Exploring the Relationship Between Teachers’ Motivation Orientation and the Efficacy of Two Professional Development Models

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science in Human Development and Family Studies

by

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August, 2014
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Entitled

Exploring The Relationship Between Teachers’ Motivation Orientation And The Efficacy Of Two Professional Development Models

be accepted in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

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August, 2014
Abstract

Positive teacher-child interactions are meaningfully tied to child academic and social outcomes, particularly for children in pre-K through the 3\textsuperscript{rd} grade where quality teaching can have the greatest impact (Burchinal et al., 2008; Crawford, Cobb, Clifford, & Ritchie, 2013; Hamre & Pianta, 2001). Teaching practices vary immensely in quality, however, professional development that uses observational measures and contextual feedback has the potential to address this variance (Shore, 2009). Goal Orientation Theory provides an ideal framework to understand how teachers’ internal motivation patterns impact effort and change in behavior resulting from professional development opportunities (Dweck, 1999). Here, using a quasi-experimental method, two professional development models were compared, coaching and student-centered learning teams (SCLT), through the lens of goal orientation theory. Change in teacher behavior was measured through fall and spring Classroom Assessment Scoring System (CLASS) scores. This study found marginal support for increases in the CLASS domain of instructional support resulting from both professional development programs, and support for increases in the CLASS domain of emotional support for coaching alone. Results indicate that teachers with learning orientations are most likely to participate in challenging professional development programs. However, more research is needed to determine the impact of goal orientation on change in behavior and the efficacy of professional development.
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Chapter 1: Introduction

General Problem Statement

Children who fall behind in the early years of their education rarely catch up, leading to the blatant and growing achievement gap between children from low income and middle to high-income families (Heckman, 2008; Reardon, 2013). In this time of accountability there is a sharp focus on what works and use of best practices to ensure positive child outcomes (Meisels, 2007). Literature supports that children benefit from positive teacher-child interactions in the classroom and that these interactions are tied to meaningful child outcomes (Burchinal et al., 2008; Hamre & Pianta, 2005; Mashburn et al., 2008). Classroom interactions matter in learning, as children receiving high levels of instructional support and positive teacher-child interactions display increased performance in language, academics, and social functioning compared to children in classrooms with low levels of instructional and emotional support (Burchinal et al., 2013; Downer et al., 2011; Hamre & Pianta, 2001). Teaching practices vary immensely in quality with teachers differing in their understanding of what “constitutes good teaching” and with abrupt shifts in children’s experiences between grades and classrooms (Crawford, Cobb, Clifford, & Ritchie, 2013; Shore, 2009a, p. 3). For child outcomes to shift, first teacher behavior must be addressed (Foundation for Child Development, 2010).

The national P-3 (preK-3rd grade) movement aims to bridge the gaps in children’s experiences with and readiness for education through a multi-faceted approach to education betterment (Kauerz & Coffman, 2013; Foundation for Child Development, 2010). This initiative emphasizes that disparities between children’s experiences can be
addressed through intentional and quality teaching that is consistent across classrooms not only in K-12th grade education, but beginning in early childhood (Foundation for Child Development, 2010). Quality and targeted professional development programs are one way that this goal can be addressed, however, the nature of, and teachers’ engagement in professional development activities fluctuates (Klinger, 2004; National Association of Elementary School Principals, 2013). By pinpointing professional development efforts that lead to classroom change and through continued teacher learning and professional support in partnership with increased understanding of teacher internal motivation patterns, improvements in classroom practices can be made. These improvements have the potential to bolster student outcomes and begin addressing achievement gaps. Quality professional development efforts can support teachers to engage in best practice and sustain these practices over time (Guskey & Yoon, 2009; Klinger, 2004; Neumerski, 2012).

This study extends previous research by investigating the impact of two differing professional development models on Classroom Assessment Scoring System (CLASS) scores through the lens of teachers’ internal goal orientations. This study adds to current research the exploration of teachers’ motivation orientations to their likelihood of implementing what is learned in professional development opportunities. When investing in professional development, implementation of strategies that are most likely to create positive and sustainable change is necessary. Often a barrier to change is teacher overload, as teachers are often overwhelmed with continuously changing standards and expectations imposed on them from districts (Gutmann & Oertwig, 2012; Klinger, 2004). Current research explores teachers’ motivation orientations and child outcomes in
isolation. By combining these elements and through measuring children’s classroom experiences through CLASS scores, a clearer picture of the ways in which teachers implement professional development strategies to change their behavior within the classroom may be obtained.

**Theoretical Perspective: Achievement Goal Theory**

As a theoretical framework, Achievement Goal Theory describes the connection between cognition, behavior, and affective components of motivation (Ames, 1992). As this study seeks to draw the connection between teachers’ internal motivation patterns and time consuming professional development efforts, achievement goal theory can provide a lens through which to understand teachers’ orientations toward learning. Achievement goal theory maintains that individuals have internal dispositions toward learning that affect the ways they engage in, approach, and respond to professional and academic challenges (Ames, 1992). Upon its conception, achievement goal theory asserted that there are two main goal orientations that affect motivation, learning goals and performance goals. Learning goal orientation is correlated with positive attitudes toward learning, increased achievement, and challenge-seeking behavior, and is linked to internal motivation patterns (Ames, 1992; Dweck & Leggett, 1988). In contrast, individuals with performance goal orientations are more concerned with gaining positive judgments and avoiding negative judgments of their competence (Dweck, 1986). More recent considerations on the nuance of adult motivation have emphasized the need to further categorize performance orientations into two dimensions, approach and avoidance (Nitsche et al., 2011). Performance approach orientation suggests a focus on demonstration of ability or competence to self or others, while performance avoidance
orientation manifests in shielding one’s lack of competencies (Nitsche et al., 2011). There have been variations in the language used to describe these patterns. For example, learning orientation has also been labeled mastery motivation or task orientation, and performance goals have been labeled ego or ability orientation (Nitsche et al., 2011). However, this work will remain true to the original authors of this theory and use the terms learning orientation and performance orientation.

Each goal orientation is tied to an underlying belief about one’s intelligence and the role of effort. For example, learning goals are characterized by a belief that intelligence is malleable and that effort leads to mastery of skill. This belief leads individuals to pursue challenge and persevere in the face of difficult tasks (Dweck & Leggett, 1988). Teachers with a learning orientation view failure or struggle as a natural piece of learning and often seek out situations that provide challenge. Performance orientations, on the other hand, were originally characterized by a belief that intelligence is fixed and effort is related to poor competency (Dweck, 1999). Even though the category of performance orientation is now broken into two separate motivation patterns, both performance orientations remain marked by a desire to look good in comparison to others. For this reason, performance approach orientation is characterized by the desire to demonstrate competency to self or others, while performance avoidance orientation initiates the “avoidance of challenge and a deterioration of performance in the face of obstacles” (Dweck & Leggett, 1988, p. 256). Those with performance approach orientations may be highly motivated to change their behavior in relation to professional development opportunities, but do so under a different guise than those with a learning orientation. Individuals with either performance goal orientations tend to seek public
recognition for success achieved with little effort (Ames, 1992; Dweck, 1999; Dweck & Legget, 1988). Teachers with a performance orientation may avoid engaging in situations that contain the possibility of failure or require increased effort. Behaviors linked to each goal orientation are consistent with the underlying beliefs related to intelligence, effort, and failure.

Much of the research done on achievement goals has focused on the ways children acquire lifelong motivational patterns within the classroom environment (Ames, 1992). Some more recent studies have examined the impact of teachers’ internal motivational and goal orientation patterns in relation to self-efficacy and help seeking, but have not examined the connection between teacher goal orientation and change in classroom behavior in response to professional development (Kucsera et al, 2011; Kwakman, 2003; Nitsche et al., 2011). Kwakman (2003) asserts that teacher improvement is tied to individual learning and that teachers constantly move toward improvement through reading, experimenting, collaborating, and reflecting. However, this assertion implies that teachers are internally motivated toward learning and mastery. It may be that some teachers are alternately motivated to perform for recognition or to avoid revealing lack of competence compared to peers. Some teachers may view effort and failure as signs that they are bad teachers, and may therefore avoid situations where failure or increased effort is possible.

The innate contradiction between performance goals, where individuals view intelligence and performance as immutable, and professional development, which aims to change adult behavior presents a distinct theoretical conundrum. In an effort to address this contradiction, Martocchio and Hertenstein (2003) sought to understand how
individual dispositional factors, or goal orientations, interact with contextual factors in professional training environments. Based on previous research showing that learning contexts lead to increases in self-efficacy regarding tasks even in the face of challenges, Martocchio and Hertenstein (2003) compared two groups of adults participating in a software training course. Participants were randomly assigned to either a learning or performance context regardless of internal motivation orientation (Martocchio & Hertenstein, 2003). Self-efficacy was measured at pre and post-test with significant interaction effects found when there was consistency in orientation and context. Learning contexts increased measures of self-efficacy regardless of learning orientation, while performance contexts had no impact on self-efficacy regardless of learning orientation (Martocchio & Hertenstein, 2003). Findings suggest that training context can impact activation of differing learning orientations.

While these findings support that learning contexts matter in changing adult behavior, more research is needed to clarify the exact types of training environments that cultivate adult change. Through applying goal orientation theory to teachers spanning pre-K to third grade, a gap can be filled in teacher motivation research and a better understanding of how administrators can support all teachers in adopting positive practices through continuing professional development efforts. With greater access to flexible professional development that supports the activation of learning orientations, administrators have the potential to foster use of best classroom practice in teachers of all orientation styles.
Research Highlights

A smoothing of the transitions children experience between and across grades has the potential to improve student outcomes and begin to address the current achievement gap (Foundation for Child Development, 2010; Kauerz & Coffman, 2013; Ritchie, Maxwell, & Bredekamp, 2009). While abundant research supports the importance of quality pre-K experiences to address the achievement gap, recent research also highlights the fade-out of these early gains if high quality instruction is not continued through the third and fourth grade (Crawford et al., 2013; LoCasale-Crouch et al., 2006; Shanahan, 2009; Shore, 2009b). High-quality educational experiences from pre-K through the early primary grades have the potential to produce the best student outcomes for continuing academic success (Crawford et al., 2013; Kauerz & Coffman, 2013). The teacher-child relationship can be a moderating factor contributing to children’s overall academic and social achievement in school, particularly for children at risk (Burchinal et al, 2008; Darling-Hammond, 2000; Hamre & Pianta, 2005; Mashburn et al, 2008; Pianta, 1999). However, teaching practices fluctuate greatly between and within grades with differing expectations and ideas about what it means to be a good teacher (Shore, 2009a). This fluctuation in the ways teachers engage young children leads to persistent differences in child learning as children who experience high quality engagement display greater academic improvement than less-engaged peers (Hamre et al., 2007; Shore, 2009b).

Quality teaching can result in a full academic year of achievement gains and when children experience sequences of good teachers, the effect on student achievement can be lasting and cumulative (Hanushek, 1992; Rivers, 1996). What results is the recognition that teachers remain the single most impactful resource that schools have, and they lead
to the greatest improvement in child outcomes particularly for those at risk (Burchinal et al., 2008; Coleman et al., 1966; Darling-Hammond, 2000). As children form their approaches toward learning in the early years and these approaches remain relatively stable across the lifespan, a focus on the teaching of young children has the potential to make a greater impact than reacting to low-achievement later in the school years (Crawford et al., 2013). Recognizing that teacher behavior can impact child learning in deep and lasting ways prompts practitioners to seek methods for improving teacher behavior and practice within the classroom.

Addressing these differences through continuing, in-service, data-driven professional development is a powerful way to move toward improvement; however, the literature indicates that in practice, professional development approaches vary widely with little connection to student outcomes (Engfield & Rogers, 2009; Guernsey & Ochshorn, 2011; Guskey & Yoon, 2009; Klinger, 2004; Maxwell, Field, & Clifford, 2006). Additionally, teacher engagement in professional development programs depends upon their internal goal orientations with some teachers exhibiting self-motivated, learning orientation patterns and others exhibiting externally motivated, performance orientation patterns (Dweck, 1999; Oosterheert, Vermunt, & Denessen, 2002). Professional development efforts that aim to change teacher behavior will be most effective if designed to elicit motivation factors that lead to sustained change and engagement over time (Martocchio & Hertenstein, 2003).

Observation measures provide a way to view adult behavior within the classroom. The CLASS provides a data-based method through which to assess the quality of teacher-child interactions inside the classroom environment (Hamre, Goffin, Kraft-Sayre, 2009).
The measure includes subscales that measure quality within three domains: emotional support, classroom organization, and instructional support (Hamre et al., 2009). The validity of the CLASS measure has been demonstrated to measure the aspects of classroom interactions that are linked to student academic and social achievement and apply to children of varying ages (Burchinal et al, 2008; Mashburn et al., 2008). Measuring specific dimensions of quality classroom interactions both before and after teacher engagement in professional development programs will inform administrators of the most effective models.

Previous studies have explored these elements in isolation, but have not considered how teachers’ internal goal orientations and professional development strategies interact to lead to change in teacher behavior within the classroom. This study seeks to explore this relationship and gain a better understanding of the ways professional development programs can enhance teaching practices.

**Research Questions**

*Research question 1:* Is there a statistically significant correlation between teacher internal goal orientation measured by a goal orientation survey and change in time-1 (pre-professional development) and time-2 (post-professional development) CLASS scores?

*Research question 2:* Does a learning orientation or performance approach orientation, measured by the Goal Orientation Survey, lead to greater change in time-1 (pre-professional development) and time-2 (post-professional development) CLASS scores than a performance avoidance orientation?

*Research question 3:* Is a coaching model effective in significantly increasing CLASS domain scores from time-1 (pre-coaching) to time-2 (post-coaching)?
Research question 4: Are student-centered learning teams (SCLT) effective in significantly increasing CLASS domain scores from time-1 (pre-SCLT) to time-2 (post-SCLT)?

Research question 5: Is the CLASS-based coaching model or the SCLT more effective at increasing CLASS scores from time-1 to time-2?

Definition of Terms

Coaching. A program of sustained professional development in which a mentee is paired with a trained, experienced, and knowledgeable individual who supports the use of research-based strategies in the aim of improving teacher performance (Neumerski, 2013).

Goal Orientation. Goal orientation is rooted in goal achievement theory and is a term related to individual’s internal motivation state (Dweck, 1999).

Learning goal orientation. Internal motivation pattern in which individuals seek self-improvement and job mastery (Dweck, 1986). Effort and challenge are viewed as positive and a natural part of gaining competence (Dweck, 1986).

Performance approach goal orientation. Internal motivation pattern in which individuals measure themselves against the perceptions of others, strive to demonstrate competence or high ability compared to others, and view effort as a way to gain recognition (Ames, 1992; Butler, 2007).

Performance avoidance goal orientation. Internal motivation pattern in which individuals seek to put forth minimal effort and avoid displaying inferior ability to others (Butler, 2007). Challenge and effort are generally avoided as they have the possibility to lead to failure (Dweck, 1986).
**K-3.** Indicates kindergarten through third grade education in the public school system.

**P-3.** P-3, or Pre-K-3rd grade, is a national initiative aimed to transform how children aged three to eight learn in schools with a focus on teacher training and instructional collaboration that allows teachers to build strong connections between learning experiences in these critical years (Shore, 2009b).

**Pre-K.** Any experience a child has before formal entry into the K-12 school system. As children learn regardless of the physical setting, pre-k includes both purposeful education received through preschool services and experiential learning that occurs through daily living (Odom, Barbarin, & Wasik, 2009).

**Professional Development.** Planned learning activities that are intended to improve the practice or knowledge base of an individual, group, or school (Bolam &McMahon, 2004).

**Student-Centered Learning Teams.** Teams similar to teacher learning communities, which are professional learning communities that emphasize collaboration between teachers with an emphasis on evaluating connections between student achievement and teaching practices (McLaughlin & Talbert, 2006). Student-centered learning teams work toward changing practices to improve learning and teaching that occurs within individual classrooms.
Chapter II: Review of the Literature

Background of the Problem

The interactions children have within classrooms have a powerful impact on children’s academic and social achievement (Burchinal et al., 2008; Pianta, 1999). However, teachers differ in their implementation of positive classrooms and meaningful instruction, often with inconsistent expectations not only between grades, but also between classrooms of the same grade level (Shore, 2009a). The experiences children have in classrooms vary widely and depend largely on where they live, ethnicity, socioeconomic status (SES), and sometimes luck of the draw in getting a good teacher or a poor one (Shore, 2009a). This creates a large problem in education, as children are not consistently receiving effective, high-quality instruction, which is tied to student outcomes (Hamre & Pianta, 2005). Definitions of what constitutes effective or high-quality teaching vary; however researchers are beginning to agree that student outcomes, teacher-child relationships, and responsiveness of instruction are emerging as valid and reliable ways to measure effectiveness and quality teaching across ages (Burchinal et al., 2008; Guernsey & Ochshorn, 2011; Shore, 2009a). By supporting specific teaching practices that are linked to positive child outcomes through continuing, data-driven professional development opportunities, educational leaders can better support best practice (Measures of Effective Teaching Project, 2013).

One proposed way to address this disparity in education is to ensure children are receiving instruction appropriate to their developmental level. Developmentally, children aged three to eight are in early childhood and exhibit similar patterns in the ways that they learn (Ritchie, Maxwell, & Bredekamp, 2009). A growing body of research on brain
functioning and development suggests that the cognitive structures that support executive functioning skills, skills necessary for the control of emotions and behavior and that are foundational for school success, develop between ages 3-8 (Fusaro & Nelson, 2009). Children aged 3-8 learn by interacting with the environment, with adults and peers, and by manipulating educational materials (Fusaro & Nelson, 2009). Therefore, classrooms that foster positive social interaction and manipulation of materials are most age appropriate for children in early childhood. Classrooms that focus too stringently on large-group teacher instruction and demand high levels of self-regulation may obscure children’s learning and may not adequately reflect children’s academic or social knowledge (Fusaro & Nelson, 2009).

This age range is also characterized by a series of critical periods in development that are affected by the environment and can result in either positive or negative foundations for learning (Tout et al., 2013). The sharp transition that occurs between ages four and five often disrupts learning as children progress from pre-K environments emphasizing social-emotional skills, choice, and self-regulation to K-12 environments emphasizing academics, teacher-directed learning, and limited social interaction (Crawford et al., 2013; Ritchie, Maxwell, & Bredekamp, 2009). A growing body of research suggests that the best way to support learning throughout the lifespan is to support a smoothing of the transitions between pre-K and K-12 instruction (Crawford et al., 2013; Foundation for Child Development, 2010; Kauerz & Coffman, 2013; Shore, 2009b). Pre-K-3rd is a national initiative aiming to transform how children aged three to eight learn in schools with a focus on teacher training and instructional collaboration that allows teachers to build strong connections between learning experiences in these critical
years (Ritchie, Maxwell, & Bredekamp, 2009; Shore, 2009b). Professional development programs aimed to support P-3 efforts have the potential to create the largest impact on student outcomes (Crawford et al., 2013; Shore, 2009a). However, this potential cannot be realized without long-term efforts of administrators and professional development experts. Teachers who receive technical support while implementing new strategies and know that the instructional practices being implemented are in line with administrator expectations and goals, demonstrate increased ability to change their behavior in the classroom (Klinger, 2004).

P-3

The research base for P-3 education spans several areas including developmental neuroscience, child outcomes, professional development, and classroom quality and quality measurement. Pre-K-3rd ideology emphasizes that children’s academic progress, achievement, engagement in learning, and social-emotional competence can be supported by education practices that focus on smoothing transitions between grades and classrooms, data collection and sharing of child information, vertical and horizontal alignment of standards and practices, data-based professional development, and creating collaboration opportunities for teachers across and within grades (Kauerz & Coffman, 2013). The consensus of P-3 research indicates that one of the largest issues facing children today is that they come to formal education with vastly different experiences with discrepancies in education quality and experience beginning at a young age before formal entry to the K-12 school system (Pianta, 2007). Moreover, the achievement gap that exists today begins well before kindergarten and persists through the lifespan. The achievement gap can be seen in children as young as nine months and has grown over the
past 40 years (Halle, cited in Guernsey & Ochshorn, 2011; Rhodes & Huston, 2012).

Fernald (2013) found that the achievement gap in language is present as early as 18 months, and that by the age of two years, a six-month gap exists between children of low SES and high SES. The language ability that children have at age three is the strongest indicator of reading level in the third grade (Dickinson, Darrow, Ngo, & D’Souza, 2009). Compounding the urgency of these findings, reading level in the 3rd grade is consistently a strong predictor of high school graduation and college entrance, as children who do not read at grade level in the third grade are four times more likely to drop out of school by age 19 (Hernandez, 2011). Taken together, this evidence supports the need for continuation of quality experiences bridging pre-K and K-3rd grade to support academic achievement, as the experiences children have before formal entry into school provide the foundation for academic success or struggle. One factor that impedes this continuum is the sharp shift in teaching practice and expectations that occurs between pre-k classrooms and K-3rd grade classrooms that discourages many children and does not reflect current knowledge in developmental science (Pianta, 2007; Barbarin & Miller, 2009; Shore, 2009b).

The teacher-child relationship can be a moderating factor contributing to children’s overall academic and social achievement in school (Pianta, 1999). The ways students experience the educational setting in the context of relationships, specifically teacher-child relationships, has implications for achievement across grades. Two specific indicators of quality teacher-child interactions are emotional and instructional support (Burchinal et al., 2008). The CLASS instrument used in the present research study addresses these indicators, as the measure includes assessments in three key domains of
classroom quality: emotional support, classroom organization, and instructional support (Hamre et al., 2009). Of these sub-scales, emotional and instructional support in the classroom will be the focus here. Instructional support is often the most difficult domain for teachers and involves concept development, quality of feedback, language modeling, and focus on literacy (Hamre et al., 2009). Instructional support can be defined as the level of direct scaffolding and support that teachers provide to students based on their knowledge of the child’s strengths and weaknesses and in the context of the specific environment (Hamre & Pianta, 2005). Teachers who rate high in instructional support display high levels of instructional conversation, evaluative feedback, and encouragement of responsibility, as well as scaffolding of new skills and knowledge just beyond the natural reach of children (Burchinal et al., 2008; NICHD ECCRN, 2002). Emotional support encompasses positive and negative classroom climate, teacher sensitivity, and teacher regard for student perspectives (Hamre et al., 2009). Emotional support encompasses the overall positive relationship that teachers have with children and the “degree to which the teacher serves as a secure base for children” (LaParo, Pianta, & Stuhlman, 2004, p. 414). Classrooms that rate high on emotional support display high levels of teacher sensitivity, positive emotional climates, and effective classroom management with low levels of teacher detachment, over-control, and intrusiveness (NICHD ECCRN, 2002).

Burchinal et al. (2008) found that high instructional quality and emotional support in pre-K classrooms, as measured by CLASS, predicted children’s concurrent academic, social, and language development and had a lasting impact through the kindergarten year. As children advance in age and have more experiences within the formal school setting,
their experiences with teachers compound. Hamre and Pianta (2005) investigated the impact of high instructional and emotional support on the academic achievement of children at risk of school failure. They found that children at high-risk who experienced high to moderate levels of instructional and emotional support over a two year period performed on par with their low-risk peers at the end of the first grade. Conversely, children at high-risk who experienced low levels of instructional and emotional support in the first grade performed below the level of their low-risk peers at the end of the school year on academic and cognitive measures (Hamre & Pianta, 2005). Findings from this nationally representative sample support other studies that find high-quality emotional and instructional support buffers the risk of school failure and bolsters academic achievement and relationships with teachers (Burchinal et al, 2008; LoCasale-Crouch et al., 2007). This research further supports the notion that teacher-child interactions and the specific practices that teachers use within the classroom have implications for school effectiveness, particularly for those children who are at risk.

Variations of teacher quality are strongly linked to differences in children’s learning outcomes with classrooms containing positive emotional climates producing larger educational gains than classrooms without those characteristics (Darling-Hammond, 2000; Hamre et al., 2007). More recently, data has shown that the quality of teacher-child interactions make the largest impact on children’s learning and experiences regardless of behavioral challenges, teacher education, or credentialing (Burchinal et al., 2008; Mashburn et al, 2008; Measures of Effective Teaching Project, 2013; Shore, 2009a). These findings have strong implications for practice; however, the struggle to apply research to practice is deepened by the multitude of considerations educational
leaders encounter when attempting to institute best practice. Often a barrier to implementation of data-driven strategies is the sheer volume of responsibilities educational leaders face in relation to the time they have available (Glanz, 2006; Gutmann & Oertwig, 2013).

The ways that teachers are supported and trained to implement strong emotional and instructional support into their classrooms have an impact on child outcomes. In a review of literature, Yoon et al. (2007) explored the link between professional development programs and student achievement outcomes in K-12 education and found that professional development programs had a significant effect on student achievement when the programs were ongoing, content-focused, and based on validated “theories of teacher learning and change” (p. 4). In prekindergarten classrooms, observational assessments measuring high levels of teacher instructional support and emotional interactions predicted higher academic and language skills than classrooms with lower levels of instructional and emotional support (Mashburn et al., 2008). Further, professional development efforts that support the development of skills related to instructional and emotional support through data-driven feedback and access to video exemplars are linked to teacher behavioral change within prekindergarten classrooms (Pianta et al., 2008). Professional development programs that are not ongoing and exclude meaningful feedback to teachers were not linked to changes in teacher behavior within the classroom (Klinger, 2004; Pianta et al., 2008). What is needed is a shift in focus within education from teacher autonomy to collaborative inquiry and shared standards of practice (Shore, 2009b).
Through data based feedback on measures of classroom quality, teachers can be supported to grow as educators and improve the quality and climate within their classrooms, thus supporting best practice and methods linked to student learning (Guernsey & Ochshorn, 2011). It is this data-based process that lends weight to the national P-3 initiative toward improving education. Data-driven professional development that uses reliable and valid observations to measure classroom quality has the potential to drive positive change in teaching practices and children’s classroom experiences, especially when paired with coaching and teacher learning communities (Guernsey & Ochshorn, 2011). In light of current literature on specific professional development practices that support change in teacher behavior, it becomes necessary to consider the degree to which teachers come preloaded with learning orientations that impact their engagement and buy-in with professional development programs.

Teacher Motivation

If the goals of professional development strategies are to improve teacher learning and implementation of new strategies, then a look at the motivational structures that influence teachers’ learning and implementation are necessary. In this vein, knowledge gleaned from goal achievement theory can be applied. An element continually mentioned in professional development research is the role that teachers’ own perceptions and learning dispositions play in their willingness to engage in professional development programs (Guskey & Yoon, 2009; Klinger, 2004). Often, teachers encounter conflicting advice from experts who constantly recommend the next big thing in teaching. This constant rotation and re-defining of best practice often inhibits teachers from fully buying into professional development models (Klinger, 2004). This truth interacts dynamically
with teachers’ motivational patterns and internal goal orientations. As outlined by Dweck (1999) and Butler (2007), there are three general models of motivation, learning-goal orientation (characterized by challenge seeking, high effort, and persistence in difficult tasks), performance approach goal orientation (characterized by a desire to demonstrate superior ability to others), and performance avoidance goal orientation (characterized by avoidance of challenging tasks, desire to hide low ability from others, and low effort). Implications ascertained from these three motivation styles provide insight into the ways different teachers engage in professional development programs.

To further illuminate the impact that goal orientation has on learning, specific behaviors related to each orientation are helpful. Those who have a learning orientation view effort and increased difficulty as connected to success (Ames, 1992). Individuals with learning orientation value internalization of content, have higher tolerance of failure or struggle during difficult tasks, and demonstrate higher self-regulatory strategies in problem solving and implementation of new ideas over time (Ames, 1992). Those with learning orientation strive toward mastery of tasks. In contrast, those with performance avoidance orientation view increased effort as meaning that they lack ability and tend to avoid challenging tasks (Dweck, 1999). Performance approach orientation sits in the middle of learning and avoidance goals and has a less negative connotation but is still characterized by the desire to demonstrate advanced ability or hide inferior ability (Butler, 2007). Individuals with both performance orientations often use memorization or short-term strategies requiring low-effort in relation to tasks, and experience decreases in self-concept when met with challenge (Ames, 1992; Butler, 2007). Consequently, those with learning orientation tend toward higher achievement and those with performance
orientations tend toward avoidance of tasks that may lead to low achievement (Dweck, 1999).

Research on learning orientations has persisted over time, but has rarely been applied to teachers, as the focus is generally on student learning. Research that has been applied to teachers focuses on self-efficacy and perceptions of help seeking (Butler, 2007; Nitsche et al., 2007). Butler (2007) surveyed 320 teachers and found that learning orientation was a strong predictor of help seeking behavior while performance avoidance goals were “negatively associated with help seeking” (p. 248). This indication of the strong connection between learning goals and help seeking behavior supports the present research, but leaves out the impact of goal orientations on engagement with professional development efforts that are already in place. Studies also show that context matters in the activation of goal orientation patterns in that school cultures encouraging teachers to seeking mastery rather than teacher competition or demonstration of ability through performance measures may foster more learning goal oriented behaviors (Butler, 2007; Dweck, 1999; Martocchio & Hertenstein, 2003). Students’ perceptions of teacher support are also associated with a classroom climate of mastery and students’ own learning orientations implying that administrator support can foster a climate of mastery for teachers (Patrick & Ryan, 2005). This evidence supports the expected findings, as the professional development opportunities offered here will provide ways to improve teacher practice, specifically through positive collaboration and the building of school cultures oriented toward learning.

Those with performance and learning orientations do not differ in innate ability or intelligence, however goal orientations guide individuals toward different achievement
pathways (Ames, 1992; Dweck, 1999). For example, implicit theories about intelligence
direct behavior in the face of challenging tasks, influence values of what is important, and
the ways individuals interpret and respond to events (Dweck, 1999). Those with a
learning orientation persist despite challenge, and those with a performance orientation
avoid challenge or risk of failure. These patterns in behavior affect effort toward high
achievement in the long term (Dweck, 1999). Longitudinal research also supports that
internal motivation styles remain relatively consistent through the lifespan, however it
should not be assumed that performance approach orientation couldn’t lead to high
achievement (Dweck, 1999). What is needed in practice is an understanding of the ways
mastery-oriented, learning goal response patterns can be fostered through the
environment regardless of internal goal orientation.

In relation to adult learning, Oosterheert et al. (2002) assessed 162 secondary
teachers’ orientation to learning in teacher preparation settings. Teachers were
categorized based on dispositions toward learning and motivation styles. Differences
were reflected between those with internal (learning) loci of motivation that sought to
improve the quality of their teaching and those with external (performance) loci of
motivation who relied on external efforts to drive their practice. The researchers
emphasized teachers’ perceptions and experiences showing a “discrepancy between their
actual teaching and well established image of teaching and of being a teacher”
(Oosterheert et al., 2002, p. 45). Teacher’ with learning orientation displayed greater
acknowledgement of and problem-solving surrounding shortcomings, while teachers with
performance orientations displayed less acknowledgement and problem-solving
surrounding shortcomings and used temporary solutions to problems rather than seeking
to deepen understanding of practice (Oosterheert et al., 2002). In addition, researchers found that some teachers were survival-oriented, displayed characteristics of performance avoidance goals, and were not concerned with bettering their teaching practice. These teachers were solely concerned with survival within the field and often attributed classroom problems to student issues. Further exploration indicated that performance oriented teachers may benefit more from external motivation, or programs that incorporate mentors or community supports, while learning oriented teachers may also benefit from these, but have a higher level of self-regulation in relation to learning (Oosterheert et al., 2002).

Further research on teacher motivation patterns reveals that the motivation styles generally applied to children in the classroom also apply to teachers with goal orientations beginning in childhood and persisting throughout the lifespan (Dweck, 1999). While performance and learning orientations have traditionally been viewed as static, individual differences, this concept stands in opposition to many professional development or training programs that invest in changing teacher behavior and learning (Martocchio & Hertenstein, 2003). Findings related to learning context have shown that situational factors can guide learning orientations and may cause individuals to vary in their goal orientation patterns (Martocchio & Hertenstein, 2003; Patrick & Ryan, 2005). When learning environments are modified to elicit learning or performance orientation response patterns, those in training programs are more likely to persist, engage, and change their behavior (Martocchio & Hertenstein, 2003).

Findings related to the ways that classroom environments work to develop the goal orientations of children can be additionally applied to adult learning contexts.
Environmental cues can impact the ways that children view themselves, their effort, goals, and the nature of tasks (Ames, 1992). Classroom environments that emphasize social comparison, competition, authority of the teacher, and outcome-focused evaluation of learning increases student’s acceptance of failure, and decreases perceptions of the importance of learning and effort (Ames, 1992). As context influences the development and activation of learning orientations, professional development programs that cultivate positive dispositions toward mastery and emphasize the role of evaluation in supporting focused learning have the greatest potential to change adult teacher behavior. Conversely, programs that involve social comparison, authority of trainer or administrator, and high-stake evaluation of skill development may deter participation and limit motivation toward learning. In this light, professional development programs should target the desired motivational attributes within teachers. Programs including high structure and community or relationship-based leadership and data-driven feedback specific to each classroom and teacher have the potential to be the most impactful. It now becomes necessary to consider the ways administrators can implement professional development models that lead to the highest levels of change in teacher behavior.

**Professional Development**

Maxwell et al. (2006) examined the literature on early childhood professional development and found that no consistent definition of professional development existed in major studies on the topic. The researchers delineated three main veins of professional development for their further review: education (delivery of content-specific knowledge in an official academic setting), training (defined as in-service or informal education activities delivered outside of official academic settings aimed at improving staff
knowledge, skills, and attitudes), and credentialing (provision of accreditation, certification or licensure provided by an organization) (Maxwell et al., 2006). These definitions are consistent with other operational definitions of professional development domains (e.g. Bergen, 2009; Karoly, 2012; Zaslow et al., 2010). The focus here will be on training and will reflect the definition provided by Maxwell et al. (2006), as the proposed study will examine in-service training efforts by professional development experts in the context of P-3 education goals.

One goal of P-3 is to incorporate strong professional development into schools (Shore, 2009b). There is evidence that professional development is linked with growth in teacher pedagogical knowledge, improved approaches to teaching, and quality in teacher-child interactions (Muijs, Day, Harris, & Lindsay, 2004). While there is a surprising lack of research that supports the link between specific types of professional development and child outcomes, research does support the link between teacher-child interactions and child academic and social success (Guskey & Yoon, 2009; Mashburn et al, 2008). Since evaluation of effective professional development is highly context specific, often what works in one setting with one group of teachers is less effective in another setting with a different group of teachers (Muijs et al., 2004). Because of this, evaluation of professional development strategies needs to be tailored to the environment in which they will be used. Along this logic, within the P-3 framework professional development strategies need to be evaluated both in pre-K and K-3, as delivery models often differ.

This need becomes problematic, as there is a schism between the literature that exists for young children under age five, and the literature for K-12 school systems. There is also a schism between the ways that teachers are prepared for careers in pre-K
versus K-12 education (Karoly, 2012). There is little known about professional
development efforts with teachers of children aged 3-8, as the types of professional
development activities teachers participate in are rarely defined and vary widely
(Engfield & Rogers, 2009; Maxwell et al., 2006). Maxwell et al.’s (2006) review of
training content offered to early education professionals revealed more than 28 separate
methods of delivering 38 distinct areas of content. As developmental science and
research on learning supports that depth and integrated understanding of concepts is more
meaningful than brief, rapid-fire sessions delivering shallow content, this variable model
of professional development delivery used in early childhood cannot logically provide the
support teachers need to improve their practice (Engfield & Rogers, 2009; Guskey &
Yoon, 2009; Klinger, 2004). In addition, pre-K teachers often begin teaching in
classrooms before receiving any formal training and go on to gain training through
varying methods as they progress through their careers and decide to invest in their own
knowledge and practice (Karoly, 2012). A more integrated, personalized, long-term
method for professional development that addresses the discrepancies in practice between
pre-K education and K-12 education is needed.

To provide context to the differing challenges pre-K teachers face it is necessary
to review the various settings that deliver pre-K education and the fluctuating standards
applied to them. One challenge to ensuring effective professional development to support
best practice in pre-K involves the diverse delivery methods of early education and the
varying standards applied to teacher preparation, licensure, and quality (Barnet et al.,
2012; Karoly, 2012). Families choose from center-based care, home or family-based care,
private preschools, Head Start, or state-funded pre-K. Each method abides by different
licensing standards, which often vary by state, as well as different philosophical and theoretical approaches to teaching young children. Home or family-based care is often exempt from licensure if they care for fewer than six children depending on the age groupings (Child Care Law Center, n.d.). Additionally, there is an increasing practice of including pre-K classrooms into elementary schools, which use different learning and credentialing standards than preschools (Shore, Shue, & Lambert, 2010). Often elementary principals are not trained in early childhood development, do not have experience working with preschoolers, and in one study 59% had no professional development to administer to preschool classroom teachers (Shore et al., 2010).

Kindergarten teachers are often stuck in the middle of the contradiction between pre-K practices and expectations and those of the K-12 system in which they teach. Often state pre-K guidelines indicate minimum qualifications that mainly address safety and health and require minimal teacher qualifications. In state-funded pre-K, only 58% of programs require lead teachers to have a bachelor’s degree and less than one third require an early childhood credential (Barnett et al., 2012). This provides a sharp contrast to the licensure and credentialing requirements of all K-12 teachers and illuminates the challenges of unifying professional development efforts across P-3 classrooms.

Professional development efforts in K-12 schooling have changed over time with an increased focus on instructional leadership and mentoring of teachers by school administration (Neumerski, 2013). While there is scant information available as to the link between specific professional development practices that yield improved child outcomes, a review of the literature across several areas provides a comprehensive account of the specific professional development practices that create change in teacher
practices. Consistent with the P-3 philosophy, change in teachers’ behaviors can yield change in child outcomes. Professional development models that foster the development of skills needed to create classrooms with positive emotional climates and high-quality instructional support are needed. There is growing evidence that one-shot, in-service professional development efforts are ineffective in creating long-term, positive change in teaching practices (Klinger, 2004; McLaughlin & Talbert, 2006). Workshops are a common method of professional development, but can be a “waste of time and money” if there is not sufficient follow-up by experts and continued effort (Guskey & Yoon, 2009, p. 496). Programs that focus on the implementation of research ideas, involve outside experts as facilitators, and provide opportunities for teachers to adapt practices to fit their classrooms are found to be most effective (Guskey & Yoon, 2009). Additionally, common themes from the literature suggest programs that are ongoing, collaborative, and inquiry-oriented display the greatest potential for efficacy (Engfield & Rogers, 2009; McLaughlin & Talbert, 2006). The design of a successful professional development model must take into account the experiences and expertise of individual teachers as well as the unique culture of each school or classroom while maintaining the focus on student learning and achievement (Engfield & Rogers, 2009; Glanz, 2006; Klinger, 2004). These findings of specific professional development practices that lead to teacher change further illuminate the need for tailored professional development efforts, as school and classroom context matters. Two separate professional development models will be analyzed here in terms of their effect on teacher behavior, coaching and student-centered learning teams.

**Coaching.** Mentoring and coaching are practices that have been increasingly used with both pre-K and K-3rd grade teachers, particularly with newer teachers since the
1980s, to improve teacher efficacy (Neumerski, 2013). While coaching has been correlated with increases in student achievement, the specific coaching practices that yield sustained change in teaching are vague with varying definitions of specific coaching practices used (Neumerski, 2013; Robb, 2000). However, there are some universal characteristics that coaches possess that make them ideal for improving teacher practice. Some include: knowledge of adult education strategies, having over 15 years of teaching experience within education, nonjudgmental listening and respect for teachers’ work, and expertise and access to resources (Robb, 2000). Here, the conceptual definition of coaching will be consistent with other definitions that emphasize the practical nature of coaching and significance of learning derived from working with teachers in their own classrooms with their own students (Klinger, 2004; Neumerski, 2013). Coaching will be defined here, as “sustained class-based support from a qualified and knowledgeable individual who models research-based strategies and explores with teachers how to increase these practices using the teacher’s own students” (Sailors & Shanklin, 2010, p. 1).

Despite some shortcomings in the research, one consistent and encouraging finding across studies is that coaching has the greatest potential to effect student academic and social outcomes when students come from high-risk populations (Pianta et al., 2008; Zaslow et al., 2010). While direct links to student achievement are slim, the body of literature does show a link between coaching and change in teacher behavior within the classroom (Eaton, Falk, & Doolittle, 2008; Pianta et al., 2008). Studies also support the link between change in teacher classroom behavior and increased student achievement when targeted behaviors include increasing levels of instructional and
emotional support (Burchinal et al., 2008; Hamre & Pianta, 2005). To further explore these findings this research evaluated the effect of CLASS-based coaching on change in teacher classroom behavior within classrooms that contain children at risk.

As this research used CLASS as a measure of classroom quality, a CLASS-based coaching model was used. In a validation study, a web-mediated CLASS professional development model was tested that compared the use of web-based exemplar videos with use of videos in addition to individualized consultation support for CLASS-based teaching strategies (Pianta et al., 2008). Findings suggest that access to video exemplars improved student-teacher interactions particularly when the majority of students were in at-risk populations and that the addition of individualized consultation further supported positive change in teacher classroom behavior (Pianta et al., 2008). Eaton et al. (2008) measured the impact of coaching on second grade teachers over one school year and found that both coaching and coaching paired with teacher institutes significantly increase teacher knowledge and explicit instruction within the classroom. Another comparison of coaching and coaching accompanied curriculum training found that the combination led to reinforcement of teaching concepts and impacted teacher practice effecting student performance on academic measures after one school year (Assel et al., 2007).

Because exact coaching practices vary so widely between and within programs, it is difficult to tie specific child outcomes to specific coaching practice. However, it is clear that coaching can have an impact on teacher knowledge and behavior within the classroom (Assel et al., 2007; Eaton et al., 2008; Pianta et al., 2008). One shortfall of some coaching and mentoring programs that limits researchers ability to ascertain
outcomes is that many programs fail to delineate specific goals pre-intervention making measurement of change impossible (Zaslow et al., 2010). Additionally, many programs fluctuate in the dosage of coaching given to teachers making measurement of specific effective coaching practices difficult. One study found that the variation in amount of coaching given to teachers corresponded to the experience levels of the teacher being mentored (Eaton et al., 2008). Researchers explained that this variation may have been related to teacher levels of experience, as new teachers may have needed more support in relation to classroom practice and curriculum implementation. Another reason may be that teachers who required more coaching time may have had classrooms containing more high-needs children. One benefit of individualized coaching is the inherent flexibility of the practice. Coaches are free to work within individual teachers contexts and with their unique challenges.

**Student-centered learning teams.** Student-centered learning teams, or teacher learning communities, are another method of professional development linked to changes in teacher behavior and improved child outcomes (McLaughlin & Talbert, 2006). Learning teams provide a professional culture of student-focused teaching, technical and social support for implementation of new strategies, and are specific to the culture of the individual school as well as the assessments used (Dufour & Fullan, 2013; McLaughlin & Talbert, 2006). This allows teacher learning communities to tailor professional development content to the specific context of individual schools, a hallmark of best practice in professional development (Abadiano & Turner, 2004; Guskey & Yoon, 2009). Strong connections have been made between teacher learning communities and student learning gains as well as student experiences within the classroom (Robb, 2000). In three
nationally representative samples researchers found that students within schools implementing teacher learning communities demonstrated higher academic outcomes and that student SES had less of an effect on achievement gains when schools used teacher learning communities (McLaughlin & Talbert, 2006). Further research suggests that there is a link between teacher learning communities and teacher learning and positive cultural change within the school (Gutmann & Oertwig, 2013). In a randomized study Gersten et al. (2010) found that teachers in a learning community performed significantly higher on content and instructional knowledge than teachers in the control group at the end of one year. This research also found marginal effects on student word knowledge due to teacher learning suggesting that change in teacher instruction improved student word knowledge (Gersten et al., 2010). Supported by the evidence that teacher behavior and knowledge bolsters academic achievement for students, professional development strategies that aim to change teacher behavior have the potential to improve student outcomes (Burchinal et al., 2008; Hamre & Pianta, 2005; Shore, 2009a).

Barriers to successful implementation of teacher learning communities lie in the reality that many underestimate the effort needed to make them sustainable and think of them as the “latest program” rather than as a way to fundamentally change school culture (Dufour & Fullan, 2013, p. 17). Teacher learning communities provide a venue for inside-out change that has proven to be more effective than top-down initiatives (Robb, 2000). These communities additionally support the struggles of many traditional school cultures in which the most experienced teachers are rewarded by being assigned to classrooms with high-achieving students and teachers with the least experience are placed with students who are low-achieving and in the greatest need of high-quality instruction
(McLaughlin & Talbert, 2006). Teacher learning communities can help to address this disparity in the allocation of expertise on a school staff by creating a venue for shared ideas, collaboration, and sharp focus on student achievement and teaching practices that work.

Continued efforts on the part of administrators and invested experts are needed for teachers to internalize stated goals and embed new practices into their routines. Teacher learning communities and coaching reflect many principles outlined in the P-3 model applied here, as both professional development strategies emphasize the collaborative nature of learning. Additionally, teachers come to professional development programs with internalized beliefs and attitudes and approach learning through the lens of their individual experiences (Dweck, 1999; Kwakman, 2003). For this reason professional development efforts that aim to create lasting change in teachers’ behaviors must be respectful and aware of teachers’ perspectives and internal goal orientations.
Chapter III: Method

Abundant studies explore professional development strategies and student outcomes; however, a dearth of research incorporates the role of teachers’ internal goal orientation patterns when evaluating change in teacher behavior in response to professional development opportunities. This chapter contains an explanation of the sampling methods used in addition to population information, research procedure, and a description of measures.

Background Information

In order to examine the goals of this research, two elementary schools were chosen to participate in the larger P-3 initiative because they serve high-risk populations, as schools with the highest need have the most to gain from quality professional development. Both schools were similar in demographics and serve primarily low-income students with 89% and 85.9% qualifying for free and reduced lunch, approximately 53.7% English Language Learners, and enrollment of 68% and 55% Hispanic (National Title 1 Association, 2012). The transiency rates for both schools are approximately 50% for School A and 33% for school B (National Title 1 Association, 2012; S. Cunningham, personal communication, January, 2014).

Two differing models of professional development were used with each school site. School A, used student-centered learning teams, and school B, used CLASS-based coaching. Each school site independently implemented different professional development models, thus, assignment to each group was not random. Both models focused on assisting teachers to make changes in classroom practices to improve their individual CLASS scores.
Human Subjects

A request for expedited review was filed with the Institutional Review Board (IRB). The Social Behavior and Education IRB approved the data collection process and granted exempt status to this project. Prior to collecting data, a full research approval letter was granted by Washoe County School District. The CLASS data being used for this study were previously collected and written consent was obtained from teachers for use of their personal data.

All responses remain confidential and were only accessible by the research team. Teachers’ scores on both the CLASS and the Goal Orientation survey were coded with a non-identifying number to keep their personal information confidential while allowing it to be matched to time-1 and time-2 CLASS scores. Materials were kept in a locked file cabinet only accessible by the research team. No scores were shared with school administration.

Procedure

IRB approval from University of Nevada, Reno (UNR) and Washoe County School District (WCSD) was obtained before contacting school sites. Once IRB and WCSD approval were obtained, the principals of each school were approached by the co- and primary-investigators to gain permission to approach teachers and ask for consent to participate.

Upon gaining principal permission, researchers approached teachers during one group professional development meeting in their respective schools. In both schools, researchers provided a brief verbal introduction of the purpose of the study and the information sheet was made available to all teachers. Teachers read the information sheet
and indicated whether or not they wanted to participate in the study. Teachers who did not give consent were excluded from the study. Teachers granting consent were administered the goal orientation survey. In school A and school B, all Pre-K-3rd grade teachers were addressed in a P-3 meeting, were given a brief explanation of the study and were presented with the research information sheet. The information sheet and goal orientation survey was left in the mailboxes of teachers who were not available to attend the meeting for school A. The information sheet and survey took approximately 15-20 minutes to administer at both sites.

CLASS data were collected twice during the 2013-2014 school year for both sites. Time-1 and time-2 data were existing data collected by a trained and reliable third party rater. Time-1 CLASS data were collected between October and December of 2013-2014 school year. Time-2 CLASS data were collected between May and June of the 2013-2014 school year. Each classroom observation was conducted by an independent, reliable observer and lasted at least two hours. Prior to the school year, CLASS observers were trained to reliability by a certified trainer of the instrument. Each observer was tested and obtained a 95% reliability score (Burchinal et al., 2008; Pakarinen et al., 2010). In school A, the SCLT trainer provided the CLASS scores of the participating teachers to the researchers. In school B, the primary administrator of the coaching professional development program provided the CLASS scores.

Participants

Participants were 15 Pre-k through 3rd grade teachers from two Northern Nevada elementary schools: eight teachers from school A and seven from school B. Teachers were approached in two separate groups, one at school A (SCLT) and one at school B.
Thirteen teachers attended a P-3 meeting at each school site, making a total of 26. At school A, 61% of teachers agreed to participate, at school B, 53% of teachers agreed to participate leading to a sample size of fifteen teachers participating in this study. Both schools engage in P-3 practice and teachers from both schools were enrolled in multi-year professional development programs related to P-3. Involvement in the professional development programs or this study was not mandatory or tied to any performance review. All teachers chose to participate in the professional development program; therefore, assignment to professional development program was not random.

Of the 15 participating teachers, 14 were female. All participants were licensed teachers through the state of Nevada. Teachers had a range of 1 to 12 years teaching experience within the same district, with an average of 9 years. Teachers were informed of the purpose of the study as well as all procedures used to protect their personal information. Of the eight teachers from school A, three did not participate in the SCLT, and were excluded from the professional development data analysis. Of the seven teachers from school B, two did not have time-2 CLASS scores and one did not participate in the coaching program, leaving four participants from school A for professional development data analysis.

Measures

Classroom Assessment Scoring System (CLASS). CLASS is a classroom observation tool measuring three dimensions of classroom quality: emotional support, classroom organization, and instructional support (Hamre et al., 2009). During observations, classrooms are rated on nine dimensions of classroom quality categorized under the three main domains. Teachers are rated on a scale from 1 to 7, with scores of 1-
2 indicating low quality, scores of 3-5 indicating moderate quality, and 6-7 indicating high quality (Hamre et al., 2009).

CLASS provides an objective and reliable measure of classroom climate and children’s experiences via reliable and objective third party observers rather than relying on teacher reports or child testing to measure effectiveness (Hamre et al., 2009). Validity of the CLASS system has been repeatedly demonstrated with CLASS scores reflecting the interactions and dynamics within a classroom that are tied to student academic and social achievement as well as positive change in teacher behavior across classrooms reflecting diverse demographics and in countries other than the United States (Burchinal et al., 2008; Hamre & Pianta, 2005; Mashburn et al., 2008; Pakarinen et al., 2010). Validity of this measure has been compared to other measures of classroom quality with results indicating that CLASS is a more comprehensive measure of classroom quality when compared to scales that only measure the physical environment (i.e. Early Childhood Environmental Rating Scale - Revised: ECERS-R) (see Mashburn et al., 2008). CLASS’s predictive power and reliability are further demonstrated when observation scores are combined with evidence of student achievement such as achievement scores (MET, 2012). CLASS as a measurement tool is also applicable to varying age ranges and can be applied within pre-K classrooms as well as grade-level classrooms where other observational assessments cannot, making this an ideal assessment tool for P-3 efforts (Hamre, Goffin, Kraft-Sayre, 2009).

**Goal Orientation Survey.** The goal orientation survey was adopted from Nitsche, Dickhauser, Fasching, and Dresel (2011). The survey consists of 36 closed-response items with responses ranked on a 5-point Likert scale ranging from 1 (strongly
disagree) to 5 (strongly agree). Items on the scale measure each of three goal orientation models. A uniform base exists for each question (“In my vocation, I aspire…”) (Nitsche et al., 2011, p. 579). Twelve questions measure performance approach goals (“…to demonstrate to myself that I know more than other teachers”), nine questions measure learning goals (“…to constantly deal better with critical class situations”), twelve questions measure performance avoidance goals (“…get through the day with little effort”), and three questions measure work avoidance goals (“…that the work is easy”) (Nischke et al., 2011, p. 580). Some minor language in the scale was changed for the purposes of this study. The measure was originally published in German and some of the wording needed to be adjusted for proper grammar. For example, the statement "I aspire my colleagues to realize…” was changed to "I aspire for my colleagues to realize…". None of the changes influenced the meaning of the survey questions. See Appendix A for the full version of the survey.

As most goal orientation surveys historically validated are intended to measure student learning, these researchers modified this scale to reflect teacher perceptions and experiences in the work place. The survey is intended to measure a teacher’s motivation in the context of work and professional development cultures (Nitsche et al., 2011). While there is need for further validation of this scale by other researchers, initial investigation found high factorial, convergent, and divergent validity, indicating a goodness of fit of the questionnaire items to the targeted content (see Nitsche et al., 2011). Additionally, findings suggest that this measure of teacher goal orientation improves upon previous measures by omitting loaded language that implied values (… is important to me), and by targeting a teacher’s own actions rather than the actions of
others (Nitsche et al., 2011). As this instrument is fairly new, reliability has yet to be demonstrated.

**Professional Development Programs**

School A used student-centered learning teams (SCLT) to focus on implementing CLASS quality objectives in relation to time-1 CLASS scores, and did so through a community-based professional development program with broad group training topics. SCLT’s focused on building awareness of developmentally appropriate practice outlined by P-3, and change in instructional practice to meet student needs through healthy and honest professional collaboration and data-driven feedback. SCLT’s met one time per month for the duration of the school year, approximately ten times. In addition, teachers videotaped several classroom lessons for reflection, engaged in professional reading surrounding training topics (See Appendix B for a complete list of training), observed peer teaching demonstrations of model teachers, and committed to changing classroom practice to reflect changing understanding of quality. Some teachers also participated in eight total opportunities to observe in peer’s classrooms.

The coaching program followed the model outlined by CLASS making it reflective of the measurement tool used. Teachers chose a coach to work with throughout the second half of the school year. Coaches focused on improving low scores on specific sub-scale quality indicators gained through time-1 CLASS data. Specific goals were chosen in collaboration between the coach and classroom teacher. Coaches and teachers met together to plan a lesson integrating specific CLASS-related dimensions. The classroom teacher implemented the lessons and some were video recorded. Coaches and teachers then met one-on-one to review the lesson and discuss strengths and weaknesses.
related to CLASS indicators and personal goals. Coaches and teachers debriefed and planned next steps. This was done on an approximately monthly basis for the duration of the spring school semester, approximately four times.

**Research Design**

This quasi-experimental pretest-post-test research design sought to find the answer to four distinct research questions. First, do teachers’ internal goal orientations correlate with their implementation of research-based classroom strategies over one school year indicated by change in time-1 and time-2 CLASS scores? Second, does a learning orientation lead to greater change in CLASS scores than performance orientations? Last, what is the impact of two differing professional development models on change in time-1 and time-2 CLASS scores? Change in time-1 and time-2 CLASS scores were evaluated in relation to participation in two varying professional development models and teachers’ internal goal orientations were measured by survey.

Independent variables were the differing professional development programs, CLASS-based coaching, and student-centered learning teams. Additionally, teachers’ internal goal orientation was measured to determine whether learning or performance orientations correlated with change in time-1 and time-2 CLASS scores. Goal orientation was not manipulated. The dependent variable was change in CLASS domain scores over one school year. Since participants were chosen based on their school’s participation in the P-3 initiative, and teachers volunteered to participate in the professional development models, assignment to conditions was not random. This study made use of both between and within-subject designs, as analysis of the differences between the efficacy of both professional development models and individual change in time-1 and time-2 scores was
necessary to evaluate effectiveness. To explore the relationship between goal orientation and change in time-1 and time-2 CLASS scores, a goal orientation survey was administered to all participating teachers during spring of the 2013-2014 school year.

**Data Analysis**

This exploratory study sought to examine the relationship between three variables: teacher goal orientation, two differing professional development models, and change in time-1 and time-2 CLASS scores. To address research question one (is there a statistically significant correlation between teacher internal goal orientation measured by a goal orientation survey and change in time-1 and time-2 CLASS scores), and two (does a learning goal or performance approach orientation lead to greater change in CLASS scores than a performance avoidance orientation), sub-scores from the goal orientation survey were calculated to determine teachers’ primary internal goal orientation. CLASS change scores within each domain for each teacher were compared to achievement goal survey results to determine a relationship between achievement goal orientation and change in classroom behavior. To determine whether or not there was a statistically significant correlation between teacher goal orientation and change in CLASS domain scores over one school year, the CLASS domain change scores were compared to achievement goal orientation sub-scores using a Spearman correlation coefficient (r_s).

In response to research questions three, is a coaching model effective in significantly increasing CLASS domain scores from time-1 (pre-coaching) to time-2 (post-coaching), and four, are student-centered learning teams effective in significantly increasing CLASS domain scores from time-1 (pre-SCLT) to time-2 (post-SCLT), a non-parametric Wilcoxon signed ranks test was run. This allowed for matched pairs
comparison of time-1 and time-2 data for each professional development program. To further explore the efficacy of both professional development models and answer research question five, a Mann-Whitney ($U$) non-parametric t-test was performed to compare the means of two groups experiencing two separate professional development models, coaching ($n=4$) and student-centered learning teams ($n=8$). To compare the efficacy of coaching and SCLT, a change score was calculated using the mean scores from each measure of classroom quality, (emotional support, classroom organization, and instructional support) to allow for comparison. Directionality of this change score could be either positive or negative, as it is possible for teachers to obtain lower scores upon time-2 CLASS measurement. Mean rank scores derived from the Mann-Whitney ($U$) for each school site were compared to determine variance between professional development models and change in time-1 and time-2 CLASS data across domains.

**Assumptions**

1. The goal orientation survey is reliable and measures internal goal orientations.
2. Teachers in this sample are representative of the larger population of teachers.
3. Survey questions were answered truthfully, as anonymity and confidentiality were maintained throughout the research process.
4. Internal motivational attitudes are relatively stable and do not fluctuate.
Chapter IV: Results

Data were analyzed to determine if there was a significant relationship between internal goal orientation (i.e., learning goals, performance approach goals, and performance avoidance goals), professional development programs (i.e., student-centered learning teams and CLASS-based coaching), and change in CLASS scores over time. This chapter will include the results from the data analyses and findings pertaining to the research questions. Descriptive statistics are included to explore the bivariate relationships between variables and determine possible program effects, followed by non-parametric analyses of the specific research questions. Due to the small sample size of this study, relationships were determined at a .10 significance level in order to reveal some efficacy of programs and difference between groups.

Findings

For the sake of parsimony, research questions one and two are grouped together, as both examine the relationship between goal orientation and change in CLASS scores. Research questions three, four, and five are also grouped together, as all three examine the relationship between professional development and change in CLASS scores. The research questions are listed below along with relevant findings. For each research question, change in CLASS scores was calculated by subtracting time-1 from time-2 for each domain score. Descriptive statistics for goal orientation, CLASS scores, and professional development are presented in table 1.
Table 1. *Descriptive Statistics for the Goal Orientation Survey and Change in CLASS Scores Across Professional Development Interventions*

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coaching</th>
<th>SCLT</th>
<th>No Intervention</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Goal Orientation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Goal</td>
<td>4.67</td>
<td>0.28</td>
<td>4.98</td>
<td>0.05</td>
</tr>
<tr>
<td>Approach Goal</td>
<td>1.38</td>
<td>0.35</td>
<td>1.03</td>
<td>0.07</td>
</tr>
<tr>
<td>Avoidance Goal</td>
<td>1.85</td>
<td>0.86</td>
<td>2.28</td>
<td>0.48</td>
</tr>
<tr>
<td>CLASS Time-1 Scores</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Support</td>
<td>5.71</td>
<td>0.84</td>
<td>3.22</td>
<td>0.93</td>
</tr>
<tr>
<td>Classroom Organization</td>
<td>5.38</td>
<td>1.09</td>
<td>4.92</td>
<td>1.32</td>
</tr>
<tr>
<td>Instructional Support</td>
<td>3.65</td>
<td>1.73</td>
<td>2.95</td>
<td>1.22</td>
</tr>
<tr>
<td>CLASS Time-2 Scores</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Support</td>
<td>6.18</td>
<td>0.59</td>
<td>5.28</td>
<td>1.03</td>
</tr>
<tr>
<td>Classroom Organization</td>
<td>5.88</td>
<td>0.59</td>
<td>5.00</td>
<td>1.25</td>
</tr>
<tr>
<td>Instructional Support</td>
<td>4.40</td>
<td>1.54</td>
<td>3.05</td>
<td>0.86</td>
</tr>
<tr>
<td>CLASS Domain Change Scores</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional Support</td>
<td>0.64</td>
<td>0.33</td>
<td>0.06</td>
<td>0.48</td>
</tr>
<tr>
<td>Classroom Organization</td>
<td>0.58</td>
<td>0.73</td>
<td>0.09</td>
<td>0.87</td>
</tr>
<tr>
<td>Instructional Support</td>
<td>0.96</td>
<td>0.95</td>
<td>0.10</td>
<td>0.62</td>
</tr>
</tbody>
</table>

*Note.* CLASS (Classroom Assessment Scoring System); SCLT (Student Centered Learning Team); \(n_{coaching} = 7\) for goal orientation, \(n_{coaching} = 4\) for CLASS domain scores; \(n_{SCLT} = 8\) for goal orientation, \(n_{SCLT} = 5\) for CLASS domain scores; \(n_{no\ intervention} = 4\) for goal orientation, \(n_{no\ intervention} = 2\) for CLASS domain scores.
To examine the prevalence of internal goal orientation across all teachers, higher-order goal orientation factors were averaged to determine teachers’ individual goal orientations. Responses ranked from 1-5, with 1 indicating low orientation and 5 indicating high orientation; therefore, a higher group mean indicates higher identification with said goal orientation. Findings reveal that all teachers in this sample demonstrated high identification with learning orientation and low identification with performance avoidance orientation ($M = 4.77$, $SD = .34$ and $M = 2.08$, $SD = .65$ respectively).

Performance approach orientation was least indicated ($M = 1.21$, $SD = .29$). Descriptive statistics further revealed overall positive change in CLASS scores for all teachers in emotional support ($M = .13$, $SD = .98$) and classroom organization ($M = .16$, $SD = .89$) with the largest gain in instructional support ($M = .51$, $SD = .95$).

**Goal Orientation and Change in CLASS Scores**

**Research questions 1 and 2:** Is there a statistically significant correlation between teacher internal goal orientation measured by a goal orientation survey and change in time-1 and time-2 CLASS scores; and does a learning orientation or performance approach orientation, measured by the Goal Orientation Survey, lead to greater change in time-1 and time-2 CLASS scores than a performance avoidance orientation?

Because the distribution of scores was not normal in the current sample, the non-parametric Spearman rank order correlation ($r_s$) was used to determine a relationship between goal orientation and change in CLASS scores. Results from this analysis are presented in table 2. A statistically significant correlation was not found between the degree of teacher internal goal orientation and change in time-1 and time-2 CLASS
scores regardless of goal orientation; however, the magnitude of the correlation between emotional support change and avoidance goals was high ($r_s = -0.43$), and likely didn’t reach significance due to the small sample size. Further, the direction of the relationship between avoidance goals and change in emotional support scores indicates that teachers with higher levels of avoidance have less change in emotional support. Learning goal orientation did not correlate to greater change in CLASS scores over time than did either performance goal orientations.

Table 2. Spearman’s Rho Correlation Coefficient for Achievement Goals and Change in CLASS Scores

<table>
<thead>
<tr>
<th>CLASS Domains</th>
<th>Achievement Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Learning Goal</td>
</tr>
<tr>
<td>Emotional Support</td>
<td>-0.22</td>
</tr>
<tr>
<td>Change</td>
<td></td>
</tr>
<tr>
<td>Organization Change</td>
<td>-0.19</td>
</tr>
<tr>
<td>Instructional Support</td>
<td>0.08</td>
</tr>
<tr>
<td>Change</td>
<td></td>
</tr>
</tbody>
</table>

*Note. CLASS (Classroom Assessment Scoring System); SCLT (Student Centered Learning Team); N = 13.*

**Professional Development and Change in CLASS Scores**

**Research questions 3, 4, and 5:** Is a coaching model effective in significantly increasing CLASS domain scores from time-1 (pre-coaching) to time-2 (post-coaching); and are student-centered learning teams effective in significantly increasing CLASS domain scores from time-1 (pre-SCLT) to time-2 (post-SCLT)? Is the CLASS-based coaching model or the SCLT more effective at increasing CLASS scores from time-1 to time-2?

To determine if both professional development programs were effective in
increasing CLASS domain scores from time-1 to time-2, the Wilcoxon signed ranks, non-parametric paired t-test, was run. Findings were marginally significant at the .10 level for instructional support for teachers who participated in professional development programs ($z = 71.50, p = .07$). No other significant differences were found between time-1 and time-2 CLASS domain scores when the professional development groups were reviewed in aggregate. To further test the impact of the professional development programs and to determine program differences in efficacy, the Wilcoxon was additionally run on each program independently. The results indicate a marginally significant increase in emotional support and instructional support for the coaching program ($z = 10.00, p = .07$ and $z = 10.00, p = .07$). No significant change was made to classroom organization scores for either professional development group. No significant differences were found between time-1 and time-2 CLASS domain scores for the SCLT or for teachers who did not participate in the optional professional development programs.

In order to further explore the possible difference between the two professional development programs, a Mann-Whitney ($U$) was conducted. This test was chosen, as the sample size was small and the two professional development intervention groups were unequal in number (coaching, $n = 4$, SCLT, $n = 5$). Coaching and the SCLT did not differ significantly in degree of change between time-1 and time-2 CLASS domain scores for classroom organization or instructional support, but emotional support change was slightly higher for the coaching group ($U = 2.50, p = .07$) (see table 3).
### Table 3.
*Mann-Whitney (U) Analyses for Professional Development Programs and Change in CLASS Scores*

<table>
<thead>
<tr>
<th>CLASS Domains</th>
<th>Coaching</th>
<th>SCLT</th>
<th>U</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Rank</td>
<td>Mean Rank</td>
<td></td>
</tr>
<tr>
<td>Emotional Support</td>
<td>6.88</td>
<td>3.50</td>
<td>2.50⁺</td>
</tr>
<tr>
<td>Classroom Organization</td>
<td>6.25</td>
<td>4.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Instructional Support</td>
<td>6.38</td>
<td>3.90</td>
<td>4.50</td>
</tr>
</tbody>
</table>

*Note. CLASS (Classroom Assessment Scoring System); SCLT (Student Centered Learning Team); ⁺p = .10.*

**Teacher Individual CLASS Change**

With unequal sample sizes between professional development intervention groups, reviewing change in CLASS scores of each teacher illuminates individual differences and provides additional insight into the efficacy of both professional development programs. Individual time-1 and time-2 teacher scores for each CLASS domain and professional development group are presented in figures 1 and 2. For school A, five out of eight teachers improved domain scores for emotional support and classroom organization, while six out of eight improved in instructional support. All teachers who participated in the SCLT did not improve on all domain scores, while the teachers who did not participate in the SCLT did improve all CLASS domain scores. Within school B, all teachers in the coaching group improved all domain scores from time-1 to time-2. The teacher who did not improve scores did not participate in the CLASS-based coaching program.
Figure 1.
*Individual CLASS Domain Scores for School A.*
Summary of Research Questions

In relation to achievement goal orientation, while each teacher indicated some level of each goal orientation, all teachers within this sample endorsed a learning orientation most strongly, followed by performance avoidance orientation, with teachers identifying least with performance approach orientation. Learning goal orientation was not predictive of increased change in CLASS scores, as no significant correlation was found between any goal orientation and change in time-1 and time-2 CLASS scores for any domain. Professional development programs were evaluated to determine if coaching
or SCLT’s were impactful in changing teacher classroom behavior as measured by time-1 and time-2 CLASS scores. When change in CLASS scores were viewed in aggregate, both professional development programs improved instructional support scores over the school year. When viewed independently, coaching made a marginally significant improvement to emotional support and instructional support scores. When the two professional development models were compared, coaching made a slightly larger increase in emotional support than did the SCLT. Through review of CLASS domain scores for each teacher, individual differences became evident with most teachers improving in the three domains. While scores did improve overall for most teachers, scores improved most for those who participated in the optional coaching professional development program. While this is the case for these analyses, significant differences between the two professional development groups and between goal orientations may exist to a greater degree, but this sample size was likely too small to detect the difference.
Chapter V: Discussion

Framed in Dweck’s goal orientation theory, the relationship between teacher internal motivation patterns and change in behavior measured by time-1 and time-2 CLASS scores resulting from professional development strategies was investigated. A summary of findings as they relate to current literature, as well as additional observations, implications for future research, and limitations of the current study are presented.

Achievement Goals

Achievement goal orientation can be a helpful tool in understanding teacher motivational patterns, ideas about job mastery, and goal-directed behavior (Ames, 1992; Butler, 2007; Nitsche et al., 2010). Goal orientation impacts meaning teachers make from their experiences as well as their behavior surrounding job-related tasks (Butler, 2007). Measuring teacher internal goal orientation and linking it to engagement in professional development opportunities, reveals the teacher characteristics that lead to change in classroom behavior. All teachers in this sample identified most with learning orientations. The growing body of literature on goal orientation and teaching supports that those with learning orientations are more highly motivated toward help-seeking, reflective practice, asking for feedback, and engaging in challenging tasks than those with performance orientations (Runhaar, Sanders, & Yang, 2010). While both schools engage in broad P-3 practice, teachers in this sample chose to be a part of the optional P-3 professional development program in their respective school. Thus, participating teachers were self-selected. Because of this, it is possible that teachers with performance approach and performance avoidance orientations were naturally excluded due to the complex nature of
both professional development programs, therefore skewing the results. All teachers in the present sample ranked high on learning orientation, and it is possible that those who chose not to participate were performance approach or performance avoidance oriented. While results did not indicate a direct relationship between goal orientation and change in CLASS scores over time, main effect differences may not have been possible on this measure with such a homogenous group. Teachers with learning orientations may be more internally motivated to participate in programs that include self-reflection, meaningful feedback on teaching practice, and increasingly complex tasks. Teachers with learning goals may also have been more likely to participate in the optional goal orientation survey, further limiting the ability to find difference within this sample.

To review the complex interaction between internal motivation styles, professional development, and change in teacher behavior, it is helpful to revisit the ways goal orientations function. While goal orientations remain relatively stable over the lifespan, goal oriented behaviors can be manipulated by environments that foster either performance or job mastery (Dweck, 1999; Martocchio & Hertenstein, 2003). Result-oriented professional development that focuses on teacher assessment can foster performance-related goals, while learning-oriented professional development that allows for mistakes and non-evaluative self-reflection can foster learning-related goals (Ames, 1992; Martocchio & Hertenstein, 2003; McLaughlin & Talbert, 2006). Increased opportunity for collaborative support via scheduled professional development can have an impact on the activation of goal orientation behavior patterns, and the nature of the learning environment can “support bids for help” and bolster effort (Buler, 2007, p. 243; Martocchio & Hertenstein, 2003). Since both professional development programs offered
continued support from experts, administrators, and colleagues over time, it is possible that learning orientations were activated through the duration of the programs. Future research should explore this relationship and include pre-test and post-test goal orientation measures.

**Professional Development Programs**

A review of the literature on pre-K and K-12 professional development informs practitioners of best-practice strategies that support teachers to adopt behavioral change within the classroom that leads to improved student outcomes. Professional development that is collaborative, ongoing, inquiry-oriented, and that incorporates the expertise and experiences of individual teachers as well as the unique cultures of each school and classroom is most successful in creating lasting teacher change (Engfield & Rogers, 2009; Glanz, 2006; Klinger, 2004; McLaughlin & Talbert, 2006). Both coaching and the SCLT aimed to create long-term change, tailored content to the specific school and classroom learning contexts, and utilized observational feedback in goal creation. While the content areas and some learning goals of the SCLT were designed before the rollout of the program by the professional development expert and school administrator, teachers also pinpointed areas of self-improvement through videotaped lessons and peer review. In comparison, the coaches within the coaching program worked in partnership with teachers to create individual goals that were specific to the learning needs and classroom contexts of each teacher through videotaped lessons, but did not include peer feedback or broader learning content. Considering these conceptual differences, analysis determined that the professional development programs were successful in increasing instructional support scores over one school year, with an additional increase in emotional support.
within the coaching group. These slight differences between programs should not be interpreted as meaning that one professional development strategy was better than the other. As all three CLASS domains are highly interrelated, it is likely that both professional development programs would improve all domains to a greater degree over a greater period of time or in a larger sample.

The CLASS, as an observational tool, measures the interactions within the classroom that are meaningfully tied to student social and academic achievement (Pianta, LaParo, & Hamre, 2008). The domains that are measured are deeply interrelated and interact dynamically with one another. For example, increases in the emotional support domain foster a positive emotional climate, teacher sensitivity, and regard for student perspectives while also reducing negative climate. This change in classroom climate, built by teacher behavior, also impacts classroom organization by limiting behavioral outbursts and increasing productivity. Thus, increases in one domain often result in increases in another over time (Pakarinen et al., 2010). While the differences between the two professional development programs were marginal, review of the CLASS domain change scores for each individual teacher implies the effectiveness of both professional development strategies in improving teacher classroom practice. The types of behavior measured through the CLASS tool, the behavior the professional development models attempted to change, are dynamic and require intentional persistence from teachers. The lack of strong findings differentially linking coaching or the SCLT to change in CLASS scores paired with the overwhelmingly learning oriented sample may indicate that the teachers were attempting to implement complex behavioral change and that the temporal restraints of this research did not allow sufficient time to see long-term program effects.
Since the goals of both professional development programs were to create lasting, long-term change in teacher classroom behavior, both professional development programs may be highly effective, but significant differences may not be detectable over one school year with this limited sample. It is also possible that there were larger main effect differences between programs, but the same limitations disallowed the discovery of differences.

While the gains made by individual teachers were slim, evidence suggests that these slight gains are impactful for student academic and social outcomes. A national study examining the threshold of the impact of high-quality early educational settings on child academic and social outcomes, found that emotional support scores above 5 predicted higher levels of social competence and lower levels of behavior problems with emotional support scores below 5 failing to predict child outcomes (Burchinal, Vandergrift, Pianta, & Mashburn, 2010). In comparison, classrooms with moderate to high levels of Instructional Support (scores higher than 3.25) were more strongly associated with increased expressive language, reading, and math ability (Burchinal et al., 2010). The magnitude of these associations increased as the level of instructional support and emotional support increased. Additional findings on specific scores on CLASS domains indicate that high to moderate levels of instructional support (CLASS scores between 3-4, and 5-7 respectively) are positively associated with increased academic and language achievement from the pre-K year through the first grade for English and Spanish-speaking children, as well as children from high-risk backgrounds (Downer et al., 2011; Hamre & Pianta, 2005; Mashburn et al., 2008). Specifically, gains include receptive and expressive language, rhyming, letter naming, applied problem solving, increased social competence, and decreased problem behaviors (Downer et al., 2011;
Mashburn et al., 2008). Thus, greater instructional support scores indicate greater academic achievement, and even slight gains in this classroom quality dimension suggest improvements in child outcomes. When reviewing the individual teachers scores in both the coaching and the SCLT groups, scores for instructional support improved toward the 3.25 quality cut-off point indicating an improvement in scores that is impactful for student outcomes. Most teachers demonstrated emotional support around the quality cut-off of 5 at time-1 (pre-professional development) and continued to improve. Research suggests that these improvements are significant for child outcomes even if no statistically significant difference between time-1 and time-2 scores was made.

Further, review of change in time-1 and time-2 CLASS scores for each teacher reveals some individual differences between teachers and provides possible explanation for the decrease in the scores of some. For example, the staff member in the coaching group who did not improve CLASS scores displayed a sharp decrease in all domains and did not participate in the professional development program. The teachers in the SCLT who did not improve CLASS scores also displayed decreases in all domains indicating possible confounding life-events that may have interfered with implementation of professional development efforts. This is a reality for most programs, as teaching is a dynamic profession that requires deep personal investment by staff. Additionally, one teacher in the SCLT demonstrated slight decreases in emotional support and classroom organization, but increased in instructional support. As the CLASS tool emphasizes complex teaching skills, increased focus on one domain may lead to decreases in other domains as energy and intentionality shifts from one domain to another.
Additional Observations

The goal orientation survey used here allowed for further breakdown of goal orientation responses in relation to address facets that correspond to behavior directed toward different audiences (Nitsche et al, 2010). For example, teachers’ motivation to conceal inferior ability or prove superior ability as indicated by performance approach orientations may fluctuate depending upon whom they are addressing. While this was not the focus of this research, and the sample size did not allow for full use of this aspect of the tool, observations related to this point are relevant. Within this sample, teachers were overwhelmingly learning oriented, but were also motivated to hide inferior ability from students. Teachers indicated that they were willing to admit struggle when addressing colleagues, engaging in self-reflection, and to some extent toward their principal, but were not willing when in front of students. This may indicate that while most teachers were willing to discuss inferior ability with self, colleagues, or their principal to improve practice, revealing this to students may run counter to the goal of teaching. While outside of the scope of this research, further studies aiming to understand address facets of performance avoidance behavior may review the role of struggling in front of students in regard to mastery motivation or self-efficacy.

Implications for Future Research

Further research is needed on the relationship between teacher motivation patterns, professional development, and tangible change in teacher classroom behavior over time. While this study did not find a significant relationship between internal goal orientation and change in classroom behavior, small sample size limits the implications of these findings. Consistent with previous research that finds strong connections
between learning goal orientations and engagement in help-seeking behavior (Ames, 1992; Nitsche et al., 2010), a larger sample size and measurement of classroom behavior over a longer period of time may support previous findings.

With the strong empirical connection between goal orientation and challenge-seeking behavior, it follows that those with learning orientations may be more likely to engage in professional development programs that challenge teachers. Butler’s (2007) exploration of help seeking behavior provides a meaningful juxtaposition to the research questions and findings here. If there is a difference in help seeking in general between those with learning and performance goals, is there also a difference between these groups in implementing or using help once it is offered or present? Both the coaching and SCLT are long-term programs aiming to improve teaching in relation to the aspects of classroom behavior that matter most. As goal orientations can be influenced and activated by the setting (Martocchio & Hertenstein, 2003), the type of help that is offered as well as the administrative support available throughout the professional development programs may induce greater motivational diversity within participating teachers in this sample, and may activate more learning oriented behaviors. Moreover, each school culture plays a role in the concentration of different goal orientations, with learning-oriented teachers possibly seeking out schools that engage in unique and challenging practices. Future research should explore the relationship between goal orientation and long-term engagement in professional development programs as well as the implications of school culture on teacher goal orientation. In other words, how does motivation change over time in the context of school climate and changing demands on teachers? Additionally, since all teachers in the present study chose to participate in both the professional
development programs and this study, further research should also focus on the inclusion of a more diverse sample.

Limitations

While this study aimed to measure the effectiveness of two differing professional development models, the small sample size limited the chance of finding a difference, even if a difference exists. The limited sample size was determined by the number of teachers participating in P-3 professional development programs in two elementary schools. The small number disallows for the generalization of these results, but does lend insight into the difficulties of linking concrete professional development programs to measurable change in teacher behavior within the classroom.

In addition to the small groups, teachers included here were self-selected into both the professional development interventions as well as into the study. Thus, the results of the motivation orientation survey may not reflect qualities of teachers who have performance avoidance goal orientation as these teachers may not be involved in the project due to avoidance of challenging tasks. The findings presented here are not representative of the true teaching population in Northern Nevada, or even within these particular schools. Since both professional development programs required a high level of engagement from teachers, those with performance avoidance or performance approach orientations may have been naturally excluded. Moreover, the questioning style and word choice within the goal orientation survey proved to be confusing to teachers, as several questions contained triple negatives (i.e. “… I aspire for my principal not to believe I would master my job less sufficiently…”). The questions were also worded in a way that may have deterred teachers from responding honestly (i.e. “…I aspire for my students to
realize that I teach better than other teachers”). While such questions may successfully target goal orientation, they imply negative qualities, which may impact the validity of responses.

In regard to teacher perspectives, participation in this study required honest responses to the goal orientation survey and the sharing of personal CLASS scores, which may have been positive or negative reflections of the teachers. The clinical nature of the information letter may not have incited the necessary trust from teachers to provide personally revealing information about their work, professionalism, and internal motivational patterns. While researchers may view the data collection process as routine, it is personal to the teachers being studied. Providing for this perspective in sampling methodology may lend greater strength to future findings. Last, a larger and random sampling of teacher goal orientation as well as of change in CLASS scores over time would allow for more insightful answering of the present research questions.

**Conclusion**

There is long-standing evidence that the qualities and practices teachers possess profoundly influence children. What matters most in creating high quality classroom environments is the behavior of the teacher and the nature of teacher-child interactions (Burchinal et al., 2008; Foundation for Child Development, 2010; LoCasale-Crouch, 2008). However, teachers’ own perceptions and motivational styles influence the degree to which they utilize self-reflective practice and the depth of their engagement in professional development programs that aim to improve teaching practices (Guskey & Yoon, 2009; Klinger, 2004). Despite this, when professional development programs are designed to activate learning oriented motivation patterns, and create school-wide
cultures of collaboration and learning, teaching behavior in the classroom can be improved (Guskey & Yoon, 2009; Zaslow et al., 2010).

While this study did not reveal significant connections between goal orientation, and change in CLASS scores, both professional development programs were able to improve CLASS domain scores over one school year. Findings presented here provide further insight into the challenges of linking complex aspects of internal dispositions and teachers’ abilities to implement professional development strategies to make meaningful change in classroom behavior. Clear links exist between motivational patterns and engagement in self-improvement and challenge-seeking behavior (Butler, 2007; Dweck, 1999). Clear links exist between professional development strategies and changes in teacher classroom practice (Yoon et al., 2007). Clear links exist between high quality teacher-child interactions and increased student achievement (Burchinal et al., 2008; Pianta & Hamre, 2005). Further exploration of the dynamic interactions presented here can support administrators in creating professional development programs that have the greatest potential to improve teaching practice.
References


Burchinal, M., Howes, C., Pianta, R., Bryant, D., Early, D., Clifford, R., & Barbarin, O. (2008). Predicting child outcomes at the end of kindergarten from the quality of


Appendix A

PreK-3rd grade Student-Centered Learning Team

DRAFT 6/1/13

Vision: “The vision of PreK-3rd grade approaches is to improve the quality and coherence of children’s learning opportunities, from the experiences children have before they enter the K-12 system and extending through elementary school. Ultimately, comprehensive PreK-3rd grade approaches hold the potential to improve child outcomes and to prevent or close achievement gaps.” Framework for Planning, Implementing and Evaluating PreK-3rd Grade Approaches by Kristie Kauerz and Julia Coffman, March 2013

Goals:
• build site competency and sustainability in the “whys and hows” of P-3 reform and it’s benefits for emergent and early learners
• support and document powerful teacher-student interactions
• confirm and support understanding of child development and best instructional practices for emergent and early learners
• support effective and efficient use of data to drive teaching and student learning thus narrowing school achievement gaps
• align successful pathways of education for each student both horizontally and vertically
• establish beginning points and trajectories for comprehensive and systemic reform in areas including cross-sector work, administrator effectiveness, teacher effectiveness, instructional tools, learning environment, data-driven improvement, engaged families, and continuity and pathways.

Essential Questions:
• How do we as a site close the achievement gaps for all students?
• How do other District initiatives align to support our efforts toward CCSS expected student learning?
• How do we teach and support all emergent and early learners to meet CCSS expectations?
• How do we efficiently and effectively assess/monitor every student’s progress?
• How can facilitated conversations PreK-3rd grade align instructional practice to support student learning?
• How do we strengthen family, school, and community partnerships?
• How does building capacity in site teacher teams empower instructional site leadership and promote sustainability of gains for young children?
• How to we begin to make positive changes for students in the complexity of issues and demands?
• How does the PreK-3rd Grade Framework for Planning, Implementing, and Evaluating PreK-3rd Grade Approaches support the development and implementation of a comprehensive and systemic site plan?

**Intent of the Student-Centered Learning Team time** - Engage in and promote:

- a culture of collaborative inquiry
- healthy, honest conversations
- a safe, data-driven environment
- a critical look
- deeper understanding and individual capacity in the PreK-3rd grade reform model
- change in instructional practices in team member’s classrooms to meet all student’s needs in order to close existing achievement gaps

**Training Topics:**

- Teaching and supporting the emergent and early learner PreK-3rd grade
- Intro to literacy development - Reading development (Clay – changes over time)
- Overall learning goals PreK-3rd (not just about reading) – strong foundational cognitive skills in literacy, communication, and math; social and emotional competence; established patterns of engagement in school and learning – developing habits of mind
- Professional Growth System (PGP ?); Evidence Guide (?); Student Learning Objectives connections
- Solidification of Plan/Do/Study/Act process;
- Strong teaching across the entire literacy block
- the value of a PreK-3rd grade reform approach - foundations, beginnings, and going deeper
- identification of site strengths and needs – District data, climate survey, P-3 Framework buckets
- review of DBDMT work (big picture of the school – who is falling out) – Whitney collaboration
- developing and strengthening school, family, and community connections – Theresa collaboration
- developing the team member’s classroom instructional practice
- vertical and horizontal alignment discussions
- Coherence of Speaking and Listening and Vocabulary CCSS (Donner Springs)
- Assessment – formative and summative – watching for learning
- Identifying student needs and teaching focuses
• CLASS use and value – emotional support, classroom organization, instructional support
• Consistent and continual connections to CTiP and DBDMT
• Video reflections (CLASS videos and/or own classroom videos)

Team description and commitments:
• Attendance at monthly extended PLC times (1.5 hr. – stipend paid) for Student-Centered Learning Team participation
• Active participation in video taping of your classroom, professional reading, conversations around classroom, grade level, and school data (CLASS, DRA2, KAP, running records, formative assessments, etc.) team classroom observations,
• Edmodo reflections on team experiences, classroom data, professional reading, and video reflections
• Changes in classroom practice to reflect team learning and changing understandings
• Continual use or the Plan Do Study Act framework as team work

<table>
<thead>
<tr>
<th>Site Leadership</th>
<th>Extended Site PLCs:</th>
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<tbody>
<tr>
<td>Student-Centered Learning Teams:</td>
<td>Routine:</td>
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<tr>
<td></td>
<td>Debrief of extended site PLCs – clarifications, refinement of understanding (circle/square/triangle reflection sheet)</td>
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<tr>
<td></td>
<td>Sharing of Edmodo reflections and analysis – classroom videos, changes in practice, focus students progression, professional reading</td>
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<td></td>
<td>New learning focus</td>
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<td></td>
<td>CLASS video library support</td>
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<td>classroom video data analysis</td>
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<td>Analyze student running record together to determine next steps needed (data focus)</td>
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<td>Model balanced literacy with children</td>
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<td>New learning – balanced literacy elements, CLASS, CCSS (Speaking and Listening, or Vocabulary Standards…), PreK-3rd goals, environment, rich and rigorous discussions, student engagement, consistency/connections/repetition, gradual release,</td>
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<td></td>
<td>Intro to PreK-3rd professional reading (articles)</td>
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<td>Edmodo (circle/square/triangle reflection sheets)</td>
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<thead>
<tr>
<th>Team description and commitments:</th>
<th>Homework/Edmodo reflection:</th>
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<tbody>
<tr>
<td>Team share</td>
<td>Professional reading</td>
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<td>Classroom video on SCIT training focus</td>
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<td>Edmodo reflection on classroom video, changes in classroom practice, focus student progress, and assigned professional reading</td>
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<td></td>
<td>Follow through with PreK-2nd professional reading (articles from PreK-3rd and SRT work 2012-13 Year 2)</td>
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<td>Watching for student progress with 3 focus students</td>
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<tr>
<th>Purpose/Goal:</th>
<th>Classroom support:</th>
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<tbody>
<tr>
<td></td>
<td>Building capacity for vision for next year’s extended PLCs</td>
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<td>Identification of school strengths and focus of need (biggest bang for the buck – areas to begin)</td>
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<td>Comprehensive, systemic PreK-3rd framework</td>
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<td>Established culture of collaborative inquiry</td>
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<td>Encouraging healthy, honest conversations</td>
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<td>Establishing a safe, data-driven environment</td>
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<td>Promoting and supporting a critical look</td>
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<td>Supporting a deeper understanding and individual capacity in the PreK-3rd grade reform model</td>
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<td>Changing instructional practices in team member’s classrooms to meet all student’s needs in order to close existing achievement</td>
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<td></td>
<td>What would support look like for team members? Amy, Diana</td>
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<td>Watching focus students – monitoring progress</td>
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<td>Guided peer classroom observations – 2 times a year</td>
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<td>CLASS video library availability</td>
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<th>Purpose/Goals:</th>
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<tr>
<td></td>
<td>Establish aligned Tier 1 instruction</td>
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<td>Establish guiding principles/common beliefs/curriculum</td>
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<td></td>
<td>Alignment of theory, practice, and assessment</td>
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<td>What would support look like? Amy, Diana</td>
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