that the criteria for teachers being in the top half would be based on an evaluation that would include student scores on standardized tests.

Two main models of performance-based reward system have been discussed in the education compensation literature. The literature related to these two models, merit pay and knowledge and skill-based compensation, has been reviewed and is presented in the following two sections of this review.

Merit Pay Programs

In a merit-based pay system, teachers have been rewarded financially based on a number of factors such as student performance, classroom observations, and teacher portfolios. Most merit pay systems have relied on student scores on standardized tests to determine rewards. Merit pay has been used to reward individual teachers, groups of teachers, or entire schools.

In Great Britain, merit pay in education was first introduced in the 1700s and later was judged unfair and removed from policies. Teachers were given financial rewards based on the results of reading, writing, and mathematics examinations given to the students (Gratz, 2005). The United States began serious consideration of merit pay after the public release of the *Nation at Risk* report (King et al., 2003). Merit pay programs have been implemented in a variety of ways and were still a focus of debate at the time of this study.

In 2007, according to a Hewitt Pay Study, over 90% of businesses in the private and public sector are using some kind of performance pay system with bonuses and raises linked to results. During the third National Education Summit in 1999, governors and business leaders offered to create a system of rewards and consequences for teachers based on student performance. This offer was quickly rejected, as educators believed this system would diminish cooperation and trust among teachers (Holt, 2001).

One of the earliest performance pay systems in an education setting in the United States was in Douglas County, Colorado in 1994. This pay scheme, developed with teacher input, had 90% of the teachers ratify the plan prior to implementation. The Douglas County project pay structure was varied and encompassed several performance based reward strategies focusing on teachers' behaviors and student achievement. According to Kelley (2000), the base salary earned by the teachers depended upon an initial evaluation. Teachers receiving an unsatisfactory rating did not earn the annual cost of living pay increase and were required to begin a remediation program. Teachers who earned a satisfactory rating were given the cost of living pay increase and were eligible for additional bonuses. The research performed in Douglas County showed that the plans increased student achievement, and teachers and community leaders were satisfied with the plan (Kelley, 2000).

The Dallas Independent School District in Texas developed a group-based performance pay system that rewarded teachers, principals, and non-teaching staff in order to increase the level of accountability and improve student outcomes. A total of 20% of the schools were eligible for bonuses between $500 and $1000, and an additional

30% of the schools could receive $425 bonuses for each participant. A distinguishing aspect of the program was that a complex formula was used to equalize gender, racial, and socio-economic factors in test scores (Mendro et al., 1999). Ladd (1999) reported that there was an increase in seventh-grade students who had passed the Texas Assessment of Academic Skill (TAAS) from 1991 to 1994.

In 1999, primary and secondary schools in the United Kingdom implemented a new performance management initiative for teachers described in a document entitled the "Green Paper." School administrators utilized annual performance appraisals and external assessment reviews against individually agreed objectives including pupil progress. Storey (2000) evaluated this scheme and determined that it was lacking important criteria for a successful program. Teachers did not agree with the framework of the plan, and this caused morale issues in the initial implementation phase. Additionally, she discovered that the system did not appear to have had a major effect on teachers' motivation to perform well.

One of the largest reviews of teacher attitudes about performance-based pay took place between 1998 and 2002. Kelley, Henneman and Milanowski (2002) conducted three studies on the same data set from programs in Kentucky and North Carolina. In July of 1990, Kentucky had implemented the Kentucky Education Reform Act (KERA), which included significant rewards, and sanctions program paying teachers bonuses based on student performance and provided money for school wide purchases, i.e., equipment and curriculum (Tomlinson, 2000). School success was measured using student assessment scores covering seven academic areas (reading, writing, math,

science, social studies, arts/humanities, and vocational/ practical living) as well as school-level indicators including dropout rates and school attendance.

The North Carolina project took place in the Charlotte-Meckenburg, North Carolina school district. The District had a school-based performance award program that evaluated student achievement in nine areas: reading, writing, math, social studies, primary grade readiness, higher-level course enrolment, end-of-course subject mastery, attendance and dropout rates (Heneman & Milanowski, 1999). Teachers could earn bonuses between $750 and $1,000. Researchers used surveys and interviews from approximately 3,000 teachers and administrators and found that the teachers in the study had a high degree of commitment and reasonably high level of understanding of the identified school goals. Results showed that teachers felt like they were motivated to change behaviors and improve student achievement because of the program. Due to budgetary issues, however, the teachers had a low level of belief that the financial rewards would actually be paid if they achieved the goals. Researchers showed that teachers had both positive and negative perceptions of the program (Kelly, et al., 2002).

Denver's teacher performance pay plan, entitled Professional Compensation Systems for Teachers (ProComp) evolved from a four-year analysis and pilot study that began in September of 1999. The plan was implemented for the 2005-2006 school year after overwhelming approval from the Denver Classroom Teachers Association and Denver Public Schools. A voter-approved $25 million tax increase funded the program. There were four components in ProComp that allowed teachers to earn additional salary or bonuses: (a) improving student achievement, (b) receiving satisfactory professional

evaluations, (c) market incentives for working in schools of critical need, and (d) obtaining graduate degrees or national certification, and participating in professional development activities. The program allowed experienced teachers to opt out of participating in the program (Gratz, 2005).

Gratz (2005) found that there were several positives in the program including its requirement for teachers to meet individually with their principals to establish goals and objectives for their students. However, Gratz (2005) also found that teachers were using over 400 different tests to measure student achievement. Thus, it was difficult to assess whether the program improved student outcomes. Additionally, it was found that teachers were more likely to want to teach at a higher socio-economic school so that student achievement would be higher, and that some teachers were cheating and excluding children with special needs in order to earn the bonuses (Gratz, 2005).

Lavy (2002, 2004) conducted two extensive studies in Israel on a bonus program based on scores on the high school exit exam. The first study concerned a school-wide program providing bonuses from $200 to $715 for all teachers in schools that met or exceeded the targeted scores. The second study was focused on an individual teacher program that provided an average bonus of $7,500 per teacher based on value-added contribution to student achievement based on various exit exams. A control group did not participate in the incentive program. The results showed that performance increased in terms of student credit accrual, higher participation and performance on matriculation, and lower dropout rates for both the recipients and non-recipients of the bonus group compared to the control group.

Arizona implemented a statewide performance pay program for all its schools in 2000. The performance pay program, funded through a sales tax increase from a ballot initiative entitled Proposition 301, increased funding for all aspects of education in Arizona. As part of the initiative, a Classroom Site Fund (CSF) was developed, and 40% of these funds (approximately $266 million) went towards performance pay as a way to increase accountability (White & Henemann, 2002).

Arizona school districts were able to establish their own implementation plans based on the unique needs of their districts. Although less than 1% of the teachers participating in the program did not meet their goals, the percentage of students who met or exceeded the state standards was below the state average. It appeared that the individual teacher goals criteria did not require students to meet the state testing average (Alafaita, 2003).

Minnesota implemented its Q Comp plan in 2005. This plan offered school districts an extra $220 per student to implement a five-point program that included performance pay. Under Q-Comp guidelines, 60% of any compensation increase was required to be based on district professional standards and on classroom-level student achievement gains, and teachers needed to approve the program before a district could participate. The state allocated $86 million annually for the program, which was funded by, state aid and local tax levies (Chait, 2007).

Florida replaced several other merit pay structures with the implementation of the Merit Award Program (MAP) in 2007. The program was optional, but additional state funding was available to participating districts (*Center for Education Compensation,*

2007). All teachers in the system were eligible for the award, and each district could develop its plan as long as 60% of the criteria were based on student achievement. In 2010, Florida legislators drafted and approved Senate Bill 6, ultimately vetoed by Governor Charlie Crist (*Education Week. April 21, 2010*). This bill would have required districts to reserve 5% annually of each district's classroom spending, about $900 million statewide, for merit pay, test development and related expenses. Districts that failed to comply with the bill would have lost that money. In 2010, Florida was one of 11 states with the District of Columbia that was awarded "Race to the Top" funds. These funds will require the state to develop a comprehensive pay for performance system.

Figlio and Kenney (2006) used data from the National Education Longitudinal Survey of K-12 schools, students and their families and their own survey to study the relationship between teacher performance incentives and student achievement. The researchers examined the impact of the frequency and magnitude of merit raises and bonuses. The results of this research showed that students had higher achievement even when teachers were given only a modest incentive pay. Students at schools with teacher pay-for-performance programs scored an average of one to two percentage points higher on standardized tests than did their peers at schools where non-bonuses were offered

In 2009, Hillsborough County in Florida, won a $10 million grant from the Bill and Melinda Gates Foundation to develop a teacher-effectiveness plan. In this program, 40% of a teacher's salary was based on student achievement as measured by the Florida Comprehensive Assessment Test (FCAT) and Hillsborough County end-of-year exams. The other 60% was based on principal or other teacher observational evaluations.

One of the largest studies of pay for performance was completed in Nashville with 300 middle school math teachers. The National Center on Performance Incentives completed a three-year experiment in 2010. This program allowed mathematics teachers to earn bonuses up to $15,000 per year for gains their students make on state exams (Chait, 2007). However, the results of the study showed little to no impact on test scores. The researchers reported "with respect to test scores in mathematics, we find no significant difference overall between students whose teachers were assigned to the treatment group and those whose teachers were assigned to the control group" (Springer et al., 2010, p. 43).

Knowledge and Skill-Based Pay Programs

A knowledge and skill-based pay program rewards teachers for acquisition of new skills and knowledge with the expectations that these lead to better instruction. Considered a compromise between the proponents and opponents of performance pay, it usually works in conjunction with a single salary schedule (Beer & Cannon, 2004). Rather than measure student achievement, salary increases have been associated with specific external evaluators and assessments that measure the degree to which teachers have reached a specified level of competency (Odden & Kelly, 2002).

In 2000, the Chattanooga, Tennessee school district implemented an incentive plan funded by a private foundation designed to improve student performance in its lowest performing schools. Teachers were first evaluated using a value-added and portfolio approach and then given significant incentives such as free graduate school

tuition and $5,000 bonuses to work in these schools. Turnover has been reduced and teacher quality in these schools has improved.

Dee and Keys (2004) completed one of the few randomized studies examining the correlation between incentive pay and student performance. Using the State of Tennessee Career Ladder Evaluation System, it was determined that students assigned to a teacher taught by a teacher participating in this system had significantly improved math scores but showed little or no effect on reading scores. The Dee and Keys study was particularly unique because students were randomly assigned to Tennessee career ladder teachers. However, in this study it was difficult to sort out the self-selection effect, as superior teachers may be the ones who chose to participate in the program.

Design and Implementation of Performance Pay Systems

The findings of researchers related to the design and implementation of pay for performance were of high importance in the literature review. Many plans have appeared to fail because of ineffective design (Kauhanen & Piekkola, 2006; Lawler, 1990). Some of the key challenges in designing a good system have been determined to include (a) difficulties in measuring performance, (b) adjusting for conditions that are outside of the control of participants, and (c) the general challenge of fairness (Rosenthal & Dudley, 2007).

King et al. (2003) observed that programs should not have quotas in that requiring teachers to compete for a limited number of rewards created a competitive rather than a collaborative environment. The use of quotas to determine the number of teachers to

receive awards was one of the key reasons for discontinuation of programs (Odden & Kelley, 2002).

A 2009 study by Jackson, et al. also reinforced the need for developing collaborative settings. These researchers found that teachers' performance and subsequent student achievement were affected by the quality of their peers' performance.

> If you give the reward at the individual level, all of a sudden, my peers are no longer my colleagues--they are my competitors. If you give it at the school level, then you are going to foster feelings of team membership, and that increases the incentive to work together and help each other out (Jackson et al., 2009, p. 22).

Bullock and Tubbs' (1990) research reinforced that formal structures and "buy in" from staff are important in the successful implementation. This includes ensuring there is a formal system to gather feedback from participants on the development of the plan as well as written policies and procedures on the bonus system. When staff are part of a formal feedback gathering session, they believe that management has a commitment to listening to them and meeting their needs. Odden and Kelly (2002) reinforced that for any of these pay plans to work, the involvement of all parties, adequate funding, training, and persistence is needed. Florida's initial failure in competing for $600 million Race to the Top federal funding was in part due to the lack of support of the teacher unions. Only 8% of the Florida unions backed the applications compared to the 100% backing in Delaware and 93% in Tennessee, ultimate recipients of the coveted awards (*Wall Street Journal*, March 29, 2010). Had Senate Bill 6 passed in Florida, teacher tenure would have been completely eliminated for newly hired teachers and school districts would have

been required to establish merit pay plans for all teachers and administrators (*Education Week,* April 21, 2010). However, teachers did not have input into the creation of the plan and they created significant opposition to the bill, which was subsequently vetoed by Florida Governor Crist.

In the 1990s, the Denver, Colorado School District developed and implemented one of the largest pay for performance and student improvement plans in the nation. Working with a design team consisting of school board members, teachers and administrators, this plan went through a number of transformations including the utilization of a pilot project. There were then several additional adjustments based on information learned. One of the differences that emerged in the final plan was the expansion of the definition of performance--considering both good teaching and service to the community as indicators. Additionally, the plan rewarded the entire group of teachers vs. individual teachers (Gratz, 2005).

The idea of merit pay has been to reward teachers for high student achievement. The majority of the current debate has not centered on the whether merit pay is a good idea, but rather how it should be implemented. Many people have agreed that paying bad teachers and good teachers the same amount of money is not fair (Zhang, 2002).

A more recent method of measuring teacher effectiveness has been the use of "Value Added Modeling." In this model, estimates are made about the academic progress students make in a particular teacher's class or in a particular school from one year to the next. This model attempts to isolate the impact that a particular teacher or school has on student learning (Murnane & Steele, 2007).

Pay-for-performance plans are built on two conceptual premises: (a) student achievement can be measured fairly and reliably, and (b) teachers can be motivated to achieve better results through incentives. The premise in most pay-for-performance plans is that money is an effective motivator and that these plans will motivate teachers to a higher level of performance. In the past, various types of organizations have used motivation theories as a basis to design pay for performance system (Cannon, 2007).

Conceptual Framework and Theoretical Basis

The focus of behaviorism has been viewed as an overt and observable behavior and involves what causes a certain behavior to happen (Driscoll, 2005). When individuals choose one action over another, it is because they expect or are speculating that one action will provide better results than another will. Bonus pay systems have been premised on incentives, motivation, and the belief that certain behaviors will occur if rewarded. An incentive has been defined as the purposeful use of rewards to encourage certain behavior (Kelley & Protsik, 1997).

Expectancy and goal setting are complimentary theories that work together to improve motivation. Expectancy theory, originally pioneered by Atkinson (1964) and then expanded by Eccles & Wigfield (2002) stated that individuals are motivated based on the belief that they will succeed and the value attached to their success. In his goal-setting theory, Bandura (1977) postulated that setting a goal, particularly a specific goal, has motivating value.

Learning Theory and Motivation

Multiple theories of motivation help predict and understand why individuals do or do not engage in certain behaviors. Three that are particularly relevant to this study include (a) behaviorism, (b) expectancy value theory and (c) goal-setting theory. In contrast to traditional behaviorism theories, the expectancy and goal-setting theories use a cognitive model as a premise, wherein individuals engage in uniquely purposeful goal-directed behavior (Bandura, 1986).

Expectancy theory, originally pioneered by Atkinson (1964), stated that individuals are motivated based on their perception of their ability to succeed and the value placed on the reward they receive for their success. Atkinson proposed the following equation: Motivation = perceived probability of success X incentive value of success (the value placed on success). Atkinson believed that a relationship existed where expectancy would substantially increase motivation when value for success is high. Eccles and Wigfield (2002), modern-day expectancy theorists, expanded Atkinson's theory showing that this relationship should not be unilaterally assumed, believing there was a broader variety of determinants for expectations of success and value based on the past life experiences of an individual.

Cummings (1994) and Welbourne and Mejia (1995) believed that individuals would respond favorably and change their behavior if three conditions were met in a multiplicative affect: (a) They believe that the goal was realistic and that they have enough control to achieve it, (b) they believe they have the right skills, tools and

competencies to do the job (self-efficacy), and (c) they must see a connection between their individual effort and the reward.

In their meta-analysis, Judge and Bono (2001) affirmed that generalized self-efficacy and locus of control were factors that were significant predictors of job performance and satisfaction. Vroom (1964) was one of the first theorists to research and apply expectancy theory to organizational settings - using these results to help predict the use of rewards and incentives to explain motivation and ultimately increase productivity and job satisfaction.

One of the factors influencing motivation in expectancy theory has been the level of belief by individuals in the value of the reward and that they will actually receive it. Trust is an important factor that improves an individual's perception that the promised reward will indeed be received. One of the key elements of success for performance pay is for staff to have trust in their supervisor and upper management and the belief that they will do what they say they will do (Vest, Scott, Vest, & Markham, 2000). Kelly et al. (2002) determined that teachers in North Carolina did not believe that their performance bonuses would be paid, and motivation was affected.

The establishment of a meaningful employee reward is also extremely important to the success of the plan. If the reward is too small, it is not noticeable, has no value and employees will think it is not worth the extra effort to achieve it. Gneezy & Rustichini's (2000) research showed that it is critical to have the resources to provide a large enough reward or it is not worthwhile to implement the plan. Staff should be included in discussions of what level of reward is meaningful to them. Charlotte-Mecklenburg

educators complained that the small amount of the performance award ($400-$600) did not compensate them adequately for the extra workload necessary to achieve the required objectives (Kelley, 2000).

Ironically, it has been believed that teachers have not been motivated by extrinsic rewards but have chosen the profession for its intrinsic satisfaction. According to Kelley and Protsik (1997), wanting to help children learn or working collaboratively with peers was much more important to teachers than extrinsic rewards. Many teachers have reported helping students as their main reason for becoming a teacher and that the intrinsic rewards of teaching far outnumber the monetary gains (Conley & Odden 1995). Johnson (1986), however, found that if the extrinsic incentive was tied to something specific such as improvement of test scores, a financial incentive was also motivating to teachers. Johnson (1986) also argued that providing the opportunity to earn extrinsic rewards could diminish the satisfaction of the intrinsic rewards teachers feel. Kelley (1999) analyzed qualitative and survey data from pay for performance programs in Kentucky; Charlotte-Mecklenburg, North Carolina; and Douglas County, Colorado. The findings suggested that teachers were motivated because the programs also increased intrinsic rewards such as school improvement and watching students' improvement. However, when allowed to vote on how to use the award money, 98% of the teachers voted to use the funds as a salary bonus (Kelley, 1999).

Another consideration or explanation for motivation has been goal-setting theory. Originally postulated by Locke (2002), the goal setting theory proposes that in itself the act of setting a specific goal increases motivation and performance. However, in order

for a goal to be effective, it must be specific, challenging and something the individual considers worthwhile. Tubbs' (1986) research reinforces the need for clear objectives and a very specific system of outcome measurements. It has been shown that attaching a financial incentive to goal achievement, i.e., a bonus plan, increases an individual's motivation to achieve these goals (Wright, 1989). Goal-setting theory supports the idea that one of the main mechanisms by which incentives influence performance is by generating commitment to incentive goals (Locke & Latham, 2002). Researchers have shown that the act of setting a clear and measurable goal motivates individuals to higher levels of performance (Odden & Kelley, 2002). A pay scheme tends to attract employees who prefer it or who prosper under it (Lazear, 2000) who reported that incentive pay not only raised the productivity of the individual but the overall quality of the workplace or school.

The present study was relevant in examining and extending the expectancy behavior and goal setting theory of motivation as it relates to school quality. In particular, this study was conducted to extend the understanding of these theories by combining the two variables together with a classroom bonus plan. Although one of these theories has been researched in previous studies, there has been limited research using the combined variables. This study was conducted to investigate whether the use of a pure behaviorist reward, i.e., money, combined with specific goals would have a significant effect on improving quality rating scores and student achievement scores in selected Pre-K classes.

CHAPTER 3
METHODOLOGY

Introduction

This chapter describes the methodology that was used to explore the relationship between scores on the CLASS quality rating scores in a Pre-K classroom before and after the introduction of a bonus system. The chapter has been organized to include a presentation of the research questions, descriptions of the setting, participants, and instruments in the study. Also included are a description of the processes and procedures used in the collection and analysis of the data.

Research Questions

This study was guided by the following research questions:

1. Does the ability to earn a financial incentive/bonus for each classroom team member change CLASS quality rating scores in their Pre-K classes?
2. Does the ability to earn a financial incentive/bonus for each classroom team member change student achievement scores in their Pre-K classes?

Table 1 displays the research questions along with the data source used to answer each question. Also included in the table are the types of research and the analyses used in conducting this research study.

Table 1
Research Questions, Data Sources, and Data Analyses

	Research Questions	Data Source	Data Type	Data Analysis
1.	Does the ability to earn a financial incentive/bonus for each classroom team member change CLASS quality rating scores in their Pre-K classes?	CLASS Interviews	Quantitative Qualitative	Descriptive statistics Mann-Whitney Interviews and Focus Groups
2.	Does the ability to earn a financial incentive/bonus for each classroom team member change student achievement scores in their Pre-K classes?	VPK Student Pre-assessment test VPK Student Post-assessment test	Quantitative	Descriptive statistics Split-plot ANOVA

Setting and Population

State

The research study was conducted at a non-profit agency in Central Florida. In 2009, the state of Florida employed approximately 170,000 teachers of which approximately 30,000 were Pre-K teachers. In 2009, the demographics of the teacher

population in Florida were 73% White, 14% Black, 11% Hispanic, 1% Asian and 2% Other/Mixed.

Agency

The non-profit agency was a 501c(3) agency that has been providing Pre-K education services to children since 1955. As one of its programs, the agency has been operating birth through kindergarten inclusive charter schools since 2001. There were six such schools serving approximately 650 students, both with and without disabilities, in urban and suburban settings at the time of the study. The total student population of approximately 650 students was representative of the community at large with 25% White, 38% Hispanic, 18% Black, 1% Asian and 18% Other/Unknown. The staff membership of approximately 300 team members is representative of the communities served with 43% White, 40% Hispanic, 13% Black, 2% Asian and 2% Mixed/Other.

The non-profit agency was chosen for this study because of its diversity in staff and student demographic factors, i.e., ethnicity, type of students. Additionally, as a charter school, the agency was able to exercise flexibility in how pay systems were designed as well as ease in changing pay systems as different information emerged.

Lastly, the schools contained all the elements of structural quality such as low classroom ratios, use of a standardized curriculum, small group size, and highly educated teachers (Clifford et al., 2005; Hamre & Pianta, 2007). The agency gave permission for this study to be conducted.

Schools

Only four of the six schools were included in the study. The fifth and sixth schools were excluded because they did not have any teacher teams who met the requirements for inclusion in the study.

The first school in the study was School A. There were 180 students currently enrolled in the school with a total of 16 classrooms serving birth through second-grade students. The school student demographics were 58% White, 9% Black, 31% Hispanic and 2% Other. There were 85 staff including 75 teachers and paraprofessionals.

The second school in the study was School B which served 110 students currently enrolled in the school in eight birth through kindergarten classrooms. The school student demographics were 24% White, 20% Black, 53% Hispanic, and 2% Other. There were 45 staff including 35 teachers and paraprofessionals.

The third school in the study was School C . A total of 120 students were enrolled in the school with nine classrooms from serving students from birth through Pre-K. The school student demographics were 14% White, 4% Black, and 83% Hispanic. There were 27 staff including 21 teachers and paraprofessionals.

The fourth school in the study was School D. There were 50 students currently enrolled in the school with six classrooms from birth through kindergarten. The student demographics were 20% White, 52% Black, and 28% Hispanic. There were 25 staff including 20 teachers and paraprofessionals.

Classrooms

The setting for this study consisted of Summer Voluntary Pre-K (VPK) classrooms. The classrooms consisted of students with and without disabilities who would be entering kindergarten in the fall. The maximum number of children enrolled in each classroom was 12. There were 14 VPK classrooms held during the summer. Only six classrooms were eligible to participate in the teacher team bonus/non-bonus portion of the study. However, student assessment data was used from all classrooms to provide for a larger comparison sample size. Student assessment data was not used if the student did not complete the entire session or were moved to another class in the middle of the session.

Study Participants

A total of 12 participants were included comprising of six teacher/paraprofessional teams who participated in the entire study. Two of the participants (1 team) were from School A. Six of the participants (3 teams) were from School B. Two of the participants (1 team) were from School C and the remaining two participants (1 team) were from School D. In order to be included in the study, team members were required to remain part of the same classroom team for the entire study. Two additional teacher/paraprofessional teams began the study but withdraw due to change of schedule or resignation from their position.

Prior to the beginning of the study, all eligible teacher and paraprofessional teams were encouraged but not required to participate. Based on agency and state requirements, each teacher was required to be considered highly qualified and certified by the State of

Florida in Early Childhood, with a minimum of a bachelor's degree in a related field. The paraprofessionals were required to have a minimum of a high school diploma though most had an associate degree or college credit equivalent or a Child Development Associate (CDA). Demographic information for participants was captured in the areas of campus/school assigned, position, ethnicity, years of Pre-K teaching experience, and highest degree earned.

Sampling

Participants were randomized into treatment and control groups using a two-stage process. First, each classroom team was stratified into three groups using the Administrators' Walkthrough Checklist for Pre-Kindergarten Classroom (Appendix A). As part of the regular agency assessment process, approximately a month prior to the study, observations were conducted in each school classroom using this checklist, which was developed, by the Florida Technical Assistance and Training System (TATS). TATS is a statewide project that supports programs serving Pre-Kindergarten children with disabilities by providing technical assistance and training. The checklist contains the core items that administrators would expect to see during a short observation period in an inclusive preschool classroom. The checklist primarily addresses the structural aspects of the classroom and measures 19 items divided into three categories: physical environment (10 items), curriculum (five items), and teaching (four items). The checklist protocol provides space for recording the date of the classroom visit, whether the checklist items were or were not observed and a space for notes. Each classroom team was rated as

"High," "Middle," or "Low" based on the results of the Administrators Walk-through Checklist. The initial sample included two teams rated "high", four teams rated "middle" and two teams rated "low". However, one of the "high" teams and one of the "middle" teams did not complete the study.

Each classroom team in the High category was given a number and then utilizing the random sampler on SPSS, was placed in a Bonus (Group 1) or Non-Bonus (Group 2) category until equally distributed. A similar procedure of assigning each classroom team in the Middle and Low categories, and utilizing the random sampler on SPSS, was followed for teams in the Middle and Low categories until equally distributed. Randomization was done within strata to ensure balance between treatment and control groups, e.g., a disproportionate number of teams in the higher performance classrooms being assigned to the treatment group by chance. Of the final study participants, one bonus team was in the 'high" group, two were in the "middle" group and one was in the "low" group. In the non-bonus teams, one team was in the "middle" group and one was in the "low group.

Research Design

This study employed a randomized subjects, pretest-posttest Control Group research design (Ary, Jacobs & Razavieh, 2002) with the primary focus on quantitative data. The quantitative portion of the study consisted of recording and comparing the CLASS scores before and after the bonus intervention. The researcher also compared the pre- and posttest student scores on the *Voluntary Pre-K Screening Test* for each

classroom team. The qualitative portion of the research study consisted of interviews with the classroom teams to gain insight into their motivations and feelings about the performance pay. There were specific questions that were asked to each participant based on whether they were a member of the bonus or non-bonus group.

Research Timeline

Institutional Review Board (IRB) permission to conduct the study was requested in May 2010, and permission was granted on June 9 of that same year (Appendix B). Agency permission was also requested and granted at the same time (Appendix C). The timeline for the study was consistent across all teams. The study lasted 16 weeks.

During week one, participants were introduced to the study by the primary researcher and two agency managers in a group meeting. The researcher explained that a study was being conducted to assess improvement in teacher/paraprofessional interactions and student achievement during the nine-week summer VPK program. Participants were not told about the bonus possibility during this meeting. During this group meeting, the research team collected participant consent forms (Appendix D) and demographic data of the teacher/paraprofessional teams using a paper survey (Appendix E). Demographic information for participants was captured in the areas of campus/school assigned, position, ethnicity, years of Pre-K teaching experience, and degree earned. During this overview, the participants were trained on the VPK curriculum/lesson plans and on the administration of the Student Pre- and Posttest.

Additionally, during week one, basic demographic information on all students was collected using existing data sets. The pre- and post-assessment were completed on each student as part of the classroom protocol for all students in the Summer VPK program (Appendix F). The student pre-test was conducted in week one of the Summer VPK program (week two of the study). The student post-test was conducted in week eight and week nine of the Summer VPK program (week nine and ten of the study)

During week three of the study, the CLASS pre-assessment was completed and scored on all classroom teacher/teacher assistant teams in the study (Appendix G). Trained assessors completed the CLASS during a two-hour onsite classroom observation and in 30-minute cycles (20 minutes of observation and 10 minutes of recording). Each observation included three to four cycles of observations. Baseline scores and targeted scores were established based on these results. To determine the thresholds that bonus teams' performance measures would need to reach to qualify for bonuses, the mean of all pre-test sub-categories (emotional climate, classroom organization and instructional support) was calculated and 10% was added to each mean score.

In week five of the study, the results of their CLASS scores were shared with all participants in individual team meetings. The team meetings were conducted by the researcher or research assistant who utilized a script in order to ensure that information was communicated consistently. Participants were also given a letter summarizing the information (Appendix F). All participants were instructed that as an agency, the goal was for each team to achieve the agency target score, as described above. Additionally, participants in Group 1 (Bonus Group) were notified that if they raised or maintained

their CLASS scores to at least 10% above the validated agency mean score, they would receive a bonus. The bonus was $350 for each team member. Teams were striving to reach a fixed target goal. Theoretically, all participating teams could have attained the targeted goal. The bonus teams were informed that they could not share information about the bonus with any other team members and doing so would result in their being disqualified from the study.

At the same meeting, all participants (bonus and non-bonus groups) were given the identical training materials on the CLASS including access to a video subscription of training videos to assist them in improving their teaching skills. The videos were short clips of teachers in actual classrooms demonstrating the skills in each of the domains (Emotional Climate, Classroom Organization and Instructional Support).

The participants were also given copies of their individual scoring sheets, which included specific feedback and anecdotic comments on their performance for each domain of Emotional Climate, Classroom Organization and Instructional Support. There were no workshops or other required trainings conducted. Participants were free to self-study if they chose. Permissions to use instruments in the study are contained in Appendix H.

Based on the initial pre-assessments across all participants, the targeted mean score for Emotional Climate was 5.98. The targeted mean score for Instructional Support was 3.33. Mashburn et al.'s (2008) research using 2,439 children enrolled in 671 pre-K classrooms in 11 states showed an Emotional Climate mean score of 5.52 (95%

confidence interval = 5.44 to 5.59) and an Instructional Support mean score of 2.03 (95% confidence interval = 1.95 to 2.10).

In weeks nine to 13, another CLASS observation was conducted by trained assessors. The CLASS post-assessment results were scored and recorded. Also during week 10, the VPK post- assessment was conducted on each student participant. During weeks 14 through 16, after all CLASS assessments were completed, participants were interviewed to collect their feedback on their feelings about the performance pay and its motivation for them to improve their CLASS scores. At that time, the debriefing statement (Appendix G) was reviewed with each group. Table 2 outlines the research timetable.

Table 2
Research Timetable

Week	Tasks
Week 1	Collect demographic information
	Explanation of study
	Pre-Test (Students)
Week 2	Classroom Assessment Scoring System (CLASS)
	baseline observations
	Summer VPK program begins
Week 3	Announcement of intervention (potential bonus)
Weeks 4-9	Summer Voluntary Pre-K (VPK) program continues
Week 10	Post-test (students)
Weeks 9-13	CLASS post observations
Weeks 14-16	Focus Groups/Interviews with participants

Instrumentation

Classroom Assessment Scoring System (CLASS)

The instrument that was used to measure quality of the Pre-K classrooms was the Classroom Assessment Scoring System (CLASS) (Appendix G). The CLASS is an observational instrument developed by the National Center for Research on Early Childhood Education (NCRECE) to assess classroom quality in pre-school through third-

grade classrooms. Currently, two versions of the CLASS are widely used, a Preschool version and a Kindergarten through third grade version. The CLASS has been used to observe more than 4,000 classrooms across the United States. The CLASS assessment dimensions were developed using theory and research suggesting that interactions between students and adults are the primary mechanism for student development and learning. This focus on teacher interactions is a shift from other definitions as it focuses on what teachers actually do with the materials they have and the interactions they have with students, rather than the presence of materials, the physical environment, or reported use of a curriculum (Pianta et al., 2006). Pianta et al. (2006) identified teacher-child interactions as the best measure of classroom quality, student development and learning and subsequently developed the CLASS.

The CLASS has been used to measure program quality and teachers' interactions with children in over 671 pre-school classrooms across 11 states. A positive relationship was found between a high score on the model and an improvement in student achievement (Mashburn et al., 2008). The dimensions included on the CLASS have been shown to contribute to students' academic achievement, social competencies, and performance on standardized tests of literacy skills (La Paro et al., 2004; Pianta et al., 2008).

The CLASS measures 10 dimensions that each fall under one of three domains: emotional support, classroom organization and instructional support (Pianta et al., 2008). Table 3 displays the domains, dimensions, and descriptors of the CLASS.

Table 3
Classroom Assessment Scoring System (CLASS) Domains, Dimensions, and Descriptors

Domains and Dimensions	Descriptors
Emotional Support	
Positive climate	Reflects enthusiasm, enjoyment, and respect displayed during interactions between the teacher and children, as well as peer interactions.
Negative climate	Reflects the negative tone within the classroom, such as anger, hostility, or aggression exhibited by the teacher and/or children.
Teacher sensitivity	Reflects how responsive the teacher is to emotional and academic needs, such as providing comfort and encouragement.
Classroom Organization	
Over-control	Extent to which classroom activities are rigidly structured and the degree to which children's autonomous behaviors are exhibited.
Effective Behavior Management	The ability to monitor, prevent or redirect behavior.
Productivity	Reflects the teacher's use of instructional time and routines for children's learning.
Instructional Support	
Concept development	Reflects how well teachers encourage higher order thinking skills, creativity, and problem solving.
Instructional learning formats	Reflects how the teachers engage children in activities and facilitate activities so that learning opportunities are maximized.
Quality of feedback	Reflects the verbal evaluation teacher' provide to children about their work, comments and ideas.

Voluntary Pre-K (VPK) Pre- and Post-Assessment

A secondary measure of quality of classroom instructional teams was the VPK pre- and post-assessment (Appendix F). The VPK pre- and post test assessment was developed by the agency utilizing the VPK performance standards that measure the skills needed for a student's readiness for kindergarten. There were 51 skill items in the following categories: (a) math, (b) emerging literacy, (c) gross motor, (d) fine motor, (e) personal care, and (f) social and emotional development.

Each skill was rated "yes," "emerging," or "no," and these scores were translated into a numerical rating. This screener was used as a pre- and posttest for all of the approximate 100 summer VPK program students regardless of their teachers' participation in the bonus study. Teachers administered the test to each student individually during the first and last week of the program.

Data Analysis

In this research project, the relationship, if any, between the implementation of a classroom bonus system and a teachers' motivation to improve quality was examined. The independent variable was the bonus. The dependent variables were the CLASS pre- and post-scores and the VPK pre- and post assessment scores.

Classroom teacher and paraprofessional performance on the CLASS were compared two times: (a) baseline (prior to any interventions), and (b) post-financial incentive/bonus. The higher the CLASS score, the higher was the quality of the

classroom. The CLASS score is a ratio variable as there is an absolute zero and the researcher was able to quantify and compare the differential in scores. All dimensions were scored on a 7-point Likert scale ranging from low (1, 2), medium (3, 4, and 5) to high (6, 7). The total score for each category or domain (Emotional Support, Classroom Management and Instructional Support) was obtained by summing the average of the sub-categories. Due to the small sample size, the researcher conducted a non-parametric, Mann-Whitney test to determine if there was a statistically significant difference in the dependent variables before and after implementing the intervention (bonus plan).

The student VPK assessment scores were compared at two different points in time: (a) pre-assessment/baseline during the first week of the VPK session, and (b) post-assessment during the last week of the VPK session. Each skill was assessed by the teacher and scored for the pre- and post-assessments as follows: Skills rated "yes" received two points. Ratings of "emerging" and "no" received one point and zero points respectively. The scores were then summed to obtain the total pre- and post-assessment score. The assessment data of four students were not utilized as the students were classified as having profound disabilities and their scores reflected no skills in either the pre- or post-assessments. Additionally, the assessment scores for students whose teachers/teachers assistants were not participating in the research study were included and labeled "non-participants". The inclusion of all students was done to have a larger sample size for comparison purposes of the student's pre and post assessment scores.

After the completion of the CLASS post-assessment and the student post-assessment, three sets of semi-structured interviews were conducted with the participants.

The interviews were conducted either individually or in small groups with members of respective groups (i.e. bonus group or non-bonus groups). All but one teacher participant was included in an interview/group. The participant who was not included had left the agency prior to the interviews beginning (but completed all other aspects of the study).

An agency representative manager was present during each focus group to assist in note taking and to ensure validity and "audit trail" of the interview (Gay, Miller, Airasian, 2006). Comments from the interviews and focus groups were used to explain and enhance the quantitative findings. A written guide was followed with a list of ordered questions. Based on the responses, clarification was requested or additional questions were asked to ensure understanding by the researcher (Gay, Miller, Airasian, 2006). The bonus group was asked the following questions:

1. What did you think was the goal of the research project?
2. Did you understand the terms of the bonus pay?
3. Did you believe you would get the reward?
4. What were some ways that you tried to improve your CLASS score?
5. Did the bonus motivate you to improve your CLASS score?
6. Would a larger amount of bonus pay change your behavior?

The non-bonus group was asked the following questions:

1. What did you think was the goal of the research project?
2. What were some ways that you tried to improve your CLASS Score?
3. What would you have done differently if you knew there was a bonus incentive to improve your CLASS score?

Validity and Reliability

Reliability is the extent to which an experiment, test or any measuring procedure yields consistent results on repeated trials (Babbie, 1990). In this study, the researcher used certified CLASS observers who were not employees of the agency. As a part of the certification process, trainees watched and coded five 15-minute classroom videos. These video had been consensus coded by at least three master CLASS coders. The consensus ratings established a standard by which to judge the accuracy of ratings made by trainees; ratings that are not in agreement with the consensus ratings reflect a high degree of random error that is used to pinpoint additional training needs. In order to receive certification, trainees needed to score within one point of the master code on 80% of all codes given and demonstrate the ability to code reliably across all 10 CLASS dimensions. Prior to initial assessments, the assessors exceeded the minimum requirements and had reached a documented inter-rater reliability of .85 or above.

Ethical Considerations

The following ethical considerations were included:

1. All data collections were anonymous
2. Participation in this study was voluntary. All respondents were informed of their right to withdraw from the study at any time without penalty.
3. The purpose of the study was clearly stated on the informed consent form and the cover letter.

4. Permission to conduct the study was obtained from the dissertation chairperson, other committee members, and the Institutional Review Board of the University of Central Florida.

Limitations of the Study

The study's design contained the following limitations.

1. Participants of this study had higher levels of education compared to other early childhood education staff. The study teachers were required to have a bachelor's degree or higher, be certified teachers and highly qualified. The majority of the teacher assistants had a Child Development Associate (CDA) or an associate degree. Most early childhood teachers are only required to have a high school diploma or CDA. Thus, results could only be generalized to teachers having similar levels of education.
2. Participating classrooms had a higher percentage of students with disabilities than did typical pre-school programs. Thus, results could only be generalized to classroom with similar student demographics.
3. Participating schools were all public charter schools operated by a non-profit agency; therefore results could not be generalized to private pre-schools or other public schools. According to Podgursky (2006), charter schools are already significantly more likely to use performance pay as part of their system of compensation than other public schools.

4. Only six participant teams were studied. Due to the limited sample size, it was difficult to generalize to a larger population.
5. The school climate may also have had an impact on this study. The participants appeared to have a high level of trust that administrators would follow through on the award of bonuses. If team members do not trust their administrators, they may not believe that they will receive the financial reward even if they achieve their targeted goals.

CHAPTER 4
ANALYSIS OF THE DATA

Introduction

The purpose of this study was to test the hypothesis that the implementation of a classroom bonus plan would improve student achievement and the observable attributes and behaviors of teaching that have been determined to be effective in improving student learning. The chapter is organized to (a) present demographic information relative to staff and student participants in the study and to (b) respond to the two research questions which guided the study.

Demographic Information for Teacher/Teacher Assistant Participants

Demographic information for participants was captured in the areas of campus/school assigned, position, ethnicity, years of Pre-K teaching experience, and degree earned. Table 4 presents the frequency and percentage data for each of the demographic variables for the total study population.

Table 4
Demographic Characteristics of Staff Participants

Characteristic	Frequency	Percentage
School/Campus location		
A	2	16.7
B	6	50.0
C	2	16.7
D	2	16.7
Total	12	100.0
Job classification		
Teacher	6	50.0
Teacher Assistant	6	50.0
Total	12	100.0
Ethnicity		
Black	5	41.7
White	4	33.3
Hispanic	3	25.0
Total	12	100.0
Highest degree earned		
High School	2	16.7
Associate degree	3	25.0
Bachelor degree	7	58.3
Total	12	100.0
Years of PK teaching experience		
Less than one year	4	33.3
1-5 years	8	66.7
Total	12	100.0

Note. Percentages may not equal 100% due to rounding.

Of the 12 participants, six (50%) worked at School B. Schools A, C and D had two participants each (16.7% each). In regard to job classification, six (50%) were teachers. The six remaining participants (50%) were teacher assistants. The ethnicity of the participants was almost equally distributed with five (41.7%) of the participants

identified as Black and four (33.3%) identified as White. Only three (25%) of the 12 participants were identified as Hispanic. Concerning the education of participants, seven (58.3%) had earned a bachelor's degree, three (25%) had earned an associate degree, and two (16.7%) had completed a high school education. Of the 12 participants, eight (66.7%) had between one and five years of Pre-K teaching experience. Only four staff members (33.3%) had less than one year of Pre-K teaching experience. Complete demographic information for all participants is presented by classroom group in Table 5.

Table 5
Demographic Information for Teacher-Assistant Teacher Teams by School and Position

Group	School	Position	TATS Score	Bonus Yes/No	Certification	Degree	Gender	Ethnicity	Years of Experience	Years at Agency
1	A	Teacher	High	Yes	Yes	BA	F	White	1-5	1
1	A	Assistant	High	Yes	Yes	BA	F	Black	1-5	1
2	B	Teacher	Middle	Yes	Yes	BA	F	White	1	1
2	B	Assistant	Middle	Yes	No	AA	F	Hispanic	1	1-5
3	B	Teacher	Low	No	Yes	BA	F	Black	1-5	6-10
3	B	Assistant	Low	No	No	AA	F	Hispanic	1-5	1
4	B	Teacher	Low	Yes	Yes	BA	F	White	1-5	1-5
4	B	Assistant	Low	Yes	No	HS	F	Black	1	6-10
5	C	Teacher	Middle	Yes	Yes	BA	F	White	1-5	1-5
5	C	Assistant	Middle	Yes	No	AA	F	Hispanic	1-5	1-5
6	D	Teacher	Middle	No	Yes	BA	F	Black	1-5	6-10
6	D	Assistant	Middle	No	No	HS	F	Black	1	1

Demographic Information for Students

As part of the initial intake process, basic demographic information was collected for all students enrolled in one of the six campuses providing the agency's summer VPK programs. This information was entered into the agency data management system. Data were extracted for the purpose of this study from this system. Students were assigned a case number to ensure anonymity. Students who did not participate in the entire session were deleted from the data set. A total of 44% of the Agency Summer VPK students were in classrooms that participated in the bonus/non-bonus aspect of the research study. Table 6 provides data related to the total summer VPK student population. Reported are frequency and percentages of students (a) in bonus, non-bonus, and non-participant groups; (b) on each of the six campuses; (c) by student ethnicity;, and (d) by Individual Education Plan (IEP) status.

Table 6
Demographic Characteristics for Student Population

Characteristic	Frequency	Percentage
Group		
Bonus Group (Study Participants)	34	32.4
Non-bonus (Study Participants)	11	10.5
Non participants (Teachers did not participate in study but student assessment data was used)	60	57.1
Total	105	100.0
Campus – All Students		
A	29	27.6
B	22	21.0
C	18	17.1
D	10	9.5
E	10	9.5
Total	16	15.2
	105	100.0
Student Ethnicity – All Students		
Black	19	18.1
White	39	37.1
Hispanic	31	29.5
Asian	3	2.9
Other/Mixed	13	12.4
Total	105	100.0
Individual Education Plan (IEP Status) – All Students		
Yes	80	76.2
No	25	23.8
Total	105	100.0

Note. Percentages may not equal 100% due to rounding.

During the summer, there were a total of 14 VPK classrooms in operation. To increase the sample size of student assessments, student data were included for all students regardless of whether their teacher/teacher assistants were assigned to be participants in the study. Six of these classrooms were study participants and eight of the classrooms teacher/teacher assistants did not participate in the study. Students in these classrooms were excluded from the study because in these classrooms the teachers all taught only half the session/summer. Of the 105 students, a total of 34 (32.4%) were students in bonus classrooms; 11 students (10.5%) were in non-bonus classrooms, and 60 students (57.1) were categorized as non participants in the bonus/non-bonus aspect of the research study.

In regard to campus location of enrollment, a majority of the students (29, 27.6%) were enrolled on Campus A. Campus B had 22 (21%) of the total student enrollees, Campus C had 18 (17.1%) of the student enrollees and Campus D and Campus E each had 10 (9.5%) of the student enrollees. Campuses E and F did not participate in the bonus/non-bonus aspect of the study. The ethnicity of the total Summer VPK student population included 39 (37.1%) White students, 31 (29.5%) Hispanic students, and 19 (18.1%) Black students. Reported as Other/Mixed were 13 (12.4%) of the total summer VPK student population. The summer VPK program was an inclusive program serving students with and without disabilities. Of the 105 students enrolled, 80 (76.2%) had an Individual Education Plan (IEP) indicating the student had a disability or special need. A total of 25 students did not have an IEP and were labeled as an "Inclusion Student."

The Matrix of Services is a Florida Department of Education funding document completed after the IEP has been developed. The Matrix of Services is used to document the level and intensity of exceptional student education (ESE) and related services the student will receive for funding purposes (Florida Department of Education). The matrix is scored between 251 and 255, with a score of 255 receiving the highest level and intensity of ESE services. Table 7 indicates the matrix score assigned to each child by the school district. A total 33 (31.4%) of the students were scored as a 253 matrix, 16 (15.2%) were scored as a 254 matrix. A total of 25 students (23.8%) were scored as Unknown as they came from another school location, and 25 (23.8%) of the students did not have a disability as indicated by their inclusion status.

Table 7
Matrix of Services

Level of Services	Frequency	Percentage
Inclusion	25	23.8
251	1	1.0
252	4	3.8
253	33	31.4
254	16	15.2
255	1	1.0
Unknown Matrix	25	23.8
Total	105	100.0

Note. Percentages may not equal 100% due to rounding.

Table 8 displays information related to the demographic characteristics of bonus and non-bonus groups. In regard to campus location, 15 (44.1%) of the 34 students were

enrolled in the Campus B program. Campus A had 10 (29.4%) and Campus C had 9 (26.5%) of the bonus group student enrollees. The majority 7 (63.6%) of the students in the non-bonus group were enrolled in the Campus B program. Campus D had four (36.4%) of the non-bonus group student enrollees.

Table 8
Demographic Characteristics of Bonus and Non-Bonus Groups of Students

Characteristic	Bonus		Non-Bonus	
	Frequency	Percentage	Frequency	Percentage
Campus				
A	10	29.4	-	-
B	15	44.1	7	63.6
C	9	26.5	-	-
D	-	-	4	36.4
E	-	-	-	-
Total	34	100.0	11	100.0
Student Ethnicity				
Black	5	14.7	4	36.4
White	13	38.2	3	27.3
Hispanic	13	38.2	3	27.3
Asian	1	2.9	-	-
Other/Mixed	2	5.9	1	9.1
Total	34	100.0	11	100.0
Individual Education Plan (IEP Status)				
Yes	25	73.5	10	90.9
No	9	26.5	1	9.1
Total	34	100.0	11	100.0
Matrix				
Inclusion	9	26.5	1	9.1
251	-	-	-	-
252	-	-	1	9.1
253	9	26.5	3	27.3
254	9	26.5	4	36.4
255	-	-	-	-
Unknown Matrix Number	7	20.6	2	18.2
Total	34	100.0	11	100.0

Note. Percentages may not equal 100% due to rounding.

In the bonus group, White students and Hispanics students had equal numbers of 13 (each 38.2%). Black students totaled five (14.7%). In the non-bonus group, White and Hispanic students were again equal in number, each having three (27.3%). There were four (36.4%) Black students in the non-bonus group.

Of the 34 students in the bonus group, 25 (73.5%) had IEP's. In the non-bonus group, 10 (90.9%) of the 11 students had IEPs. A review of the distribution of matrix scores contained in Table 8 for students in the bonus group indicates that matrix scores were equally distributed with 9 (26.5%) of the students scored as a 253 matrix and an identical number scored as a 254 matrix. Nine (26.5%) of the students did not have a disability and seven (20.6%) had an unknown matrix number. Of the 11 students in the non-bonus group, four (36.4%) students were scored as a 254 matrix, and three students (27.3%) had a 253 matrix score. Table 9 presents the demographic characteristics of students by participant classroom and school. Data reported includes total number of students, bonus classification of classroom, gender, numbers of students with IEPs, and ethnicity.

Table 9
Demographic Characteristics of Students by Participant Classrooms

Variable	Classroom Number and School					
	1A	2B	3B	4B	5C	6D
Students						
Total	9	9	3	8	9	4
# with IEP	6	7	2	7	7	4
Bonus						
Yes	Yes	Yes	Yes		Yes	
No				No		No
Gender						
Male	7	6	1	2	7	2
Female	2	3	2	6	2	2
Ethnicity						
Black	0	3	1	0	1	4
White	5	2	2	3	3	0
Hispanic	3	4	0	4	4	0
Asian	1	0	0	1	0	0
Other	0	0	0	0	1	0

Data Analysis

Research Question 1

Does the ability to earn a financial incentive/bonus for each classroom team member change CLASS quality rating scores in their Pre-K classes?

The first research question was to determine whether or not a bonus would affect intentional teacher-student interactions, classroom quality, environment, and organization, as well as emotional and instructional support in Pre-K classrooms as measured by Classroom Assessment Scoring System (CLASS). Originally, eight Voluntary Pre-kindergarten (VPK) classrooms were first randomly assigned to two groups: bonus or non-bonus. Two of these classrooms did not complete the study. The classrooms were then observed individually using the CLASS for three to four cycles of twenty minutes each for a pre- and post-assessment. Data collected from these observations were entered into SPSS version 14. For the purpose of data analysis, total mean scores from each of the CLASS subscales were used. Descriptive statistics for pre- and post-assessment subscales are displayed in Table 10 and discussed in the accompanying narrative.

Table 10
Pre- and Post-Assessment Mean Scores and Standard Deviations for CLASS Subscales

Subscales	Total		Bonus		Non-Bonus	
	Mean	SD	Mean	SD	Mean	SD
Pre-assessment	52.38	6.33	54.94	6.28	47.25	1.76
Emotional Support	6.32	.41	6.27	.47	6.41	.40
Classroom Organization	5.99	.87	6.10	.66	5.75	1.53
Instructional Support	3.38	1.01	3.27	.94	3.59	1.53
Post-assessment	55.54	4.14	57.81	2.70	51.0	1.41
Emotional Support	6.66	.30	6.66	.34	6.65	.33
Classroom Organization	5.95	.52	5.77	.54	6.31	.28
Instructional Support	3.69	.82	3.92	.84	3.25	.82

Pre-assessment Subscales

The highest possible CLASS pre-assessment total score was 70. In this study, the mean pre-assessment score for all participants was 52.38. The maximum pre-assessment subscale score for each of the three subscales was 7. The average for each pre-assessment subscale for all participants was: Emotional Support (6.32), Classroom Organization (5.99), and Instructional Support (3.38). The subscale that received the highest score was Emotional Support (M=6.32) whereas Instructional Support (M=3.37) received the lowest mean score.

Post-assessment Subscales

The highest possible CLASS post-assessment total score was 70. In this study, the total mean CLASS post-assessment score for all participants was 55.54. The maximum post-assessment subscale score for each of the three subscales was 7. The average for each post assessment subscale for all participants was: Emotional Support (6.66), Classroom Organization (5.95), and Instructional Support (3.69). The subscale that received the highest score was Emotional Support (M=6.66) whereas Instructional Support (M=3.69) received the lowest mean score.

The total mean CLASS post-assessment score for the bonus group participants was 57.81. The average for each post-assessment subscale for the bonus group participants was: Emotional Support (6.66), Classroom Organization (5.77) and Instructional Support (3.92). The subscale receiving the highest score was Emotional Support (M=6.66) whereas Instructional Support (M=3.92) received the lowest mean score.

The total mean CLASS post-assessment score for the non-bonus participants was 51. The average for each post assessment subscale for the non-bonus participants was: Emotional Support (6.65), Classroom Organization (6.31), and Instructional Support (3.25). The subscale that received the highest score was Emotional support (M=6.65) whereas Instructional Support (M=3.25) received the lowest mean score.

Comparison Analysis

A non-parametric Mann-Whitney test was run to determine differences in the pre-test CLASS scores between the bonus and non-bonus groups. The test, $Z = -1.39$, $p = .17$, indicated that there was no significant differences in the rankings of pre-test scores between the bonus and non-bonus groups. The Non-Bonus group ($M_r = 2.00$, $n = 2$) had a smaller mean rank than the Bonus group ($M_r = 4.25$, $n = 4$). In other words, the non-Bonus group's pre-test CLASS scores were lower than those in the Bonus group; however, this difference was not significant.

An additional Mann-Whitney Test was run on the percentage change between pre-test and post-test CLASS scores between the bonus and non-bonus groups. The test, $Z = -0.46$, $p = .64$, indicated that there was no significant differences in the percentage change in CLASS score from pre-test to post-test between the bonus and non-bonus groups. The Non-Bonus group ($M_r = 3.00$, $n = 2$) had a smaller mean rank than the Bonus group ($M_r = 3.75$, $n = 4$). In other words, the non-Bonus group's percentage change in CLASS scores from pre-test to post-test were not as great than those in the Bonus group; however, this difference was not significant. The results should still be interpreted with caution due to the extremely small sample sizes.

Research Question 2

Does the ability to earn a financial incentive/bonus for each classroom team member change student achievement scores in their Pre-K classes?

The second research question was used to determine whether the ability to earn a financial incentive/bonus for each classroom team member changed student achievement scores in their Pre-K classes. All students in the agency's Voluntary Pre-kindergarten (VPK) classrooms received a pre- and post-assessment. Additionally, the percentage of change was also calculated for each score. Data collected from these assessments were entered in SPSS version 14. Descriptive statistics are reported for each item in the section below.

Table 11 shows the pre- and post-assessment of all students enrolled in the summer VPK program. The mean of the pre-assessment was 56.06 with a standard deviation of 28.71. The minimum score was three and the maximum score was 102. The mean of the post-assessment was 66.57 with a standard deviation of 28.73. The minimum post-assessment score was four and the maximum score was 102. The mean percentage change from pre- to post-assessment was 34.7%.

Table 11
Pre- and Post-Assessment Scores: All Students

Variables	N	Minimum	Maximum	Mean	Standard Deviation
Pre-assessment Score	105	3.00	102.00	56.06	28.71
Post-assessment Score	105	4.00	102.00	66.57	28.74
% Change (Pre to post-assessment)	104			.347	
Valid N (listwise)	104				

Table 12 shows the pre- and post-assessment of the students enrolled in the bonus group. The mean of the pre-assessment was 53.26 with a standard deviation of 28.81. The minimum score was three and the maximum score was 95. The mean of the post-assessment for the bonus group students was 60.50 with a standard deviation of 31.47. The minimum post-assessment score was four and the maximum score was 101. The mean percentage change from pre- to post-assessment was 28.7%.

Table 12
Pre- and Post-Assessment Scores: Bonus Group Students

Variables	N	Minimum	Maximum	Mean	Standard Deviation
Pre-assessment Score	34	3.00	95.00	53.26	28.81
Post-assessment Score	34	4.00	101.00	60.50	31.47
% Change (Pre to post assessment)	34			.287	
Valid N (listwise)	34				

Table 13 shows the pre- and post-assessment of the students enrolled in the non-bonus group. The mean of the pre-assessment was 56.55 with a standard deviation of 26.76. The minimum score was 10, and the maximum score was 84. The mean of the post-assessment for the non-bonus group students was 70.82 with a standard deviation of 30.00. The minimum post-assessment score was 13 and the maximum score was 96. The mean percentage change from pre- to post-assessment was 30.5%.

Table 13
Pre- and Post-Assessment Scores: Non-Bonus Students

Variables	N	Minimum	Maximum	Mean	Standard Deviation
Pre-assessment	11	10.00	84.00	56.55	26.76
Post-assessment	11	13.00	96.00	70.82	30.01
% Change	11			.305	
Valid N (listwise)	11				

Table 14 shows the pre- and post-assessment of the students whose teacher/teachers assistants were not part of the research study. The mean of the pre-assessment was 57.55 with a standard deviation of 29.33. The minimum score was six and the maximum score was 102. The mean of the post-assessment for the non-participant group students was 69.23 with a standard deviation of 26.78. The minimum post-assessment score was 13, and the maximum score was 102. The mean percentage change from pre- to post-assessment was 39.0%.

Table 14
Pre- and Post-Assessment Scores: Non-Participants

Variables	N	Minimum	Maximum	Mean	Standard Deviation
Pre-assessment	60	6.00	102.00	57.55	29.33
Post-assessment	60	13.00	102.00	69.23	26.78
% Change	59	.22	4.50	.389	.69
Valid N (listwise)	59				

Comparative Analysis

A split-plot ANOVA was run, testing for three hypotheses:

- Keeping the bonus group constant, there is no difference in student scores between pre-test and post-test. (*Within-Subjects effect*)
- Keeping time constant, there is no difference in student scores between bonus types. (*Between-Subjects effect*)
- There is no interaction between time and bonus type. (*interaction effect*)

In the testing of the first hypothesis (within-subjects effects), F (1, 102) = 56.47, p < .001, partial eta-squared = .36. Ignoring the factor of bonus group, there was a significant difference between pre-test and post-test in student score. This result would be anticipated, as there should be improvement and growth observed from pre to post test. 36% of the variability in student scores could be explained by the factor of time

In the testing of the second hypothesis (between-subjects effects), F (2, 102) = 0.62, p = .54, partial eta-squared = .01. Ignoring the factor of time, there was no

significant difference in student scores between the bonus groups. 1% of the variability in student scores could be explained by the factor of bonus group.

In the testing of the third hypothesis (interaction effects), F (2, 102) = 2.12, p = .12, partial eta-squared = .04. There was no significant interaction between time and bonus group regarding student score; any changes occurring over time did not differ in significant ways between groups. 4% of the variability in student scores could be explained by the interaction.

Overall, all groups showed increases in scores between pre-test and post-test, but the increases were statistically similar in nature. Tables 15 and 16 display the results of the analyses to determine main effects and interaction effect for student scores. Table 17 contains the ANOVA for pre-post student scores by bonus group.

Table 15
Main Effect: Descriptive Statistics for Student Scores (N = 105))

Group	*M*	*SE*
Bonus Group		
Bonus (n = 34)	56.88	4.83
No Bonus (n = 11)	63.68	8.50
Non-Part. (n = 60)	63.39	3.64
Time		
Pre-Test	55.79	3.57
Post-Test	66.85	3.54

Table 16
Interaction Effect: Descriptive Statistics for Student Scores (N = 105)

	Bonus (*n* = 34)		No Bonus (*n* = 11)		Non-Participants (*n* = 60)	
Statistic	Pre	Post	Pre	Post	Pre	Post
M	53.63	60.50	56.55	70.82	57.55	69.23
SE	4.96	4.92	8.72	8.65	3.73	3.71

Table 17
Repeated Measures ANOVA for Pre-Post Student Scores by Bonus Group

Source	*Df*	*F*	η^2	*P*
	Between Subjects			
Bonus Group (B)	2	0.62	.01	.54
S within-group error	102	(1,588.81)		
	Within Subjects			
Time (T)	1	56.47	.36	< .001**
T x B	2	2.12	.04	.13
T x *S* within-group error	102	(71.20)		

Note. Values enclosed in parentheses represent mean square errors. *S* = subjects.
*$p < .05$. **$p < .01$.

Ancillary Analysis

In addition to the quantitative analysis, additional qualitative data were collected through focus groups and interviews with participants of the bonus and the non-bonus groups. Each group was asked the same questions (as indicated in Chapter 3). Both participant groups believed that the purpose of the research project was to improve the

quality of their teaching practices and ultimately improve student achievement. Some of the comments included:

> We knew we were trying to improve how we interacted with our students and how we effectively used the materials we had in the classroom.
>
> The assessor was looking at how we interacted with the students and the other teachers.

In the focus group, participants in the bonus group indicated that they understood that they would receive a $350 bonus if they achieved the targeted CLASS scores. The majority of them believed they would receive the reward if they were successful. Some of the comments included:

> At one point, we thought maybe we would not get the bonus since there were wage freezes at the agency but then we thought it was from a different pot of money so it would be okay.
>
> I did not even think that we would not get it. I just assumed if I improved my scores I would get it.
>
> I did not think about the bonus--whether we would get it or not.

However, even though they all indicated they understood what was required to get a bonus, after the study was over, one of the participants questioned why her team did not get a bonus (they did not meet the target score).

The responses regarding what the participants did to improve their CLASS score varied from hardly anything to significant efforts to increase their scores. In the bonus

group, two out of the three members of the focus group appeared to be very focused on improving their scores. Some of their comments included:

> My teacher assistant and I went through each item on the pre-assessment and strategized about how we could improve.
>
> We split up the training videos, watched them, and then came back together to talk about what we learned.
>
> The notes (feedback on the CLASS pre-assessment) were very helpful because they were very specific.
>
> On the assessment, it indicated that we needed to improve the way we asked questions of the student and it gave us some suggestions. Based on that feedback, we really worked on trying to ask more "how and why" questions with our students.
>
> We met with our school administrator and asked her for help on ideas to improve based on the pre-assessment.
>
> We read the CLASS training materials especially the parts that we did not do as well on.
>
> We did not really do anything other than read over the pre-assessment score.
>
> We talked to our Foster Grandmom (volunteer) because some of the issues we were marked down on was related to her interactions.

From their comments, the non-bonus group did not appear to make any extra efforts to improve their CLASS scores. Some of their comments included:

> I sort of forgot about the training that was offered.

My teacher assistant and I didn't really talk much about it.

I looked at my pre-assessment CLASS scores.

When asked the question, "Did the bonus motivate you to improve the scores?" none of the participants indicated that the bonus significantly affected their efforts. Some of their comments included:

I wanted to improve because I wanted to get better for my students.

The bonus was nice but I would have tried to improve in any case.

We are here for the heart of it – we want be making a difference and having our students improved.

I was happy to get additional advice and feedback. Any advice I can get I was happy to take.

Even though the extra was money is a motivator, we just want to try to do our best.

There was some follow up conversation about the "equity" factor of a bonus and the different ways bonus pay could be structured. The participants felt strongly that when a bonus was offered, they would want a classroom team bonus and so as to be rewarded for individual classroom individual efforts vs. school wide efforts. The teacher participants agreed that teacher assistant bonuses should be equal to theirs. One of the teachers commented: ". . . because it's all about being a team, and we are all responsible for the success of our kids." The bonus participants also felt that the bonus amount that was used in the study was a good number - enough of an incentive to be meaningful.

The non-bonus group believed they would have changed their behavior if they had known there was a bonus opportunity. Some of the comments included:

I would have paid better attention when the e-mails came out telling us about the trainings.

I would have asked my school administrator for help.

I think I would have read over my pre-assessment score feedback closer and read the CLASS training materials/blue folder.

I would have watched the training videos.

I would have known that I would have had to do step a, step b, step c to get the bonus.

None of the non-bonus group achieved the targeted score that would have been required to receive the bonus. However, after the study was completed, these participants were offered the opportunity to be re-evaluated by a CLASS assessor and receive the bonus if they met the target. All of them were interested in being re-assessed.

CHAPTER 5
SUMMARY, DISCUSSION AND RECOMMENDATIONS

Introduction

The present study was conducted to explore the effects of a bonus pay plan on PreK teachers and teacher assistants based on their CLASS scores and student achievement. This chapter contains a summary and discussion of the findings of the study and implications as they related to the literature reviewed. Additionally, recommendations for further research in the area of performance pay are presented. Lastly, the limitations of the investigation are discussed

Interest in teacher effectiveness and merit pay has continued to be a high priority for major stakeholders in the field of education as well as the public. In a survey conducted by Phil Delta Kappa and the Gallop Organization, 71% of those surveyed said teachers should be paid based on the quality of their work rather than a traditional salary schedule (*Education Week*, September 14, 2010).

Summary and Discussion of Findings

During a summer Voluntary PreK program, six eligible classroom teams (teacher and teacher assistant) were randomly divided into either a bonus or non-bonus group. A pre- and post-Classroom Assessment Scoring System (CLASS) was completed on each classroom team of participants to evaluate the quality of their instruction. The CLASS score assesses team versus individual participation, resulting in a compiled score based on the performance of all classroom staff members, i.e., teacher and teacher assistant.

There was no statistical significance of the CLASS post-assessment score between the bonus and non-bonus group. However, two of the four bonus group participant teams achieved the targeted scores needed to receive a bonus. None of the non-bonus groups achieved the targeted score.

Additionally, pre- and post-assessment data for the entire student population of the Agency Summer VPK program was examined. There was no significance in student post-assessment scores between the three groups (bonus, non-bonus, and non-participants).

Research Question 1

Does the ability to earn a financial incentive/bonus for each classroom team member change CLASS quality rating scores in their Pre-K classes?

The first research question focused on determining whether the introduction of a bonus pay plan would affect CLASS scores for teacher/teacher assistant participant teams. The data from this study indicated that the participants in the bonus group did not have a significantly higher post-CLASS score than the non-bonus group. The mean total score for the post-CLASS was 57.81 for the bonus group and 54.94 for the non-bonus group.

According to LaParo et al. (1998) improving direct teacher and child interactions, known as process quality, is more beneficial than structural quality in improving early childhood quality. The CLASS focuses on measuring these child-teacher interactions and

is divided into three domains: emotional support, classroom organization and instructional support.

In this study, the overall Emotional Support scores for the bonus and non-bonus groups on their post-assessment was 6.66. The Emotional Support scores for the two groups were almost identical with the bonus group scoring a mean of 6.66 and the non-bonus group scoring 6.65. All scores in the study were significantly higher than those determined in previous research (Pianta et al., 2005). In the NCEDL/SWEEP study, 56% of classrooms had a mean Emotional Support score between 5 and 5.9 (Early et al., 2005). Emotional climate was the element with the highest mean score among all study participants.

Emotional climate includes elements of positive climate, negative climate, teacher sensitivity, and regard for student perspectives. It was not surprising that classroom teams in the present study scored high in these elements. The educators in this study had chosen to work with students with special needs; thus, one could theorize that they were especially attuned to the individual needs of students and have a higher level of caring and compassion. As one of the participants related in her comments, "We are all here because we have a heart for kids even though we could make more money somewhere else." Additionally, inclusion, respect, and acceptance of all were accepted values in the school, and most of these values align with the elements of emotional climate.

The overall Instructional Support scores for all groups in the post-assessment was 3.69. Though both scores fell into the "good" range, the instructional support mean scores for the bonus group (2.92) and the non-bonus group (3.25) were determined to be

significantly different. The mean instructional support score decreased, however, from the pre- to the post- assessment for the non-bonus group. The Instructional Support mean in the current study was also significantly higher than that found in prior research (Pianta et al., 2005). In the NCEDL/SWEEP study, 57% of classrooms had a score between 1 and 1.9 and 32% of classrooms had a score between 2 and 2.9 (Mashburn, 2008).

The three dimensions that comprise the Instructional Support domain (concept development, quality of feedback, and language modeling) had lower mean scores across all classrooms than did the dimension scores for the other domains. Past researchers have suggested that Instructional Support scores in Pre-K classrooms have been typically lower than Emotional Support scores and have been low on the seven-point scale (Hamre et al., 2006). This was consistent with the current findings. The fact that Instructional Support was consistently the lowest score is of concern. This domain has been the most reliable classroom quality indicator for predicting growth across time in receptive and expressive language skills after adjusting for demographic factors (Howes et al., 2008).

In the focus groups and interviews, it was related that this was the area on which participants had focused in their improvement efforts. For example, the bonus group participants focused on improving the types of questions they asked their students, i.e., asking more "how and why" questions and watching training videos that focused on this aspect of the CLASS scores.

According to the results of the data analysis, the intervention had an effect on mean scores of the CLASS. The scores for the post assessment were higher for the bonus group. However, the post assessment scores means for both groups did increase. It is

interesting that although their scores improved, the participants in the bonus group believed that the fact there was a bonus opportunity did not affect how hard they worked to improve their scores. "We wanted to improve for the sake of improvement not just to get the money," related one of the participants. Regardless of what they shared about why they were motivated to improve, the participants in the bonus group appeared to be more focused on improving their scores and were more successful in doing so. On the other hand, the non-bonus group indicated that had they known about the bonus in advance, they would have worked harder and been more focused on improving their scores. The findings of the current study aligned with the results of the study of Kentucky's performance-based compensation systems in which teachers with potential to receive performance pay reported modifying their instructional practice to achieve targeted goals (Kelley et al., 2000; Kelley & Protsik, 1997).

It was also noteworthy that all participants in the bonus group had the belief that if they improved their CLASS scores, they would receive a bonus as promised. One of the key elements of success for performance pay has been that the staff believes that management will "do what they say they are going to do" (Vest et al., 2000). The trust expressed by participants in the current study are in contrast with findings by Kelley et al. (2000) where teachers studied reported they did not believe that that a bonus would be received even if goals were achieved. In the current study, the trust level in management may have contributed to the actions of staff who believed that the promised bonus would materialize if they reached their targeted goals.

One of the themes that emerged from the focus groups was the appreciation for and value of the specific and direct feedback that participants received from the pre-assessment. The participants also seemed to be clear on what goals they needed to achieve in order to qualify for the bonus. In previous research related to goal-setting theory, there was motivation in receiving goals that were specific and challenging for the participants (Bandura, 1977). The CLASS provides very direct and meaningful feedback from observations that link teaching interactions to student learning. Using a system such as the CLASS appears to be able to provide teachers with the needed feedback. With the results from the CLASS assessment, the teacher knows the specific practices that need improvement.

The last theme relates the strong feeling of "team" that all the participants shared. This bonus plan was a team-based bonus - all members of the classroom team had an opportunity to earn the same bonus if the targeted scores were achieved. When teacher participants were asked, without their teacher assistants present, if they thought that all members of the classroom team should get the same bonus, all participants agreed that their teacher assistants were critical to the success of the classroom and should get the same bonus amount as the teacher.

In the present study, all participants could conceivably receive the bonus if all had achieved the targeted CLASS scores. Merit pay has often been criticized for lowering morale and discouraging collaboration of teachers to help each other if only a certain percentage of individuals could achieve a bonus (Chamberlin et al, 2002, Jackson et al., 2009). Many of the current study participants mentioned working as a team to improve

their CLASS scores as a strategy that was used. During one focus group, one participant specifically mentioned, "I wish we all were in the bonus group so all the classroom staff could have worked together to improve." Stiglers (*Education Week*, Commentary June 14, 2010) discussed the strategy that has been used in Japan where all teachers meet informally to review results of student assessments and use each other as resources to brainstorm strategies for improved results.

Research Question 2

Does the ability to earn a financial incentive/bonus for each classroom team member change student achievement scores in their Pre-K classes?

The second research question focused on determining whether the introduction of a bonus pay plan would affect student assessment scores. The data obtained in this study indicated that the students in the bonus group did not have a significantly higher student post-assessment mean score than the non-bonus group. No significance was found between student scores in the bonus, non-bonus and non-participant groups in the study. The mean total score for the student post-assessment across all groups was 66.57. The mean score for the student post-assessment in the bonus group was 60.50. The mean score for the student post-assessment in the non-bonus group was 70.82 and the mean score for the student post-assessment in the non-participant group was 69.23.

Although the study randomized participants into treatment and control groups, the students were not randomized. Students had been assigned to their classrooms based on

parent choice of school location as well as capacity of classroom. Imbalance can arise, particularly when the number of subjects is small as in this study. The smaller the size of the groups, the greater the probability that chance can produce unequal groups. In the case of this study, this issue turned into an uneven distribution of types and intensity of disabilities into classrooms. The non-bonus group had almost 10% more students with more severe disabilities as rated by their 254 matrix score. However, there was also a similar number of students with "matrix unknown." Based on observation, many of those students had equally intense needs.

There was a large standard deviation (28.74) in student post-assessment scores between all groups. This large deviation was indicative of the wide variety of abilities in the classrooms. The classrooms consisted of students with low-cognitive abilities as well as students with autism whose behavior potentially interfered with their ability to produce a valid assessment of their skills and knowledge. On the other end of the spectrum, some of the children in the classrooms had no disabilities at all and were classified as "inclusion students."

The CLASS assessment analysis indicated that the seven-point ratings of the classroom setting and teacher behavior were highly stable and were not dependent on the type of children in the classroom. The student assessment scores, however, were much more dependent on the individual student composition of each classroom. Although the student outcome findings in this study did not align with previous research of improved student outcomes, the implications are important. One implication from the current findings stems from the fact that the sample in the current study included a large

percentage of students with disabilities. It may well be that current results did not align with prior research findings because unlike prior research, in which no children had disabilities, the majority of children included in the current study had disabilities.

Finally, the bonus reward was not tied to improvement in the student assessment. Although the expectation was that if the CLASS scores improved, student achievement would improve, there was no direct linkage between the two. This may have, in part, contributed to the lack of significance of student post-assessments scores for the bonus group over that of the non-bonus group. Additionally, there was a relatively short period, approximately eight weeks, between pre- and post-assessment for students.

Implications of the Study

This study has added to the research base and may be useful in the design or revision of performance based compensation systems in the future. The ultimate goal of everyone involved in education is to improve student achievement. Therefore, any progress towards motivating staff to work towards this goal is valuable. The belief of supporters of pay for performance is that a bonus plan will motivate education teams to work harder towards higher level of performance (Brown & Heywood, 2002). The current study showed some support that performance pay reinforced behaviors such as increased interest in learning and training that could contribute to improving teacher performance.

One of the on-going arguments against bonus pay has been that compared to other professions, teacher performance is more difficult to measure in valid, reliable, and fair

ways (Springer, 2009). Additionally, there have not appeared to be any specific credentials or characteristics to serve as reliable predictors of teacher quality (Podgursky & Springer, 2007). One merit of the current study is that it included measurement of the quality of the early childhood environment via child-teacher interactions rather than relying solely on student assessments. Taken together, these allow a broader opportunity for enhancing early childhood classroom quality (Pianta, 2003).

This study provided additional considerations and ideas for administrators to assist teachers and teacher assistants to improve the quality of instruction for students. In this age of limited resources, it would seem prudent to focus on providing tools to teach and reinforce improvement of the skills that would achieve the most meaningful improvement for students.

The first consideration related to the three domains in the CLASS - Emotional Climate, Classroom Organization and Instructional Support. Although all three domains are important elements of a successful classroom, the Instructional Support domain has been determined to be most critical in improving student achievement (Howes et al., 2008).

Interestingly, this was the domain that the teachers in the study seemed to choose to focus upon during their self-study. The teachers sought to improve how they could promote students' higher-order thinking skills and cognition. The teachers used the specific feedback received from their pre-assessment, their peers and the training materials available to improve their skills in the Instructional Support domain. This focus

did seem to work - as most of the teacher's demonstrated improvement in the Instructional Support domain during their post-assessment.

Another consideration for administrators based on the results of the study was the types of professional development that appeared to be preferred by teachers. During the focus groups/interviews, a number of teachers spoke of the usefulness of the specific and individual feedback on the aspects of their child-teacher interactions that needed improvement. The teachers used this feedback to pin point what they needed to do differently and systemically improved these skills. For an administrator, the CLASS provides the structure and common lens to set up a specific feedback loop for their staff and ultimately could improve performance. It also provides a common language that administrators, teachers and teacher assistants can use to begin discussion and then share information and tips.

Lastly, the teachers found the training videos useful as a tool to improve their skills. The training videos provided real life examples of how to execute the various techniques that improve instructional effectiveness. The teachers found it particularly useful to watch others demonstrate the skills and then the teachers were able to take it back to their own classrooms to try themselves. The creation of videos would be relatively easy and effective to implement in any school.

Limitations

The findings were limited by four variables. The first limitation concerns the generalization of findings to other types of pre-K programs. As described earlier,

classrooms in this study were selected from the summer program at four inclusive charter schools. The classroom staff had a higher level of education than did a typical pre-school program. Additionally, ratios and class size were smaller. Lastly, charter schools are innovative schools of choice and a different type of staff member is attracted to this type of school. Because of these unique characteristics, findings about the associations between a bonus pay plan and a high score on the CLASS assessment may be different from that found in less advantaged settings.

The second limitation relates to the students themselves. All the classrooms served four- and five-year-old students who would be entering kindergarten in the fall, and the majority exhibited one or more of a wide range of disabilities. Many of the students were on the autism spectrum, which presented many behavior challenges during instruction as well as assessment. Additionally, some students had been in the program up to five years and some were new students. The classes in the study also had unequal percentages of students in terms of intensity of level of disability. Thus, student assessment performance could have been impacted based on the type and severity of disability as well as the amount of time they had been enrolled in the program. Questions could be posed regarding the quantity of instruction needed by this population to improve school readiness skills.

Third, the study occurred over a period of 13 weeks during which the teachers had to provide a pre- and post-assessment on the students as well as review and reflect on their CLASS scores and participate in training to improve these scores. There should be sufficient time for teachers to implement lessons learned between training and post-

assessment phases. The study may have benefited from a longer period between the pre- and post-assessment phases of the study.

The fourth limitation related to the small sample size. Though the study began with over twice the number of participants as were eventually included in the study, only six classroom teams completed the study. Due to study limitations, several classrooms teams were ineligible, as they were not participating in the full session. One team decided after the study began to work for only part of the summer. Lastly, one teacher resigned a week prior to the end of the study, making it impossible to have a CLASS post-assessment completed for her and her team.

Recommendations for Further Study

This study was limited to one agency with six PreK charter school classes in central Florida. The current study also utilized teachers and teacher assistants with a higher level of education than typically found in PreK classes. Further research, which includes other types of PreK classes and schools with a broader range of characteristics throughout the state, would enhance the ability to generalize findings regarding whether the use of bonuses would enhance the quality of teachers and teacher assistants.

In addition, a great deal of previous research on the effectiveness of child-teacher interactions and subsequent student achievement utilized the NCEDL/SWEEP studies (LoCasale-Crouch et al., 2007). Future research that used children other than those in the NCEDL/SWEEP studies would strengthen the ability to make correlations between CLASS scores and student achievement.

Another recommendation for future study would be focusing on raising the scores in the "instructional support" domain of the CLASS through the use of a merit bonus. The instructional support domain contains the attributes that most directly aligns with improved student achievement. Adjusting for prior skill levels, child and family characteristics, program characteristics and state requirements, statistically significant results were found between the CLASS domains of instructional support and children's receptive language, expressive language, rhyming, letter naming, and applied problem solving (Mashburn et al., 2008)

The current study also had a high percentage of students with disabilities in their classrooms. Although there has been some research affirming that the type of student in the classroom did not have an effect on CLASS scores, this research was very scant. It would be useful to conduct additional studies comparing classrooms with students with disabilities and students without to determine if this makeup contributed to differences in CLASS scores.

In the present study, limited professional development was provided for team member participants, both in quality and duration. Additional research where team members would have an opportunity to have high quality training over a longer period may yield different results.

Finally, although researchers have indicated that team members' ability to participate in the design of the bonus plan greatly enhances their acceptance and motivation to succeed (Odden & Kellor, 2000), this study did not utilize team members to

assist in the design. Additional research using team members to assist in the design would be useful to see if such involvement improved their CLASS scores even more.

APPENDIX A
ADMINISTRATIVE WALKTHROUGH CHECKLIST

Classroom # _____

Administrators' Walkthrough Checklist for Prekindergarten Classrooms*

Environment	Observed		Not Observed	
	Date	Date	Date	Date
1. Furniture arrangement allows for staff supervision.				
2. Furnishings are appropriate for young children.				
3. Health and safety procedures are implemented throughout the classroom.				
4. The classroom displays examples of children's work.				
5. The room is free of unnecessary clutter and extraneous stimulation.				
6. The classroom spaces are well organized, and learning materials are accessible to all children.				
7. Language and literacy experiences are prominent throughout the classroom.				
8. Staff interactions with children are positive and promote the development of critical thinking skills.				
9. Diversity is reflected through the classroom environment and materials.				
10. Outdoor space is safe, accessible for all children, and includes equipment and materials for a variety of activities.				
Notes:				

* The *Administrators' Walkthrough Checklist for Prekindergarten Classrooms* was developed by the Technical Assistance and Training System (TATS) project. The TATS project is funded by the State of Florida, Department of Education, Bureau of Exceptional Education and Student Services (BEESS), through federal assistance under the Individuals with Disabilities Education Act (IDEA), Part B.

Classroom # _____

Curriculum	Observed		Not Observed	
	Date	Date	Date	Date
11. The level of sound in the room is elevated, indicating that children and teaching staff are involved in communication and learning activities.				
12. There is visible evidence of a developmentally appropriate planned curriculum, lessons plans, a posted schedule, and curriculum guide book linked to state standards.				
13. Throughout the day, there are opportunities for various activity groups and learning opportunities from individual to small or larger groups.				
14. There is evidence that accommodations are being made for diverse learners.				
15. Children are actively engaged in activities.				
Notes:				

Teaching	Observed		Not Observed	
	Date	Date	Date	Date
16. The adults in the classroom work collaboratively as a team (including teacher, paraprofessionals, therapists, and family), modeling cooperation and problem solving.				
17. Teaching staff use positive class management strategies and discipline procedures.				
18. Teaching staff facilitates the development of social-emotional skills and encourages interactions among all children.				
19. There is evidence that family involvement is encouraged in the classroom and at home.				
Notes:				

APPENDIX B
INSTITUTIONAL REVIEW BOARD APPROVAL

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Ilene E. Wilkins**

Date: **June 09, 2010**

Dear Researcher:

On 6/9/2010, the IRB approved the following human participant research until 6/8/2011 inclusive:

Type of Review:	UCF Initial Review Submission Form
Project Title:	EFFECTS OF A BONUS ON QUALITY IMPROVEMENT FOR PRE-SCHOOL CLASSROOM EDUCATORS
Investigator:	Ilene E Wilkins
IRB Number:	SBE-10-06951
Funding Agency:	
Grant Title:	
Research ID:	N/A

The Continuing Review Application must be submitted 30days prior to the expiration date for studies that were previously expedited, and 60 days prior to the expiration date for research that was previously reviewed at a convened meeting. Do not make changes to the study (i.e., protocol, methodology, consent form, personnel, site, etc.) before obtaining IRB approval. A Modification Form **cannot** be used to extend the approval period of a study. All forms may be completed and submitted online at https://iris.research.ucf.edu .

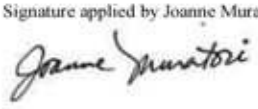
If continuing review approval is not granted before the expiration date of 6/8/2011, approval of this research expires on that date. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

Use of the approved, stamped consent document(s) is required. The new form supersedes all previous versions, which are now invalid for further use. Only approved investigators (or other approved key study personnel) may solicit consent for research participation. Participants or their representatives must receive a copy of the consent form(s).

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Joseph Bielitzki, DVM, UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 06/09/2010 09:52:32 AM EDT



IRB Coordinator

APPENDIX C
AGENCY APPROVAL

[redacted]

May 14, 2010

To Whom It May Concern:

This is to confirm the Ilene E. Wilkins has permission to conduct the research study "Effects of a bonus on quality improvement for pre-school classroom educators" at [redacted]

Please feel free to contact me with any questions at [redacted] or 407-852-3371.

Thank you.

Sincerely,

Jill Wirth,
Chief Financial Officer

[redacted]
Downtown Orlando
Holloway Campus
Orlando Campus
West Orange Campus
Pine Hills Campus
East Orange Campus
Seminole Campus
www.ocps.org

[redacted]

APPENDIX D
PARTICIPANT CONSENT FORMS

Informed Consent

Principal Investigator(s):	Ilene E. Wilkins
Sub-Investigator(s):	Dr. Marcey Kinney
Faculty Supervisor:	Dr. Suzanne Martin
Investigational Site(s):	[redacted]

Introduction: Researchers at the University of Central Florida (UCF) study many topics. To do this we need the help of people who agree to take part in a research study. You are being invited to take part in a research study, which will include about twenty-eight people in Central Florida. You have been asked to take part in this research study because you are a teacher or paraprofessional for Summer 2010 VPK. You must be 18 years of age or older to be included in the research study.

The person doing this research is a doctoral student at the University of Central Florida, College of Education. Because the researcher is a doctoral student, Dr. Suzanne Martin, a UCF faculty supervisor in the department of Child, Family and Community Sciences, is guiding her.

What you should know about a research study:
Someone will explain this research study to you.
A research study is something you volunteer for.
Whether or not you take part is up to you.
You should take part in this study only because you want to.
You can choose not to take part in the research study.
You can agree to take part now and later change your mind.
Whatever you decide it will not be held against you.
Feel free to ask all the questions you want before you decide.

Purpose of the research study: The purpose of this study is to improve observable attributes and behaviors of teaching that have been determined to be effective in improving student learning. Specifically, it will measure intentional teacher-student interactions, classroom quality, environment and organization, as well as emotional and instructional support in PreK classrooms that are linked to student achievement and development.

What you will be asked to do in the study:
As part of the study, you will be observed two times using the Classroom Assessment Scoring System (CLASS) at the beginning and end of the Summer VPK Program. The CLASS is an observational instrument developed by National Center for Research on Early Childhood Education (NCRECE) to assess classroom quality in pre-school through third-grade classrooms. The CLASS will be completed during a two-hour onsite classroom observation and in 30-minute cycles (20 minutes of observation and 10 minutes of recording). Each observation typically includes one to three cycles. The total number of cycles for any one-team member may range from one to seven.
You will also be required to complete a short demographic survey at the beginning of the study.
After completion of the study, you will be asked to participate in a focus group or one or one interview to obtain feedback on the study methods.

Location: The study will take place at the [redacted] where you will be teaching Summer VPK.

Time required: We expect that you will be in this research study for 10 weeks throughout the Summer VPK session.

Risks: There are no reasonably foreseeable risks or discomforts involved in taking part in this study.

Benefits: We cannot promise any benefits to you or others from your taking part in this research. However, possible benefits include improvement of your instructional techniques.

Compensation or payment:
There is no compensation or other payment to you for taking part in this study.

Confidentiality: We will limit your personal data collected in this study to people who have a need to review this information. We cannot promise complete secrecy.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, or think the research has hurt you, talk to: Ilene E. Wilkins, Doctoral Student, Curriculum and Instruction, College of Education at 407-852-3303 or Dr. Martin, Faculty Supervisor, Department of Health Professions at (407) 823-4260 or by email at martin@mail.ucf.edu.

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901. You may also talk to them for any of the following:
Your questions, concerns, or complaints are not being answered by the research team.
You cannot reach the research team.
You want to talk to someone besides the research team.
You want to get information or provide input about this research.

Withdrawing from the study:

If you decide to leave the study, contact the investigator so that the investigator can update the records. The person in charge of the research study or the sponsor can remove you from the research study without your approval. Possible reasons for removal include lack of completion of the full summer VPK term.

Your signature below indicates your permission to take part in this research.

DO NOT SIGN THIS FORM AFTER THE IRB EXPIRATION DATE BELOW

Name of participant	
Signature of participant	Date

APPENDIX E
DEMOGRAPHIC SURVEY OF PARTICIPANTS

1. Research Study

Please answer the questions below. This information will be used for the research study.

1. What Campus are you teaching Summer VPK?

- ◯ EO/Bailes (1)
- ◯ Holloway (2)
- ◯ Osceola (3)
- ◯ Pine Hills (4)
- ◯ Seminole (5)
- ◯ West Orange (6)

2. What is your position for Summer VPK 2010?

- ◯ Teacher (1)
- ◯ Teacher Assistant/Paraprofessional (2)

3. Are you certified to teach in Florida?

- ◯ Yes
- ◯ No

4. What is your highest degree earned?

- ◯ High School/GED
- ◯ Associates Degree/CDA
- ◯ Bachelors
- ◯ Masters
- ◯ Doctorate

5. What is your gender?

- ◯ Male
- ◯ Female

6. What is your ethnicity?

- ◯ Black
- ◯ White
- ◯ Hispanic
- ◯ Asian
- ◯ Other

7. How many years have you taught PreK?

- ◯ Less than 1 year
- ◯ 1-5 Years
- ◯ 6-10 Years
- ◯ More than 10 Years

8. How many years have you worked for the agency?

- ◯ Less than 1 year
- ◯ 1-5 Years
- ◯ 6-10 Years
- ◯ More than 10 Years

9. Name

APPENDIX F
VOLUNTARY PRE-K (VPK) PRE- AND POST-ASSESSMENT
AND RELATED COMMUNICATIONS WITH PARTICIPANTS

Summer VPK Assessment

[redacted]

Students Name:_____ **Center:**_____

Teacher: _____

Key: Y-yes N-no E-emerging *Date comments to show if they are pre or post

1. Math	Pre	Post	Comments
a) Counts to 10			
b) Counts to 20			
c) Counts objects to 3			
d) Counts objects to 5			
e) Counts objects to 10			
f) Compares 2 sets to determine if they are equal			
g) Compares 2 sets to determine which has more			
h) Compares 2 sets to determine which has less			
i) Verbally identifies numerals 1-20			
j) Names next piece in an A/B pattern			
k) Can continue A/B pattern with a variety of materials			

2. Emerging Literacy	Pre	Post	Comments
a) Answers questions related to a story read individually			
b) Combines word to create a compound word (verbally)			
c) Combines syllables into words			
d) Identifies colors verbally or by pointing			
e) Identifies shapes verbally or by pointing			
f) Recognizes own name			
g) Recognizes classmates names			
h) Identifies capital letters of the alphabet			
i) Identifies lower case letters of the alphabet			

3. Gross Motor	Pre	Post	Comments
a) Runs smoothly			
b) Runs around objects			
c) Climbs onto playground equipment			
d) Jumps forward feet together			
e) Jumps over objects			
f) Throws ball to a person			
g) Catches thrown ball			
h) Kicks stationary ball			
i) Kicks rolled ball			

4. Fine Motor	Pre	Post	Comments
a) Cuts on a line			
b) Completes 1-10 piece puzzles independently			
c) Draws a horizontal line			
d) Draws a circle			
e) Writes name independently			
f) Fills a circle with 3 facial features			
g) Draws a face			
h) Draws a person with limbs (no body)			
i) Draws a person with body and limbs			
j) Draws recognizable pictures			

Personal care	Pre	Post	Comments
a) Puts items away in own cubby when asked			
b) Uses toilet independently			
c) Washes hands independently			
d) Wipes nose independently			
e) Uses eating utensils independently			
f) Uses napkin independently			

Social and Emotional Development	Pre	Post	Comments
Plays with others			
Chooses a variety of toys			
Participates in dramatic play			
Cleans up at the end of playtime			
Transitions easily			
Keeps toys in appropriate areas			

LETTER GIVEN TO PARTICIPANTS AFTER PRE-ASSESSMENT

July 8, 2010

Dear Members of the UCF Research Study,

We are well under way on the research study! As you know, the purpose of the study is to improve classroom quality specifically measuring classroom emotional climate and organization and instructional support. During the second week of Summer VPK, the assessors completed the Pre-test using the CLASS observational instrument. Each classroom team should be getting their scores and feedback in the next day or so.

The CLASS is scored on a scale of 1 to 7 (with 7 being the highest – except for the category of Negative Climate, which is reversed). As a total UCP group, here are the average scores for each domain:

Emotional Climate:	6.10
Classroom Organization:	5.33
Instructional Support:	3.45

The CLASS has been used to observe more than 4,000 classrooms across the United States. The research strongly supports that classrooms that obtain higher CLASS scores have students who make greater academic and social progress. As such, we are very interested in raising our individual classroom and agency scores. Our goal is that each class achieve at least 10% higher than the initial pre-test average score by the end of the Summer VPK.
For example:

Target Goal

Emotional Climate:	6.71
Classroom Organization:	5.87
Instructional Support:	3.79

There are several tools to help you improve your score. With your score/feedback sheet, I also provided copies of the scoring manual for each of you. It goes into depth on how each category is scored and how to improve your student interactions and instruction.. Additionally, we have purchased a video subscription. Each library contains brief videos that highlight effective interactions within specific CLASS dimensions.

To access the videos go to the web site at: http://www.teachstone.org/
Login:
E-Mail: [redacted]
Password: tbjz3gbj

The assessors will return between in August to do the post CLASS assessment.

Please let me know if you have any questions or need additional assistance.

Sincerely,

Ilene Wilkins
[redacted]

DEBRIEFING STATEMENT

Principal Investigator(s): Ilene E. Wilkins
Sub-Investigator(s): Dr. Marcey Kinney
Faculty Supervisor: Dr. Suzanne Martin
Investigational Site(s): [redacted]

Additional Information:

The purpose of the study was to improve observable attributes and behaviors of teaching that have been determined to be effective in improving student learning. As school districts in the United States move to a system of increased accountability and commitment to closing the achievement gap, there has been a strong emphasis on using alternative methods of compensation for education staff as a potential strategy to increase and direct motivation towards these goals.

In order to gain accurate information about whether a bonus would improve results, the researcher randomly divided all participants into a "Bonus" or "Non-Bonus" group. Randomization was done using SPSS, a computer program that ensured that each participant had an equal chance of being in either the Bonus or the Non-Bonus group.

The information about whether you were in a bonus or non-bonus group could not be shared prior to the beginning of the study in order to develop a baseline of each participants Classroom Assessment Scoring System (CLASS) scores. After the baseline scores were established, the Bonus group was informed that if they raised their score to a certain level, each team member would receive a bonus between $350. In order to protect the integrity of the research, the Bonus group was asked not to share this information with other participants or team members.

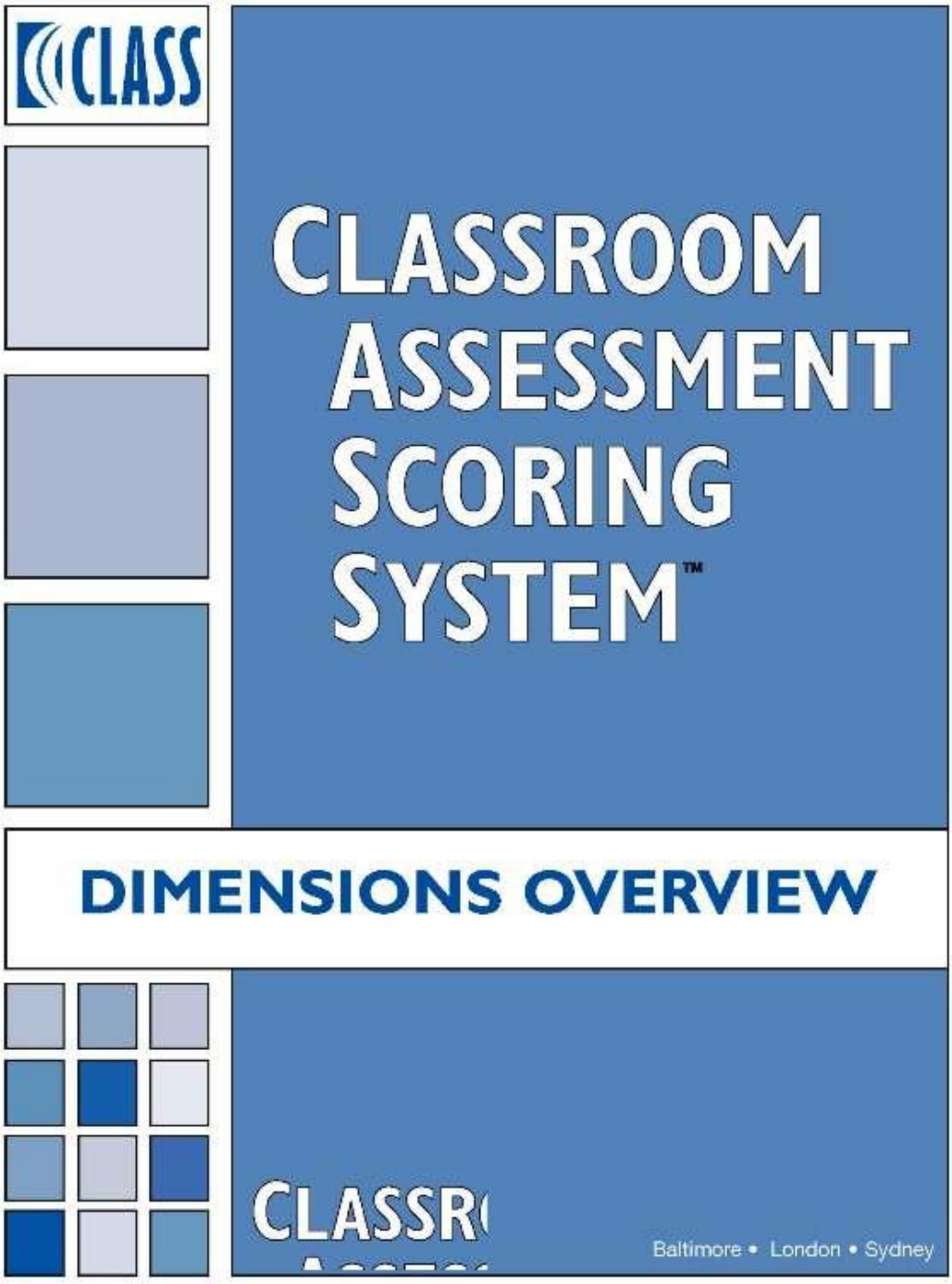
After the study was completed and the final CLASS assessment results were done, all participants who achieved the required level of improvement received the bonus (even if they were not in the original bonus group). This allowed us to measure whether knowing there was an opportunity to receive a bonus affected a participants motivation towards raising their CLASS score but still all eligible participants would receive the reward. Additionally, anyone in the "non-bonus" group was able to get re-assessed with the knowledge that if they did achieve the targeted score, they would get the bonus.

This study will provide information on whether financial incentives for teachers and paraprofessionals can help cause teachers and paraprofessionals to focus their efforts on changing behaviors that improve the quality of their teaching. This research will help develop a thorough understanding of how various incentives that could be used in performance-based pay plans may or may not motivate teachers to improve their teaching and thus improve student achievement. The findings of this research may be helpful for policymakers considering the implementation of a merit bonus pay system.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, or think the research has hurt you, talk to: Ilene E. Wilkins, Doctoral Student, Curriculum and Instruction, College of Education at 407-852-3303 or Dr. Martin, Faculty Supervisor, College of Education at (407) 823-4260 or by email at martin@mail.ucf.edu

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). This research has been reviewed and approved by the IRB. For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

APPENDIX G
CLASSROOM ASSESSMENT SCORING SYSTEM (CLASS)


CLASS
CLASSROOM ASSESSMENT SCORING SYSTEM™
DIMENSIONS OVERVIEW
CLASSR
Baltimore • London • Sydney

Positive Climate

	Low (1, 2)	Middle (3, 4, 5)	High (6, 7)
Relationships • Physical proximity • Shared activities • Peer assistance • Matched affect • Social conversation	There are few, if any, indications that the teacher and students enjoy warm, supportive relationships with one another.	There are some indications that the teacher and students enjoy warm, supportive relationships with one another.	There are many indications that the teacher and students enjoy warm, supportive relationships with one another.
Positive Affect • Smiling • Laughter • Enthusiasm	There are no or few displays of positive affect by the teacher and/or students.	There are sometimes displays of positive affect by the teacher and/or students.	There are frequent displays of positive affect by the teacher and/or students.
Positive Communication • Verbal affection • Physical affection • Positive expectations	There are rarely positive communications, verbal or physical, among teachers and students.	There are sometimes positive communications, verbal or physical, among teachers and students.	There are frequently positive communications, verbal or physical, among teachers and students.
Respect • Eye contact • Warm, calm voice • Respectful language • Cooperation and/or sharing	The teacher and students rarely, if ever, demonstrate respect for one another.	The teacher and students sometimes demonstrate respect for one another.	The teacher and students consistently demonstrate respect for one another.

Negative Climate

	Low (1, 2)	Middle (3, 4, 5)	High (6, 7)
Negative Affect • Irritability • Anger • Harsh voice • Peer aggression • Disconnected or escalating negativity	The teacher and students do not display strong negative affect and only rarely, if ever, display mild negativity.	The classroom is characterized by mild displays of irritability, anger, or other negative affect by the teacher and/or the students.	The classroom is characterized by consistent irritability, anger, or other negative affect by the teacher and/or the students.
Punitive Control • Yelling • Threats • Physical control • Harsh punishment	The teacher does not yell or make threats to establish control.	The teacher occasionally uses expressed negativity such as threats or yelling to establish control.	The teacher repeatedly yells at students or makes threats to establish control.
Sarcasm/Disrespect • Sarcastic voice/statement • Teasing • Humiliation	The teacher and students are not sarcastic or disrespectful.	The teacher and/or students are occasionally sarcastic or disrespectful.	The teacher and/or students are repeatedly sarcastic or disrespectful.
Severe Negativity • Victimization • Bullying • Physical punishment	There are no instances of severe negativity between the teacher and students.	There are no instances of severe negativity between the teacher and students.	There are instances of severe negativity between the teacher and students or among the students.

Teacher Sensitivity

	Low (1, 2)	Middle (3, 4, 5)	High (6, 7)
Awareness • Anticipates problems and plans appropriately • Notices lack of understanding and/or difficulties	The teacher consistently fails to be aware of students who need extra support, assistance, or attention.	The teacher is sometimes aware of students who need extra support, assistance, or attention.	The teacher is consistently aware of students who need extra support, assistance, or attention.
Responsiveness • Acknowledges emotions • Provides comfort and assistance • Provides individualized support	The teacher is unresponsive to or dismissive of students and provides the same level of assistance to all students, regardless of their individual needs.	The teacher is responsive to students sometimes but at other times is more dismissive or unresponsive, matching her support to the needs and abilities of some students but not others.	The teacher is consistently responsive to students and matches her support to their needs and abilities.
Addresses Problems • Helps in an effective and timely manner • Helps resolve problems	The teacher is ineffective at addressing students' problems and concerns.	The teacher is sometimes effective at addressing students' problems and concerns.	The teacher is consistently effective at addressing students' problems and concerns.
Student Comfort • Seeks support and guidance • Freely participates • Takes risks	The students rarely seek support, share their ideas with, or respond to questions from the teacher.	The students sometimes seek support from, share their ideas with, or respond to questions from the teacher.	The students appear comfortable seeking support from, sharing their ideas with, and responding freely to the teacher.

Regard for Student Perspectives

	Low (1, 2)	Middle (3, 4, 5)	High (6, 7)
Flexibility and Student Focus • Shows flexibility • Incorporates student's ideas • Follows lead	The teacher is rigid, inflexible, and controlling in his plans and/or rarely goes along with students' ideas; most classroom activities are teacher-driven.	The teacher may follow the students' lead during some periods and be more controlling during others.	The teacher is flexible in his plans, goes along with students' ideas, and organizes instruction around students' interests.
Support for Autonomy and Leadership • Allows choice • Allows students to lead lessons • Gives students responsibilities	The teacher does not support student autonomy and leadership.	The teacher sometimes provides support for student autonomy and leadership but at other times fails to do so.	The teacher provides consistent support for student autonomy and leadership.
Student Expression • Encourages student talk • Elicits ideas and/or perspectives	There are few opportunities for student talk and expression.	There are periods during which there is a lot of student talk and expression but other times when teacher talk predominates.	There are many opportunities for student talk and expression.
Restriction of Movement • Allows movement • Is not rigid	The teacher is highly controlling of students' movement and placement during activities.	The teacher is somewhat controlling of students' movement and placement during activities.	Students have freedom of movement and placement during activities.

Behavior Management

	Low (1, 2)	Middle (3, 4, 5)	High (6, 7)
Clear Behavior Expectations • Clear expectations • Consistency • Clarity of rules	Rules and expectations are absent, unclear, or inconsistently enforced.	Rules and expectations may be stated clearly but are inconsistently enforced.	Rules and expectations for behavior are clear and consistently enforced.
Proactive • Anticipates of problem behavior or escalation • Low reactivity • Monitors	The teacher is reactive, and monitoring is absent or ineffective.	The teacher uses a mix of proactive and reactive responses; sometimes she monitors and reacts to early indicators of behavior problems but other times misses or ignores them.	The teacher is consistently proactive and monitors the classroom effectively to prevent problems from developing.
Redirection of Misbehavior • Effective reduction of misbehavior • Attention to the positive • Uses subtle cues to redirect • Efficient redirection	Attempts to redirect misbehavior are ineffective; the teacher rarely focuses on positives or uses subtle cues. As a result, misbehavior continues and/or escalates and takes time away from learning.	Some of the teacher's attempts to redirect misbehavior are effective, particularly when he or she focuses on positives and uses subtle cues. As a result, misbehavior rarely continues, escalates, or takes time away from learning.	The teacher effectively redirects misbehavior by focusing on positives and making use of subtle cues. Behavior management does not take time away from learning.
Student Behavior • Frequent compliance • Little aggression and defiance	There are frequent instances of misbehavior in the classroom.	There are periodic episodes of misbehavior in the classroom.	There are few, if any, instances of student misbehavior in the classroom.

Productivity

	Low (1, 2)	Middle (3, 4, 5)	High (6, 7)
Maximizing Learning Time • Provision of activities • Choice when finished • Few disruptions • Effective completion of managerial tasks • Pacing	Few, if any, activities are provided for students, and an excessive amount of time is spent addressing disruptions and completing managerial tasks.	The teacher provides activities for the students most of the time, but some learning time is lost in dealing with disruptions and the completion of managerial tasks.	The teacher provides activities for the students and deals efficiently with disruptions and managerial tasks.
Routines • Students know what to do • Clear instructions • Little wandering	The classroom routines are unclear; most students do not know what is expected of them.	There is some evidence of classroom routines that allow everyone to know what is expected of them.	The classroom resembles a "well-oiled machine"; everybody knows what is expected of them and how to go about doing it.
Transitions • Brief • Explicit follow-through • Learning opportunities within	Transitions are too long, too frequent, and/or inefficient.	Transitions sometimes take too long or are too frequent and inefficient.	Transitions are quick and efficient.
Preparation • Materials ready and accessible • Knows lessons	The teacher does not have activities prepared and ready for the students.	The teacher is mostly prepared for activities but takes some time away from instruction to take care of last-minute preparations.	The teacher is fully prepared for activities and lessons.

Instructional Learning Formats

	Low (1, 2)	Middle (3, 4, 5)	High (6, 7)
Effective Facilitation • Teacher involvement • Effective questioning • Expanding children's involvement	The teacher does not actively facilitate activities and lessons to encourage students' interest and expanded involvement.	At times, the teacher actively facilitates activities and lessons to encourage interest and expanded involvement, but at other times she merely provides activities for the students.	The teacher actively facilitates students' engagement in activities and lessons to encourage participation and expanded involvement.
Variety of Modalities and Materials • Range of auditory, visual, and movement opportunities • Interesting and creative materials • Hands-on opportunities	The teacher does not use a variety of modalities or materials to gain students' interest and participation during activities and lessons.	The teacher is inconsistent in her use of a variety of modalities and materials to gain students' interest and participation during activities and lessons.	The teacher uses a variety of modalities including auditory, visual, and movement and uses a variety of materials to effectively interest students and gain their participation during activities and lessons.
Student Interest • Active participation • Listening • Focused attention	The students do not appear interested and/or involved in the lesson or activities.	Students may be engaged and/or interested for periods of time, but at other times their interest wanes and they are not involved the activity or lesson.	Students are consistently interested and involved in activities and lessons.
Clarity of Learning Objectives • Advanced organizers • Summaries • Reorientation statements	The teacher makes no attempt to or is unsuccessful at orienting and guiding students toward learning objectives.	The teacher orients students somewhat to learning objectives, or the learning objectives may be clear during some periods but less so during others.	The teacher effectively focuses students' attention toward learning objectives and/or the purpose of the lesson.

Concept Development

	Low (1, 2)	Middle (3, 4, 5)	High (6, 7)
Analysis and Reasoning • Why and/or how questions • Problem solving • Prediction/experimentation • Classification/comparison • Evaluation	The teacher rarely uses discussions and activities that encourage analysis and reasoning.	The teacher occasionally uses discussions and activities that encourage analysis and reasoning.	The teacher often uses discussions and activities that encourage analysis and reasoning.
Creating • Brainstorming • Planning • Producing	The teacher rarely provides opportunities for students to be creative and/or generate their own ideas and products.	The teacher sometimes provides opportunities for students to be creative and/or generate their own ideas and products.	The teacher often provides opportunities for students to be creative and/or generate their own ideas and products.
Integration • Connect concepts • Integrates with previous knowledge	Concepts and activities are presented independent of one another, and students are not asked to apply previous learning.	The teacher sometimes links concepts and activities to one another and to previous learning.	The teacher consistently links concepts and activities to one another and to previous learning.
Connections to the Real World • Real-world applications • Related to students' lives	The teacher does not relate concepts to the students' actual lives.	The teacher makes some attempts to relate concepts to the students' actual lives.	The teacher consistently relates concepts to the students' actual lives.

Quality of Feedback

	Low (1, 2)	Middle (3, 4, 5)	High (6, 7)
Scaffolding • Hints • Assistance	The teacher rarely provides scaffolding to students but rather dismisses responses or actions as incorrect or ignores problems in understanding.	The teacher occasionally provides scaffolding to students but at other times simply dismisses responses as incorrect or ignores problems in students' understanding.	The teacher often scaffolds for students who are having a hard time understanding a concept, answering a question, or completing an activity.
Feedback Loops • Back-and-forth exchanges • Persistence by teacher • Follow-up questions	The teacher gives only perfunctory feedback to students.	There are occasional feedback loops—back-and-forth exchanges—between the teacher and students; other times, however, feedback is more perfunctory.	There are frequent feedback loops—back-and-forth exchanges—between the teacher and students.
Prompting Thought Processes • Asks students to explain thinking • Queries responses and actions	The teacher rarely queries the students or prompts students to explain their thinking and rationale for responses and actions.	The teacher occasionally queries the students or prompts students to explain their thinking and rationale for responses and actions.	The teacher often queries the students or prompts students to explain their thinking and rationale for responses and actions.
Providing Information • Expansion • Clarification • Specific feedback	The teacher rarely provides additional information to expand on the students' understanding or actions.	The teacher occasionally provides additional information to expand on the students' understanding or actions.	The teacher often provides additional information to expand on students' understanding or actions.
Encouragement and Affirmation • Recognition • Reinforcement • Student persistence	The teacher rarely offers encouragement of students' efforts that increases students' involvement and persistence.	The teacher occasionally offers encouragement of students' efforts that increases students' involvement and persistence.	The teacher often offers encouragement of students' efforts that increases students' involvement and persistence.

Language Modeling

	Low (1, 2)	Middle (3, 4, 5)	High (6, 7)
Frequent Conversations • Back-and-forth exchanges • Contingent responding • Peer conversations	There are few if any conversations in the classroom.	There are limited conversations in the classroom.	There are frequent conversations in the classroom.
Open-Ended Questions • Questions require more than a one-word response • Students respond	The majority of the teacher's questions are closed-ended.	The teacher asks a mix of closed-ended and open-ended questions.	The teacher asks many open-ended questions.
Repetition and Extension • Repeats • Extends/elaborates	The teacher rarely, if ever, repeats or extends the students' responses.	The teacher sometimes repeats or extends the students' responses.	The teacher often repeats or extends the students' responses.
Self- and Parallel Talk • Maps own actions with language • Maps student action with language	The teacher rarely maps his or her own actions and the students' actions through language and description.	The teacher occasionally maps his or her own actions and the students' actions through language and description.	The teacher consistently maps his or her own actions and the students' actions through language and description.
Advanced Language • Variety of words • Connected to familiar words and/or ideas	The teacher does not use advanced language with students.	The teacher sometimes uses advanced language with students.	The teacher often uses advanced language with students.

APPENDIX H
PERMISSION FOR USE OF INSTRUMENTS

11/10/2010

Dear Dr. Wilkins,

The Administrators' Walkthrough Checklist was developed in 2009 by the Technical Assistance and Training System for Prekindergarten Children with Disabilities (TATS) staff to provide a quick assessment of early childhood classrooms. The Walkthrough is available on the TATS web-site: http://www.tats.ucf.edu/docs/Administrators_Checklist_Level_1_Final.pdf. **The Checklist was designed to be used by all stakeholders interested in planning quality environments for young children with disabilities. We are** pleased that you found this checklist a helpful tool and used it as part of your dissertation.

Sincerely,

Lee Cross

Lee Cross, PhD
Principal Investigator TATS
Associate Professor
Exceptional Student Education

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Phone: 407-823-3058 • Fax: 407-823-1360 • Email: tats@mail.ucf.edu • Web: www.tats.ucf.edu

Ilene Wilkins

From: Pianta, Robert (rcp4p) [rcp4p@eservices.virginia.edu]
Sent: Sunday, October 31, 2010 9:42 AM
To: Ilene Wilkins
Subject: Re: Dissertation Research Project - CLASS and Merit Pay

You have my permission to use CLASS in this study

Bob Pianta
Dean, Curry School of Education
University of Virginia
434-243-5481

Sent from my iPhone

On Oct 30, 2010, at 4:07 PM, "Ilene Wilkins" <iwilkins@ucpcfl.org> wrote:

> Dear Dr. Pianta,
>
> I successfully defended my dissertation on Thursday. However, as
> part
> of the revisions, my committee requested I receive your written
> permission to use the CLASS in my research.
>
> Would you mind sending me that via e-mail? Thank you so much - Ilene
>
>
> If you never chase what you want, you'll never get it. If you never
> ask, the answer is always no.
>
>
> If you never step forward, you'll always be in the same place.
>
>
>
>
>
> Dr. Ilene E. Wilkins, EdD
>

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