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CHARACTERISTICS OF HEAD START TEACHING TEAMS: ASSOCIATIONS WITH CLASSROOM QUALITY AND CHILD OUTCOMES

A DISSERTATION APPROVED FOR THE
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DEDICATION

For Cametra Parrish who demonstrated the true essence of a successful teaching team and all the teaching teams who strive to care for the most precious people.

I give all honor to God and my savior Jesus Christ without Him, I would not be here. Along my journey, I have learned that my success has always been the result of a supportive village. I have been blessed with a village in every area of my life and I am forever grateful to my academic, professional and personal villages.

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Prologue

This dissertation is prepared in a journal-ready format. The dissertation includes three journal articles that have been prepared for submission to referred journals. Manuscript I, *Application of Bronfenbrenner's PPCT Bioecological Model to Head Start Teaching Teams*, is prepared for the NHSA Dialogue. This journal is a publication of the National Head Start Assocation and aims to offer an outlet for scholarly writing revelant to the Head Start and early childhood community. The journal also serves a conduit between research and practice. This manuscript is ideal for NHSA Dialogue because it focuses on Head Start teaching teams, an underresearched but widely implemented model. The application of Brofenbrenner's Bioecological theory to how teachng teams develop can help administrators understand the complexities of teaching teams and provide guidance on relevant professional development topics.

Manuscript II, *The Characteristics of Head Start Teaching Teams: Associations among Classroom Quality and Child Outcomes,* is prepared for the journal Early Childhood Research Quarterly. Early Childhood Research Quarterly (ECRQ) is a top-tier journal that publishes mostly empirical research. Some of the topics of interest include children's development, program quality, public policy, and professional development. This manuscript is ideal for the ECRQ because the empirical findings demonstrate how teaching teams' perceived teamwork associates with classroom quality and child outcomes. Sharing the findings could also strengthen the links between research and practice; a priority of the journal.

Manuscript III, *Under Construction: Building Strong Early Childhood Teaching Teams*, is prepared for Young Children. Young Children is one of the leading

practitioner journals and focuses on publishing practical research-based articles. This manuscript focuses on teachers' reported successes and challenges expressed with teaching teams. The manuscript provides practical information for administrators and program staff to use to strengthen the communication, interpersonal relationship and teamwork among teaching teams.

Dissertation Abstract

A plethora of research exists regarding how teacher interactions influence classroom quality (Bailey et al., 2013; Castle et al., 2015; Howes & Smith, 1995; Phillipsen, Burchinal, Howes, & Cryers, 1997). Most of the existing studies gathered data from lead teachers without much, if any, consideration of the other adults in the classroom. However, Head Start and most early childhood classrooms are staffed by more than one adult (Ratcliff et al., 2011). In fact, two Head Start Performance Standards, 1306.20 and 1306.32, call for two or more adults to be assigned to a group of children. Thus, to effectively implement Head Start mandates the classroom staff must work together to plan, organize, and provide activities that promote the care and development of young children. Previous studies that focus on the lead teacher overlook a key component of the classroom—the teaching team. The interactions and characteristics of the assistant teachers combined with those of the lead teachers are important contextual factors that must be examined in order to understand the dynamics of classroom environments. Gathering information on how the two staff members work together as a team will fill the gaps in the current body of early childhood literature. This quantitative study examined data from 43 Head Start toddler and preschool classrooms including 43 lead and assistant teacher pairs and approximately 174 children. Multiple data collection methods included observing in classrooms, documenting teacher-child interactions, obtaining teachers' ratings of their perceptions and beliefs related to their teaching team, and assessing child outcomes on measures of executive function development and social-emotional development. The results will be beneficial to Head Start agencies and to the larger field of early childhood by providing insights on the success and challenges

of teaching team and teachers' perceptions of teamwork. This information will provide insight to administrators on how to promote effective teaching teams through supervision and professional development. Classroom staff could also benefit by understanding how teamwork success and challenges, and perceptions of teamwork, relate to interactions with children and resulting child outcomes.

This dissertation is formatted as three manuscripts. The first manuscript has an emphasis on theory and provides a theoretical foundation for conceptualizing teaching teams using Bronfenbrenner's Bioecological Theory; specifically the components of Person, Process, Context, and Time. Kozlowski and Bell's team definition is also used. The second manuscript is the empirical findings from the dissertation study and presents results related to associations among teaching team characteristics, classroom quality, and child outcomes within a large Head Start agency. The third manuscript is written for a practitioner journal and provides administrators' research-based information for understanding the success and challenges of teaching teams and suggest strategies for building effective teaching teams.

Keywords: teaching teams, teamwork, perceptions, classroom quality, child outcomes.

MANUSCRIPT I

Application of Bronfenbrenner's Bioecological Model to the Development of Head Start Teaching Teams

This manuscript is prepared for submission to the peer-reviewed journal *NHSA Dialog* and is the first of three manuscripts prepared for a journal-ready doctoral dissertation.

Abstract

Teaching teams are a common staffing pattern in early childhood classrooms, yet there is little research on how these teams are defined and what influences their development and interactions. Bronfenbrenner's theory of bioecological systems (2006) and Kozlowski and Bell's (2013) team definition are woven together to provide a deeper understanding of Head Start teaching teams. This manuscript provides a background on teaching teams in early childhood education and discusses the benefits and challenges of teaching teams. It concludes with recommendations on how to create and support teaching teams.

Keywords teaching teams, child development,

Application of Bronfenbrenner's Bioecological Theory to the Development of Head Start Teaching Teams

In many early childhood programs, teachers are required to work with another adult in the classroom. This policy is based on the need to establish lower teacher-child ratios that lay the foundation for better teacher-child interactions, which influence classroom quality and child outcomes (Castle et al., 2015; Choi et al., 2016; Cooks & Friend, 1995; NICHD Early Child Care Research Network, 1999). Thus, one component to understanding contextual factors that support children's development is to investigate how the teaching staff function as a team. Teaching teams are charged with the dual responsibility of providing care and fostering development of young children. Understanding how teaching teams function is an important factor when considering the ecology of the classroom and associations with classroom quality and child outcomes.

Through his Bioecological Theory, Bronfenbrenner examined the contextual factors that influence human development (Bronfenbrenner & Morris, 2006). Drawing on his theory of how children develop within nested systems, this paper aims to apply the same constructs to adults working as Head Start teaching teams. This paper has six goals: (1) introduce and provide background on educational teams; (2) examine and apply a definition of teams (Kozlowski & Bell, 2013) to the Head Start setting; (3) and describe the benefits and challenges of working within teaching teams. The other goals include (4) discuss the theoretical foundations and principles of Bronfenbrenner Bioecological Theory of Development, (5) integrate Bronfenbrenner's theory and Kozlowski and Bell's team definition to explain and explore the development of teaching teams, and (6) provide guidance for creating and supporting teaching teams.

Background on Educational Teams

It is common to find teams functioning in various sectors. There are teams in healthcare, business, and education just to name a few. However, defining teams can be problematic because there are many types of teams that function in a variety of ways. Hackman (1990) defines teams generally as "A collection of individuals who are interdependent in their task and share responsibilities for the outcomes, are seen as an intact social entity within a social system, and manage their relationships across organizational boundaries" (p. 241). Teams can consist of project teams, production teams, or service teams (Chiocchio & Essiembre, 2009). Project teams are temporary groups that work on a specialized tasks for a specific amount of time. Production and service teams are generally ongoing and perform tasks repeatedly over time. An educational team can be a mix of the two types because they can be temporary or long term, depending on the educational setting and tasks. Not only do teams differ by type, but the setting of the team is also an important aspect.

In the education field, the settings can vary by level such as secondary, elementary, early childhood, and more specifically Head Start. Within those settings various teams exist that can include special education teams, interdisciplinary teams, and English as a Second Language (ESL) co-teaching teams. Despite the different types and settings of teams, two things make teams unique, (1) teams have an objective and (2) reaching that objective requires collaboration (LaFasto & Carson, 2001). The objective for teaching teams should be to provide optimal care and education for children. To achieve success in those areas, teaching teams must collaborate to reach the goals of their specific setting.

The following sections review some of the different educational teaching teams, how they function in schools, along with the benefits and challenges for students and teachers. This background information on teams will lay the foundation for understanding the need for a teaching team development model appropriate for Head Start and other early childhood programs.

Head Start teaching teams share many attributes of other teams in education. The Head Start population is similar to special education teams in that their population includes at least 10% of children with special needs. Similar to ESL co-teaching classrooms, Head Start has a high percentage of children whose home language is not English. In fact, 23% of the families served nationally by Head Start are Spanish speakers (Early Childhood Learning and Knowledge Center (ECLKC), 2015). Despite these similar demographics, some programmatic differences exist. Head Start teachers teach all the content areas unlike some elementary and secondary programs. Head Start teachers typically do not have a specialty in certain subject areas; instead, they are responsible for providing instruction across the curriculum in math, language, literacy, social studies, art, health, music, and gross motor (physical education). Thus, understanding how the various educational teams function can provide a foundation for how Head Start teaching teams operate.

Teams in Educational Settings

In many educational settings, the term co-teaching is used interchangeably with team teaching. Team teaching dates to the 1960s when it was introduced as one way to address the disparities among special education and mainstream classes (Murato, 2002; Friend et al., 2010). Parents and educational leaders challenged schools to provide better

services for children and place special needs children in the least restrictive environment which typically was the regular classroom setting. This advocacy led special and general education teachers to work more closely together. However, by the 1990s, leaders felt more should be done to increase student outcomes and as a result, highly qualified content area and special education teachers were encouraged to co-teach. Co-teaching in special education programs generally consist of a degreed general education teacher collaborating with the special education teacher. This model of team teaching, or co-teaching, set the example for interdisciplinary, ESL, and Head Start teaching teams. A brief summary of teams in these various educational settings are provided below.

Special education teams. Schools use co-teaching, or team teaching, to provide individualized instruction to special needs students (Cook & Friend, 1995; Friend et al., 2010; Scruggs, Mastropieri, & McDuffie, 2007). Cook and Friend (1995) define co-teaching as "two or more professionals delivering substantive instruction to a diverse or blended group of students in a blended physical space" (p. 2). There are five co-teaching models: (1) one teaching, one assisting, (2) station teaching, (3) parallel, (4) alternative, and (5) team teaching. The one teaching, one assisting model, requires both teachers to be in the class, but one is the lead while the other observes and assists the students. Station teaching consists of the staff providing instruction in separate groups and then repeating the lesson to the opposite group. Alternative team teaching allows one teacher to work with a small group while another teacher provides instruction to the larger group of students. Lastly, team teaching consists of both teachers leading the discussions and delivering instruction.

The rationale for co-teaching is the increased instructional options for children, improved program intensity and continuity, as well as reduced stigma for children with special needs (Cook & Friend, 1995; Friend et al., 2010; Scruggs et al., 2007). Students in these classrooms receive more individualized attention from the special education teacher and mainstream teacher. The co-teaching model also prevents teachers from singling out special education students as the two teachers may work with children in mixed groups if using the co-teaching or parallel teaching model.

The structure of special education teaching teams set the foundation and tone for how other educational teams function in different settings. Interdisciplinary education, ESL, and Head Start teaching teams incorporate one or more aspects or components of the co-teaching models. The following sections will provide more details on how those teams incorporate the various co-teaching models and the benefits and challenges.

Interdisciplinary teams. Like special education teams, interdisciplinary instructional teams appeared during the 1960's as part of the middle school movement, a national movement to create core content classes in middle school (Crow & Pounder, 2000). The teaching teams are composed of core academic content area teachers such as language arts, social studies, math, science, and reading. These teachers are responsible for the required academic instruction of a contained group of students.

The specific responsibilities of interdisciplinary instructional teams are to develop appropriate curriculum and strategies that address the academic and behavioral needs of students. Interdisciplinary teaching teams must also collaborate to engage in communication with parents.

Interdisciplinary teams often use the co-teaching model (Cook & Friend, 1995), but unlike the special education co-teachers, the interdisciplinary teachers do not always teach in the same space. Most of the collaboration, or co-teaching, occurs in the form of planning and integration of curriculum. One of the benefits of interdisciplinary team teaching is the positive influence on students' social skills. One study compared the social bonding of 50 students in one class with two teachers to the scores of the same number of students in a class with one teacher (Wallace, 2007). Social bonding is the school friendships that children have that create a student's willingness to establish new relationships. Sixth graders taught using a team teaching approach had students with higher scores on social bonding. Social bonding is also important in early childhood classrooms for children and teachers. Social bonding in early childhood is a part of young children's social emotional development and for teaching teams it can help to develop teacher's interpersonal relationships and collegiality within the teaching team.

English as Second Language (ESL) teams. Another group that uses team teaching is staff delivering English as a Second Language Teams (ESL) programs. Dove and Honigfeld (2010) designed a co-teaching model specifically for ESL teachers. The model consist of seven co-teaching strategies that were adapted to meet the specific needs of ESL students. The strategies shown in Figure 1 describe the different co-teaching models in ESL classrooms and their structure.

Figure 1 *ESL Co-Teaching Models*

Group Type	Structure
One Student Group	One lead teacher and another teacher teaching intentionally
One Student Group	Two teachers teach the same content
One Student Group	One teacher teaches, while the other assesses
Two Student Groups	Two teachers teach the same content to different groups
Two Student Groups	One teacher pre-teaches and one gives alternative information
Two Student Groups	One teacher re-teaches, one teaches alternative information
Multiple Student Groups	Two teachers monitor and teach

The collaboration among teachers has a positive impact on ESL student's academic and social development (Causton-Theoharis & Theoharis; Theoharis, 2007; York-Barr, Ghere, & Sommerness, 2007). In a three-year longitudinal study conducted at an urban elementary school, researchers found positive gains in student's test scores when first and second grade teachers participated in co-teaching (York-Barr, Ghere, & Sommerness, 2007). General education and ESL specialists collaborated to plan, organize, and facilitate lessons. The authors found positive gains for children including more student participation, fewer problem behaviors, and gains on standardized test.

Head Start teaching teams. A teaching team in early childhood is much different from the team teaching found in elementary and secondary settings. The name is one significant distinction that highlights the differences. A teaching team is the teaching dyad employed to provide care and instructional activities for very young children in one classroom. The teaching team structure in Head Start is typically hierarchical, with the co-teaching structure being less common. The hierarchical approach includes defining roles for the staff. There is a lead teacher and an assistant teacher. The lead teacher usually has a higher education level, receives more pay, and is responsible for more of the teaching and paperwork responsibilities than the assistant teacher (Bullough, 2015). The terms co-teaching and team teaching are synonymous. The teachers have equal qualifications, shared responsibilities, and similar pay. However, team teaching is often optional in elementary and secondary schools. In contrast, the Head Start center director typically assigns two adults to each early childhood classroom to meet adult-child ratios or program requirements. It is common for the director to structure the teaching teams prior to the start of each year without consulting the staff (Bullough, 2015). However,

staff are expected to care for children while sharing the common goal of using best classroom practices. Understanding how teaching teams develop requires a deeper understanding of teaching teams; for this Kozlowski and Bell's (2013) work will be used as a base.

Examination and Application of a Team Definition

It is important to discuss various team definitions and to examine how each can fit within the context of teaching structures. Though Hackman (1990) provides a broad definition of a team, Kozlowski and Bell's (2013) definition of teams describes more accurately the function of Head Start teaching teams.

> two or more individuals that exist to perform organizationally relevant tasks, share one or more common goals, interact socially, exhibit task interdependencies, maintain and manage boundaries, and are embedded in an organizational context that sets boundaries, constrains the teams and influences exchanges with other units in the broader entity. (p. 5)

This definition can be applied to the teaching teams that exist in many Head Start and early childhood programs because it is more comprehensive and considers contexts and mutual influences. The organizationally relevant tasks for Head Start teaching teams include caring for children, providing activities for them, and monitoring their development (Manlove, 1994; Ratcliff et al., 2011). The common goal of the teaching team is to create an environment that supports the development and care of the whole child (Bullough, 2015a; Bullough, 2015b). The social interactions of Head Start teaching teams include interactions with each child, the group of children, co-workers, and parents.

Head Start teaching teams exhibit task interdependence by planning together and implementing classroom processes together. The expectation is for lead and assistant teachers to spend some time together planning activities. For example, one Head Start agency designates nearly two hours per day in the afternoon for staff planning and meetings. This designation of time demonstrates the programs' expectation that planning occurs (K. Black, personal communication, July 3, 2017). The program also designates time at the beginning of the school year for teachers to develop classroom management strategies, which is another way for teaching teams to implement classroom processes. In addition to Head Start teams' being defined by their task interdependence, teaching teams' also have boundaries that they must maintain and manage.

The boundaries of teaching teams, based on the definition of a team, are two-fold. Boundaries exist among teaching staff and within the Head Start program. Teacher characteristics, such as ethnicity and team tenure, can be viewed as boundaries. The communication of the teaching team is often restricted by the differences in ethnicity and less time spent together (Chiocchio & Essiembre, 2009; Frigotto & Rossi, 2012; Stahl et al., 2010; Young, 2016). Teachers often report that it is a challenge to communicate and work with other ethnicities. In Young's study (2017b), a lead teacher reported that the assistant teacher was unable to help with paperwork because she spoke Spanish. Another teacher reported that cultural differences were a challenge. In the open-ended response, the teacher reported, "Cultural differences can sometimes make it difficult to communicate and understand one another." These boundaries are discussed further related to the challenges of teaching teams.

Although Head Start does not explicitly define their teaching teams, Kozlowski and Bell's (2013) definition of teams provide an alignment with Head Start teaching teams and how those teams function. The next aim is to understand the benefits and challenges that exist within teaching teams.

Benefits and Challenges of Teaching Teams

Benefits of Teaching Team

The success or failure of a team depends on its ability to work together (LaFasto & Larson, 2001). Teachers from other fields state that teaching teams provide opportunities to gain personal and professional support as well as a mechanism to acquire new teaching techniques (Cooks & Friend, 1995; Fitzgerald & Theilheimer, 2012; Salend, Gordon, & Lopez-Vona, 2002). In fact, team teachers in secondary schools report several benefits of co-teaching such as empowerment, camaraderie, positive climate, and professional growth (Murato, 2002). Co-teachers also provide relief for the other staff and can clarify concepts for the other teacher (Cooks & Friend, 1995). These benefits help co-teachers work more closely together, thereby increasing their perceived level of effectiveness.

Participating in interdisciplinary teams is rewarding for teachers as well (Crow & Pounder, 2000; Mertens, Flowers, Anfara, & Caskey, 2010; Mira, 2008). One study found that the incorporation of interdisciplinary teams in middle school led to more collegiality within the school environment and professional satisfaction among the participating teachers (Mirra, 2008). A study conducted on the amount of planning time used by interdisciplinary teams revealed that teachers who engaged in more planning time reported higher levels of interdisciplinary classroom practices. The findings were

also associated with the teachers' job satisfaction and more positive interactions with coworkers. Related to job satisfaction, another study examined interdisciplinary elementary and middle school teaching teams' level of teamwork and commitment (Park, Henkin, & Egley, 2005). They found that higher levels of teamwork were associated with the team's commitment. Though these aforementioned benefits were found in elementary and secondary schools, there are some similarities to the benefits found in Head Start teaching teams.

In the limited research on Head Start teaching teams, interpersonal relationships, a sense of teamwork, and communication were reported factors underlying the teaching teams' success (Young, 2017a). In addition, social interactions and support were noted for early childhood teachers as a benefit to working within a team (Baumgartner et al., 2009). These social interactions are important to dealing with the stress among early childhood caregivers. Teachers can voice their concerns or grievances regarding work and receive guidance on various situations.

Support, camaraderie, empowerment, positive social interactions or interpersonal relationships, personal and professional growth, a sense of teamwork, and communication are factors of a successful team. It is encouraging to know that teachers and children benefit from teaching teams. However, one must also acknowledge the challenges that exist to fully understand the complexities of teaching teams.

Challenges of Teaching Teams

Although there are many potential benefits, many team members will agree that working well together is a challenging task (LaFasto & Larson, 2001). Though co-teaching may be an advantageous method of instruction, it comes with some difficulties

to overcome for the classroom team to be effective. Teachers report that with team or co-teaching, at times, large class sizes, a wider range of learning needs, and overwhelming amounts of paperwork can impede their ability to teach effectively (Dieker & Murawski, 2003). The success of team or co-teaching is dependent on several factors; planning time, the autonomy to select co-teachers, shared philosophy, complementary strengths, and communication (Murato, 2002; Muraski & Lochner, 2010). Effective co-teaching requires staff to co-instruct, in addition to co-plan and co-assess. Yet, collegial time is rare and causes teams to restructure their time to incorporate more planning. Nevertheless, the teams feel the preparation and time spent together is necessary to their performance (Murato, 2002).

One of the major challenges for interdisciplinary teams was consistent with that experienced by special education teams. Interdisciplinary teams also struggled to carve out planning time but it was reported to be important to their teaching effectiveness and overall job satisfaction (Mertens et al., 2010). Early childhood teachers frequently report communication as a challenge for their teaching team. Providing and receiving feedback among team members was a consistent problem in teaching teams. The undisclosed feedback often related to teaching style differences (Bullough, 2015a). Other challenges reported include teaching style differences, lack of teamwork, as well as differences perceptions and values of teaching team members (Young, 2017a; Ratcliff et al., 2011; Sokinsky & Gilliam, 2011). Similarly, elementary and secondary teachers reported challenges of differing philosophies, role shift and confusion, and loss of instruction autonomy (York-Barr, Ghere, & Sommerness, 2007).

From the literature, it is clear that the definition and function of teaching teams vary in the different educational context. It is also clear that teams have benefits, especially if the challenges are attenuated. However, what is unclear is how those teaching teams develop over time and what processes should be set in place to promote optimal development for the teaching team; as individuals and as a unit. To better understand how teaching teams may develop, Bronfenbrenner's Bioecological Theory of Development will be applied as a model to understand the development of teams.

Theoretical Foundation of Bronfenbrenner Bioecological Theory of Development

Bronfenbrenner's Bioecological Model (Bronfenbrenner & Morris, 2006) provides a theoretical foundation for understanding the dynamics of teaching team developments. Bronfenbrenner's theory is complex (Tudge, 2016), much like the development of individuals and teaching teams with many complex factors influencing their development. According to Bronfenbrenner, development occurs over time and includes the biological and physiological aspects of individuals and groups. In Bronfenbrenner's model, he argues that children develop within the components of the Person, Process, Context, and Time (PPCT).

Person

The Person is the individual, their characteristics, and personality (Bronfenbrenner & Morris, 2006). The Person is comprised of three personality characteristics that influence how the child or person interacts with the environment. These three characteristics are dispositions, demands, and developmental resources. Dispositions, or natural tendency, can trigger or hinder the proximal processes. Proximal processes are the interactions between the person and other peers that drive development.

The two different dispositions, developmentally generative or developmentally disruptive, form and determine the outcome of the proximal processes. Examples of developmentally generative dispositions include taking initiative, interacting with others, and delaying immediate gratification. Examples of developmentally disruptive dispositions include feelings of insecurity, unresponsiveness, or being withdrawn.

The demand characteristics include noticeable characteristics such as age, gender, and skin color and less visible characteristics such as temperament type, and activity level (i.e. active versus passive) (Bronfenbrenner & Morris, 2006; Rosa & Tudge, 2013). Demand characteristics may also aid or hinder the social interactions from occurring as they act as a stimulus for the other person (Bronfenbrenner & Morris, 2006; Tudge, Mokrova, Hatfield, & Karnik, 2009). For example, a person's demand characteristics may elicit another person's implicit bias. Implicit bias is the stereotypes that one may hold that subconsciously influences their understanding and action (Kirwan Institute, 2015). If a person has an implicit bias against older adults, he or she may treat the older adult poorly without full awareness of their behavior or the underlying bias.

Developmental resources are the developmental skills, knowledge, and experiences needed to function during an interaction throughout development. Resources include not only the skills needed, but also encompass the deficiency of those skills. One example of a developmental resource is birth weight. Although a child's birth weight does not prevent him from engaging in proximal processes it represents variation in the biological resources and how children respond to the interactions. Another example is a person with a degree in early childhood and several years of teaching experience. The experienced early childhood teacher may engage in stimulating conversations with other

early childhood experts due to her specialized knowledge and shared understanding of developmentally appropriate practice. In this example, the teacher's experience and knowledge led to better interactions.

Process

Process has two interdependent components; Proposition I and Proposition II (Bronfenbrenner & Morris, 2006). The proximal processes can occur alone or within a group. Proposition I, or proximal processes, are the developments that occurs through processes that become more complex through the reciprocated interactions between people, objects, and symbols in the environment. Effective interactions take place frequently over an extended time are the primary mechanism that produces development. The proximal process is the interactions the child (person) has with the parents, teachers, and materials within his environment. The interactions may consist of conversations or interactions with adults (parents, teachers, etc.), other peers, or the manipulation of materials. The harmony and chaos, as well as the consistency and inconsistency found during these interactions can influence development.

The driving forces behind the proximal processes are the four components of Proposition II. Proposition II components consist of form, power, content, and direction. The

> form, power, content, and direction of the proximal processes effecting development vary systematically as a joint function of the characteristics of the developing person, the environment, the nature of the developmental outcomes under consideration, the social continuities and changes occurring over time

through the life course and the historical period during which the person has lived. (Bronfenbrenner & Morris, 2006, p. 798)

Context

The context of Bronfenbrenner's model occurs on different levels; micro, meso-, exo-, and macrosystem (Bronfenbrenner & Morris, 2006). The first level, micro-level, consists of the family and school. The mesosystem is the interactions between the microsystem and exosystem. The exosystem include neighborhood, social systems, local government, and media. The exosystem consist of how the community supports the child's development. Concrete examples include which schools are available for the child to attend and the families' access to services such as healthcare, social services, etc. The macrosystem is the person's cultural attitudes and ideas. The churches in the community may also influence a child's development as parenting beliefs may be driven by religious beliefs. All of these systems are encompassed within the chronosystem or time.

Time

The time component begins at birth and includes all the transitions that occur during a person's life. Time consist of three levels; micro, meso, and macrotime (Bronfenbrenner & Morris, 2006). Microtime is the continuity of ongoing interactions during the proximal processes, such as a teacher having a conversation with a child. Mesotime are the broader periodic episodes such as days and weeks. Another example of mesotime is the number of years that a teacher works at a center or the amount of time that a teaching team works together. The amount of time that a teaching team works together can influence interactions. While macrotime consist of the events that occur during the life cycle; these societal occurrences happen within and across generations.

One example of how events influence development would be the presidential election and how each president supports or prioritizes funding for early childhood and programs like Head Start.

As one reflects on the development of the child, the development of a teaching team can also mirror those same processes as each adult and the teaching team experience development to their Person, and exchange Processes within the Context of the classroom and school during a specified amount of Time.

Integration of Bronfenbrenner Bioecological Theory

As suggested in the previous summary, Bronfenbrenner's PPCT model and Bioecological Theory is complex and detailed. Though it is important to correctly apply Bronfenbrenner's PPCT Model, due to its comprehensive scope not all the factors need to be considered or examined in the same depth to adequately use his theory as a foundation (Tudge, 2016). With this recommendation in mind, the application of the PPCT model will be applied to what is known about Head Start teaching teams.

Person

Person characteristics are not only true of the developing child but also of the individuals in the microsystem including the parents, teachers, and peers among others (Bronfenbrenner & Morris, 2006). The teachers in the teaching team each have their own dispositions, demands, and resources that work collectively to create the team characteristics. The teaching team demonstrates their dispositions, or tendencies, through the classroom climate created by both teachers. The positive and negative classroom climate depends on the dispositions of the teachers. A positive climate consists of the level of positive affect, positive communication, and respect that teachers display toward

one another and the children. Negative climate behaviors are defined as teacher's irritability, harsh voice tones, the use of sarcasm, and punitive control. The Classroom Assessment Scoring System (CLASS, Pianta, La Paro, & Hamre, 2008) measures these constructs as elements of classroom quality. These behaviors can encourage or thwart interactions with others. For example, a lead teacher's irritability may hinder a positive interaction between her and the assistant teachers.

Positive and negative attitudes are contagious and often beget the same type of response (LaFasto & Larson, 2001). In some teams, differentiation of groups, or personal dispositions are celebrated. But, when the team has an objective that is closely tied to the success and failure of the goal, it is important for the teaching teams to use a form of integration. Integration is the behavior that promotes collaborative success. For example, teachers with exuberant personalities may enjoy leading story time in which they act out various characters from the story. While a teacher with less exuberant personality may feel more comfortable leading small math group. The teacher that enjoys dancing may facilitate music and movement more often, while the teacher that has a strong background in literacy may facilitate the shared reading activity. Integration focuses on the balance of weaknesses and promotes the strengths of each teacher. In the classroom, it is important that teachers integrate their personalities as they work together because these interactions not only affect the team dynamics but also influence the interactions with children. As teaching teams develop, they may move from differentiation to integration.

Teachers also report having an interpersonal relationship is a contributor to their teaching teams' success (Young, 2017a). Examples of interpersonal relationships consist of the teacher's reports of trust, humor, and enjoyment working with the other teaching

team member. Within teaching teams a bidirectional transaction occurs as each team member's person components influence the processes of the other team member. Bronfenbrenner and Morris (2006) argue that the feelings of hope, doubt, and belief formulate in the early stages of development. Such is the case with the thoughts, feelings, and perceptions of teaching staff at the onset of their development within and among the teaching team. Teachers may have implicit bias or thoughts about the demand and resources, components of the *Person*.

Resources, including the teacher's education level, skills, and knowledge, influence how teachers interact with one another. Research has shown that lead teachers felt the assistants were essential to classroom management and children's care but less beneficial to teaching, with the assistant teacher's education level being a mediator. The lead teacher characterized the assistant teacher's teaching responsibilities more favorable if the assistant and lead teacher had similar education levels (Ratcliff et al., 2011). Although assistant teachers may be less qualified, they contribute to the development of children (Gest et al, 2006; Sokinsky & Gilliam, 2011). The demand characteristics influence their proximal processes given some teachers make perceptions about the assistant teacher based on the assistant teacher's resources, or education level. If a teacher perceives her teaching team member to be less useful to instruction, it is possible there will be fewer positive proximal processes or interactions that involve the two working together on instructional activities with the children.

Process

Some of the teaching team proximal process that are relevant to Proposition I are making lesson plans, solving problems, acquiring new knowledge, and the interactions

among teachers. Most lead teachers are responsible for ensuring the lesson plans are completed and posted each week (Bullough, 2015b). Although she is primarily responsible for implementing the lesson plan, the assistant teachers should also be involved in the planning of the activities. In fact, assistant teachers noted their desire to be more involved in the instructional planning (Young, 2016; Young, 2017b). Teaching teams also benefit when both teachers work together to solve problems (Young, 2017b). Lead and assistant teachers noted that a success of their teaching team is communicating daily about challenges that occur in the classrooms. Those challenges related to curriculum, classroom and behavior management.

Another proximal process that is relevant for teaching teams is acquiring new knowledge. Teachers can acquire new knowledge through professional development and from one another (Fitzgerald & Theilheimer, 2012; Young, 2017b; Salend, Gordon, & Lopez-Vona, 2002). Teachers note that one of the benefits of working within a teaching team is the ability to learn from the other teacher. In a dissertation study (Young, 2017s) one teacher responded that "For my co-teacher and I to be able to learn from each other [is a factor to the team's success]." This finding is consistent with other studies on teaching teams (Fitzgerald & Theilheimer, 2012).

For teaching teams to work successfully in the classroom there must be communication, teamwork, and interpersonal relationship (Young, 2017a). An effective teaching team will ensure that the work loads are varied so that each teacher can perform meaningful activities in the classroom. This coordinated effort requires teachers to collaborate on lesson plans and consistently discuss problems that occur in the classroom. Acquiring knowledge is another aspect of the proximal processes. Teachers report that

they are able to learn new teaching techniques from watching the other teaching staff in the classroom.

Often, perhaps due to a lack of communication, teaching teams may perceive a higher level of teamwork than actually exists within the teaching team. Young's (2017b) study conducted on Head Start teaching teams showed that teaching teams perceived a higher level of teamwork than what actually existed. Teachers within the teaching team were asked to rate various practices associated with teamwork. On the survey item, *my co-teacher and I vary workload so that both of us perform meaningful activities (E.g. we each take turns facilitating circle time and performing cleaning tasks)* 28% of teaching teams rated this item inconsistently. Another question asked the teachers to rate the following item, a*t least once a week, my co-teacher and I discuss the teaching responsibilities (e.g. decide who will facilitate circle time or small group).* On that response, 21% of the teaching teams were inconsistent.

Early childhood educators also differ in their perceptions of the assistant teacher's role (Ratcliff et al., 2011). Assistants rated themselves higher on task completion than the rating provided by their lead teachers. The tasks were assisting with lesson plans and cleaning the classroom. This contribution rating discrepancy can also influence the perceptions of teamwork and how the teaching teams successfully navigate positive proximal processes. The interactions that teachers have with each other can also influence the context.

Context

The Context of a teaching team is the center, neighborhood, and agency in which the program is located. The Context of the team also includes the school climate (i.e.

norms, values, and organization structure of a center) and administrator's support of teachers and teaching teams. The workplace is an important factor to the development of teaching teams as it promotes or impedes individual and collective teaching practices, development, and dispositions (Center for the Study of Child Care Employment; CSCCE, 2016; National-Louis University & McCormick Center for Early Childhood Leadership, 2016). Head Start center characteristics and programming decisions, such as teacher-child ratios, hiring practices, and teacher job satisfaction, have an indirect influence on child outcomes.

The CSCCE (2016) reports that teachers with optimistic perceptions of their work environment provide better instructional support. This is consistent with previous research conducted that examined the association between organizational climate and classroom quality (Lower & Cassidy, 2007). Organizational climate consists of constructs such as collegiality, supervisor support, and task orientation. A positive correlation existed between organizational climate and language interactions. Another similar study (Dennis, & O'Connor, 2013), examined organizational climate, the relational climate, type of teacher interactions collegial, intimate, and disengaged behavior. These authors found that the overall organizational and relational climate both significantly predicted classroom quality. Given these findings, administrators must find ways to offer supportive work environments for teaching staff, as the context of the teaching team influences, not only their perceptions, but their interactions with children. Administrators must also find ways to positively influence the time element of the teaching team.

Time

A teaching team's tenure can help to improve communication and cohesion. In a pilot case study of the experiences of early childhood assistant teachers, the teaching team's lack of time together influenced the lack of communication between team members (Young, 2016). Participants stated the need for more communication and noted that the teams were new and still learning each other's styles. Time spent together can influence the function of a team as teams need time to develop cohesion (Chiocchio & Essiembre, 2009). Team cohesion is the interpersonal attraction and commitment to the task and is related to their performance. Time together is an important factor in the functioning of a teaching team. However, the literature is sparse on Head Start teaching teams and therefore calls for more research in this area. Examining Head Start teaching team tenure as well as the other elements of the team's Person, Process, and Context, may lead to better understanding of the successes and challenges of the team. Administrators can use this information to create and support strong teaching teams.

Creating and Supporting Teaching Teams

Although teachers receive a great deal of professional development (PD) most of the PD is related to academic content (Zaslow et al, 2010) and not on how teaching teams can work together. Given the lack of PD provided in this area and the challenges that teaching teams face, it is important to provide administrators with information to create and support teams. In order for teaching teams to work successfully in the classroom, administrators must provide professional development and on-going support that promotes growth. There are four factors that are associated with the growth of effective

teams; openness, supportiveness, action orientation, and personal style (LaFasto & Larson, 2001). Each of these are discussed below.

Openness

Openness is used to describe individuals that "are willing to deal with problems, surface issues that need to be discussed, help create an environment where people are free to say what's on their mind, and promote an exchange of ideas" (LaFasto & Larson, 2001 p. 8). Administrators can create an open environment by meeting with their teaching teams regularly to discuss the strengths, weaknesse, and progress of the team. This type of communication and support will help develop the proximal processes of the teaching team. Interactions can improve with honest communication. When asked about factors that contribute to teaching teams' success, teachers frequently said open communication (Young, 2017b). One teacher noted, "when we have our down time at the end of the day and discuss what went well and what did not, we are very open and honest with each other." The level of openness will depend on the teaching team member's disposition. Some people are naturally quiet or reserved and it may take some time before they are comfortable being open and honest with their teaching team member. Therefore, when administrators first structure teaching teams, they may have to offer more assistance by facilitating conversations, but this extra support may lead to teaching teams feeling more supported.

Supportiveness

La Fasto and Larson (2001) describe supportiveness as the desire to help others be successful. The type of support that is offered will vary based on each teaching team member's *Person* element. If administrators have a teaching team with a first year

teacher, that teacher may lack confidence in her ability, which is an example of a developmentally disruptive disposition. This disposition can hinder the proximal processes, or interactions, with the other teacher if the beginning teacher lacks the confidence to ask questions or seek assistance. Therefore, the administrator may need to offer additional support until that teacher is more confident. When asked about what factors contribute to the teaching teams' success, one teacher reported, "having the correct support from site director, coach, and coworkers." (Young, 2017b). Correct support may look differently for each teacher, therefore, administrators need to individualize the type and level of support for each teacher and teaching team. Support from the administration is valued by teachers and influences the overall context for the teaching teams.

The Center for the Study of Child Care Employment; CSCCE (2016) found components that create a supportive work environments are often not included in program improvement policies and practices. In fact, components such as teacher well-being and teacher support are not often areas of primary focus on quality rating systems, however, these constructs influence teacher turnover. Only four states are making headway in offering quality supportive work environments. These work environments offer paid planning time, paid professional development, and paid healthcare and leave. The inconsistency in support for EC teachers often leads to turnover and leaves gaps in the quality of the teaching staff (Center for the Study of Child Care Employment; CSCCE, 2016). Finding ways to better support teachers is critical to attracting and retaining quality staff that are willing to be action oriented.

Action Orientation

Another factor contributed to strong teams is action orientation, the ability to take action and encouraging others to do the same (La Fasto & Larson. 2001). In the classroom, this could be observed when both teachers take shared responsibility for the care of the children and managerial task. Teachers frequently reported that teamwork or working together was a contributor to their success (Young, 2017a). The ability for teachers to work together depends on their dispositions. As noted before, there are two types of dispositions, developmentally generative (i.e. taking initiative) and developmentally disruptive (i.e. unresponsiveness). If teaching teams are matched with one person that takes initiative and another that is unresponsive or withdrawn, this could lead to an imbalance in workload, one of the challenges of working in a team. Administrators should also work with teaching teams to clearly define each teacher's responsibilities. Together the teaching team and administrator could list daily, weekly, and monthly tasks that need to be completed. After the tasks are listed, the teaching team can decide who will be responsible for each task. The administrator's role would be to observe the classroom and meet with the teaching team regularly to ensure that they are varying workloads. During monthly or quarterly meetings, the staff can discuss how they are sharing responsibilities and any challenges the team has faced.

Personal Style

Personal style is defined as those individuals who display positive attitudes, confidence, and are fun to work with and contribute to the team's success (La Fasto & Larson, 2001). One way to support staff is to ensure strong teaching team relationships. Building strong teaching teams, like creating strong marriages, requires work and

chemistry between two people. Administrators must start with a strong foundation, which is the chemistry between the teachers. The moment of conception for a child begins the development process. Teams also develop in this manner as center directors conceived or form the teaching team prior to the start of the school year. This conception is often done with little to no input from the teaching staff (Bullough, 2015a; Young, 2016). However, teachers who can select their co-teacher base some of their decision on that person's personality and attitude (Murato, 2002). Some teachers noted that having a sense of humor and being compatible with the other's personality was also important. Therefore, administrators should consider the teacher's input regarding their teaching team. In a qualitative study on assistant teachers, the assistants commented many times that they did not have a say in the composition of their team and it was solely based on the director's decision (Young, 2016) but the CSCCSE (2016) recommended that directors involve caregivers in the decision-making process. This type of autonomy to select teaching team members can lead to the success of teaching teams (Bullough, 2015a; Murato, 2002). Once input has been sought from teachers regarding their teaching team, administrators should provide opportunities for staff team building and developing a relationship.

One of the ways that teaching team members can develop their relationship is by getting to know one another through personal assessments. Personal assessments provide valuable information to staff and their co-workers about their individual strengths and personality.

Conclusion

Teaching teams in Head Start are an important component of the program and are assumed to impact the development of young children given that both teachers are

responsible for interacting with and caring for children. Head Start teams have a big responsibility; they must perform organizationally relevant tasks, share goals, interact socially, exhibit task interdependencies, maintain and manage boundaries. Though there are benefits of being in a team, teaching teams need support with the challenges faced in the classroom. Administrators can provide support by understanding how teaching teams function.

Teaching teams develop similar to the way in which children develop according to Bronfenbrenner's Bioecological Model (Bronfenbrenner & Morris, 2006). Examining teaching teams through the PPCT lens allows administrators to understand the 'whole team' just as Bronfenbrenner intended for others to understand the whole child and the proximal and distal influences shaping their development. Bronfenbrenner posits that children's development is heavily influenced by several systems; micro, meso, exo, and macrosystems that are all encompassed in the chronosystem or across time. That layered system of care that is used to understand and support children and families should be provided to teaching teams.

Administrators can provide this layer of support by aligning their efforts with the four factors that associate with effective teams; openness, supportiveness, action orientation, and personal style. These factors combined with the application of the PPCT model will promote effective development and sustain strong functioning teaching teams. Providing support to the development, functioning, and cohesiveness of teaching teams is important because this could lead to increased organizational climate and higher classroom quality which both influence child outcomes.

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MANUSCRIPT II

Characteristics of Head Start Teaching Teams: Associations among Classroom Quality and Child Outcomes

This manuscript is prepared for submission to the peer-reviewed journal *Early Childhood Research Quarterly* and is the second of three manuscripts prepared for a journal-ready doctoral dissertation.

Abstract

The primary objectives of the present study were to describe the structural characteristics of Head Start teaching teams and to investigate perceived levels of teamwork, and to explore how these structural characteristics and perceptions associate with classroom quality and child outcomes. Forty-three teaching team pairs, composed of a lead and assistant teacher, independently completed a rating of their perceived levels of teamwork. Their classrooms were observed using a standard observational technique and the enrolled children were assessed on measures of executive function and social development. This study hypothesized that classroom staff with positive perceptions of their existing teams would have higher classroom quality scores and better child outcomes than those teams with less positive perceptions. Findings revealed that 80% of teaching teams rated themselves as having a high level of teamwork. However, comparisons of individual lead and assistant teachers' ratings revealed that 20.5% of teaching teams were inconsistent in how they rated their teamwork. The examination of teaching team perceptions, consistency, and classroom quality showed that the lead teachers' perceptions negatively associated with dimensions of classroom quality. Multi-leveling modeling examined the associations between teaching team perceptions, consistency, and child outcomes. Results illustrated that lead and assistant teachers' perceptions and consistent ratings predicted children's social-emotional development. A mediation model was used to test if classroom quality mediates relationships between teaching teams' perception levels and children's executive function and social-emotional development. Results did not reveal any significant mediation between teaching teams' perception levels and children's social-emotional development and executive function.

This study contributes to a scant body of literature that overlooks the dynamics of the teaching team. The exploration of teaching teams' characteristics and perceptions offer insight into an understudied topic. The study also highlights how teaching teams' perceptions associate with classroom quality and children's social-emotional development.

Keywords: teaching teams; perception; teamwork; classroom quality; child outcomes; social-emotional; executive function

Characteristics of Head Start Teaching Teams: Associations to Classroom Quality and Child Outcomes

Head Start advocates for the use of research-based practices to optimize the development and learning of the young children and families they serve—families with incomes at or below the federal poverty level. Head Start Performance Standards stipulate classroom practices, including small class size and low adult-child ratios, that have been associated with positive child outcomes (Howes & Smith, 1995). The Performance Standards also require classroom-staffing patterns that result in teaching teams consisting of at least one lead and one assistant teacher (Office of Human Health Services, 2015). The implementation of this staffing pattern is to provide optimal adult-child ratios, which allow positive teacher-child interactions and optimal care for young children (NICHD Early Child Care Research Network, 2002; Zigler & Muenchow, 1992).

Although the teaching team staffing pattern is the model for Head Start, Early Head Start, and other early childhood settings, the empirical literature examining teaching teams' characteristics and impacts is sparse. For example, no common definition of team exists that describes teaching teams in Head Start programs. Beyond definition, a review of current literature identified few studies on the topic of teaching teams in early childhood education (ECE). Given the gap between the available literature and the widespread implementation of the teaching team staffing pattern, the goal of this study is to generate results that will enhance understanding of the characteristics and dynamics of teaching team relationships. Many questions are currently unanswered including: what are the associations between teaching team characteristics and classroom quality and do

higher levels of perceived teamwork associate with better child outcomes? Classroom quality and the teacher-child interactions occurring in classrooms have been identified as important contributors to children's development (Howes & Smith, 1995; Shonkoff et al., 2011). To date, however, little research has examined the characteristics of teaching teams that serve in Head Start classrooms and the potential association with classroom quality or child outcomes. This study addresses these gaps in the literature.

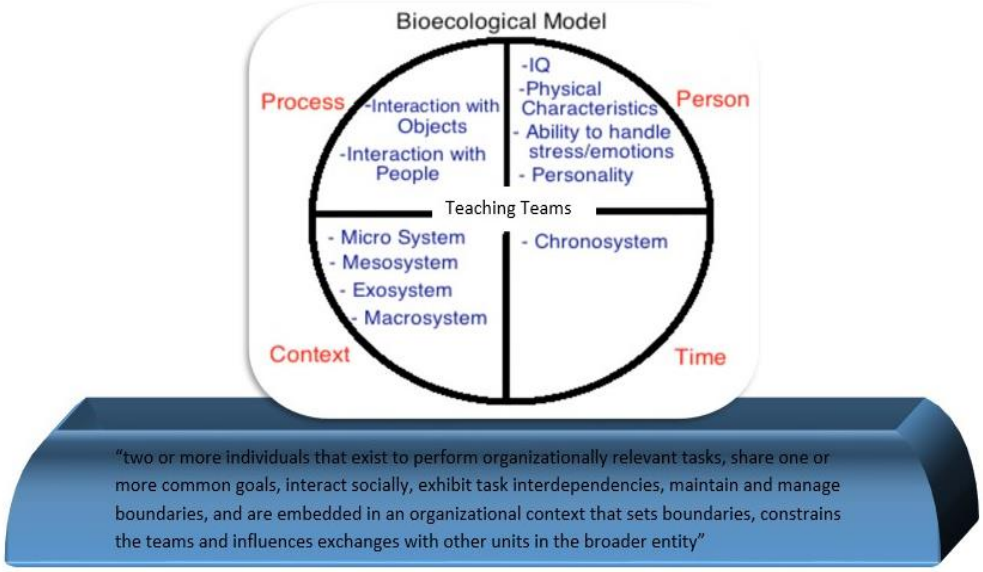
Theoretical Framework

Kozlowski and Bell's (2013) conceptual work on teams and Bronfenbrenner's theory of bioecological systems (2006) are woven together to serve as the framework for this study. Kozlowski and Bell (2013) define teams as

> two or more individuals that exist to perform organizationally relevant tasks, share one or more common goals, interact socially, exhibit task interdependencies, maintain and manage boundaries, and are embedded in an organizational context that sets boundaries, constrains the teams and influences exchanges with other units in the broader entity. (p. 5)

This definition serves as the base of the theoretical framework illustrated in Figure 1.

Figure 1 Theoretical Framework



According to Bronfenbrenner (2006), development occurs over time and includes the biological and physiological aspects of individuals and groups. In Bronfenbrenner's model, he argues that children develop within the components of the Person, Process, Context, and Time (PPCT). The four components each operate within the microsystem (i.e., family, childcare center, church), exosytem, (i.e., extended family, neighbors, parent's workplace) macrosystem, (i.e., government, culture, social class) and chronosystem (time).

To understand how teachers support child development, one must examine the proximal processes and person properties noted in the bioecological model. Proximal processes are the interactions that occur between the environment and the person (Bronfenbrenner & Morris, 2006). The classroom, the center, and the agency that operate the center are internal parts of the environment. The interactions that occur between teaching staff, as well as those among teachers and children, are a part of the proximal process that lead to the child's development.

The person component referenced in the bioecological model embodies the individual teachers' characteristics such as ethnicity, and age. To understand how teachers work together, one must view interactions through the *person* lens, which brings attention to the resources and demands of teaching teams. Each member of the teaching team brings individual resources and demands to the classroom environment. The teachers' resources include his or her education and experience. The teachers' work responsibilities within the teaching team contribute to the demand component. The resource and demand factors together contribute to the proximal process or the teacher-child interactions that emerge.

These interactions occur and are influenced by the context elements of the model, including the microsystem, mesosystem, exosystem, and macrosystem. The time component is the chronosystem. The chronosystem that exists within teaching teams would be the events and transitions that occur during the life of the teaching team. Some examples of events or transitions that may occur within a teaching team include the start of a new school year, the changing of team members, or the transition of children and families.

Based on Bronfenbrenner's bioecological model of development (2006), the environment in the model of proximal process, person, context, and time influences the interactions among the teaching team. Kozlowski and Bell (2013) in their teamwork literature would view the bioecological system as a multilevel influence. This mean that individuals are nested within different levels; the individual (teacher), the teams (teaching teams), and the higher-level context, which for Head Start teams would be the programs in which they work.

Literature Review

Working within the context of a team is complex. It requires communication, flexibility, and common goals. These components, added to the demands of caring for young children, can be challenging for some teachers. In Head Start and Early Head Start programs, teachers are required to work with another adult in each classroom. Since its inception, Head Start classrooms consist of a lead teacher and an assistant teacher (Fitzgerald & Theilheimer, 2012; Zigler & Muenchow, 1992). In fact, two Head Start Performance Standards, 1306.20 and 1306.32, call for this staffing pattern requiring that classroom staff work together to plan, organize, and provide activities that promote the care and development of young children. Although this has been the model since its initiation, there is little research on the characteristics and functioning of Head Start teaching teams. Therefore, this review will draw on multiple sources from other disciplines such as management and business, to define teams and discuss the various types of teams found in different settings. The review of literature will use other educational sources and studies to draw parallels for Head Start teaching teams. A review of the few early childhood studies available will highlight the composition and responsibilities of Head Start teaching teams: the process and structural variables related to classroom quality, and the constructs that potentially influence child outcomes.

Head Start Teaching Teams

Head Start was founded as one of the mechanisms to wage the war on poverty (Zigler & Muenchow, 1992). One of the goals of Head Start was to be a comprehensive program that served the needs of children and their families living in poverty. To address these needs, Head Start programs were initiated to give children a *head start* in life

through education, health, and community services. Julius Richmond, the first national director of Head Start, was a pediatrician and former director of a program for disadvantaged infants. At the onset of Head Start, Richmond recommended a 1:15 staff-child ratio to ensure the preschool children got individual attention. This ratio was half the size for most kindergarten classes at that time. Richmond also recommended that each class consist of a teacher and two assistants. The assistants initially were parents or people from the community. It was unclear to Richmond if the additional staff would be successful, but he felt strongly that more than one teacher was needed for each classroom. Therefore, Head Start programs staffed classrooms with two or three adults, thereby creating a teaching team.

In elementary and secondary education, Friend and Cook's (1995) term *co-teaching* or *team teaching* is often used; however, team teaching is different from a teaching team in Head Start. Although these are the same words transposed, the differences are important. Team teaching describes the act of two people working collaboratively with a group of children. It can occur in the same classroom or indicate that the teachers spent time together planning and or delivering lessons to the same group of children at different times (Friend & Cook, 1995; Friend et al., 2010; Scruggs et al., 2007). However, a Head Start teaching team represents the persons in a dyad or group that may team-teach but it is not required. In Head Start classrooms, the lead and assistant teachers are a part of a teaching team. Another distinguishing feature of team teaching is that each teacher is considered an expert and has equal qualifications. For example, a Bachelor-degreed elementary education teacher may team-teach with a Bachelor-degreed special education teacher. In the Head Start teaching team model, the staffing generally

consists of a lead teacher and an assistant teacher paired together to provide care and instruction for the same group of children in one classroom at the same time. Therefore, in some ways, Head Start teaching teams are similar to Friend and Cook's (1995) definition. Teaching occurs in one space but unlike their definition, both teachers are not always viewed as professionals and both do not always deliver a substantial amount of the instruction. In most Head Start rooms, the lead teacher is responsible for most of the instruction and viewed as the professional because of her education level. Murawski (2002) further states that co-teaching is not a teacher and an assistant, which would disqualify some Head Start teaching teams from being an example of team teaching.

Defining Head Start teaching teams. The absence of a definition of Head Start teaching teams results in describing teams based on definitions found in the management literature. Kozlowski and Bell (2013) define teams as:

> two or more individuals that exist to perform organizationally relevant tasks, share one or more common goals, interact socially, exhibit task interdependencies, maintain and manage boundaries, and are embedded in an organizational context that sets boundaries, constrains the teams and influences exchanges with other units in the broader entity. (p. 5)

This definition is applicable to the teaching teams that exist in many Head Start and early childhood programs. Some of the organizationally relevant tasks for Head Start teaching teams include caring for children, providing activities for them, and monitoring their development (Manlove, 1994; Ratcliff et al., 2011). The common goal of the teaching team is to create an environment that supports the development and care of the whole child (Bullough, 2015a; Bullough, 2015b). The environment is comprised of the

academic and social setting. The academic environment is the classroom and the ways that teachers support children's learning. The social interactions of Head Start teams include interactions with each child, the group of children, co-workers, and parents.

Head Start teaching teams exhibit task interdependence by both planning and implementing classroom processes together. The expectation is for lead and assistant teachers to spend some time together planning activities. The boundaries of teaching teams, based on the definition of a team, are two-fold. Boundaries exist among teaching staff and within the Head Start program. Teacher characteristics, such as ethnicity and team tenure, can be viewed as boundaries. The communication of the teaching team is often restricted by the differences in ethnicity and less time spent together (Chiocchio & Essiembre, 2009; Frigotto & Rossi, 2012; Stahl et al., 2010; Young, 2016). These constructs will be explored further in the next section.

Head Start teaching teams' composition. Although the ECE literature does not specifically define Head Start teaching teams, there are generally two distinct composition or structures of ECE teaching teams; the hierarchical and the co-teaching structure. The hierarchical structure, a teacher and an aide (assistant) is more common than that of the co-teaching (two equal teachers) structure (Cooks & Friend, 1995; Leana et al., 2009; Shim et al., 2004). In the hierarchical structure, the teacher is viewed as the lead staff and typically has more responsibilities than the assistant teacher. Lead teachers typically care for children, create lesson plans, facilitate activities, monitor, and document the children's progress (Bullough et al., 2014; Leana et al., 2009; Ratcliff et al., 2011). This model is similar to the one lead, one assist co-teaching model of Cook and Friend (1995).

The second team configuration used in Head Start classrooms is the co-teacher structure. In the co-teacher structure, the responsibilities are equally shared (Cook & Friend, 1995; Leana, et al., 2009; Shim et al., 2004). Although sharing responsibilities is a challenge for some teachers (Cooks & Friend, 1995), in one of the few studies that exist, co-teachers were shown to have higher quality and more appropriate teaching practices (Shim, Hestenes, & Cassidy, 2004). Because the literature is sparse concerning teaching teams in early childhood, less is known about the responsibilities of co-teachers.

Teaching Team Demographic Characteristics

Demographic characteristics such as ethnicity and team tenure, or the number of years working together, are a part of every team. Demographic characteristics are also referred to as surface level or structural characteristics. These surface level characteristics include things such as gender and race (Kozlowski & Bell, 2013). How those characteristics contribute to team processes and outcomes are commonly studied in the teaming literature (Kozlowski & Bell, 2013). However, the findings are mixed as to how diversity contributes to the performance of the team. One study found that race had a negative effect on team performance (Mannix & Neale, 2005). In contrast, another study found that race had no influence on the team performance (Stahl et al., 2010). Although most Head Start teams are comprised of primarily female dyads, racial or ethnic diversity exists in many of the teaching teams (Bullough, 2015b). Though diversity occurs in many Head Start classrooms, there are few, if any, studies that examine this surface level characteristic. Thus, exploring if the team member's ethnicity associates with the team's processes can provide an opportunity to understand the dynamics and possibly create higher levels of teamwork. When teams differ based on ethnicity, there are issues that

arise based on cultural differences that can create problems in communication (Frigotto & Rossi, 2012; Stahl et al., 2010). However, a meta-analysis conducted by Chiocchio and Essiembre (2009) found that heterogeneity was correlated to the social cohesion and positive outcome performance of a team. Simply put, diverse teams had better results when there was evidence of interpersonal attraction. Because there are mixed findings related to the team's heterogeneity, this becomes an interesting construct to examine among Head Start teaching teams.

Another intersting characteristic to examine is the tenure of the teaching team. Bronfenbrenner (2006) argues that time is the lifespan of the person and all the transitions that occur. In examining teaching teams, time would be the lifespan of the team, or the teaching team tenure. A pilot case study of the experiences of early childhood assistant teachers discovered the team's lack of time together influenced the lack of communication between team members (Young, 2016). Participants stated the need for more communication but noted that the teams were new and still learning each other's styles. Time spent together can influence the function of a team, but one of the issues in applying research findings is the inconsistent data related to time spent in a team.

Teams need time to develop cohesion (Chiocchio & Essiembre, 2009). Team cohesion is the interpersonal attraction and commitment to the task. A team's cohesion is related to their performance. Time together is an important factor in the functioning of a teaching team; however, the literature is sparse on Head Start teaching teams, which calls for more research in this area. Examining Head Start teaching team tenure may lead to a better understanding of the perceptions that teaching team members form about their level of teamwork.

Teaching Team's Perceptions

As many team members will agree, working well together does not come easy (LaFasto & Larson, 2001). Sokinsky and Gilliam's (2011) study examined the lead teachers' perception of working with assistant teachers. Their results indicated that lead teachers felt the assistants were important to classroom management and children's care, but less useful in providing instruction, with the assistant teachers' education level being an exception. When assistant and lead teacher had similar education levels, the lead teacher described the assistant as more useful in teaching responsibilities.

Assistants and lead teachers also differed in their perceptions of the assistant teachers' role (Ratcliff et al., 2011). Compared to teachers' ratings of how often tasks were completed, the assistants rated themselves higher on task completion than the rating provided by their lead teachers. The tasks were assisting with lesson plans and cleaning the classroom. This difference in opinion about the contributions of assistants could influence the perceptions of teamwork. Therefore, it is important to understand the teaching teams' perceptions of teamwork since teaching teams are charged with the task of working together to support children's development through high quality classrooms.

Classroom Quality

Many factors contribute to the overall quality of a classroom. For years, conceptions of classroom quality have focused primarily on the environment and program structures (Phillipsen et al., 1997). As research has shed more light on areas impacting program effectiveness, it became necessary to not only measure structural variables such as the environment and classroom materials but also process quality that consists of the relationships and interactions between teaching staff and children.

Structural quality. Phillipsen et al. (1997) examined the difference between structural and process quality. Structural variables include ratios, teacher training and education requirements, center hours, and pay. These constructs are generally out of the control of the teacher and influenced by policies or administrators. On the other hand, caregivers heavily influence process quality. These variables consist of the caregiver's interaction with children and the child's overall experiences in the classroom. However, Phillipsen et al. (1997) only examined the lead teachers' structural indicators influence on teacher-child interactions. They found that higher education, more experience, and pay influenced the process quality of early childhood classrooms. Similarly, Castle et al. (2016) found that infant and toddler teachers with early childhood education related degrees provided higher Emotional and Behavioral Support (EBS) and Instructional Support (IS) as measured by the Classroom Assessment Scoring System (CLASS; La Paro, Hamre, & Pianta, 2012), a tool commonly used to measure classroom quality. The study examined the associations between teacher characteristics and teacher-child interactions. The sample for this study only included the lead teachers.

The lack of information about the assistant teachers' interactions with children presents a limited view of all the contributions to classroom quality and leaves the field with more questions. In addition to the limited information on assistant teachers is the lack of information the structural characteristics of the teaching team and how the interactions within the teaching team provide a broader view of all the teacher characteristics that contribute to the classroom environment.

Process quality. Although most studies only collect data on the lead teacher, one recent study examined the contributions of the assistant teacher (Curby et al., 2012). The

study examined how teachers provided emotional support, organized the classroom, and the overall quality of instruction. The researchers observed the lead and assistant teachers also using the CLASS Pre-K tool (Pianta, La Paro, & Hamre, 2008) designed specifically to measure these constructs. The results of the study indicated that assistant and lead teachers achieved similar scores on emotional support and classroom organization. However, assistant teachers scored lower than lead teachers in the domain of instructional support. The study also found low correlations between assistant and lead teachers' concurrent ratings. This indicated that one teachers' measure of quality did not represent overall classroom quality. Any individual that interacts with children will have an influence on them. Whether the assistant teacher was responsible for maintaining ratios, helping with routines, or providing instruction, he or she served as an asset to the classroom. Therefore, examining the lead and assistant teachers' interactions are key to measuring classroom quality and understanding the significance of how teaching teams work together. These results may also suggest each teaching team member contributes something unique to the classroom and teams that work well should produce optimal settings.

Classroom quality is dependent upon positive interactions between teachers and children, as well as a stimulating and safe environment. One of the primary influences on classroom quality is the teacher (Bollough et al., 2014; Castle et al., 2016; Pianta et al., 2005). Specifically, the type of interactions the teacher has with the children has been found to influence both classroom quality (Howes & Smith, 1995; Pianta et al., 2005) and child outcomes (Howes & Smith, 1995; Shonkoff et al., 2011). These studies have primarily focused on the lead teacher. Fewer studies have considered the role and impact

of other teachers in the classroom, specifically the common staffing patterns that leads to teaching teams.

Child Outcomes

The primary goal of Head Start is to improve the lives of children living in poverty (Zigler & Muenchow, 1992). One of the ways to improve their lives is by providing a firm educational foundation and ensuring that children are ready for school. Therefore, measuring and monitoring child outcomes are essential to Head Start programs. Head Start aims to address the needs of the whole child by measuring all aread of development; language, cognitive, physical, congnitve and social-emotional. Recently, attention has focused on social-emotional and cognitive development and their association with school (Lally, 2010; Shonkoff et al., 2011). Understanding what contributes to these outcomes is critical.

Social-emotional development. Social-emotional development is the development and regulation of children's emotions and ability to build positive relationships with others. Social interactions are the foundation for brain development (Shonkoff & Phillips, 2000). Genetically, children are born with certain temperaments, however, the caregiver and environment also shape young children's social-emotional development. Caregivers shape the children's emotions by their reactions, modeling, and discussion of emotions, therefore teacher interactions are also a key to school readiness (Castle et al., 2016; Phillips, 2010; Hamre et al., 2014; Williamson, 2014). Interactions that offer support of children's emotional and academic development, as well as organize the classroom activities, are associated with better child outcomes (Bandel, Aikens,

Boller, & Murphy, 2014; La Paro, Hamre, & Pianta, 2012; Pianta, La Paro, & Hamre, 2008).

Supporting children's emotional development requires that teachers provide a positive climate, demonstrate sensitivity toward children and have regard for the child's autonomous behavior (Teachstone, 2017). Teachers who are emotionally supportive may also guide and manage behaviors more effectively.

Although these positive teacher interactions contributed to better child outcomes (Hamre et al., 2014; Patrick, 2016), data gathered through classroom observation tools typically focused only on the lead teachers' behavior. Current ECE and Head Start literature does not provide a clear understanding on how teaching teams work to contribute to children's school readiness. However, Scruggs et al. (2007) conducted a meta-analysis on co-teaching in special education classrooms and reported that children benefit from the experience of two teachers. Some of the student benefits were extra attention from teachers, increased positive social behaviors, and increased academic achievement. The studies used were qualitative and did not examine the correlation between team teaching and academic achievement using test scores.

For this reason, gathering quantitative data to examine the associations between teaching team effectiveness and child outcomes would provide more information on how these constructs associate. The proposed study would also provide more specific information about the Head Start population.

Executive function development. Children's *executive function* development can be supported when teachers facilitate learning activities, provide many language development opportunities, and provide feedback that is meaningful to children

(Teachstone, 2017). Executive function consists of working memory, mental flexibility, and inhibitory control (Diamond, 2002). Working memory allows a person to store and manage information in the mind for a short period. Mental flexibility is the capacity to redirect attention promptly to another task or priorities. In very young children, mental flexibility is considered the ability to shift attention when an adult is both talking to them and another adult (Galinsky, 2010, p.18). Inhibitory control is the skill used to regulate thoughts and natural inclination in an effort to refrain from temptations and distractions. It is also the ability to control attention, behavior, and emotions. Although inhibitory control is often difficult for young children, especially exuberant children, it is predictive of later outcomes (Center on the Developing Child, 2011; Diamond, 2002).

One study conducted by Choi et al. (2016) explored the link between Head Start teacher–child interactions and children's inhibitory control. The preschooler's inhibitory control skills were measured in the fall and spring and teacher–child interactions were observed during the fall using the CLASS tool. Results showed that children who initially presented poor IC skills showed improvements in their IC skills the following semester when enrolled in classrooms practicing high-quality teacher–child interactions. The findings support the importance of teacher-child interactions to executive function but more information is needed to understand how the teaching teams' perceived level of teamwork may contribute to classroom quality and, subsequently, to children's executive function development.

The research is clear on the importance of children's social-emotional and executive function development and the positive influence that teachers have on those areas of development. One area that remains to be examined is the interactions among

Head Start teaching teams and their influence of children's social-emotional and executive function development.

Present Study

This study aimed to examine associations among teaching team perceptions of teamwork, classroom quality, and child outcomes including both social-emotional and executive function development. Through secondary data analysis and hierarchial linear modeling, the following questions were investigated (1) How do teaching teams' structural characteristics associate with the identified success and challenges and level of perceived teamwork? (2) To what extent does perceived teamwork associate with observed classroom quality? (3) To what extent does perceived teamwork associate with children's executive function and social-emotional development and is this association mediated by classroom quality?

Relative to question one, it was hypothesized that teaching staff's strcutural characterisitcs, such as ethnicity and time working together, would influence how they perceive their level of teamwork among the teaching team. The past literature suggested that teaching team members that shared the same ethnicity did not have as many problems communicating which was often found with diverse teams. Without this communication barrier, teaching team members would have better communication and be more likely to perceive a higher level of teamwork. In contrast, mixed ethniticy teams may have issues communicating and it may result in lower perceptions of teamwork. The amount of time a teaching team works together may also influence their perceived levels of teamwork. Teaching teams who work together longer, may have found ways to balance each one another's stregnths and weaknesses that leads to better collaboration

and teamwork. Teaching teams that have worked together less may have challenges communicating, learning one another's work style therefore may have lower perceived levels of teamwork.

For question two it was expected that teaching teams with higher perceptions of teamwork had higher classroom quality scores. It was also predicted that teaching teams that worked well together displayed more positive attitudes in the classroom, were more sensitive toward children, and provided more meaningful interactions.

Related to question three, it was predicted that children in classrooms with teaching staff that had higher levels of teamwork demonstrated higher self-regulation and social-emotional development. Teachers with higher perception of teamwork were better able to demonstrate self-regulation resulting in children's higher self-regulation. These same teachers also better support the social-emotional development as they were not experiencing constrained relationships in the classroom with their team member.

Method

Data for the current study were collected as part of a larger evaluation project conducted in collaboration with a large Head Start program in the Midwestern region of the U.S. The larger evaluation project included measures of teacher characteristics, classroom quality, and child outcomes. The larger evaluation was conducted by a research group at a local state university.

Participants

The participants in this study were Head Start lead and assistant teachers and the children enrolled in their classrooms. The following inclusion criteria were used for teaching team pairs: provided informed consent by signing the IRB-approved form, had

completed teacher surveys from both team members, had current classroom observation data, and have children in the larger study so the that child outcomes measures were available.

The resulting sample included 44 lead and 42 assistant teachers and approximately 174 children at 9 Head Start sites. The classrooms consisted of 13 toddler and 30 preschool rooms. The classrooms were full-day classrooms. The ethnicity of the lead teachers was 70% white, 9% black, 5% Hispanic, and 16% other (see Table 1). The ethnicity of the assistant teachers included 33% white, 31% black 24% Hispanic, and 9% other. The majority of lead teachers (84%) had at least a Bachelor's degree. The majority of assistant teachers (90%) had attained at least a Child Development Association (CDA) credential. The teaching teams consisted of 14 teams that had matched ethnicities and 31 of the teams worked together for at least one year or more (see Table 2). The ethnicity of the children included 18% white, 25% Black, 35% Hispanic, and 22.4% other (Table 3).

Procedures

For the larger study, a stratified random sample of 300 children was initially selected. Classrooms were stratified by age to include 18 2-year old rooms, 31 3-year old rooms, and 27 4-year old rooms. Once classrooms were selected, five children were randomly selected from each classroom. There were two selection criteria for child participants: the child must not be participating in another agency-funded study and the child must be at least 30 months old by September 1, 2015. Data for the larger study was collected during the 2015-16 school year by trained and reliable research staff following IRB-approved protocols. Only those teachers with consented children were asked to participate in this study of teaching teams. Lead and assistant teachers were compensated

with a $15.00 gift card. An additional incentive was provided to increase the teaching teams' participation. Every classroom that had a lead and paired assistant teacher complete the survey was entered into a drawing for $250 worth of classroom supplies.

Child data was collected in two waves in a pre/post-test timeframe with a six-month gap between data collection waves. The first wave of child assessment data were collected in early fall. Towards the end of each wave of data collection, classroom teachers rated each child on behavioral and social-emotional traits using a standardized tool.

Classroom observations were conducted January through March 2016. Each classroom was required by their agency to be observed but teachers consented to their data being used for research purposes. Ninety-three classrooms were observed and 39 of the classrooms had teaching team pairs that completed the teacher survey and were part of this research study.

Data collectors received thorough training and evaluation prior to being certified to collect data. For child assessments, data collectors reviewed the assessment manuals and materials, practiced with colleagues and non-study children, were videotaped administering each assessment with reviews of videos conducted by the training coordinators for the study. Relative to classroom observations, data collectors participated in a two-day training offered by the tool's authors. Subsequent to the training, the observers obtained reliability by watching a series of five 20-minute videos of classroom interactions. The observer must obtain an aggregate score of 80% reliability in order to be certified reliable.

In addition to the thorough training and certification processes described above, data collectors typically had three or more years of experience working with young children in various roles, with most having previous early childhood classroom teaching experience. Thus, they are familiar with protocols to build and maintain rapport with young children; and are adept at conducting assessments in the context of early childhood classrooms and settings.

Measures

Several measures were used to collect data from teachers, children, and classrooms. Table 4 provides an overview of the specific measures used for this study. Each measure is described below.

Teacher survey. The staff survey for the lager study included items related to teacher efficacy, personal beliefs, teacher characteristics, and teaching team perceptions. The items used for this study included:

Teacher characteristics. Teachers self-reported their race, marital status, household income, educational background, years in the field, and plans to stay in the field. Of interest to this study are questions related to ethnicity, field of degree, and number of years together as a teaching team. Teaching team tenure was collected from the Head Start agency.

Perceptions of teamwork. A component of the staff survey contained questions related to teaching teams. These 17 questions were adapted to measure levels of teamwork based on Salend, Gordon and Lopez-Vona's (2002) article, Evaluating Cooperative Teaching Teams. Teachers rated 15 items on their perceptions of their current team's level of teamwork on a 5-point Likert scale. Statements included "I enjoy

working as a team with my co-teacher" and "My co-teacher and I incorporate each other's teaching styles into our teaching team" were rated as 1 (strongly disagree) to 5 (strongly agree). A higher mean score indicates higher perceptions of teamwork. Two open-ended questions asked teachers about factors that contributed to the success of their team and what challenges they experienced in their current team. See Appendix A for survey items. No published psychometric data exists for the measure therefore psychometric analysis was conducted during the analysis for this dissertation research and received a Cronbach Alpha of .92.

Classroom Quality. ***Classroom Assessment Scoring System, Pre-K*** (CLASS Pre-K, 2008). The CLASS is designed to assess three domains: Emotional Support, Classroom Organization, and Instructional Support. The tool measures the level of interaction in each domain provided by the teacher to the majority of the children in the classroom. Each domain has several dimensions that are coded during four 20-minute cycles. The Emotional Support dimensions include Positive Climate, Negative Climate (reversed coded), Teacher Sensitivity, and Regard for Student Perspective. Under the domain of Classroom Organization, Behavior Management, Productivity, and Instructional Learning Format Dimensions are observed. The last domain of Instructional Support measures Concept Development, Quality Of Feedback, and Language Modeling provided by the teacher. Each domain is scored using a 7-point scale ranging from 1= low to 7= high range interactions.

The reliability of the tool was estimated by the authors by using internal consistency and test-retest procedures. The stability of the CLASS Pre-K scales and their dimensions among the National Center for Early Development and Learning Multi-State

Prekindergarten Study (NCEDL MS Pre-K) classrooms are available within observations and across time periods. Scale correlations across the four cycles of the observation ranged from 0.86 (Instructional Support) to .91 (Emotional Support). Dimension coefficients ranged from .79 (Instructional Learning Formats) to .90 (Teacher Sensitivity). Over two consecutive days, scale coefficients ranged from .81 (Classroom Organization) to .86 (Instructional Support). Dimension coefficients ranged from .73 (Productivity) to .85 (Teacher Sensitivity). Between fall and spring, dimension coefficients ranged from .25 (Quality of Feedback) to .64 (Behavior Management). The Cronbach's alpha for the sample is .870.

Child Outcomes. Children were assessed on a variety of measures that assessed their executive function and social-emotional development. The following assessments were used in this study:

Executive Function Development: The Pencil Tap *(Diamond & Taylor, 1996).* The Pencil Tap, an adaption of the peg-tapping task, is an executive function measure that specifically assesses the child's inhibitory control. For this assessment, the assessor asks the child to tap once when the assessor taps twice. The child must also tap twice time when the assessor taps once. The assessor demonstrates three trial items and provides feedback during the trial items to ensure that children understand the rules of the assessment. However, after the three trials are complete, the assessor administers the assessment without feedback and records the child's responses without comment. The assessor does not administer the assessment if the child fails all the trial. Scores represent the number of correct responses out of the 16 trial items. Scores ranged from zero to 16. External psychometrics result in reliability coefficient of $\alpha = .82$ for preschool children

(Blair & Razza, 2007). The psychometric properties for this sample include a Cronbach alpha of .604.

Executive Function Development: Head Toes Knees Shoulders (HTKS; McClelland et al., 2014). The HTKS is administered as a short game in three sections with 10 items each in which an examiner asks a child to perform a movement opposite of what is stated. The first section consists of a head/toes pairing such that when asked to touch their toes, children should touch their head. The second section adds a new pairing of knees/shoulders such that when asked to touch their shoulders, children should touch their knees. Section 2 includes a mix of head/toes and knees/shoulders pairings. Section 2 is only administered if children score at least 4 points on section 1. The last section, Section 3 switches pairings to head/knees and shoulders/toes, which is only administrated if at least 4 points are scored on section 2.

There are two parallel forms of the HTKS: A, which starts with head/toes, and B, which starts with knees/shoulders and there is no significant differences between the two forms (McClelland et al., 2014). Assessors assign scores of 0, 1 and 2 assigned for incorrect, self-correct and correct, respectively, for a total score range of 0 to 60. Higher scores indicate higher self-regulation. Self-correct refers to any motion toward the incorrect response, but stopping and ending with the correct response (McClelland et al., 2014, p. 4). There is no basal or ceiling scores for the measure. The reported reliablity coefficients for the measure is .93. The Cronbach's alpha for this is sample is .634.

Social Emotional: Devereux Early Childhood Assessment Preschool, 2nd Ed (DECA-P2; LeBuffe & Naglieri, 2012). The DECA is a measure of children's social-emotional development and evaluates children's frequency of desirable behaviors (Total

Protective Factors; TPF) and assesses any behavior concerns (Behavior Concerns) the caregiver may have about the child. The parent or teacher completes the DECA by rating chidlren's behavior. Sample items include; *during the past 4 weeks how often did the child show confidence in his/her abilities* and *how often did the child hurt others with actions or words.* The ratings involve a 5-point scale and include never, rarely, occasionally, frequently, or very frequently. Scores for TPF ranged from zero to 108. Higher scores indicate more positive behaviors. Score for Behavior Concerns ranged from zero to 40. Higher scores indicate more behavior concerns.

The Total Protective Factors consisted of three subscales; attachments/relationship, self-regulation, and initiative. Median internal consistency reliability coefficients across the three protective factors were .88 and .92 for parent and teacher raters, respectively, while the coefficients for the Total Protective Factors scale were .92 for parent and .95 for teacher ratings (LeBuffe & Naglieri, 2012). Coefficients for the Behavioral Concerns scale were .80 for parent raters and .86 for teacher raters. There were no subscales for Behavior Concerns. The psychometric properties for this sample is a Cronbach's alpha of .827 for Behavioral Concerns and .829 for Total Protective.

Results

The first aim was to examine how teaching teams' structural characteristics were associated with identified successes, challenges and reported levels of teamwork. Next, the teachers' perceived teamwork was examined to explore the extant to which it associated with observed classroom quality. Last, the extent to which perceived teamwork associated with children's executive function and social-emotional

development was explored and further examined to see if the potential associations were mediated by classroom quality

Preliminary analyses using descriptive statistics were conducted in Excel and SPSS (Version 23) to explore if the data were within normal ranges to justify the use of inferential statistics. Once assumptions were confirmed, data for 43 classrooms, including a total of 174 children were analyzed. Three research questions were examined for this study and the results are presented below by research question.

RQ1

How do teaching teams' structural characteristics associate with identified success and challenges and level of perceived teamwork?

***Success and Challenges*.** Teachers were asked to report what factors contributed to their successes and challenges as a teaching team. Teachers' open-ended responses to the last two survey items: (1) w*hat factors contribute to the success of your classroom teaching team and (2) what challenges have you encountered with your co-teacher as a classroom team* were coded into themes. The most frequently reported successes were communication, interpersonal relationship, and co-teaching. Most teachers reported that they did not have any challenges. After none, the most frequent responses were different philosophy, teamwork, and communication. See Table 5 for all the reported successes and challenges.

These themes were used to create dichotomous variables of factors that teachers reported contributed to their teaching teams' success or factors that were challenging for the team. Figures 1 and 2 show the most frequently reported (by percentages) successes or challenges. Teachers provided multiple answers and, thus, the responses do not add up

to 100%. Each variable that the teachers listed in the open-ended response were coded as yes (or 1) and items not listed were coded as no (or 0). If teachers did not respond to the open-ended responses, all variables were coded as missing.

Figure 2. Reported Successes of Head Start Teaching Teams

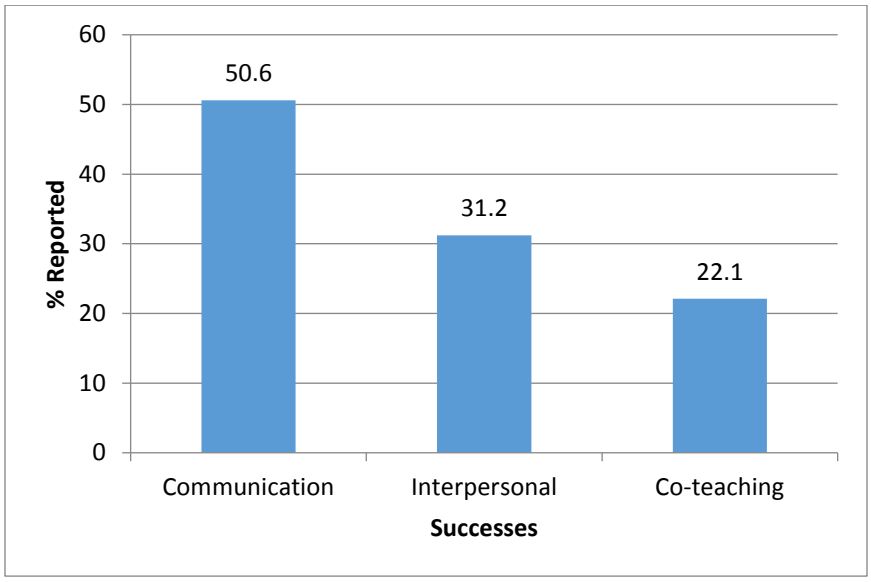
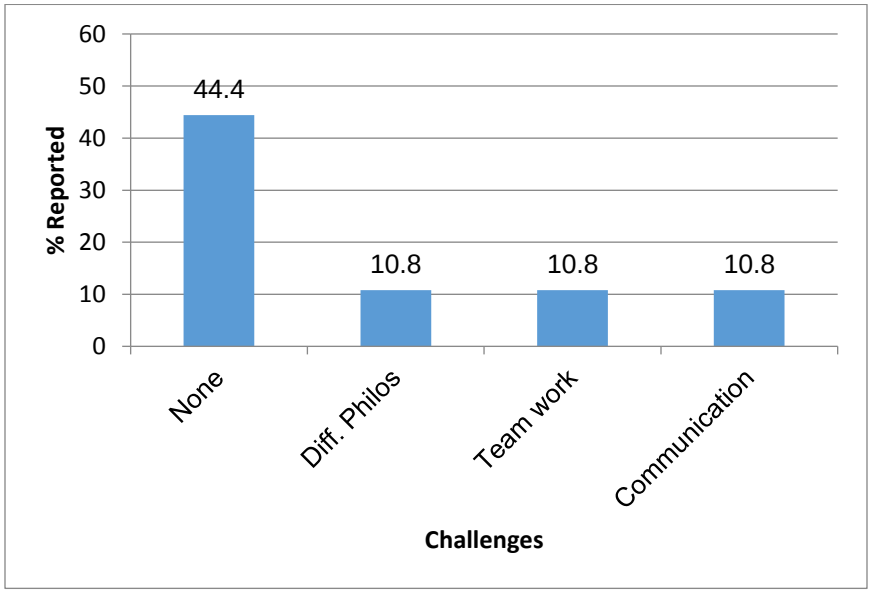


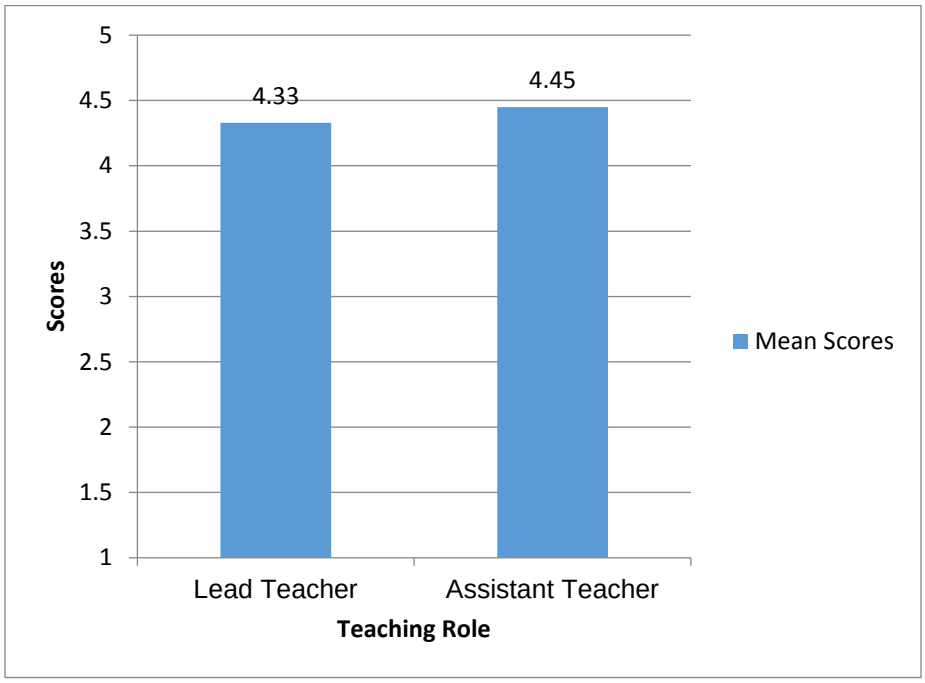
Figure 3. Reported Challenges of Head Start Teaching Teams



Perceived Teamwork. The lead and assistant teachers (n=86) were asked to rate their level of teamwork on a Likert scale of 1-5. Scores were slightly skewed to the right.

Overall, scaled scores ranged from 2.13 to 5.00 with a grand mean of 4.34 (SD of .70). Scaled scores were computed for lead and assistant teachers' mean score on the Teaching Team Practice and Perceptions measure. Higher scores on the measure indicated higher perceived levels of teamwork. Lead teachers' mean score was 4.33 (SD of .74) and assistant teachers' mean score was 4.44 (SD of .61). Figure 4 displays these results. A Wilcoxon Signed-Ranks Test indicated that lead and assistant teachers' perceptions were not significantly different, Z = -.464, p <.643.

Figure 4. Teachers' Perceived Level of Team



A consistency variable was created to examine the consistency of teaching teams' rating of each of the items on the Teaching Team's Practices and Perceptions scale (see Appendix A). Teaching teams were rated "yes" for consistency if each teaching team member rated the items within one point of each other on the scale. Consistency was coded "no" if the team members differed by more than one item in their item ratings or if one teaching team member rated neutral feelings for an item. Borrowed from how inter-

rater reliability is established, it is typical calculation for observers on common classroom observation tools. A frequency analysis of the teaching teams' consistency rating was examined and revealed that 20.5% of teams were inconsistent in how they rated 7 or more of the 15 total items. Items that were most frequently inconsistent are highlighted on Table 6, which displays the complete list of items.

Analyses were conducted to examine if structural variables were associated with reported successes and challenges. The structural variables were team tenure and ethnicity. The majority of the teaching teams (n=31) had worked together for less than one year and 28 of the 43 (65.1%) teaching teams consisted of different ethnicities.

Successes, challenges, and teaching team tenure. A Chi-square was used to examine potential differences between reported successes, challenges, and teaching teams tenure due to the tenure limitation of teaching teams. The independent variable was team tenure and the dependent variables were reported successes and challenges (see Table 7). There was no significant difference in reported successes, challenges, and teaching team tenure.

Successes, challenges, and ethnicity. Chi square tests were performed on each of the frequently reported successes, challenges, and ethnicity match. The independent variable was matched ethnicity and the dependent variables were reported successes and challenges. Table 8 shows there was no statistical differences in teaching team ethnicity match or not and the reporting of successes and challenges.

Perceived teamwork and tenure. A cross tab between years working together and perceived levels of teamwork was used to determine if years working together (IV) influenced teachers' perception of their teaching team's teamwork (DV). Perceived

teamwork was analyzed using the teachers' mean score on the Teaching Team Practices and Perception scale (Appendix A). The cross tab analysis revealed there was no significant relationships [X^2 *(1, N=34) =.37.20, p=.32]*.

Perceived teamwork and teaching team ethnicity. In order to compare perceived teamwork scores between teaching teams with matched ethnicities and those with non-matching ethnicities, three Independent Sample T-test were conducted. The independent variable (IV) was matched ethnicity and the dependent variable (DV) was perceived teamwork. The tests were found to be statistically non-significant (see Table 9).

RQ2

To what extent does perceived teamwork associate with observed classroom quality?

Preliminary Analysis

Figure 5 shows the mean scores for each dimension of classroom quality. The mean scores demonstrate moderate to high quality teaching practices as measured by the CLASS tool.

Figure 5. Teaching Teams' Mean CLASS Scores

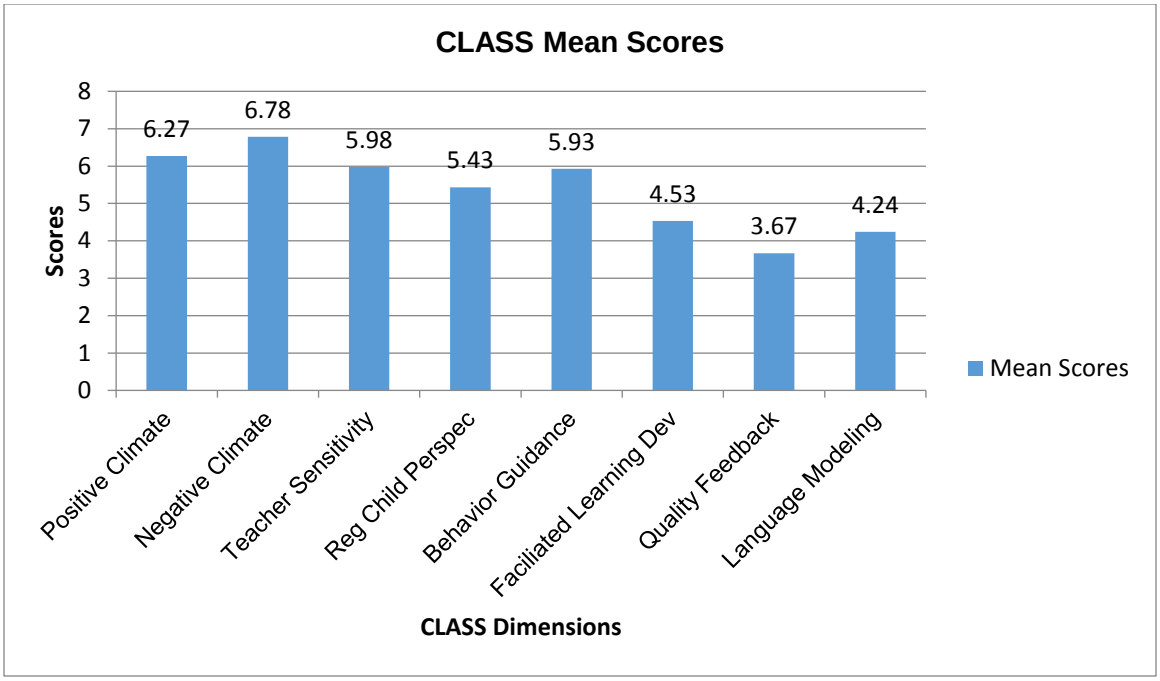


Table 10 provides descriptive information regardng classroom quality. Correlations (Table 11) were conducted to examine if relationships exist between classroom quality dimensions (DV) and the teachers' perceptions of their teaching teams' level of teamwork (IV). Findings reveal that no significant correlations exist across these measure of perception and CLASS dimensions. Teaching team perceptions are reported for lead teachers (LT), assistant teachers (AT), and the teaching team.

Primary Analysis

Full Maximum Likelihood was used to handle missing data at level one. To test for relationships between teaching team perceptions and classroom quality, models were estimated using MPLUS 7.11 using the Type = Complex analysis function and log likelihood estimation (Muthen & Muthen, 1998-2012). Two-level hierarchical linear modeling was used due to the nested data. Children (Level 1) were nested within classrooms (Level 2) and classrooms were nested within sites using a dummy code on level 2. The two teacher characteristics controlled in every model were lead teacher race

and age group of the children as these variables were correlated during preliminary analysis.

Each CLASS dimension was examined in a separate model for all analyses account for multicollinearity. The associations between positive climate, negative climate, teacher sensitivity, behavior guidance, regard for child perspective, productivity, facilitated learning and development, quality of feedback and language modeling, each teachers' perceived teamwork level, and the team's perceived teamwork level were examined. The final sample model sample size was 39 teaching teams and 174 children.

Teaching teams' perceptions were the independent variable and the dimensions of classroom quality were the dependent variables. Table 12 displays the regression models listed by CLASS dimensions. The only dimension of classroom quality that was predicted by teaching teams' perception of teamwork was positive climate. The lead teachers' perceptions and teaching teams' consistency were negative predictors of positive climate. When controlling for the lead teachers' race and age group of the children, the teaching teams' consistency in their rating of their teamwork resulted in a decrease of the Positive Climate score by .55 units. Also, when controlling for the lead teachers' race and age group of the children a one point increase in the lead teachers' perception of teamwork resulted in .22 units decrease in positive climate scores.

RQ 3

To what extent does perceived teamwork associate with children's executive function and social-emotional development and is this association mediated by classroom quality?

Due to the lack of findings with the successes and challenges as reported above, these variables were not used in the final hierarchical linear models. The independent variable was teaching teams' perceptions and the dependent variables were dimensions of classroom quality and child outcomes. The mean scores of the child outcome data were examined (Table 13). The child characteristics that were controlled for in each model were child's age, race, gender, disability and mental health referral status as these were correlated during preliminary analysis.

Lead teachers' perception of teamwork (IV) predicted an aspect of children's social-emotional development (DV). Table 14 shows the HLM models. HLM analyses did not reveal any statistically significant relationships between teachers' perceptions and teaching teams consistent ratings to behavior concerns or executive function. Children's Total Protective Factors was the only child outcome that was associated with teachers' perceptions or the teaching teams' consistent ratings. As lead teachers' perception of teamwork increased, their rating of children's Total Protective Factors (TPF) increased [4.40(.03*)]. The assistant teachers' and teaching teams' consistency also predicted teachers' rating of children's TPF. As assistant teachers' perceptions increased, ratings of children's TPF increased [3.86(.04*)]. Similarly, as teaching teams' consistency levels increased, children's rating of TPF increased [14.05(.02*)]. However, these patterns were not mediated by classroom quality.

Discussion

Head Start programs use the common staffing pattern of teaching teams, yet there is little research on how these teams influence classroom quality and child outcomes. In the present study, teaching teams' characteristics and perceptions were examined.

Teaching teams' characteristics and perceptions were expplored to to see if these constructs were predictors of classroom quality in Head Start classrooms and the potential moderating role of these relationships on child outcomes. The 43 teaching teams in the study were composed of 12 teams that had worked together for one year or more while the majority (31) had worked together for less than one year. Fourteen teaching teams in the study had matched ethnicities. The teachers identified three major factors to their successes as a teaching team; communication, interpersonal relationship, and co-teaching. The majority of the teaching teams rated their team as having high levels of teamwork. However, one fourth of those teaching teams were inconsistent in how they rated items on the team perception scale.

The main findings that emerged were: (1) years working together and ethnicity did not influence teaching teams' perceptions of teamwork or their classroom quality, (2) teaching teams' perceived level of teamwork had a negative influence on the positive climate of the classroom, and (3) teaching teams' perceptions predicted teachers' ratings of children's social-emotional development. Those findings are discussed further below.

Teaching team's characteristics, success, challenges and perceived teamwork

Teaching teams indicated that communication, interpersonal relationship, and co-teaching were factors to the success of their teaching team. These reported factors are consistent with those found in the team literature. LaFasto and Larson (2001) studied over 6,000 teams in various organizations outside of early childhood and found four factors that were associated with effective teams; openness, action orientation, personal style, and supportiveness. Openness described individuals that openly communicated. Openness was parallel to the present studies findings, as well as those from Wells (2017) qualitative study on preschool teachers' psychological job attitudes which influnced their

decision to stay or leave their job. Wells (2017) found that communication was an important aspect of teachers' work climate. Personal style, which LaFasto and Larson (2001) defined as those individuals who displayed positive attitudes, confidence, and were fun to work with and contribute to the team's success also described the interpersonal relationship found as a contributor to Head Start teaching teams' success. An aspect of positive work climate is the ability to get along with coworkers (Whitebook, McLean, & Austin, 2016; Wells, 2017). Therefore, it is not surprising that teachers reported that having an interpersonal relationship was a factor to the success of their teaching team.

However, it was interesting that most teachers reported that they did not have any challenges. It may be that they wanted to provide the desired response as teaching teams are expected to get along with the other teacher (Bullough, Hall-Kenyon, MacKay, & Marshall, 2014). However, Bullough et al. (2014) reported that role confusion and inabilty to get along were often challenges for teaching teams. Although most teams did not report any challenges, there were inconsistencies among members of the teaching team in how they rated their team. In fact, a quarter of the teams had members who rated their shared teams at least two rating points away, and some teams whose members rated them as 5s had other members who rated them as 1s. It not only speaks to the perceptions, but also speaks to the fact that individuals of a teaching team can exist in two different worlds. One teacher may perceive that everything is fine; another teacher in that same team could perceive that there are some issues within the team. Different perceptions of teachers' about their team may lead to different environments and realities;

this begs important questions about the type of environment each teacher provides to the children.

Another possible issue that can result from teaching teams' misperception is turnover. Though not one of the research questions but may have correlated with the tenure of the teaching teams, which in turn may have influenced the study. During the initial review of the teams, there were not enough teams in the study who were together for more than one year to measure the team in a stable manner. If there is conflict in the classroom that the team cannot address, it can produce a workplace environment that pushes individuals out of that classroom and possibly the organization (Goelman & Guo, 1998). The teacher-teacher relationship influences whether teachers stay or quit (Wells, 2017).

Teaching teams' perceived level of teamwork association to classroom quality

Nationally, Head Start classrooms score in the high range for emotional support as measured by the CLASS (Department of Health and Human Services, 2016b). The overall classroom quality for this study was also moderate to high in all domains. Higher scores on emotional support, as measured by the CLASS (Pianta et al., 2008; Pianta et al., 2005), is highly dependent upon positive teacher interactions. Positive interactions include warm and friendly verbal and nonverbal communication. Though these interactions are generally measured by observing teacher-child interactions (Pianta et al., 2005), one would think that teachers exhibiting these behaviors to another adult would result in positive outcomes. However, the examination of the findings showed that teaching teams' perceived level of teamwork and their consistency in rating the items negatively associated with Positive Climate. As teams rated themselves higher in self-perceptions of team work, positive climate scores went down. This may suggest that the

teachers who get along really well focus their interactions on the smooth adult functioning of the room more than on the subtle emotional connections that develop between children and adults in a classroom setting. An adult focus on smooth workplace operations can be blinded to the opportunities and challenges that are a necessary component of high quality ECE environments.

Teachers reported that good interpersonal relationships – being on the same page – affected workplace quality, and in an early childhood workplace that workplace quality has a major impact on early childhood quality. These relationships with co-teachers and colleagues influence teachers' attitudes toward the workplace (Wells, 2017).

Teaching team's perceived level of teamwork association to child outcomes

Teachers' perceived higher levels of teamwork associated positively with the children's social-emotional development reported by teachers. It is possible that the rating of children's behavior were indicative of, not only the child's behavior but also of, the rater (Hamre, Pianta, Downer, & Mashburn, 2008; Konold & Pianta, 2007). For example, as lead and assistant teachers' perceptions of teamwork increased, Total Protective Factors (TPF), as measured by DECA, for the children in that room increased significantly. So it may suggest that increased teachers' perceptions of their team and the environment that team creates can influence how they rate children's behavior in the classroom. It also may suggest that increased teachers' perceptions of their team and environment can influence children's behavior in the classroom. It is that reciprocity of what teachers give they receive from the children.

The relationship between teachers' perceptions and children's social-emotional behavior ratings can have positive influences on children's development. One of the benefits of interdisciplinary team teaching is the positive influence on students' social

skills (Wallace, 2007). One study compared the social bonding of 50 students in one class with two teachers to the scores of the same number of children in a class with one teacher. Social bonding is the school friendships that children have that create a student's willingness to establish new relationships. Sixth graders taught using a team teaching approach had higher scores on social bonding. Social bonding is also important in early childhood classrooms for children and teachers. Social bonding in early childhood is a part of young children's social emotional development, and for teaching teams it can help develop teacher's interpersonal relationships and collegiality within the teaching team.

Study Limitations and Threats to Validity

Several limitations existed with the research study and current sample. First, it is important to recognize that the study was correlational and represented a snapshot of the teaching teams' effectiveness on classroom quality and child outcomes. Second, the small sample studied is atypical of most Head Start programs for several reasons. The setting for the study is recognized as a high quality Head Start programs, as documented by their above average CLASS scores. The sample classrooms have access to many resources and had at least one Bachelor degreed teacher in most classrooms. Instructional coaches also provided support for teachers and teachers received at least 45 hours of professional development training each year. Another limitation is that teaching teams' perception data was collected using teacher self-report. These factors limited the generalizability of the findings.

Despite these limitations, the study contributed to the field by providing information on what teaching teams' reported as factors supporting their success. It also provides information on potential challenges that teaching teams may have when working

together. This information can be useful to admininstrators who plan professional development on how to overcome some of those challenges. This study also provided some insight on how teachers' perceptions of their team can influence other aspects of their work, including how teachers rate children's behavior.

A future direction for the field is to create measurement tools to examine teachers' perceptions of teamwork and work relationships with co-teachers specific to the early childhood setting. More research should further explore teaching teams' perceptions to see if the present study's findings can be replicated. Further research could also use these findings when providing interventions aimed at developing teamwork in the classroom, increasing teachers job satisfaction, and reducing turnover.

Conclusion

Head Start and many early childhood classroms are staffed with two adults with shared responsibility that must provide care and instruction to children. However, working in the context of a team can be rewarding and simultanously challenging if teaching teams do not openly communicate, work together, and develop an interpersonal relationship. These challenges can lead to teaching teams' misperceptions of their actual levels of teamwork and not support positive child outcomes that the Head Start model was designed to produce. Lead and assistant teachers within the teaching team may perceive a higher level of teamwork that actually exist and although this may not have a direct influence on classroom quality it can influence job satisfaction and teacher turnover (Wells, 2015). Early childhood staff are leaving the field at high rate and thus this turnover can have an impact on child outcomes and classroom quality.

Research shows that teacher/child interactions matter. However, what is been missing is the teacher-teacher interactions. It is insufficiently emphasized; there is no focus on these dyadic interactions as a primary component of a quality classroom and further research is needed in this area. The expectation is that teachers will get along as a natural consequence of working together. But that may not happen and in the field, there are no tools for promoting that sort of collaboration, which is essential to high quality early childhood environments. Therefore, next step in the discussion is to a possible next iteration of the teaching team tools and assessment measures that capture teaching teams' level of teamwork, environment, and quality by the team members themselves and outside evaluators.

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Table 1 Teacher Characteristics

		Lead Teacher (N=44)	Assistant Teacher (N=42)
Age Group	EHS	12	12
	HS	32	30
Ethnicity	White	31(70%)	14 (33%)
	Black	4 (8%)	13 (31%)
	Hispanic	2 (5%)	10 (24%)
	Other	7 (16%)	4 (9%)
Level of Education	Diploma	1 (3%)	4 (10%)
	CDA	1 (3%)	21 (50%)
	Associates	5 (11%)	9 (21%)
	Bachelors	32 (73%)	8 (19%)
	Masters or higher	5 (11%)	0
Gender	Female	44(100%)	39 (93%)
	Male	0	3 (7%)

Table 2 Characteristics of teaching teams

		N	%
Age Group of Children	Toddler	13	30.2
	Preschool	30	69.8
Matched Ethnicity	Yes	14	32.6
	No	28	65.1
	Missing	1	2.3
Lead Teacher with ECE Degree	Yes	7	16.3
	No	24	55.8
	Missing	12	27.9
Tenure	Less than 1 yr.	31	27.9
	1 yr. of more	12	72.1

Table 3 Child characteristics

	Child Characteristics (n=174, %)	
Ethnicity	White	18.4
	Black	24.7
	Hispanic	34.5
	Other	22.4
Primary Language	English	60.9
	Spanish	37.4
	Other	1.7
Gender	Girls	48.3
	Boys	51.7
Mental Health Referral	No	89.1
	Yes	10.9
IEP or Disability Referral	No	85.1
	Yes	10.3
	In Progress	4.6

Table 4 Measures Used

Measures	Concept(s) Measured	Frequency of Administration	N	Min	Max	Mean	SD
Teacher Survey	Teacher Characteristics Variables Field of degree Ethnicity **Perceptions of Teamwork**	Once in spring	43	2.27	4.97	4.38	.53
CLASS	Classroom Quality	Once in winter					
Pencil Tap	Executive Function	Twice per year (fall/spring)	109	1	16	9.41	4.82
Head Toes Knees Shoulders	Executive Function	Twice per year (fall/spring)	154	0	41	6.99	11.06
DECA TPF	Social-emotional	Twice per year (fall/spring)	154	8	72	53.55	10.66
DECA BC			154	9	72	49.57	10.67

Table 5 Frequently reported successes and challenges

Successes	**%**	**Challenges**	
Communication	50.6	None	44.4
Interpersonal Relationship	31.2	Communication	10.8
Co-teaching	22.1	Different Philosophy	10.8
Teamwork	19.5	Teamwork	10.8
Address Children's Needs	15.6	Addressing Children's Needs	9.6
Same Philosophy	13.0	Planning	9.5
Complimentary Teaching Styles	11.7	Staffing	8.1
Personal Character	10.4	Different Teaching Styles	8.1
Planning	9.1	Personal Character	5.4
Professional Character	7.8	Professional Character	4.1
Classroom Organization	5.2		
Behavior Management	3.9		
Tenure	3.9		
Mentoring	1.3		
Bonding with Child	1.3		

Note: Represents the teaching staff (lead and assistants combined) most frequently reported responses to open-ended questions from Teaching Team Practices and Perceptions. Teaching staff could provide more than one response.

Table 6 Inconsistency Ratings of Teaching Team Practices and Perception Items

	% rated inconsistent
My co-teacher and I rarely incorporate each other's cultural perspectives or beliefs into our teaching team.	55.8
My co-teacher and I rarely agree as a team on our teaching responsibilities. eg. *Who will facilitate circle time*	46.5
My co-teacher and I discuss child assessments as a team at least once a week *eg who will observe which child, what objectives will be observed, where to place to child in the GOLD system, etc*	30.2
My co-teacher and I vary workload so that both of us perform meaningful activities. *Eg. We each take turns facilitating circle time and performing cleaning task*	27.8
I address any conflicts with my co-teacher immediately	25.6
I feel that my co-teacher and I share responsibilities for all activities in our teaching team	20.9
At least once a week, my co-teacher and I discuss the teaching responsibilities. *E.g decide who will facilitate circle time or small group*	20.9
At least once a week, my co-teacher and I discuss how to handle the classroom management techniques as a team. *Eg. how to ensure the classroom rooms smoothly, prevention of disruptive behavior*	20.9
My co teacher and I incorporate each other's teaching styles into our teaching team	18.6
My co-teacher and I incorporate each other's strengths into our teaching team	14.0
I find it easy to communicate with my co teacher	14.0
My co-teacher and I discuss our curricula at least once a week eg *what theme or project to use, which objectives to cover, etc*	11.6
As a team, my co-teacher and I have sufficient time to communicate	11.6
My co-teacher and I agree on how to handle the classroom management	9.3
I enjoy working as a team with my co-teacher	9.3

Table 7 Crosstab of teaching teams' successes, challenges, and tenure

			Tenure: One year or more			
			No	Yes	X^2	p value
Challenges	Communication	No	4	3	.152	.54
		Yes	6	3		
	Teamwork	No	6	2	.024	.66
		Yes	5	2		
Successes	Communication	No	2	1	.290	.52
		Yes	24	6		
	Interpersonal Relationship	No	1	0	.558	.65
		Yes	14	8		
	Co-teaching	No	6	2	.277	.49
		Yes	7	4		

Table 8 Crosstab of teaching teams' successes, challenges, and ethnicity

			Ethnicity Match			
			No	Yes	X^2	p value
Challenges	Communication	No	4	2	.714	.37
		Yes	4	5		
	Teamwork	No	4	3	.311	.50
		Yes	5	2		
Successes	Communication	No	3	0	1.88	.24
		Yes	18	12		
	Interpersonal Relationship	No	1	0	.308	.77
		Yes	16	5		
	Co-teaching	No	5	3	.281	.48
		Yes	5	5		

Table 9 Perceived teamwork associated with teaching teams' ethnicity match

	Ethnicity Match	N	Mean	SD	Std. Error Mean	t	df	p
Teams' Perception	No	28	4.41	.43	.08	.454	40	.652
	Yes	14	4.33	.71	.19			
Lead Perceptions	No	28	4.40	.71	.13	.469	40	.302
	Yes	14	4.15	.80	.21			
Assistant Perceptions	No	28	4.41	.55	.10	-.457	40	.650
	Yes	14	4.50	.73	.19			

Table 1 Descriptive Statistics for CLASS Scores

	N	Mean	SD	Range	Min	Max	Variance	Skewness	Std. Error	Kurtosis	Std. Error
Positive Climate	43	6.26	.61	2.75	4.25	7.00	.376	-1.170	.361	1.810	.709
Negative Climate	43	6.78	.38	1.75	5.25	7.00	.148	-2.351	.361	6.013	.709
Teacher Sensitivity	43	5.98	.66	3.00	4.00	7.00	.445	-.703	.361	.712	.709
Regard Child Perspective	43	5.43	.83	3.75	3.25	7.00	.694	-.586	.361	.587	.709
Behavior Guidance	43	5.93	.73	2.50	4.50	7.00	.534	-.371	.361	-.842	.709
Productivity	30	6.08	.65	2.75	4.25	7.00	.428	-1.083	.427	1.611	.833
Quality of Feedback	43	3.67	1.15	4.00	1.75	5.75	1.341	.154	.361	-1.123	.709
Language Model	43	4.23	1.02	3.50	2.25	5.75	1.056	-.176	.361	-.990	.709
Facilitated Learn Develop	43	4.53	.78	3.00	3.00	6.00	.618	-.002	.361	-.876	.709

Table 10 Descriptive Statistics for CLASS Scores

Table 11 Correlation table of classroom quality and teaching teams' perceptions

		Classroom Quality								Teaching Team Perceptions		
		PC	NC	TS	RCP	BG	Pro	QF	LM	FLD	LT Per	AT Per	Team Per
Positive Climate	Pearson Correlation	1	.471**	.798**	.430**	.647**	.620**	.465**	.503**	.499**	-.251	-.174	-.273
PC	Sig. (2-tailed)		.001	.000	.004	.000	.000	.002	.001	.001	.105	.265	.077
	N	43	43	43	43	43	30	43	43	43	43	43	43
Negative Climate	Pearson Correlation	.471**	1	.450**	.078	.454**	.381*	-.041	-.044	-.065	-.085	.049	-.031
NC	Sig. (2-tailed)	.001		.002	.621	.002	.038	.795	.778	.677	.586	.754	.843
	N	43	43	43	43	43	30	43	43	43	43	43	43
Teacher	Pearson Correlation	.798**	.450**	1	.472**	.669**	.657**	.492**	.471**	.539**	-.031	-.073	-.063
Sensitivity	Sig. (2-tailed)	.000	.002		.001	.000	.000	.001	.001	.000	.842	.644	.689
TS	N	43	43	43	43	43	30	43	43	43	43	43	43
Reg. Child Pers.	Pearson Correlation	.430**	.078	.472**	1	.156	.288	.361*	.432**	.527**	-.049	-.119	-.101
RCP	Sig. (2-tailed)	.004	.621	.001		.319	.123	.017	.004	.000	.756	.447	.517
	N	43	43	43	43	43	30	43	43	43	43	43	43
Behavior	Pearson Correlation	.647**	.454**	.669**	.156	1	.742**	.272	.336*	.349*	-.038	.147	.057
Guidance	Sig. (2-tailed)	.000	.002	.000	.319		.000	.078	.028	.022	.809	.347	.716
BG	N	43	43	43	43	43	30	43	43	43	43	43	43
Productivity	Pearson Correlation	.620**	.381*	.657**	.288	.742**	1	.199	.325	.424*	-.156	-.038	-.126
Pro	Sig. (2-tailed)	.000	.038	.000	.123	.000		.291	.080	.020	.411	.841	.507
	N	30	30	30	30	30	30	30	30	30	30	30	30
Quality Feedback	Pearson Correlation	.465**	-.041	.492**	.361*	.272	.199	1	.804**	.773**	-.086	-.101	-.117
QF	Sig. (2-tailed)	.002	.795	.001	.017	.078	.291		.000	.000	.584	.521	.456
	N	43	43	43	43	43	30	43	43	43	43	43	43
Language Model	Pearson Correlation	.503**	-.044	.471**	.432**	.336*	.325	.804**	1	.851**	-.016	-.173	-.109
LM	Sig. (2-tailed)	.001	.778	.001	.004	.028	.080	.000		.000	.921	.268	.487
	N	43	43	43	43	43	30	43	43	43	43	43	43
Facilitated Learn	Pearson Correlation	.499**	-.065	.539**	.527**	.349*	.424*	.773**	.851**	1	-.024	-.249	-.158
Develop	Sig. (2-tailed)	.001	.677	.000	.000	.022	.020	.000	.000		.881	.107	.312
FLD	N	43	43	43	43	43	30	43	43	43	43	43	43

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed)

Note: LT Per is Lead teachers' perceptions, AT is Assistant teachers' perceptions and Team Per is the Teaching teams' perceptions

Table 12 Teaching teams' perceptions predicting classroom quality

Teaching team's perceptions of teamwork predicting to **Positive Climate** (n=43)

	Outcome Variables	***B***	***SE B***	***β***	***P-value***
Model 1	Intercept	7.22	0.37	18.33	0.00
	LT Race	-0.28	0.11	-2.55	0.01*
	Age Group	-0.32	0.14	-2.17	0.02*
	LT Perceptions	-0.22	0.10	-2.24	0.02*
Model 2	Intercept	7.22	0.37	19.37	0.00
	LT Race	-0.26	0.11	-2.23	0.02
	Age Group	-0.26	0.08	-2.98	0.00
	AT Perceptions	-0.09	0.08	-1.08	0.27
Model 3	Intercept	7.23	0.17	41.47	0.00
	LT Race	-0.29	0.09	-2.91	0.00*
	Age Group	-0.23	0.12	-1.83	0.06
	Team's Consistency	-0.55	0.25	-2.17	0.02*
P<0.05					

Teaching team's perceptions of teamwork predicting to **Negative Climate** (n=43)

	Outcome Variables	***B***	***SE B***	***β***	
Model 1	Intercept	7.18	0.28	24.94	0.00
	LT Race	-0.16	0.16	-1.04	0.29
	Age Group	0.03	0.11	0.31	0.75
	LT Perceptions	-0.04	0.03	-1.40	0.15
Model 2	Intercept	6.83	0.38	17.85	0.00
	LT Race	-0.16	0.15	-1.04	0.29
	Age Group	0.02	0.09	0.28	0.77
	AT Perceptions	0.03	0.08	0.40	0.68
Model 3	Intercept	7.01	0.30	22.77	0.00
	LT Race	-0.16	0.15	-1.05	0.29
	Age Group	0.04	0.08	0.53	0.59
	Team's Consistency	-0.05	0.19	-0.28	0.77
P<0.05					

Teaching team's perceptions of teamwork predicting to **Teacher Sensitivity** (n=43)

	Outcome Variables	***B***	***SE B***	***β***	***P-value***
Model 1	Intercept	7.17	0.68	10.51	0.00
	LT Race	-0.45	0.14	-3.19	0.00
	Age Group	-0.50	0.13	-3.78	0.00
	LT Perceptions	-0.05	0.12	-0.45	0.65
Model 2	Intercept	6.59	0.32	20.59	0.00
	LT Race	-0.45	0.13	-3.31	0.00
	Age Group	-0.53	0.13	-3.96	0.00
	AT Perceptions	0.07	0.08	0.97	0.33
Model 3	Intercept	7.03	0.36	19.43	0.00
	LT Race	-0.45	0.14	-3.20	0.00
	Age Group	-0.48	0.10	-4.45	0.00
	Team's Consistency	-0.15	0.31	-0.49	0.61
P<0.05					

Teaching team's perceptions of teamwork predicting to **Behavior Guidance** (n=43)

	Outcome Variables	***B***	***SE B***	***β***	***P-value***
Model 1	Intercept	6.43	0.52	12.15	0.00
	LT Race	-0.29	0.16	-1.77	0.07
	Age Group	0.09	0.23	0.39	0.69
	LT Perceptions	-0.04	0.13	-0.31	0.75
Model 2	Intercept	5.48	0.24	22.10	0.00
	LT Race	-0.30	0.15	-1.93	0.05
	Age Group	0.01	0.24	0.06	0.95
	AT Perceptions	0.18	0.10	1.79	0.07
Model 3	Intercept	6.26	0.33	18.92	0.00
	LT Race	-0.29	0.16	-1.83	0.06
	Age Group	0.09	0.24	0.41	0.68
	Team's Consistency	-0.02	0.48	-0.05	0.95
P<0.05					

Teaching team's perceptions of teamwork predicting to **Regard for Child Perspective** (n=43)

	Outcome Variables	***B***	***SE B***	***β***	***P-value***
Model 1	Intercept	6.51	0.84	7.81	0.00
	LT Race	-0.31	0.28	-1.11	0.26
	Age Group	-0.54	0.27	-1.94	0.05
	LT Perceptions	-0.08	0.11	-0.69	0.48
Model 2	Intercept	7.22	0.91	8.02	0.00
	LT Race	-0.48	0.25	-1.89	0.05
	Age Group	-0.00	0.00	-1.11	0.26
	AT Perceptions	-0.18	0.16	-1.07	0.28
Model 3	Intercept	6.46	0.66	9.66	0.00
	LT Race	-0.32	0.27	-1.17	0.24
	Age Group	-0.48	0.26	-1.88	0.06
	Team's Consistency	-0.34	0.43	-0.80	0.42
P<0.05					

Teaching team's perceptions of teamwork predicting to **Facilitated Learning and Dev.** (n=43)

	Outcome Variables	***B***	***SE B***	***β***	***P-value***
Model 1	Intercept	5.50	0.80	6.28	0.00
	LT Race	-0.03	0.09	-0.38	0.70
	Age Group	-0.94	0.22	-4.23	0.00
	LT Perceptions	-0.06	0.16	-0.36	0.71
Model 2	Intercept	5.60	0.60	9.35	0.00
	LT Race	-0.02	0.08	-0.31	0.75
	Age Group	-0.90	0.20	-4.51	0.00
	AT Perceptions	-0.09	0.12	-0.75	0.44
Model 3	Intercept	5.54	0.40	13.71	0.00
	LT Race	-0.04	0.09	-0.48	0.63
	Age Group	-0.88	0.22	-4.00	0.00
	Team's Consistency	-0.43	0.33	-1.27	0.20
P<0.05					

Teaching team's perceptions of teamwork predicting to **Quality of Feedback**. (n=43)

	Outcome Variables	***B***	***SE B***	***β***	***P-value***
Model 1	Intercept	5.29	1.00	5.28	0.00
	LT Race	-0.13	0.23	-0.56	0.57
	Age Group	-0.93	0.42	-2.36	0.01
	LT Perceptions	-0.17	0.21	-0.80	0.42
Model 2	Intercept	4.23	1.53	2.75	0.00
	LT Race	-1.12	0.20	-0.60	0.54
	Age Group	-1.00	0.40	-2.48	0.01
	AT Perceptions	0.06	0.35	0.19	0.84
Model 3	Intercept	4.70	0.43	10.95	0.00
	LT Race	-0.13	0.22	-0.58	0.56
	Age Group	-0.94	0.44	-2.13	0.03
	Team's Consistency	-0.26	0.46	-0.56	0.57
P<0.05					

Teaching team's perceptions of teamwork predicting to **Language Modeling**. (n=43)

	Outcome Variables	***B***	***SE B***	***β***	***P-value***
Model 1	Intercept	5.34	1.07	4.96	0.00
	LT Race	-0.26	0.10	-2.51	0.01
	Age Group	-0.73	0.33	-2.21	0.02
	LT Perceptions	-0.05	0.21	-0.25	0.79
Model 2	Intercept	5.53	0.98	5.60	0.00
	LT Race	-0.26	0.11	-2.36	0.01
	Age Group	-0.68	0.28	-0.28	0.01
	AT Perceptions	-0.10	0.23	-0.45	0.64
Model 3	Intercept	5.40	0.52	10.39	0.00
	LT Race	-0.28	0.09	-2.87	0.00
	Age Group	-0.67	0.30	-2.20	0.02
	Team's Consistency	-0.42	0.43	-0.99	0.32
P<0.05					

Table 13 Child outcome descriptive statistics

	N	Min	Max	Mean	SD	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Pencil Tap	109	1	16	9.41	4.82	-.096	.231	-1.382	.459
HTKS	154	0	41	6.99	11.06	1.600	.195	1.274	.389
DECA TPF	154	28	72	53.55	10.66	-.243	.195	-.888	.389
DECA BC	154	29	72	49.57	10.67	-.130	.195	-.722	.389
Valid N	106								

Table 14 HLM results of teaching teams' perceptions predicting to child outcomes and classroom quality

Lead teachers' perceptions of teamwork predicting to **Behavior Concerns**

	Outcome Variables	***Model 1***	***Full Model***	***Mediation***
Level Two (classroom)				
	Intercept	45.73	45.66	
	Ethnicity Match	-0.07(.98)	0.10(.97)	
	ECE Degree	3.73 (.25)	4.53(.16)	
	Team Tenure	1.34(.67)	2.50(.44)	
	LT Race	3.50(.21)	2.79(.30)	
	LT Perception	-2.58(.19)	-2.29(.23)	
	Positive Climate		3.22(.14)	
Level One (student)				
	DLL	-6.27(.05*)	-7.10(.02)	
	Female	-0.74(.69)	-0.96(.60)	
	White	0.14(.96)	0.12(.96)	
	Hispanic	4.07(.23)	4.43(.19)	
	Black	0.67(.80)	0.88(.74)	
	Mental Health Ref	7.12(.02*)	7.63(.01*)	
	IEP	3.79(.20)	3.70(.21)	

Note: Due to lack of significance in the full model, mediation analysis was not conducted
P<0.05

Assistant teachers' perceptions of teamwork predicting to **Behavior Concerns**

	Outcome Variables	***Model 2***	***Full Model***	***Mediation***
Level Two				
	Intercept	46.00	45.79	
	Ethnicity Match	0.74(.79)	0.78(.78)	
	ECE Degree	3.12(.34)	4.04(.23)	
	Team Tenure	0.26(.93)	1.49(.64)	
	LT Race	3.19(.26)	2.69(.34)	
	AT Perception	-1.99(.25)	-1.35(.44)	
	Positive Climate		3.00(.19)	
Level One				
	DLL	-5.40(.09)	-6.32(.05*)	
	Female	0.23(.89)	-.51(.78)	
	White	-0.35(.90)	-0.29(.92)	
	Hispanic	2.93(.39)	3.46(.31)	
	Black	0.68(.80)	.92(.73)	
	Mental Health Ref	6.42(0.03*)	6.94(.02*)	
	IEP	3.76(0.21)	3.72(.21)	

Note: Due to lack of significance in the full model, mediation analysis was not conducted
P<0.05

Teaching teams' consistency rating of teamwork predicting to **Behavior Concerns**

	Outcome Variables	***Model 3***	***Full Model***	***Mediation***
Level Two				
	Intercept	45.40	45.38	
	Ethnicity Match	1.40(.62)	1.34(.63)	
	ECE Degree	4.18(.19)	4.81(.14)	
	Team Tenure	1.05(.73)	2.03(.52)	
	LT Race	2.96(.28)	2.45(.37)	
	Teams Consistency	-9.57(.09)	-7.92(.16)	
	Positive Climate		2.79(.21)	
Level One				
	DLL	-5.64(.07)	-6.41(.04)	
	Female	-0.72(.69)	-0.89(.63)	
	White	0.26(.93)	0.20(.94)	
	Hispanic	3.38(.31)	3.74(.27)	
	Black	0.84(.75)	1.03(.70)	
	Mental Health Ref	7.08(.02)	7.45(.01)	
	IEP	3.88(0.19)	3.82(.20)	

Note: Due to lack of significance in the full model, mediation analysis was not conducted
P<0.05

Lead teachers' perceptions of teamwork predicting to Total Protective Factors

	Outcome Variables	***Model 4***	***Full Model***	***Mediation***
Level Two				
	Intercept	53.76	53.82	
	Ethnicity Match	-0.67(.82)	-0.81(.78)	
	ECE Degree	-0.79(.81)	-1.48(.66)	
	Team Tenure	0.17(.89)	-0.82(.81)	
	LT Race	-0.37(.89)	.25(.93)	
	LT Perception	4.64(.03*)	4.40(.03*)	
	Positive Climate		-2.80(.23)	
Level One				
	DLL	4.55(.16)	5.26(.11)	
	Female	1.20(.53)	1.39(.47)	
	White	-0.09(.97)	-0.13(.96)	
	Hispanic	-1.09(.75)	-1.43(.68)	
	Black	1.17(.67)	.99(.72)	
	Mental Health Ref	-6.29(.04*)	-6.76(.03*)	
	IEP	-4.73(.12)	-4.71(.12)	

Note: Due to lack of significance in the full model, mediation analysis was not conducted
P<0.05

Assistant teachers' perceptions of teamwork predicting to Total Protective Factors

	Outcome Variables	***Model 5***	***Full Model***	***Mediation***
Level Two				
	Intercept	53.18	53.33	
	Ethnicity Match	-2.14(.48)	-2.16(.48)	
	ECE Degree	0.38(.91)	-0.28(.93)	
	Team Tenure	2.14(.52)	1.25(.72)	
	LT Race	0.24(.93)	0.62(.83)	
	AT Perception	3.86(.04*)	3.41(.08)	
	Positive Climate		-2.13(.38)	
Level One				
	DLL	2.99(.36)	3.60(.28)	
	Female	0.29(.87)	0.49(.79)	
	White	0.78(.80)	0.74(.81)	
	Hispanic	0.94(.79)	0.55(.87)	
	Black	1.17(.67)	1.00(.72)	
	Mental Health Ref	-5.11(.10)	-5.37(.09)	
	IEP	-4.65(.13)	-4.68(.13)	

Note: Due to lack of significance in the full model, mediation analysis was not conducted
P<0.05

Teaching teams' consistency rating of teamwork predicting to Total Protective Factors

	Outcome Variables	***Model 6***	***Full Model***	***Mediation***
Level Two				
	Intercept	54.30	54.32	
	Ethnicity Match	-3.00(.33)	-2.96(.33)	
	ECE Degree	-1.40(.68)	-1.90(.58)	
	Team Tenure	0.86(.79)	0.07(0.98)	
	LT Race	0.29(.92)	-2.20(.36)	
	Teams Consistency	14.05(.02*)	12.79(.04*)	
	Positive Climate		-2.20(.36)	
Level One				
	DLL	3.56.270	4.12(.21)	
	Female	1.06(.57)	1.19(.53)	
	White	-0.16(.95)	-0.12(.96)	
	Hispanic	0.03(.99)	-0.25(.94)	
	Black	0.86(.76)	0.72(.79)	
	Mental Health Ref	-5.97(.05*)	-6.21(.05)	
	IEP	-4.95(.11)	-4.94(.11)	

Note: Due to lack of significance in the full model, mediation analysis was not conducted
P<0.05

Lead teachers' perceptions of teamwork predicting to Pencil Tap

	Outcome Variables	*Model 7*	*Full Model*	*Mediation*
Level Two				
	Intercept	7.65(.03)	7.66(.00)	
	Ethnicity Match	1.96(.29)	1.97(.30)	
	ECE Degree	1.11(.60)	1.10(.62)	
	Team Tenure	0.73(.73)	0.68(.77)	
	LT Race	0.09(.95)	0.12(.94)	
	LT Perception	-0.61(.61)	-0.63(.61)	
	Positive Climate		-0.13(.92)	
Level One				
	DLL	-2.76(.13)	-2.76(.14)	
	Female	0.07(.94)	0.05(.95)	
	White	1.22(.45)	1.21(.46)	
	Hispanic	4.36(.03*)	4.36(.03*)	
	Black	-1.13(.44)	-1.13(.44)	
	Mental Health Ref	-3.76(.04*)	-3.79(0.03*)	
	IEP	0.54(.78)	0.53(.78)	

Note: Due to lack of significance in the full model, mediation analysis was not conducted
P<0.05

Assistant teachers' perceptions of teamwork predicting to Pencil Tap

	Outcome Variables	*Model 8*	*Full Model*	*Mediation*
Level Two				
	Intercept	7.34	7.32	
	Ethnicity Match	2.07(.25)	2.08(.26)	
	ECE Degree	1.58(.47)	1.64(.46)	
	Team Tenure	0.34.86)	0.44(.84)	
	LT Race	0.44(.80)	0.41(.81)	
	AT Perception	1.57(.26)	1.60(.27)	
	Positive Climate		0.28(.88)	
Level One				
	DLL	-2.94(.11)	-2.99(.11)	
	Female	0.08(.93)	0.06(.95)	
	White	1.18(.46)	1.18(.46)	
	Hispanic	4.34(.03*)	4.37(.03)	
	Black	-1.02(.49)	-1.02(.49)	
	Mental Health Ref	-3.81(.03*)	-3.82(.03*)	
	IEP	0.65(.74)	0.65(.74)	

Note: Due to lack of significance in the full model, mediation analysis was not conducted
P<0.05

Teaching teams' consistency rating of teamwork predicting to Pencil Tap				
	Outcome Variables	***Model 9***	***Full***	***Mediation***
Level Two				
	Intercept	7.49	7.49	
	Ethnicity Match	2.28(.22)	2.29(.23)	
	ECE Degree	1.19(.58)	1.17(.60)	
	Team Tenure	0.96(.66)	0.91(.70)	
	LT Race	0.04(.98)	0.07(.96)	
	Teams Consistency	-3.15(.48)	-3.21(.48)	
			-0.13(.92)	
Level One				
	DLL	-2.74(.14)	-2.73(.14)	
	Female	0.03(.97)	0.01(.98)	
	White	1.34(.41)	1.33(.42)	
	Hispanic	4.39(.03*)	4.39(.03)	
	Black	-1.09(.46)	-1.09(.46)	
	Mental Health Ref	-3.74(.04*)	-3.78(.03)	
	IEP	0.64(.74)	0.63(.74)	
Note: Due to lack of significance in the full model, mediation analysis was not conducted P<0.05				

Lead teachers' perceptions of teamwork predicting to HTKS				
	Outcome Variables	***Model 10***	***Full Model***	***Mediation***
Level Two				
	Intercept	2.99(.49)	3.03(.49)	
	Ethnicity Match	4.58(.15)	4.57(.16)	
	ECE Degree	2.28(.51)	2.55(.48)	
	Team Tenure	-0.27(.93)	0.16(.96)	
	LT Race	-1.16(.69)	-1.44(.63)	
	LT Perception	1.14(.58)	1.18(.58)	
	Positive Climate		1.15(.64)	
Level One				
	DLL	1.46(.70)	1.01(.79)	
	Female	-0.47(.83)	-0.62(.78)	
	White	1.41(.70)	1.42(.70)	
	Hispanic	4.03(.33)	4.26(.31)	
	Black	1.48(.65)	1.60(.63)	
	Mental Health Ref	3.87(.28)	4.11(.26)	
	IEP	-5.96(.12)	-5.90(.13)	
Note: Due to lack of significance in the full model, mediation analysis was not conducted P<0.05				

Assistant teachers' perceptions of teamwork predicting to HTKS				
	Outcome Variables	***Model 11***	***Full Model***	***Mediation***
Level Two				
	Intercept	2.50(.56)	2.41(.57)	
	Ethnicity Match	4.09(.18)	4.06(.19)	
	ECE Degree	2.73(.42)	3.39(.34)	
	Team Tenure	0.37(.91)	1.27(.71)	
	LT Race	-0.41(.88)	-0.78(.79)	
	AT Perception	2.30(.19)	2.81(.14)	
	Positive Climate		2.15(.39)	
Level One				
	DLL	0.50(.89)	-0.24(.95)	
	Female	-0.84(.70)	-1.13(.61)	
	White	1.95(.59)	2.05(.57)	
	Hispanic	5.15(.21)	5.57(.18)	
	Black	1.55(.64)	1.75(.59)	
	Mental Health Ref	4.35(.22)	4.50(.18)	
	IEP	-5.71(.14)	-5.45(.16)	
Note: Due to lack of significance in the full model, mediation analysis was not conducted P<0.05				

Teaching teams' consistency rating of teamwork predicting to HTKS				
	Outcome Variables	***Model 12***	***Full Model***	***Mediation***
Level Two				
	Intercept	3.12(.46)	3.18	
	Ethnicity Match	3.74(.22)	3.66(.24)	
	ECE Degree	1.93(.56)	2.30(.51)	
	Team Tenure	-0.19(.95)	0.39(.90)	
	LT Race	-0.62(.24)	-0.96(.74)	
	Teams Consistency	6.80(.24)	7.65(.21)	
	Positive Climate		1.65(.50)	
Level One				
	DLL	1.13(.76)	0.57(.88)	
	Female	-0.33(.88)	-0.51(.82)	
	White	1.14(.76)	1.11(.76)	
	Hispanic	4.33(.29)	4.57(.26)	
	Black	0.28(.70)	1.43(.66)	
	Mental Health Ref	3.75(.29)	4.05(.26)	
	IEP	-6.17(.11)	-6.06(.12)	
Note: Due to lack of significance in the full model, mediation analysis was not conducted P<0.05				

Appendix A

Teacher Survey-Teaching Team Practices and Perception

Teaching Team Practices and Perceptions

The purpose of this scale is to examine the perceptions of Head Start teaching teams and to measure the use of cooperative teaching team best practices. The scale is a modification of questions from Salend, Gordon & Lopez-Vona's (2002) article, *Evaluating Cooperative Teaching Teams*. The questions were piloted at a 3-Star NAEYC Accredited child development center.

For the purpose of this study, a teaching team consists of the lead and assistant teacher working together in one classroom

On a scale of 1-5 please rate the following statements		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1	I enjoy working as a team with my co-teacher	1	2	3	4	5
2	I feel that my co-teacher and I share responsibilities for all activities in our teaching team	1	2	3	4	5
3	I find it easy to communicate with my co teacher	1	2	3	4	5
4	My co teacher and I incorporate each other's teaching styles into our teaching team	1	2	3	4	5
5	At least once a week, my co-teacher and I discuss the teaching responsibilities. *E.g. decide who will facilitate circle time or small group*	1	2	3	4	5
6	At least once a week, my co-teacher and I discuss how to handle the classroom management techniques as a team. *E.g. how to ensure the classroom rooms smoothly, prevention of disruptive behavior*	1	2	3	4	5
7	My co-teacher and I vary workload so that both of us perform meaningful activities. *E.g. We each take turns facilitating circle time and performing cleaning task*	1	2	3	4	5
8	As a team, my co-teacher and I have sufficient time to communicate	1	2	3	4	5
9	I address any conflicts with my co-teacher immediately	1	2	3	4	5
10	My co-teacher and I incorporate each other's strengths into our teaching team	1	2	3	4	5
11	My co-teacher and I rarely incorporate each other's cultural perspectives or beliefs into our teaching team.	1	2	3	4	5
12	My co-teacher and I discuss our curricula at least once a week e.g. *what theme or project to use, which objectives to cover, etc.*	1	2	3	4	5
13	My co-teacher and I discuss child assessments as a team at least once a week *e.g. who will observe which child, what objectives will be observed, where to place to child in the GOLD system, etc.*	1	2	3	4	5
14	My co-teacher and I rarely agree as a team on our teaching responsibilities. E.g. *Who will facilitate circle time*	1	2	3	4	5
15	My co-teacher and I agree on how to handle the classroom management	1	2	3	4	5
What factors contribute to the success of your classroom teaching team?						
What challenges have you encountered with your co-teacher as a classroom team?						

MANUSCRIPT III

Under Construction: Building Strong Early Childhood Teaching Teams

This manuscript is prepared for submission to the peer-reviewed journal *Young Children* and is the third of three manuscripts prepared for a journal-ready doctoral dissertation.

Scenario One*: Mrs. Mack begins circle time by playing "Come to the Circle." Most of the children start moving toward the carpet. Ms. Jordyn notices that two children are still in the dramatic play area so she gently ushers them over to the carpet. Mrs. Mack is now at the carpet with all the children and begins the welcome song. While she facilitates the circle time, Ms. Jordyn takes attendance, finishes the meal count sheets, and sets materials out for small groups. After she quickly finishes these tasks, she joins the children and Mrs. Mack at the carpet. Once the children move to small groups, each teacher works with their respective small groups. Throughout the day, both teachers can be observed working in tandem, cleaning, preparing materials and facilitating instructional activities.*

Scenario Two: *Ms. Tasha wipes the tables off after breakfast while Ms. Kim tries to get some of the girls to leave dramatic play to join the rest of the class at the carpet. The children on the carpet are getting restless waiting for the activities to start. Some of the children are rolling around, while two children argue over a carpet square. Ms. Kim seems irritated as she glares over in the direction of Ms. Tasha, who appears oblivious to the commotion. Ms. Kim doesn't say anything to Ms. Tasha, grabs the girls by the hand, and walks toward the children on the carpet. After a few minutes, Ms. Kim starts Smartboard music activities for the children then walks away to gather materials for the next activity because Ms. Tasha has left the classroom for a short break. Later that day Ms. Kim is observed writing lesson plans while Ms. Tasha is talking to another teacher across the hall.*

The scenarios above summarize typical interactions of two types of teams. There are teams that function well while others struggle. As many readers can attest, working well as a team does not come easy (LaFasto & Larson, 2001). Working in a teaching team in an early childhood setting is often a challenging task, because early childhood teachers are responsible for providing care for children, maintaining children's safety, and observing and documenting children's progress (Bullough, Hall-Kenyon, MacKay, & Marshall, 2014; Curby et al., 2012). Teachers must accomplish these multiple tasks while working with another adult and balancing their interactions with one or more coworkers.

Early childhood enrollment and ratios generally require that there are two teachers in a classroom. Although federal and state policies require more than one adult in the classroom, there is sparse research or information available to administrators about how to build strong teaching teams, specific to early childhood contexts. The purpose of this

manuscript is (1) to provide administrators with an understanding of the challenges that exist for teaching teams, (2) discuss characteristics of effective teams, and (3) provide strategies for building strong effective teaching teams in early childhood settings.

Background

Based on personal experiences in early childhood classrooms and the lack of existing research, the author designed and conducted a study to examine Head Start teaching teams in a Midwestern state. The information and insights shared here are based on a portion of her dissertation study. Specifically, this article summarizes the factors identified as successes or challenges in teaching teams as identified by a sample of classroom teaching teams working in a larger Head Start program. The author also created a set of reflective meeting guides and forms for supporting teaching teams, which are shared in the manuscript.

Teaching Team Challenges

In addition to the demands involved in caring for and educating young children, early childhood teachers also face challenges working with the other adults who comprise their teaching team. The challenges of working within a teaching team consist of communication, sharing responsibilities, as well as dealing with the perceptions of the various team members (Ratcliff et al., 2011; Sokinsky & Gilliam, 2011; Young, 2017a).

Communication

Communication is a skill that many individuals struggle to do effectively (LaFasto & Larson, 2001). Teachers may struggle with communicating with the other teachers in the classroom (Young, 2017a). For example, one teacher said that one challenge for their teaching team was “difficulty with communication in the moment in the classroom.”

Another teacher noted, “she [my colleague] doesn't want to help me plan or work with the kids. I try and she blows me off. …[it] just upset her so I just do it myself. It's easier to do it myself so that I keep conflict down.”

Damore and Murray (2009) conducted a study examining the perception of collaborative teaching practices of urban elementary teachers. The researchers found that teachers felt communication was extremely important to collaboration and co-teaching. Similarly, Head Start teachers reported that communication was a factor in the success of the teaching team (Young, 2017a). One teacher commented,

> Communication is key and being able to have an understanding with the other person. We also communicate each morning and go over the routine and what to expect for the day…At the end of the day, we take time to discuss the day, vent, and come up with a plan [for] the next day.

In the Young (2017) study, teachers reported that communication was both a factor of success and a challenge for their teaching teams, and one of the most consistent problems was giving and receiving feedback. Teachers struggled with providing feedback to their co-workers. This struggle often leads to more misunderstandings and differences of perceptions. The differences in teaching styles are often the feedback that teachers withhold from the other teacher in the classroom (Bullough et al., 2015). This type of passiveness is characteristic of an ineffective team (La Fasto & Larson, 2001) and may lead misperceptions of team members.

Perceptions of Team

Poor communication can lead teachers to develop negative perceptions about the usefulness and contributions of the other teaching team member. Sokinsky and Gilliam

(2011) examined lead teachers' perceptions of working with assistant teachers. Their results indicated that lead teachers felt the assistants were important to classroom management and children's care, but less useful in providing instruction. However, the assistant teachers' education level had an influence on the teachers' perception of the assistant's usefulness. When assistant and lead teacher had similar education levels, the lead teacher described the assistant as more useful in teaching responsibilities. Assistant and lead teachers also differed in their perceptions of the assistant teachers' work (Ratcliff et al., 2011). Assistant teachers rated themselves higher on task completion, such as assisting with lesson plans and cleaning the classroom, than the rating provided by their lead teachers.

This difference in opinion about the contributions of assistants could influence the perceptions of teamwork. In the author's dissertation study (Young, 2017a), most of the teaching teams rated their level of teamwork as high. However, nearly one fourth of the teaching teams were inconsistent in how they rated items related to teaching team practices. Items most frequently rated inconsistent related to sharing responsibilities. For example, items such as "my co-teacher and I vary workloads so that both of us can perform meaningful activities" or "at least once a week, my co-teacher and I discuss the teaching responsibilities." The lead teachers most frequently responded that teamwork was an issue for their teaching team. Therefore, it is important to understand the teaching teams' perceptions of teamwork since teaching teams are charged with the task of working together to support children's development through high quality classrooms.

Sharing Responsibilities

The teaching team structure is generally hierarchical, in which there is a lead and an assistant teacher. In this structure, the lead teacher generally has more teaching and paperwork responsibilities, more education, and may receive more pay (Bullough, 2014). The assistant teacher is often responsible for cleaning the classroom and managing child routines. Although most programs provide job descriptions, teaching teams still struggle to balance the workload between the two staff (Young, 2017a). When asked about the challenges faced among their teaching team, teachers frequently report that lack of teamwork and lack of shared responsibilities were problems. One teacher in the study commented,

> "*My assistant wants the title of 'co-teacher' without the responsibility of it. She has literally said, 'I don't get paid to do that.' We differ on what a co-teaching model should look like. I believe it is a 50/50 model, where she believes it to be the lead doing most of the paperwork side (a lot), group leading, and lesson facilitation."*

This type of frustration was voiced by several teachers. For example, another teacher commented, "*I feel that as the lead I do most of the observations and data input.*" Although the expectation may be for both teachers to work together, there was little attention given to ensure that workloads were evenly distributed.

Teachers' sense of teamwork is important to their interactions and perceptions of teamwork but there is also an association to child outcomes (Young, 2017a). Young found that teachers' reported higher levels of teamwork was associated with more reported positive social-emotional development for children. It is possible that teaching teams with

higher perceptions of teamwork are modeling good social emotional strategies for children. It is also true that rating of children's behavior is indicative, not only of the child's behavior, but also of the rater (Hamre, Pianta, Downer, & Mashburn, 2008; Konold & Pianta, 2007). Providing clarity about work expectations, clearly defining the roles of each teaching team member, and developing a shared view of responsibilities will lead to better communication and may yield better child outcomes.

Characteristics of Effective Teams

Although working in a teaching team can be challenging, there are many benefits such as added camaraderie, professional satisfaction and growth, empowerment, and a more positive climate (Mirra, 2008; Murato, 2002). Because benefits do exist, it is important for administrators to know the information and use it to build strong effective teaching teams. The results of Young's study (2017) align closely with those reported by LaFasto and Larson (2001) in identifying four factors associated with effective teams: personal style, action orientation, openness, and supportiveness. In order for teaching teams to work successfully in the classroom, administrators should provide professional development and on-going support that that promotes growth on these four factors.

Personal Style

Personal style is defined as those individuals who display positive attitudes, confidence, and are fun to work with and contribute to the team's success (La Fasto & Larson, 2001). Teachers report that getting along and being able to enjoy working together are factors related to their success (Young, 2017b). Teachers also report that having the autonomy to select their teaching partner led to their success (Bullough, 2015a; Murato, 2002). Teachers who selected their co-teacher indicate that they based some of their

decision on the team member's personality and attitude (Murato, 2002). Some teachers noted that having a sense of humor and being compatible with the other's personality was also important to the success of their teaching team (Young, 2017b). One teacher reported, "*When I feel like I have a great relationship with my lead (teacher), the classroom is more successful in my opinion.*"

Despite teachers' preferences, directors typically pair teachers at the beginning of the year, often without the input of the teachers (Bullough, 2015; Young, 2016). This decision may be made to maintain ratios and, therefore, the interpersonal relationship between teaching teams is often overlooked. Yet, relationship issues are often tied to absenteeism and decreased organizational commitment (LaFasto & Larson, 2001). Consistently absent teachers are unable to provide continuity of care and demonstrate less commitment to the program or classroom, which can influence the classroom quality in early childhood classrooms.

In an effort to create positive interpersonal relationships, administrators should consider the strengths of the teaching staff by gathering information on the team members. Administrators should assess and focus on the strengths of staff using assessments such as StrengthsFinders or other personality assessments to provide in-depth information of each person. The StrengthsFinders authors (Rath, 2007) argue that allowing individuals to work in the areas of their strengths produces greater results than attempting to develop deficit areas. Once the teacher's strengths are identified, the information can be used to pair teachers together based on a balance of strengths. However, the staff should have some input into selecting their teaching teammate. Often times teachers, especially teacher assistants, are moved to various classrooms several times throughout the year with no

input. Staff generally want to have some say regarding the members of their teaching team (Young, 2016) and teachers' ability to self-select teaching team members is associated with the team's ability to work together, or as LaFasto and Larson (2001) terms, action orientation.

Action Orientation

Action orientation, the ability to take action and encourage others to do the same (La Fasto & Larson. 2001), is another factor associated with strong teams. In the classroom, this could be observed when both teachers take equal responsibility for the care of the children and for managerial tasks. Teachers frequently reported that taking individual action was a contributor to their success (Young, 2017b). To do so, teachers need a clear understanding of their roles and responsibilities. As stated earlier, teachers often have different perceptions about the level of teamwork in the classroom (Young, 2017a). When teachers were asked to rate various practices associated with teamwork, 21% of the teaching teams were inconsistent in how they rated items. Figure 6 shows items and the frequency in which teaching teams were inconsistent in their ratings.

Figure 6. Inconsistency Ratings Teaching Team Practices and Perception Items

	% rated inconsistent
My co-teacher and I discuss child assessments as a team at least once a week *eg who will observe which child, what objectives will be observed, where to place to child in the GOLD system, etc*	30.2
My co-teacher and I vary workload so that both of us perform meaningful activities. *Eg. We each take turns facilitating circle time and performing cleaning task*	27.8
At least once a week, my co-teacher and I discuss the teaching responsibilities. *E.g decide who will facilitate circle time or small group*	20.9
I address any conflicts with my co-teacher immediately	25.6
I feel that my co-teacher and I share responsibilities for all activities in our teaching team	20.9
At least once a week, my co-teacher and I discuss how to handle the classroom management techniques as a team. *Eg. how to ensure the classroom runs smoothly, prevention of disruptive behavior*	20.9

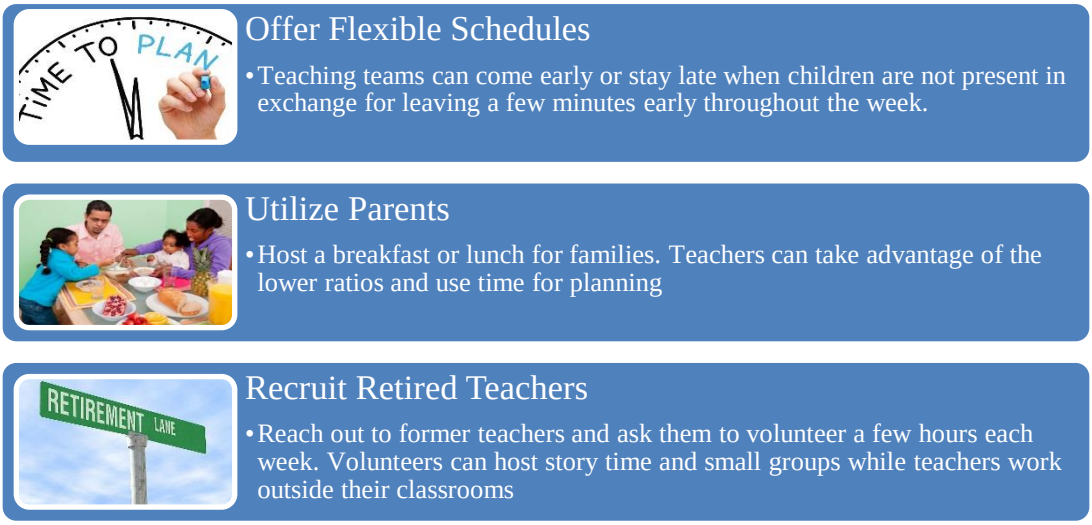
Many of these items were related to how teaching teams shared responsibilities which is important to team or co-teaching.

Effective co-teaching requires staff to co-instruct, co-assess, and co-plan. Yet, collegial time is often sparse and teams frequently must restructure their time to incorporate more planning. Nevertheless, the teams feel the preparation and time spent together is necessary for their integrated performance (Young, 2017b). Teachers report that the lack of time to plan together is a challenge. One teacher stated,

> "*Quality time to work together after the students leave every day is a challenge because the school's after and before care program are in our classroom. We cannot get the work done we need to do to plan for quality activities*."

Another teacher noted that "*Our biggest challenge is finding enough time to do the things we want to in the classroom. Classroom planning is minimal at times with all the other demands we have with meetings, paperwork and other duties of our organization*." Therefore, administrators should provide a designated time for teaching teams to meet and plan together. One agency provides nearly two hours of planning time each day (K. Black, 2017 personal communication). While this may not be possible for all programs, some structured planning time is important. Figure 7 provides a list of ideas for providing planning time.

Figure 7. Ideas for staffing planning time



Although this is a short list, it is a start to providing time for teachers to co-plan. Providing time for teachers to collaborate may not be easy, but it is critical to the teaching teams' ability to work effectively as a team.

Openness

Openness is another factor associated with effective teams. Openness is used to describe individuals that openly communicate and deal honestly with issues (LaFasto & Larson, 2001). When teachers were asked about factors that contribute to teaching teams' success one teacher noted, "*Communication is key*" while another teacher responded, "*open communication….having open and honest conversations about what techniques are working and not working*" (Young, 2017b). Young defines this type of communication as a *shared constructive conversation*. Shared constructive conversations consist of two or more people providing feedback to one another that is positive, transparent, and constructive. It is intended for the growth of each individual. This type of conversation develops the interactions among teaching team and assist with teachers providing and receiving feedback

At the heart of any support must be the administrative commitment to openness, constant communication (La Fasto & Larson, 2001), and shared constructive conversations. Administrators can encourage openness and shared constructive conversations by meeting with their teaching teams regularly to discuss the strengths, weaknesses, and progress of the team. They must model openness and shared constructive conversations in order for any of the professional development and support to be effective. As foundation to supporting teaching teams, administrators have to create a safe atmosphere for teachers to be honest with each other and themselves. Administrators must be transparent and admit to teaching teams that it is hard and sometimes awkward to give and receive constructive feedback but the conversations are necessary. It may take some time for teaching team members to learn to trust their team members and the administrators. Therefore, it is critical that administrators establish a climate that welcomes and values the staff's honesty.

To establish an environment that welcomes shared constructive conversations, administrators should encourage and model honesty and use the information to create change. Administrators can encourage honesty by explaining the importance of working within a team and how the teachers' interactions have indirect effects on the classroom quality and child outcomes. Next, administrators should explain to the staff the importance of being honest with each other and listening to the feedback from ther teachers in the team. Since teachers struggle giving and hearing feedback to each other, administrators should be transparent and let them know that it will be difficult. Addressing this in the beginning of the year will prepare teaching teams to share and listen to feedback. Then administrators must model honesty by being honest about what they observe. This can

sometimes be uncomfortable for the administrator as well. Engaging in honest conversations is difficult, but will become easier when staff see that the information is used to create positive change. The encouragement and modeling of openness from administrators can lead to teaching teams feeling more supported.

Supportiveness

Supportiveness is the desire to help others be successful (LaFasto & Larson, 2001). The Center for the Study of Child Care Employment (CSCCE; Whitebook, McLean, & Austin, 2016) found that components which create supportive work environments are often not included in program improvement policies and practices but are important to the retention of staff. One teacher noted that support from her administration was important to her teaching teams' success (Young, 2017b). Therefore, administrators must provide ongoing support to teaching teams to build supportiveness within the team.

Once teaching teams are established, administrators need to provide ongoing support hrough regular and reflective meetings. These ongoing meetings should allow teaching teams to reflect on their current practices and develop a plan to strengthen interactions, which is a form of teachers' professional development. Teacher-child interactions are positive when teachers engage in professional development that provides an opportunity to be active participants and to receive feedback from observations (Fantuzzo et al., 1996). In Fantuzzo et al. (1996) study, teachers and parents who participated in hands-on training with each other reported more active involvement engagement in training and more collaboration between parents and teachers. In the collaborative training, the parents and teachers were trained together and noted that the opportunity to understand the other's perspective was helpful. In this same way,

collaborative reflective training with teaching teams could provide an opportunity for lead and assistant teachers to understand each other's perspective.

Supporting Teaching Teams

Administrators can build strong teams by providing professional development and support in the areas of personal style, action orientation, supportiveness and openness. The Teaching Team Reflective Meeting forms provided in the appendices are designed to support and strengthen teaching teams through ongoing meetings and to facilitate conversations specific to the teaching teams. The information gathered from the meeting forms will only be effective if the teaching team members are honest by engaging in shared constructive conversations. The Teaching Team Reflective Meeting Guide (Appendix A) provides an overview of the various meeting forms and type of questions asked by the administrator.

The forms are designed to be living forms; they should not be used once and filed away in a cabinet. Administrators should review the forms often to reflect on the team goals or action items. Reviewing the forms often will be a constant reminder of things to look for when observing the classroom or even when administrators make informal visits. The forms can be used at already established meetings. Each meeting form should take about 15-20 minutes to complete. There are four meeting forms to use throughout the course of the school year. The four meeting forms consist of Initial Meeting, One Month Follow Up, Quarterly Meeting, and Special Meeting are each discussed in detail below.

Initial Meeting

The Initial Meeting will be completed at the beginning of the year or when a teaching team is first established. At this meeting, the administrator will use the Initial

Meeting form. The purpose of the Initial Meeting form (Appendix B) is to identify the team member's personality, strengths, and interest. Teaching teams will also discuss how they will share responsibilities. To gain an understanding of the members of the team members, each teacher will complete a personality or strengths-based assessment. The team members will share their assessment results with the teaching team and administrator at the initial meeting. The assessments will provide a foundation for learning about the other staff and their strengths. Administrators will also complete an assessment and share the results. Some of the assessments provide information on how to work with others of different strengths (Rath, 2007). If that is not available, discuss with staff how they will work together based on the personalities or strengths. The assessments are just one way to get to know the staff. Teachers and administrators should work on building relationships throughout the year.

The teaching team members will also discuss their view of teamwork, how to handle conflict and provide feedback as well as what activities they enjoy and dislike completing in the classroom. At the end of the meeting, the teaching team will complete the Shared Responsibilities form (Appendix C). The staff will agree upon their daily, weekly, and monthly responsibilities, working toward a reflective relationship. Completing this form will ensure that teachers have clear roles and responsibilities. The meeting will conclude with each staff signing the initial meeting form and deciding a date for the one month follow up.

One Month Follow Up

The One Month Follow Up meeting occurs at least one month after the Initial Meeting. The purpose of the One Month Follow Up meeting is to assess how teaching

teams are currently functioning. The One Month Meeting form is also designed to deal with differences before those differences become bigger unresolved issues. Prior to the One Month Follow Up meeting, each teaching staff will rate their perceptions of the team's level of teamwork using the Teaching Team Practices and Perceptions (TTPP) questionnaire (Appendix D). This rating will provide information on each person's perception of the team's communication, interpersonal relationship, and shared responsibility of the team. The administrator will remind the teaching team members to be open and honest when rating each item to optimize shared constructive conversations. Before the discussion begins with the One Month Follow Up form (Appendix E), the administrator will remind staff that giving and receiving feedback is difficult but necessary. Administrators will also stress that each person may disagree with some of the things they hear but encourage the members to be open to the feedback. This may also be an appropriate time to remind staff of the first meeting and their discussion on how each staff preferred to received feedback and their listed strategies for resolving conflict. Administrators will also remind them of the overall goal; to provide optimal care and support healthy development of children. One way to do so is to model healthy relationships which can occur through honest communication (Young, 2017a).

After the ground rules have been set to give and receive feedback, the administrator and teaching team will review each teaching teachers‘ responses and discuss rating similarities and differences. The administrator will look for areas where the team members scored high and low. For example, both teacher rated interpersonal relationship as high (mostly 5s) but one teacher scored sharing responsibilities low (mostly 2s). If a teaching team differs by more than one or if a team member rating an item as neutral, the

administrator will discuss what specific behaviors or thoughts led to the rating. During the meeting, the administrator will also inquire about how teams are sharing responsibilities. The teaching team will review and adjust the Shared Responsibilities form and plan for any additional follow up. At the end of the meeting, the administrator will schedule the Quarterly Meeting.

Quarterly Follow Up

The next meeting that will occur is the Quarterly Follow Up which will be held within three months of establishing the teaching team. The purpose of the Quarterly Follow Up meeting is to celebrate what is working well and plan to improve the necessary areas of communication, interpersonal relationships, and sharing responsibilities. The administrator will use the Quarterly Follow Up form (Appendix F) and the TTPP to guide those conversations. The teaching team will complete the TTPP questionnaire again prior to the meeting to assess their perceptions of the areas mentioned previously. Similarly to the One Month follow up meeting, the administrators will review the rating with the teaching team. The administrator will bring the first ratings to compare with the teaching teams' new ratings. Again, the administrator will emphasize the importance of honest communication and being open to feedback. The administrator and teaching team will discuss the differences in the ratings and what actions or thoughts led to the scores. The teaching team will also identify the strengths of the other team member. The administrator will ask each teacher directly, "What does the other teacher do really well?" The teaching team members will also discuss which classroom responsibilities they enjoy and dislike most. Based on that feedback, teaching teams may adjust the Shared Responsibilities form. The administrator will plan for any additional follow up needed. If no major

concerns exist, the administrator will plan to meet with the team in a few months to check in. The Quarterly Follow Up form can be used for that meeting. After each meeting, teams should set goals and always plan a time to follow up. This type of consistency and follow up will aid teachers feeling more supported, which has been found to lead to higher job satisfaction. However if concerns exist, the administrator should have another meeting with the team.

Special Meeting

The purpose of the Special Meeting form (Appendix G) is to facilitate conversations with teaching teams or individual teaching team members when things are not working well; this is the *emergency meeting*. This may occur when teachers have gotten into a heated disagreement or if one teacher feels that they have tried everything but the other team member is not responding or sharing responsibilities in the classroom. Depending on the situation, the administrator may decide to meet with the team members separately. The administrator's role is to reflect with the teacher, not to solve the problem for the teacher.

During the meeting, the administrator will ask what the specific issues are and the previous strategies tried. The administrator will also inquire about the type of support the teacher feels is needed to develop a plan to support the team. Again, the purpose of this meeting is to help the teaching team reflect in order for the teaching team member to find solutions not for the administrator to solve the problem for the team.

Conclusion

Revisiting scenario two: Mrs. Tanya, the coach for Tasha and Kim met with the teaching team using the Special Meeting form and through shared constructive

conversations learned that Ms. Kim was very frustrated with Ms. Tasha. She also learned that Ms. Tasha was unclear about her responsibilities and felt that Ms. Kim did not value her input. Therefore, she often vented to the teacher across the hall. Tonya was able to help establish clear roles and responsibilities and open the lines of communication between the teaching team. Since the teaching team started meeting regularly with the coach, Ms. Kim feels better supported and Ms. Tasha is sticking to the Shared Responsibility Plan.

Building strong teams is an important discussion topic because successful teams produce better outcomes (La Fasto & Larson, 2001). In the early childhood setting those outcomes can be demonstrated in higher classroom quality and better child outcomes. However, there are few resources available that provide the importance of strong teaching teams and a framework for supporting strong teaching teams. The goal of this manuscript was to provide administrators with the tools needed to build strong teams. It is the hope that the reflective forms available in the manuscript will provide a guide for starting conversations and creating plans that lead to stronger teams.

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Appendix A: Teaching Teams Reflective Meeting Guide

Teaching Teams Reflective Meeting Guide *Below is an overview of the discussions that will occur throughout the year with teaching teams. Please see corresponding form for individual meetings.*
FIRST MEETING:
Have each person discuss the following: ❖ **What are your individual strengths (*from previous personality assessment*)** ❖ **What do you enjoy most about working with children** ❖ **Which daily routine or activity do you enjoy most with children** ❖ **Which is your least favorite daily routine or activity to do with children** ❖ **How do you like to receive feedback** ❖ **What do think are the primary responsibilities of each teacher** ❖ **Describe your view of team teaching** ❖ **How will responsibilities be shared among the staff- Complete the Shared Responsibilities Plan**
1-MONTH FOLLOW UP MEETING
❖ **Prior to meeting have teachers individually complete the Teaching Team Practices and Perceptions (TTPP) rating** ❖ **Discuss with staff the importance of being open and honest regarding teaching team practices** ❖ **Review the shared responsibilities plan from previous meeting** ❖ **Discuss the ratings from the TTPP** o **Review items that were measured extremely high or low** o **Discuss any items that teachers rated differently and possible reasons why ratings were different** o **Develop a plan for working through any major differences (items that were off by more than one)**
QUARTERLY FOLLOW UP MEETING
❖ **Prior to meeting have teachers individually complete the Teaching Team Practices and Perceptions (TTPP) rating** ❖ **Discuss the changes in the ratings since the last meeting and possible reasons why** ❖ **What does your partner do really well** ❖ **What are some ways that the team can work better together** o **What routines or activities would you like to do more** o **What routines or activities would you like to do less** ❖ **Develop plan for sharing responsibilities**
SPECIAL MEETING ***A special meeting may be needed for those teaching teams having more challenging issues. It may be best to meet with the teaching team members separately.***
❖ **What do you feel are the major issues with your teaching team** ❖ **What strategies have you tried to resolve the issues** ❖ **What type of support do you need to resolve the issues** ❖ **Develop plan to provide more support to teaching teams**

Appendix B: Initial Meeting Form

Teaching Teams Reflective Meeting Form: Initial Meeting	
Teaching Team:	Date:
The purpose of this meeting is to help teaching teams establish open communication and share responsibilities. At the beginning of each school year, have each person discuss the following:	
What are your individual strengths (*from previous personality assessment*) **LT:** **AT:**	
What do you enjoy most about working with children? **LT:** **AT:**	
Which daily routine or activity do you enjoy most with children and why? **LT:** **AT:**	
Which is your least favorite daily routine or activity to do with children and why? **LT:** **AT:**	
How do you like to give and receive feedback? **LT:** **AT:**	
How will you discuss problems when they arise **LT:** **AT:**	
Describe your view of team teaching? **LT:** **AT:**	
What are some beliefs about classroom management that you feel are non-negotiable (*e.g. babies sitting in dirty diapers*) **LT:** **AT:**	
What do you think are the primary responsibilities of each teacher? **LT:** **AT:** ***Afterward, complete the Complete the Shared Responsibilities Plan***	
Signature:	**Signature:**

Appendix C: Shared Responsibilities

SHARED RESPONSIBILITIES PLAN		
TEACHING TEAM:		**DATE:**
DAILY	**CLEANING/ROUTINES**	**STAFF RESPONSIBLE**
	✓ Preparing table and materials for breakfast	
	✓ Cleaning after meals	
	✓ Bathroom routines *(i.e. diapering, brushing teeth)*	
	✓ Assisting children with cleaning after activities	
	✓ Sanitizing Toys	
	✓ Complete cleaning chart	
	Teaching Responsibilities	
	✓ Preparing materials for circle time	
	✓ Facilitating circle time	
	✓ Preparing materials for center	
	✓ Recording observational notes	
	✓ Preparing materials for small group	
	✓ Facilitating small group	
	✓ Setting up center materials	
	✓ Rotating to center/interest areas	
	✓ Daily Attendance	
	✓ Daily Infant/Toddler/Two Sheets	
WEEKLY	**Cleaning/Routines**	
	✓ Wash laundry	
	✓	
	✓	
	Teaching Responsibilities	
	✓ Write lesson plans	
	✓ Review observation notes & enter into database	
	✓ Organize materials for the next week	
	✓ Check out library books	
MONTHLY		
	✓ Write Newsletters	
	✓ Family Contact Logs	
	✓ Emergency Contact Update	
	✓ Supply Orders	
	✓ Bulletin boards	

Appendix D: Teaching Team Practices Questionnaire

Teaching Team Practices and Perceptions						
On a scale of 1-5 please rate the following statements regarding your interactions with your current co-teacher		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
Interpersonal Relationship						
1	I enjoy working as a team with my co-teacher	1	2	3	4	5
2	My co-teacher makes people feel comfortable	1	2	3	4	5
3	My co-teacher is a patient person	1	2	3	4	5
4	My co-teacher is enthusiastic early childhood	1	2	3	4	5
5	My co-teacher generally has a positive attitude	1	2	3	4	5
Communication						
6	At least once a week we discuss how to handle the classroom management techniques as a team. *Eg. how to ensure the classroom rooms smoothly, prevention of disruptive behavior*	1	2	3	4	5
7	I find it easy to communicate with my co teacher	1	2	3	4	5
8	As a team, my co-teacher and I have sufficient time to communicate	1	2	3	4	5
9	I address any conflicts with my co-teacher immediately	1	2	3	4	5
10	My co-teacher and I discuss child assessments as a team at least once a week *eg who will observe which child, what objectives will be observed, where to place to child in the GOLD system, etc*	1	2	3	4	5
Sharing Responsibilities						
11	My co-teacher and I discuss our curricula at least once a week eg *what theme or project to use, which objectives to cover, etc*	1	2	3	4	5
12	At least once a week, my co-teacher and I discuss the teaching responsibilities. *E.g decide who will facilitate circle time or small group*	1	2	3	4	5
13	I feel that my co-teacher and I share responsibilities for all activities in our teaching team	1	2	3	4	5
14	My co-teacher and I vary workload so that both of us perform meaningful activities. *Eg. We each take turns facilitating circle time and performing cleaning task*	1	2	3	4	5
15	What factors contribute to the success of your classroom teaching team?					
16	What challenges have you encountered with your co-teacher as a classroom team?					

Appendix E: One Month Follow Up

Teaching Teams Reflective Meeting: 1-Month Follow Up Meeting	
Teaching Team:	Date:
Prior to meeting have teachers individually complete the Teaching Team Practices and Perceptions (TTPP) rating and have copies of each of the forms at the meeting. Encourage the staff to be open about their individual responses and ensure them that information will be used to build a strong teaching team.	
Opening discussion talking points: ✓ **Discuss with staff the importance of being open and honest regarding teaching team practices.** ✓ **Remind staff of how each person prefers to receive feedback (from first meeting).** ✓ **Remind the staff that the information is not a personal attack and sometimes it is uncomfortable to hear feedback it's natural to feel "weird"**	
Discuss the ratings from the TTPP and ask each teacher: **Which set of items did you agree or strongly agree with the most (e.g. communication, sharing responsibilities, etc.)**	
Which set of items did you disagree or strongly disagree with the most?	
Discuss the items that teachers rated differently by more than one or an item that was rated as neutral. ❖ **What specific actions in the classroom made you agree or disagree with that item?**	
Develop a plan for working through any major differences (items that were off by more than one)	
❖ **What actions need to take place for the team to work better at (write the areas in which the teachers disagree, e.g. communication, sharing responsibilities, etc.)**	
Signature	Signature

Appendix F: Quarterly Follow Up

Teaching Teams Reflective Meeting QUARTERLY FOLLOW UP MEETING	
Teaching Team:	Date:
Prior to meeting have teachers individually complete the Teaching Team Practices and Perceptions (TTPP) rating	
What does your partner do really well?	
Discuss the changes in the ratings since the last meeting and possible reasons why?	
What are some ways that the team can work better together? ❖ What routines or activities would you like to do more? ❖ What routines or activities would you like to do less?	
Modify the Sharing Responsibility Plan	
Signature:	Signature:

Appendix G: Special Meeting

Teaching Teams Reflective Meeting SPECIAL MEETING	
Teaching Team:	**Date:**
A special meeting may be needed for those teaching teams having more challenging issues. It may be best to meet with the teaching team members separately.	
❖ What do you feel are the major issues with your teaching team?	
❖ What strategies have you tried to resolve the issues?	
❖ What type of support do you need to resolve the issues?	
Develop plan to provide more support to teaching teams	
Signature:	Signature *(if needed):*

Appendix H: Internal Review Board Approval Letter

The UNIVERSITY of OKLAHOMA

Institutional Review Board for the Protection of Human Subjects

Human Research Determination Review Outcome

Date: October 27, 2016

Principal Investigator: Diane M Horm, PHD

Study Title: Characteristics of Head Start Teaching Teams: Associations with Classroom Quality and Child Outcomes

Review Date: 10/27/2016

I have reviewed your submission of the Human Research Determination worksheet for the above-referenced study. I have determined this research does not meet the criteria for human subject's research. The proposed activity involves data that were originally collected for research purposes and will be de-identified with low potential for deductive re-identification based on the number of cases. Therefore, IRB approval is not necessary so you may proceed with your project.

If you have questions about this notification or using iRIS, contact the HRPP office at (405) 325-8110 or irb@ou.edu. Thank you.

Cordially,

Aimee Franklin, Ph.D.
Chair, Institutional Review Board

Appendix J: Prospectus

UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

CHARACTERISTICS OF HEAD START TEACHING TEAMS: ASSOCIATIONS WITH CLASSROOM QUALITY AND CHILD OUTCOMES

A DISSERTATION PROPOSAL

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

Degree of

DOCTOR OF PHILOSOPHY

By

EMISHA PICKENS YOUNG

Norman, Oklahoma

2016

CHARACTERISITICS OF HEAD START TEACHING TEAMS: ASSOCIATIONS WITH CLASSROOM QUALITY AND CHILD OUTCOMES

A DISSERTATION PROPOSAL APPROVED FOR THE

DEPARTMENT OF INSTRUCTIONAL LEADERSHIP AND ACADEMIC CURRICULUM

BY

_____

Dr. Diane Horm, Chair

_____

Dr. Vickie Lake

_____

Dr. Libby Ethridge

_____

Dr. Timothy Ford

_____

Dr. Jody Worley

Table of Contents

Abstract

A plethora of research exists regarding how teacher interactions influence classroom quality (Bailey et al., 2013; Castle et al., 2015; Howes & Smith, 1995; Phillipsen, Burchinal, Howes, & Cryers, 1997). Many of those studies used data gathered from lead teachers without much, if any, consideration of the other adults in the classroom. However, Head Start and most early childhood classrooms are staffed by more than one adult (Ratcliff et al., 2011). In fact, two Head Start Performance Standards, 1306.20 and 1306.32, call for this staffing pattern. Head Start requires that classroom staff work together to plan, organize, and provide activities that promote the care and development of young children. Previous studies that focus on the lead teacher overlook a key component of the classroom—the teaching team. The interactions and characteristics of the assistant teachers combined with those of the lead teachers are important contextual factors that must be examined in order to understand the dynamics of classroom environments. Gathering information on how the two staff members work together as a team will fill in the gaps in current body of early childhood of literature.

This proposed study will examine associations among teaching team characteristics, classroom quality, and child outcomes within a large Head Start agency. This quantitative study will examine data from 45 Head Start toddler and preschool classrooms including 45 lead and assistant teacher pairs and approximately 148 children. Multiple data collection methods include classroom observations to document teacher-child interactions, teacher's ratings of their perceptions and beliefs related to their teaching team and pre- and post-assessments of child outcomes on measures of cognitive development and social emotional development. The results generated from the research will describe the characteristics of existing teaching teams. The results will

also provide information on how teaching staff describe their current team functioning and perceive their level of teamwork. This study hypothesizes that classroom staff with positive perceptions of their existing teams will have higher classroom quality scores and better child outcomes than those teams that have less positive perceptions of their current teaching team. Management research shows that individuals with positive perceptions of their team are more effective and generate positive outcomes (Kozlowski & Bell, 2013; Leana, Appelbaum, & Shevchuk, 2009).

The study results will be beneficial to the local Head Start agency collaborating with this research study and to the field of early childhood by providing insight on teaching team practices and perceptions of teamwork. Classroom staff could benefit by understanding the teamwork processes that are successful and challenging and how those behaviors relate to interactions with children and resulting child outcomes. This information will provide insight to administrators on how to promote effective teaching teams through monitoring and professional development.

Keywords: teaching teams, co-teaching, classroom quality, child outcomes

Chapter 1: Introduction

Head Start advocates for the use of research-based practices to optimize the development and learning of the young children and families they serve—families with incomes at or below the federal poverty level. Head Start Performance Standards stipulate classroom practices, including small class size and low adult-child ratios that have been associated with positive child outcomes (Howes & Smith, 1995). The Performance Standards also require classroom-staffing patterns that result in teaching teams consisting of at least one lead and one assistant teacher (Office of Human Health Services, 2015). The implementation of this staffing pattern is to provide the optimal adult-child ratios, which allow positive teacher-child interaction and optimal care for young children (Zigler & Muenchow, 1992).

Although the teaching team staffing pattern is the model for Head Start and Early Head Start classrooms and other settings, the empirical literature examining teaching teams' characteristics and impacts is sparse. For example, no common definition of team exists that describes teaching teams in Head Start programs. Beyond definition, a review of current literature identified few studies on the topic of teaching team in early childhood education (ECE). Given the gap between the available literature and the widespread implementation of the teaching team staffing pattern, this study is critical to generate results that will enhance understanding of the characteristics and dynamics of teaching team relationships. Many questions are currently unanswered including: what are the associations between teaching team characteristics and classroom quality? and do higher levels of perceived teamwork associate with better child outcomes? Classroom quality and the teacher-child interactions occurring in

classrooms have been identified as important contributors to children's development (Howes & Smith, 1995; Shonkoff et al., 2011). To date, however, little research has examined the characteristics of teaching teams that serve in Head Start classrooms and the potential association with classroom quality or child outcomes. The proposed dissertation aims to address these gaps in the literature.

Teaching teams in Head Start classrooms are a significant, yet an understudied component of the Head Start program. The Head Start Performance Standard mandates the need for two staff in the classroom (Department of Health and Human Services, 2015) that has set a standard of classroom quality for teachers to achieve. Teachers within a classroom have to work together, using some level of teamwork, in order to provide for the care and development of children. Examining the demographic characteristics of current teaching teams and their contribution to classroom quality is significant to Head Start programs because this information can potentially assist leadership in structuring teams and providing ongoing professional development to facilitate teachers working together as a team. At the local Head Start agency the lead teacher population consist of 61% of Caucasian lead teachers, 10% African American, 1% Hispanic, and 20% other. While the assistant teacher population is 30% Caucasian, 34% African American, 23% Hispanic, and 11% other.

Given the local Head Start demographics and the challenges of mixed culture teams (Kozlowski & Bell, 2013) it is important to understand how the team's structural characteristics, such as ethnicity, associate with the teams teamwork processes and level of perceived teamwork. The number of years the team works together is also an important variable to examine for Head Start programs. Team tenure has been found to

associate with job performance in the teamwork literature (Campion, Papper, & Medsker, 1996; Kozlowski & Bell, 2013), but few, if any studies exist that examine Head Start teaching teams. The exploration of Head Start teaching team characteristics should also provide useful data on the success and challenges of the teams. All teams experience challenges but will have some level of success as well (Kozlowski & Bell, 2013). The success of teaching teams can be measured by the classroom quality and child outcomes.

Theoretical Framework

Bronfenbrenner's theory of the bioecological systems (2006) and Kozlowski and Bell's (2013) conceptual issues are weaved together to serve as the framework for this study. The bioecological system is "the phenomenon of continuity and change in the biopsychological characteristics of human beings, both as individuals and as groups" (Bronfenbrenner & Morris, 2006, p.793). The model consists of four components: *process, person, context, and time* (PPCT) each operating within the microsystem (i.e. family, childcare center, church), exosytem, (i.e. extended family, neighbors, parent's workplace) macrosystem, (i.e. government, culture, social class) and chronosystem (time).

To understand how teachers support child development, one must examine the proximal processes and person properties of the bioecological model. Proximal processes are the interactions that occur between the environment and the person (Bronfenbrenner & Morris, 2006). The classroom, the center, and the agency that operate the center are internal parts of the environment. The interactions that occur

between teaching staff as well as those among teachers and children are a part of the proximal process that lead to the child's development.

The person component referenced in the bioecological model embodies the individual teacher's biological characteristics such as ethnicity, age, and perceptions. To understand how teachers work together, one must view interactions through the '*person*' lens, which brings attention to the resources and demands of teaching teams. Each member of the teaching team brings individual resources and demands to the classroom environment. The teacher's resources include his or her education and experience. The teacher's work responsibilities within the teaching team contribute to the demand component. The resource and demand factors together contribute to the proximal process or the teacher-child interactions that emerge.

The context elements of the model are the microsystem, mesosystem, exosystem, and, macrosystem. The time component is the chronosystem. The chronosystem that exists within teaching teams would be the events and transitions that occur during the life of the teaching team. Some examples of events or transitions that may occur within a teaching team include the start of a new school year, the changing of team members, or the transition of children and families.

Based on Bronfenbrenner's bioecological model of development (2006), the environment in the model of proximal process, person, context, and time influences the interactions among the teaching team. Kozlowski and Bell (2013) in their teamwork literature would view the bioecological system as a multilevel influence. This mean that individuals are nested within different levels; the individual (teacher), the teams

(teaching teams), and the higher-level context, which for Head Start teams would be the programs in which they work.

The bioecological framework and upcoming literature review serve as the basis for the questions posed in this dissertation research proposal. The specific research questions and hypothesized results, based on existing theory and research are described in detail below.

Specific Research Questions of Interest

1. What teamwork processes do teaching staff identify as factors in their successes and challenges as a teaching team?
    a. What level of perceived teamwork is reported by lead and assistant teachers in Head Start and do these vary by teacher role?
2. How do teaching teams' structural characteristics associate with teamwork processes and level of perceived teamwork?
3. To what extent do teamwork processes and perceived teamwork associate with observed classroom quality?
4. To what extent do teamwork processes and perceived teamwork associate with children's cognitive and social emotional development?
    a. Is this association mediated by classroom quality?

Significance and Implications of the Research

The study will contribute to the limited research on Head Start teaching teams. The results generated will describe the characteristics of existing teaching teams. If the data show that ethnically diverse teams face challenges communicating due to cultural barriers, this knowledge provides an opportunity for professional development topics

such as diversity in the workplace. If team tenure emerges as a factor that influences the teams functioning this also provides information that administrators can use. Program administrators can use the information listed as successes and challenges to monitor teams in an effort to improve the team's communication and aid to the team's tenure. Administrators can also consider team tenure when making staffing decisions at the beginning and throughout the school year.

The study will provide information on how teaching staff describe their current team functioning. The study will also highlight how Head Start teaching teams perceive their level of teamwork. Research in other fields show that individuals with positive perceptions of their team are more effective and generate positive outcomes (Campion, Papper, & Medsker, 1996; Kozlowski & Bell, 2013; Leana, Appelbaum & Shevchuk, 2009). Therefore, study results will be useful to the partnering Head Start agency and the field of early childhood by providing insight on teaching team practices and perceptions of teamwork, which may influence the quality of the classrooms and potentially increase child outcomes. Classroom staff could benefit by developing a better understanding of their perceived level of teamwork and how those behaviors relate to their interactions with children and resulting child development. This information can also assist administrators with creating and sustaining teaching teams through monitoring and professional development. Given the high incidence of turnover in the field strategically structuring effective teams could assist in reducing staff turnover, therefore increasing continuity of care. These variables combined could ultimately impact the child and it is critical that the field understands the impact of teamwork on children's development.

Chapter 2: Literature Review

Working within the context of a team is complex. It requires communication, flexibility, and common goals. These components, added to the demands of caring for young children, can be challenging for some teachers. In Head Start and Early Head Start programs, teachers are required to work with another adult in each classroom. Since its inception, Head Start classrooms consist of a lead teacher and an assistant teacher (Fitzgerald & Theilheimer, 2012; Zigler & Muenchow, 1992). In fact, two Head Start Performance Standards, 1306.20 and 1306.32, call for this staffing pattern requiring that classroom staff work together to plan, organize, and provide activities that promote the care and development of young children. Although this has been the model since its initiation, there is little research on the use of Head Start teaching teams. Therefore, this review will draw on multiple sources from other disciplines such as management and business, to define teams and discuss the various types of teams found in different settings. The review of literature will use other educational sources and studies to draw parallels for Head Start teaching teams. A review of the few early childhood studies available will highlight the composition and responsibilities of Head Start teaching teams: the process and structural variables related to classroom quality, and the constructs that potentially influence child outcomes.

Teams

It is not uncommon to find teams functioning in various industries. There are teams in healthcare, business, and education just to name a few. However, defining teams can be nebulous as there are so many types of teams that function in a variety of ways. Hackman (1990) defines teams as

> A collection of individuals who are interdependent in their task and share responsibilities for the outcomes, are seen as an intact social entity within a social system, and manage their relationships across organizational boundaries. (p.241)

Kozlowski and Bell's (2013) definition is similar but adds that the team "maintains and manages boundaries, and are embedded in an organizational context that sets boundaries, constrains the teams and influences exchanges with other units in the broader entity" (5). These teams can consist of project teams, production teams, or service teams (Chiocchio & Essiembre, 2009). Project teams are temporary groups that work on a specialized tasks for a specific amount of time. Production and service teams are generally ongoing and perform repetitive task. Not only do teams differ by type, but the setting of the team is also an important aspect. In the education field for example, there are various settings for a team. The settings can vary by school type such as secondary, elementary, an early childhood center and more specifically a Head Start program.

Within those settings; various teams exist that can include special education teams, interdisciplinary teams, and English as a Second Language co-teaching teams. Despite the different types and settings of teams; there are two things that make teams unique; teams have an objective and reaching that objective requires collaboration (LaFasto & Carson, 2001). The objective for teaching teams should be to provide optimal care and education for children. In order to achieve success in those areas, teaching teams must work together. The following sections will address some of the

different educational teaching teams, how they function in schools, along with the benefits and challenges for teachers and students.

Special Education Teams

Team teaching dates back to the 1960s (Friend et al., 2010; Murato, 2002) team teaching was introduced as one way to address the disparities among special education and mainstream classes. Parents and educational leaders challenged schools to provide better services for children and place special needs children in the least restrictive environment. This advocacy led special and general education teachers to work more closely together. However, by the 1990s, leaders felt more should be done to increase student outcomes and, as a result, highly qualified content area and special education teachers were encouraged to co-teach. Co-teaching in special education programs generally consist of a degreed education teacher collaborating with the special education teacher.

Schools use co-teaching to provide individualized instruction to special needs students (Cook & Friend, 1995; Friend et al., 2010; Scruggs, Mastropieri, & McDuffie, 2007). Cook and Friend (1995) define co teaching as "two or more professionals delivering substantive instruction to a diverse or blended group of students in a blended physical space" (2). There are five co-teaching models; *one teaching, one assisting, station teaching, parallel, alternative, and team teaching.* The one teaching, one assisting model, requires both teachers to be in the class, but one is the lead while the other observes and assists the students. One of the benefits of this model is that less planning time is required of staff and ensures that teachers meet basic needs of students. A limitation, however, is the teacher assisting may feel and be viewed as inferior.

Station teaching consists of the staff providing instruction in separate groups and then repeating the lesson to the opposite group (Cook & Friend, 1995). Station teaching is often beneficial for novice teachers as it increases their comfort level. Yet, it can be challenging for teachers to pace their lessons, which allows teachers to effectively transition groups. Another co-teaching model is parallel teaching, which is comprised of teachers planning their instruction together and each teacher delivering the instruction to half of the class. Teachers typically provide drill and practice activities during this approach with a limitation being the noise level since groups occur simultaneously.

Alternative teaching is another co-teaching model and this model allows one teacher to work with a small group while another teacher provides instruction to the larger group of students. In this co-teaching style, teachers pre-teach a lesson in small groups to assist children with special needs or otherwise struggling to gain extra help. It can also serve as an enrichment group. One of the drawbacks of this approach is the potential to single out special needs or struggling students. The last co-teaching model identified by Cooks and Friend (1995) is team teaching and this model consists of both teachers leading the discussions and delivering instruction. This model requires teachers to trust one another which may make some uncomfortable. Although specifically identified for special education collaboration, some of the co-teaching models have set the foundation for the other collaborative and teaching team models in other settings such as ESL classrooms and Head Start.

The rationale for co-teaching is the increased instructional options for children, improved program intensity and continuity, as well as reduced stigma for children with special needs (Cook & Friend, 1995; Friend et al., 2010; Scruggs et al., 2007). Students

receive more individualized attention from the special education teacher and mainstream teacher. The co-teaching model also prevents teachers from singling out special education students as the two teachers may work with children in mixed groups if using the co-teaching or parallel teaching model. The students also benefit from more meaningful lessons (Murato, 2002; Parker, 2010). One study conducted to examine the impact of co-teaching with high school students found reading test scores did not differ between the students in traditional and co-teaching classrooms. However, math scores increased for those that were initially below proficiency and enrolled in co-taught classrooms.

Not only do special needs students benefit but teachers also benefit from co-teaching. Team teachers in secondary schools report several benefits of co-teaching. Some benefits of co-teaching were empowerment, camaraderie, positive climate, and professional growth (Murato, 2002). Co-teachers also provide relief for the other teacher in the classroom and can clarify concepts for the other teacher (Cooks & Friend, 1995). These benefits help co-teachers work more closely together, thereby increasing their perceived level of effectiveness.

Though co-teaching is an advantageous method of instruction, it comes with some difficulties to overcome in order for the classroom team to be effective. Teachers report that with team or co-teaching that there are at times large class sizes, a range of learning needs, and an overwhelming amount of paperwork that can impede their ability to teach effectively (Dieker & Murawski, 2003). The success of team or co-teaching is dependent on several factors; planning time, the autonomy to select co-teacher, shared philosophy, complementary strengths, and communication. (Muraski & Lochner, 2010;

Murato, 2002). Effective co-teaching requires staff to co-instruct, in addition to co-plan and co-assess. Yet, collegial time is sparse and causes teams to restructure their time to incorporate more planning. Nevertheless, the teams feel the preparation and time spent together is necessary to their performance.

The structure of special education teaching teams set the foundation for how other educational teams function in different settings. Interdisciplinary education, English language learning, and Head Start teaching teams incorporate one or more of the co-teaching models that will be further explained in the following sections.

Interdisciplinary teams

Like special education teams, interdisciplinary instructional teams appeared during the 1960's as part of the middle school movement (Cow & Pounder, 2000). The teams are composed of core academic teachers such as language arts, social studies, math, science, and reading. These teachers are responsible for the required academic instruction of a contained group of students (often 100 or more). The specific responsibilities of an interdisciplinary instructional teams are to "(a) develop and implement interdisciplinary curriculum and teaching strategies based on the child's developmental needs, (b) develop coordinated interventions and management strategies to address student learning and/or behavioral problems, and (c) provide coordinated communication with parents" (Crow & Pounder, 2000 p. 220).

Interdisciplinary teams often use the co-teaching model (Cook & Friend, 1995), but unlike the special education, the teachers do not always teach in the same space. Most of the collaboration or co-teaching is done in the form of planning and integration of curriculum. One of the benefits of interdisciplinary team teaching is the positive

influence on student's social skills. One study compared the social bonding of 50 students in one class with two teachers to the scores of students with one teacher (Wallace, 2007). The study of sixth graders participating in team teaching found students who's teachers team taught had higher scores on social bonding (Wallace, 2007).

Participating in interdisciplinary teams is rewarding for teachers as well (Crow & Pounder, 2000; Mertens, Flowers, Anfara, Caskey, 2010; Mira, 2008). One study found that the incorporation of interdisciplinary teams led to more collegiality within the school environment and professional satisfaction among the participating teachers (Mirra, 2008). One of the major challenges for interdisciplinary teams was consist with the challenges of special education teams. Interdisciplinary teams also struggled to carve out planning time, but felt it was important to their teaching and overall job satisfaction (Mertens et al., 2010). A study conducted on the amount of planning time teachers used by interdisciplinary teams revealed that teachers who engaged in more planning time reported higher levels of interdisciplinary and classroom practices. These findings also associated with the teacher's job satisfaction and positive interactions with coworkers.

Related to job satisfaction, another study examined interdisciplinary teaching team's level of teamwork and commitment (Park, Henkin, & Egley, 2005). The authors found that higher levels of teamwork was associated with the team's commitment, and that teamwork was associated with years working at the school. These findings are interesting especially for helping to understand how tenure may associate with Head

Start teaching teams. Though this study found association between teamwork and demographic variables, more recent research would add to the body of literature.

English as Second Language Teams (ESL)

Another group that uses team teaching are those that work with English as a Second Language Teams. Dove and Honigfeld (2010) deigned a co-teaching model specifically for ESL teachers. The model (see Figure 1) consists of seven co-teaching strategies that were adapted to meet the specific needs of ESL students.

Figure 1 *ESL Co-Teaching Models*

Group Type	Function
One Student Group	One lead teacher and another teacher teaching on purpose
One Student Group	Two teachers teach the same content
One Student Group	One teacher teaches, while the other assesses
Two Student Groups	Two teachers teach the same content to different groups
Two Student Groups	One teacher pre-teaches and one gives alternative information
Two Student Groups	One teacher re-teaches, one teaches alternative information
Multiple Student Groups	Two teachers monitor and teach

The first strategy is the o*ne student group: One lead teacher and another teacher teaching on purpose*. The mainstream and ESL teachers take turns assuming the lead role. One leads while the other provides mini lessons to individuals or small groups in order to pre-teach or clarify a concept or skill. *One student group: Two teachers teach the same content* is the second strategy where both teachers direct a whole class and teach the lesson at the same time. The third strategy is the o*ne student group: One teacher teaches, while the other assesses*. Two teachers facilitate the same lesson but

one takes the lead while the other circulates around the room making observations and taking notes for the purpose of assessing the students. This model is similar to Cook and Friend's (1995) one teach, one assist co-teaching model except the other teacher is assessing the children instead of just assisting with student questions.

The next strategy is *two student groups: two teachers teach the same content to different gro*ups; or parallel teach (Cook & Friend, 1995). The fifth strategy is *two student groups: one teacher pre-teaches and one gives alternative information*. Students are assigned to specific groups based on their skill level. Those with limited knowledge are grouped together and given background knowledge related to a skill or topic. The sixth ESL co-teaching strategy is *two student groups: One teacher re-teaches, one teaches alternative information.* This is flexible group that provides specific content support to students on various proficiency levels. The difference between this model and the fifth model is the flexibility of groups. The groups in the sixth model change frequently and as needed based on the content. The seventh and last strategy is the *multiple student groups: Two teachers monitor and teach.* In this model, both teachers are monitoring and facilitating lessons while selected students assist their peers. These models are very similar to the co-teaching models of Cook and Friend (1995). Both models share the common goal of teachers collaborating to provide more individualized instruction and attention to learners, regardless of ability or language.

The collaboration among teacher has a positive impact on ESL student's academic and social development (Theoharis, 2007; York-Barr, Ghere, & Sommerness, 2007). In a three-year longitudinal study conducted at an urban elementary school, researchers found positive gains in student's test scores when first and second grade

teachers participated in co-teaching (York-Barr et al., 2007). General education and ESL specialist collaborated to plan, organize, and facilitate lessons. The authors found positive gains for children such as more student participation, fewer problem behaviors, and gains on standardized test.

Some of the challenges of working with ESL learners in the mainstream classroom are the lack of understanding of ESL learners' sociocultural, linguistic, academic, or emotional needs (Dove & Honigfeld, 2010). These challenges are in addition to the challenges teaches face while co-teaching. Teachers report challenges of differing philosophies, role shifts and confusion, and loss of instructional autonomy (York-Barr et al., 2007). Although challenging, when teachers collaborate they are able to share their expertise with others and help form the operation of the ESL programs in the school.

The teams in special education, ESL programs, and interdisciplinary teams are similar to the teaching teams in Head Start in the way that the teams function, as well as some of the benefits and challenges. The Head Start population includes at least 10% special needs children. Also, thirty-eight percent of the families served nationally by Head Start are Hispanic (Early Childhood Learning and Knowledge Center; ECLKC, 2015). Head Start teachers also teach all the content areas unlike some elementary and secondary programs. Head Start teachers typically do not have a specialty in certain subject areas; instead, they are responsible for providing instruction in math, language, literacy, music, and gross motor (physical education). Thus, understanding how these teams function can provide a foundation for how Head Start teaching teams operate and share common benefits and challenges.

Head Start Teaching Teams

Understanding Head Start teaching teams requires one to know about the historical beginnings of Head Start. Head Start was founded as one of mechanisms to address the war on poverty (Zigler & Muenchow, 1992). It was surprisingly a bipartisan issue that garnered millions of dollars in federal support. One of the goals of Head Start was to be a comprehensive program that served the needs of children and their families living in poverty. To address these needs, Head Start programs were initiated to give children a *head start* in life through education, health, and community services. Julius Richmond, the first national director of Head Start, was a pediatrician and former director of a program for disadvantage infants. At the onset of Head Start, Richmond recommended a 1:15 staff-child ratio to ensure children got individual attention. This ratio was half the size for most kindergarten classes at that time. Richmond also recommended that each class consist of a teacher and two assistants. The assistants initially were parents or people from the community. It was unclear to Richmond if the additional staff would be successful, but he felt strongly that more than one teacher was needed for each classroom. Therefore, Head Start programs staffed classrooms with two or three adults, thereby creating a teaching team.

In elementary and secondary education, the term *co-teaching or team teaching* is often used in education; however, team teaching is different from a teaching team in Head Start. Although these are the same words transposed, the differences are important. Team teaching describes the act of two people working collaboratively with a group of students. Team teaching can occur in the same classroom or indicate that the teachers spent time together planning and or delivering lessons to the same group of

children at different times (Friend & Cook, 1995; Friend et al., 2010; Scruggs et al., 2007). However, a Head Start teaching team represents the persons in the dyad or group that may team-teach. In Head Start classrooms, the lead and assistant teachers are a part of a teaching team. Another distinguishing feature of team teaching is that each teacher is considered an expert and has equal qualifications. For example, a Bachelor degreed elementary education teacher may team-teach with a Bachelor degreed special education teacher. In the Head Start teaching team model, the staffing generally consists of a lead and an assistant teacher paired together to provide care and learning for the same group of children in one classroom at the same time. Therefore, in some ways, Head Start teaching teams are similar to Friend and Cook's (1995) definition. Teaching occurs in one space but unlike their definition; both teachers are not always viewed as professionals and both do not always deliver a substantial amount of instruction. In most Head Start rooms, the lead teacher is responsible for most of the instruction and viewed as the professional because of the education level. Murawski (2002) further states that co-teaching is not a teacher and an assistant, which would disqualify some Head Start teaching teams from being an example of team teaching.

Defining Head Start Teaching Teams

The absence of a definition of Head Start teaching teams results in describing teams based on definitions found in the management literature. Kozlowski and Bell (2013) define teams as:

> two or more individuals that exist to perform organizationally relevant tasks, share one or more common goals, interact socially, exhibit task interdependencies, maintain and manage boundaries, and are embedded in an

> organizational context that sets boundaries, constrains the teams and influences exchanges with other units in the broader entity (p. 5).

This definition is applicable to the teaching teams that exist in many Head Start and early childhood programs. The organizational relevant tasks for Head Start teaching teams include caring for children, providing activities for them, and monitoring their development (Manlove, 1994; Ratcliff et al., 2011). Other tasks include communicating with families, completing an ample amount of paperwork, completing conferences and attending meetings (Bullough, Hall-Kenyon, MacKay, & Marshall, 2014). The common goal of the teaching team is to create an environment that supports the development and care of the whole child (Bullough, 2015a; Bullough, 2015b). The environment is comprised of the academic and social setting. The academic environment is the classroom and the ways that teachers support children's learning. The social interactions of Head Start teams include interactions with each child, the group of children, co-workers, and parents. These social interactions though part of the team can be stressors for the teachers (Baumgartner et al., 2009; Fitzgerald & Theilheimer, 2012). Baumgartner et al (2009) found that teachers reported feeling stressed by interacting with the various groups because of tension that may arise among the different groups. This tension can impede the staffs ability to create a positive academic and social environment co-workers and children.

Head Start teaching teams exhibit task interdependence by both planning and implementing classroom processes together. The expectation is for lead and assistant teachers to spend some time together planning activities. The local Head Start agency designates nearly two hours per day in the afternoon for staff planning and meetings.

This designation of time demonstrates the programs expectation that planning occurs. The program also designates time at the beginning of the school year for teachers to develop classroom management strategies, which is one way to implement classroom processes. Teachers can also use the daily planning period to reflect and refine those processes.

The boundaries of teaching teams, based on the definition of a team, are two-fold. Boundaries exist among teaching staff and within the Head Start program. Teacher characteristics, such as ethnicity and team tenure, can be viewed as boundaries. The communication of the teaching team is often restricted by the differences in ethnicity and less time spent together (Chiocchio & Essiembre, 2009; Frigotto & Rossi, 2012; Stahl et al., 2010; Young, 2016). These constructs will be explored further in the next section.

Head Start Teaching Teams Composition

Although the ECE literature does not specifically define Head Start teaching teams, there are generally two distinct composition or structures of ECE teaching teams; the hierarchical and co-teaching structure. The hierarchical structure, a teacher and an aide (assistant) is more common than that of the co-teaching (two equal teachers) structure (Cooks & Friend, 1995; Leana et al., 2009; Shim, Hestenes, & Cassidy, 2004). In the hierarchical structure, the teacher is viewed as the lead staff and typically has more responsibilities than the assistant teacher. Lead teachers typically care for children, create lesson plans, facilitate activities, monitor, and document the children's progress (Bullough et al., 2014; Leana et al., 2009; Ratcliff et al., 2011). This model is similar to the one lead, one assist co-teaching model of Cook and Friend (1995).

Research is sparse concerning the assistant teacher's role in the early childhood classroom, which may lead many to infer that there is a lack of significance of that role. The few existing studies also describe a hierarchical structure in which the assistants have fewer teaching responsibilities and take care of managerial tasks such as preparing materials for the lead teacher, cleaning up after activities and transitions, and taking care of children's physical needs (Bullough et al., 2014; Leana et al. 2009; Ratcliff et al., 2011; Sokinsky & Gilliam, 2011). The local Head Start agency employs the hierarchical in most of classrooms but there are a few rooms that use the co-teacher structure.

The second team configuration used in Head Start classrooms is the co-teacher structure. In the co-teacher structure, the responsibilities are equally shared (Cook & Friend, 1995; Leana, et al., 2009; Shim et al., 2004). The Bank Street, Montessori, and Reggio approaches all utilize the co-teacher structure. However, there are few if any studies that associate the teaching structure with child outcome and classroom quality. Although sharing responsibilities is a challenge for some teachers (Cooks & Friend, 1995), in one of the few studies that exist, co-teachers were shown to have higher quality and more appropriate teaching practices (Shim, Hestenes, & Cassidy, 2004). Because the literature is sparse concerning teaching teams in early childhood, less is known about the responsibilities of co-teachers.

How teaching teams are paired is another aspect of the team structure. The center director commonly structures the teaching teams prior to the start of each year with the little to no input from staff (Bullough, 2015). However, the expectation is that teams perform the relevant task of caring for children while sharing the common goal of

using best classroom practices. The teachers in the team teaching research reports that having the autonomy to select their teaching partner led to their success (Bullough, 2015a; Murato, 2002). In a qualitative study on assistant teachers, the assistants commented many times that they did not have a say in the composition of their team and it was solely based on the director's decision (Young, 2016). The assistants were moved to various classrooms several times throughout the duration of the 6 month study.

The team teaching literature in elementary and secondary schools provides some insight on how teams are structured but less is known about Head Start teaching teams. This lack of research further justifies the need for closer examination and description of current Head Start teaching teams.

Teaching Team Demographic Characteristics

Demographic characteristics such as ethnicity and team tenure, or the number of years working as a team, are a part of every team. Demographic characteristics are also referred to as surface level or structural characteristics. These surface level characteristics include things such as gender and race (Kozlowski & Bell, 2013). How those characteristics contribute to team processes and outcomes are commonly studied in the teaming literature (Kozlowski & Bell, 2013). However, the findings are mixed as to how diversity contributes to the performance of the team. One study found that race had a negative effect on team performance (Mannix & Neale, 2005). In contrast, another study found that race had no influence on the team performance (Stahl et al., 2010).

Diversity of Head Start Teaching Teams. Studying the diversity of teams is challenging due to the contextual factors that are associated with the diversity of the teaching team. For example, heterogeneous teams have the challenge of breaking down the barriers of the different values, cultural assumptions, and stereotypes. Once those barriers are broken, members can coordinate and work as a team. (Kozlowski & Bell, 2013). A parallel can be drawn to Head Start teaching teams. Although most Head Start teams are comprised of primarily female dyads, racial or ethnic diversity exist in many of the teaching teams (Bullough, 2015b). Though diversity occurs in many Head Start classrooms, there are few if any studies that examine this surface level characteristic. Thus, identifying if the team member's ethnicity associate with the team's processes can provide an opportunity to break down any existing barriers and create higher levels of teamwork. When teams differ based on ethnicity, there are issues that arise based on cultural differences that can create boundaries in communication (Frigotto & Rossi, 2012; Stahl et al., 2010). However, a meta-analysis conducted by Chiocchio and Essiembre (2009) found that heterogeneity was correlated to the social cohesion and outcome performance of a team. Simply put, diverse teams had higher results when there was evidence of interpersonal attraction. Since there are mixed findings related to the team's heterogeneity, this becomes an interesting construct to examine among Head Start teaching teams.

Tenure of Head Start Teaching Teams. Bronfenbrenner's (2006) theory argues that time is the lifespan of the person and all the transitions that occur. In examining teaching teams, time would be the lifespan of the team, or the teaching team tenure. A pilot case study of the experiences of early childhood assistant teachers discovered the team's lack of time together might have influenced the lack of communication between team

members (Young, 2016). Participants mentioned the need for more communication and noted that the teams were new and still learning each other's styles. Time spent together can influence the function of a team but one of the issues in applying research findings is the inconsistent data related to time spent in a team. Teams need time to develop cohesion (Chiocchio & Essiembre, 2009). Team cohesion is the interpersonal attraction and commitment to the task. A team's cohesion is related to their performance. Time together is an important factor in the functioning of a teaching team however, the literature is sparse on Head Start teaching teams, which calls for more research in this area. Examining Head Start teaching team tenure may lead to better understanding of the success and challenges of the team.

Teamwork Successes and Challenges

The success or failure of a team depends on their ability to work together (LaFasto & Larson, 2001). Working as a team requires collaboration and members who are knowledgeable and good at collaborating. In the context of the classroom, each member of a teaching team should be knowledgeable about the curriculum models and use of developmentally appropriate practices (Goffin & Wilson, 2001; LaFasto & Larson,2001). Teachers should also have some experience working with young children. Problem solving is a task that teachers must employ often as they should be teaching based on the needs of each individual child. This individualized teaching requires teachers to plan and solve problems in the moment as they adjust their activities for children. The experience and knowledge of a teaching team brings a team closer to their objective. The objective for teachers would be to provide care for young children and appropriate activities that assist in their development. Once teachers are

equipped with knowledge and problem solving abilities, the focus must shift to the team factors.

Success of Teamwork

There are four factors that are associated with effective teams; openness, supportiveness, action orientation, and personal style. Openness is used to describe individuals that "are willing to deal with problems, surface issues that need to be discussed, help create an environment where people are free to say what's on their mind, and promote an exchange of ideas" (LaFasto & Larson, 2001 p. 8). Teachers create an open environment by meeting with their co-teacher or assistant on a regular basis to discuss the strengths, weakness, and progress of the team. Supportiveness is another factor of teamwork and it is the desire to help others be successful. An example of supportiveness is an experienced assistant teacher helping her first year lead teacher be successful. The third factor, action orientation, is the ability to take action and encourage others to do the same. In the classroom, this is occurs when both teachers take equal responsibility for the care of the children and managerial task. The last factor of an effective team is positive personal style. Those individuals who display positive attitudes, confidence, and are fun to work with contribute to the team's success. Teachers who select their co-teacher base some of their decision on the team member's personality and attitude (Murato, 2002). Some teachers note that having a sense of humor and being compatible with the other's personality is also important.

Additionally, teachers state that teaching teams provide opportunities to gain personal and professional support as well as a mechanism to acquire new teaching techniques (Cooks & Friend, 1995; Fitzgerald & Theilheimer, 2012; Salend, Gordon, &

Lopez-Vona, 2002). As teachers work in teams, they are able to observe their teammate's style of teaching. For example, while one teacher is responsible for circle time, she may introduce a song or concept that is new to the other teacher. The observing teacher may incorporate the new song or concept into her circle time with the children. Working as a team also provides teachers social interactions and support that are important to dealing with the stress among early childhood caregivers (Baumgartner et al., 2009). Teachers can also vent to one another and receive feedback on how to handle various situations. All of these things mentioned are components of a good teaching team relationship. Good relationships are productive, constructive, mutually understanding, and self-correcting (LaFasto & Larson, 2001).

Challenges of Teamwork

Support, positive social interactions, and personal and professional growth are all by-products of a successful team. Even with these successes, there are also challenges such as communicating with co-workers, teaching style differences, as well as perceptions and values of teaching team members (Ratcliff et al., 2011; Sokinsky & Gilliam, 2011). These challenges can negatively affect the successfulness of a teaching team. Damore and Murray (2009) conducted a study on the collaborative teaching practices perceptions of urban elementary teachers. The researchers found that teachers felt interpersonal factors such as attitudes and communication were eminently important to collaboration and co-teaching. However, one of the consistent problems was giving and receiving feedback. Teachers struggled with providing feedback to their co-workers which can lead to more misunderstandings and differences of perceptions. Often the

feedback that teachers withhold is related to the differences in teaching style (Bullough et al., 2015).

As many team members will agree, working well together does not come easy (LaFasto & Larson, 2001). Sokinsky and Gilliam's (2011) study examined the lead teacher's perception of working with assistant teachers. Their results indicated that lead teachers felt the assistants were important to classroom management and children's care, but less useful in providing instruction, with the assistant teacher's education level being an exception. When assistant and lead teacher had similar education levels, the lead teacher described the assistant as more useful in teaching responsibilities. Assistants and lead teachers also differed in their perceptions of the assistant teacher's role (Ratcliff et al., 2011). Compared to teacher's ratings of how often tasks were completed, the assistants rated themselves higher on task completion than the rating provided by their lead teachers. The tasks were assisting with lesson plans and cleaning the classroom. This difference in opinion about the contributions of assistants could influence the perceptions of teamwork. Therefore, it is important to understand the teaching teams' perceptions of teamwork since teaching teams are charged with the task of working together to support children's development through high quality classrooms.

Classroom Quality

Many factors contribute to the overall quality of a classroom. For years, conceptions of classroom quality have focused primarily on the environment and program structures (Phillipsen et al., 1997). As research has shed more light on areas impacting program effectiveness, it became necessary to not only measure structural variables such as the environment and classroom materials but also process quality that

consists of the relationships between teaching staff and children. The environment consists of the physical space and materials while teacher-child interactions can be observed by how the teacher interacts with the child and how she uses the materials available to support learning.

Structural Quality

Phillipsen et al., (1997) examined the difference between structural and process quality. Structural variables include ratios, teacher training and education requirements, center hours, and pay. These constructs are generally out of the control of the teacher and influenced by policies or administrators. On the other hand, caregivers heavily influence process quality. These variables consist of the caregiver's interaction with children and the child's overall experiences in the classroom. However, Phillipsen et al. (1997) only examined the lead teacher's structural indicators influence on teacher-child interactions. The authors found that higher education, more experience and pay influenced the process quality of early childhood classrooms. Similarly, the Castle et al (2016) found that infant and toddler teachers with early childhood education related degrees provided higher Emotional and Behavioral Support (EBS) and Instructional Support (IS) measured by the Classroom Assessment Scoring System (CLASS; La Paro, Hamre, & Pianta, 2012). The study examined the associations between teacher characteristics and teacher-child interactions. The CLASS tool is a commonly used to measure process quality. The sample for this study only included the lead teachers. The lack of information about the assistant teacher's interactions with children presents a limited view of all the contributions to classroom quality and leaves the field with more questions. The most pertinent questions are what structural variables influence assistant

teacher behaviors in the classroom and how does the interactions within the teaching team provide a broader view of all the teacher characteristics that contribute to the classroom environment?

Process Quality

Although most studies only collect data on the lead teacher, one recent study conducted examined the contributions of the assistant teacher (Curby et al., 2012). The study examined how teachers provided the emotional support, organized the classroom, and the quality of instruction. The researchers observed the lead and assistant teachers also using the CLASS-PreK tool (Pianta, La Paro, & Hamre, 2008) designed specifically to measure these constructs. The results of the study indicated that assistant and lead teachers achieved similar scores on emotional support and classroom organization. However, assistant teachers scored lower than lead teachers did in the domain of instructional support. The study also found low correlations between assistant and lead teacher's concurrent ratings. This indicated that one teacher's measure of quality did not represent overall classroom quality. Any individual that interacts with children will have an influence on them. Whether the assistant teacher was responsible for maintaining ratios, helping with routines, or providing instruction, he or she served as an asset to the classroom. Therefore, examining the lead and assistant teacher's interactions are key to measuring classroom quality and understanding the significance of how teaching teams work together.

Classroom quality is dependent upon positive interactions between teachers and children as well as a stimulating and safe environment. One of the primary influences on classroom quality is the teacher (Bollough et al., 2014; Castle et al., 2016; Pianta et

al., 2005). Specifically, the type of interactions the teacher has with the children has been found to influence both classroom quality (Howes & Smith, 1995; Pianta et al., 2005) and child outcomes (Howes & Smith, 1995; Shonkoff et al., 2011). These studies have primarily focused on the lead teacher. Fewer studies have considered the role and impact of other teachers in the classroom, especially the common staffing patterns that leads to teaching teams.

Child Outcomes

The primary goal of Head Start is to improve the lives of children living in poverty (Zigler & Muenchow, 1992). One of the ways to improve their lives is by providing a firm educational foundation and ensuring that children are ready for school. Therefore, measuring and monitoring child outcomes are essential to Head Start programs. Areas of development associated with school readiness include social emotional and executive function, an aspect of cognitive development (Lally, 2010; Shonkoff et al., 2011). Understanding what contributes to those outcomes is critical.

Social Emotional Development

Social interactions are the foundation for helping the brain to develop (Shonkoff & Phillips, 2000). Genetically, children are born with certain temperaments, however, the caregiver or environment also shapes young children's social emotional development. Caregivers shape the children's emotions by their reaction, modeling, and discussion of emotions therefore teacher interactions are also as key to school readiness (Castle et al., 2016; Phillips, 2010; Hamre et al., 2014; Williamson, 2014). Interactions that offer support of children's emotional and academic development, as well as organize the classroom activities, are associated with better child outcomes (Bandel,

Aikens, Boller, & Murphy, 2014; La Paro, Hamre, & Pianta, 2012; Pianta, La Paro, & Hamre, 2008).

Supporting children's emotional development requires that teachers provide a positive climate, demonstrate sensitivity toward children and have regard for the child's autonomous behavior. Teachers who are emotionally supportive also guide and manage behaviors more effectively. Patrick (2016) explores the relationship between teacher beliefs, teacher-child interactions and child outcomes. The author's findings conclude that a moderately significant relationship exist between children's social emotional behaviors and a teacher's ability to provide teacher sensitivity and have regard for a child's perspective.

Although these positive teacher interactions contributed to better child outcomes (Hamre et al., 2014; Patrick, 2016), data gathered through classroom observations tools typically focused on the lead teacher's behavior. Current ECE and Head Start literature does not provide a clear understanding on how teaching teams work to contribute to children's academic success. However, Scruggs et al (2007) conducted a meta-synthesis on co-teaching in special education classrooms and reported that children benefit from the experience of two teachers. Some of the student benefits were extra attention from teachers, increased positive social behaviors, and increased academic achievement. The studies used were qualitative and did not measure the correlation between team teaching and academic achievement using test scores.

For this reason, gathering quantitative data to examine the associations between teaching team effectiveness and child outcomes would provide more information on

how these constructs associate. The proposed study would also provide more specific information about the Head Start population.

Cognitive Development

Children's cognitive development can be supported when teachers facilitate learning activities, provide many language development opportunities, and provide feedback that is meaningful to children. The Classroom Assessment Scoring System (CLASS) tool (Pianta, La Paro, & Hamre, 2012) measures these behaviors. One aspect of healthy cognitive development is the maturation of executive function. Executive function consists of working memory, mental flexibility, and inhibitory control (Diamond, 2002). Working memory allows a person to store and manage information in the mind for a short period. Mental flexibility is the capacity to redirect attention promptly to another task or priorities. In very young children, mental flexibility is considered the ability to shift attention when an adult is both talking to them and another adult (Galkinsy, p.18). Inhibitory control is the skill used to regulate thoughts and natural inclination in an effort to refrain from temptations and distractions. Furthermore, inhibitory control is the ability to control attention, behavior, and emotions. In short, it makes it possible for individuals to change and choose how to react and behave (Diamond, 2013). Although inhibitory control is often difficult for young children, especially exuberant children, it is predictive of later outcomes (Center on the Developing Child, 2011; Diamond, 2002).

Harvey and Miller (2016) investigated the association between Head Start children's executive function skills and early mathematical skills and found that inhibitory control and working memory contributed to preschooler's math abilities.

Though they found association between executive function and math, there was no mention of how teaching teams supported children's development of those skills. Another study conducted by Choi et al (2016) explored the link between Head Start teacher–child interactions and children's inhibitory control. The preschooler's inhibitory control skills were measured in fall and spring and teacher–child interactions were observed during the fall using the CLASS tool. Results showed that children who initially presented poor IC skills showed improvements in their IC skills the following semester when enrolled in classrooms practicing high-quality teacher–child interactions. The findings support the importance of teacher-child interactions to executive function but more information is needed to understand how the teaching team's perceived level of teamwork may contribute to classroom quality and, subsequently, to children's executive function development.

The research is clear on the importance of children's social emotional and executive function development and the positive influence that teachers have on those areas of development. One area that remains to be examined is the interactions among Head Start teaching teams and their influence of children's social emotional and executive function development.

Conclusion

The over-arching goal of Head Start is to promote school readiness for young low-income children. The design of the Head Start program includes two adults working together to achieve this goal. Working collaboratively in a teaching team has its challenges and, yet, so many benefits. Teachers are challenged to find effective ways to communicate, plan, and provide instruction. The reward of their efforts may be seen

in increased classroom quality, which may lead to better child outcomes. In order for the two adults to work effectively together, they must communicate openly, support one another, be action oriented, and display a positive attitude (Fitzgerald & Theilheimer, 2012; LaFasto & Larson, 2001).

Effective teams reach their goals, which in the Head Start setting would be ensuring that children are well cared for and ready for school. Despite the research provided on the various types of teams, and the characteristics of effective teams, there is still much to learn about Head Start teaching teams. Information that can be learned include the associations between teaching team characteristics and classroom quality and if higher levels of perceived teamwork associate with better child outcomes. The proposed dissertation aims to address these gaps in the literature.

Chapter 3: Methods

Approach

This study aimed to examine associations among teaching team perceptions of teamwork; classroom quality, specifically how teachers provide emotional and instructional support as well as organize the classroom; and child outcomes. Through secondary data analysis, the study also explored correlations among teaching team perceptions of teamwork, teacher characteristics, classroom quality and child outcomes; more specifically children's cognitive and social emotional development. Data for the study were collected during the 2015-16 school year by trained and reliable ECEI staff. Classroom quality, child outcomes measures, and the teacher survey were collected as part of the ECEI CAP Tulsa Evaluation Project.

Participants

The participants in the study were lead and assistant teachers and children in CAP Tulsa Head Start classrooms in Tulsa OK. The data will include 45 lead and assistant teacher pairs and approximately 148 children at 11 Head Start sites. Participants were a part of the larger ECEI CAP Evaluation Project. Teaching teams pairs included in the sample had to meet the following criteria; sign the OU IRB-approved informed consent form, have completed teacher questions from both team members, and have children in the pilot study (which is a random sample of CAP children who the ECEI is following to track their achievement over multiple years of CAP Tulsa Head Start experience that is described below).

A stratified random sample of 300 children was initially selected for the ECEI CAP Evaluation Project. Classrooms were stratified by age to include 18 2-year old rooms, 31 3-year old rooms, and 27 4-year old rooms; classrooms were then randomly selected to fill those slots. Five children were randomly selected from each classroom. There were two selection criteria: the child must not be participating in another agency-funded study and the child must be at least 30 months old as of September 1, 2015.

Setting

The 45 Head Start classrooms were located throughout 11 CAP Tulsa Head Start sites. The classrooms consisted of 13 toddler and 32 preschool rooms. The classrooms were full day, full year classrooms. One of the unique characteristics of the program is that each pre-k classroom has at least one teacher with a Bachelor's degree and a teaching assistant with at least a Child Development Associate (CDA) certificate or an

Associate's degree. Instructional coaches provide support for teachers and teachers receive at least 45 hours of professional development training each year.

Procedures

The ECEI Project Investigator, Sherri Castle, obtained IRB consent for the CAP Evaluation Project, titled Pilot Study to Assess Children's Development in CAP-Tulsa's Early Childhood Programs. However, to conduct secondary data analysis, a request for determination was submitted to the IRB. The IRB will determine if an additional IRB application is needed for the analysis of the data set.

As a project director for the ECEI, the student researcher was listed as a key personnel on the IRB. The student researcher and ECEI project staff visited CAP sites to collect parent/guardian consents for the randomly-selected children. ECEI staff explained the study to each parent and informed the parents that their participation in the study was voluntary. Staff followed the IRB processes and used the IRB approved consent forms and processes. ECEI staff also collected consents from CAP Tulsa staff to participate in the online teacher survey. Only those teachers with pilot children were asked to participate in the study. ECEI staff shared with teachers that their survey participation was voluntary and their responses would be kept confidential. Lead and assistant teachers were compensated with a $15.00 Wal-Mart gift card.

Data were collected using three different methods including classroom observations of teaching practices, direct child assessment, and teacher ratings of child behavioral characteristics. Data collection through administration of observations and child assessments involved a thorough training and evaluation of each data collector in order to ensure reliability on each data collection tool. Data collectors typically had

three or more years of experience working with young children and most of them also had previous early childhood teaching experience.

As the project director, the student researcher, regularly monitored data collection procedures to ensure study protocols and data collection standards were followed. Data collectors are subsequently re-evaluated for reliability on an annual basis following similar protocol.

The process for establishing rater reliability on the CLASS assessment of classroom quality is consistent with the measure's protocol for reliability. Data collectors attend a two-day training facilitated by a CLASS certified trainer. Subsequent to the training, the observer obtains reliability by watching a series of five 20-minute videos of classroom interactions. The observation must obtain an aggregate score of 80% reliability in order to become reliable. As an additional step to verify reliability, the training team conducts drift checks on assessors once a year and simultaneously codes classroom observation. Data collectors are then given feedback on any scoring inconsistencies.

Child data were collected in two waves in a pre/post-test timeframe with a six-month gap in between data collection waves. The first wave of child assessment data were collected in early fall at the beginning of the academic calendar in order to collect baseline data and ensure the child received only minimal exposure to his or her new classroom environment at the time of assessment. Towards the end of each wave of data collection, teachers rated each child on different behavior patterns and social emotional traits using the Devereaux Early Childhood Assessment (DECA; LeBuffe & Naglieri,

2012). The classroom teacher who had to greatest familiarity and experience with the child completed these ratings.

Classroom observations were conducted January through March 2016. Each classroom was required by their agency to be observed but teachers consented to their data being used for research purposes. Ninety-three classrooms were observed and 45 of the classrooms had teaching team pairs that completed the teacher survey and will be a part of the proposed research project.

Measures

Table 1. provides an overview of the specific measures used in data collection.

Table 1: Measures Used

Measure	Concept(s) Measured	Frequency of Administration
Teacher Survey	Teacher Demographic Variables • Number of years together as team • Ethnicity Perceptions of Teamwork	Once in Spring
CLASS	Classroom Quality	Once in Winter
Pencil Tap	Cognitive: Executive Function	Twice per year (fall/spring)
Head Toes Knees Shoulders	Cognitive: Executive Function	Twice per year (fall/spring)
DECA	Social emotional	Twice per year (fall/spring)

Teaching Teams

Teamwork. A component of the staff survey contained questions related to teaching teams. These questions were adapted to measure levels of teamwork based on Salend, Gordon and Lopez-Vona's (2002) article, Evaluating Cooperative Teaching Teams. Psychometric analysis is not currently available but will be conducted during the analysis for this dissertation research. Teachers rated the perceptions and behaviors of their current team on a 5-point Likert scale. Statements included "I enjoy working as

a team with my co-teacher" and "My co teacher and I incorporate each other's teaching styles into our teaching team" were rated as 1 (strongly disagree) to 5 (strongly agree). A higher mean score indicates higher perceptions of teamwork. See appendix for survey items.

Demographic survey. The Staff Survey also included several demographic items. Teachers reported information on their race, marital status, household income, educational background, years in the field, and plans to stay in the field. Of interest to this study are questions related to ethnicity and number of years together as a teaching team. Teaching team tenure was collected from CAP agency.

Child Outcomes

Social Emotional: Devereux Early Childhood Assessment Preschool, 2nd Ed (DECA-P2), 2012. The DECA is completed by the parent or teacher. Basal and ceiling rules do not apply. Sample items include; how often in the last 4 weeks did this child control his/her anger and how often in the last 4 weeks did this child try new things. The internal consistency: Cronbach's alpha ranged from .79 for Attachments/Relationships using parent raters to .94 for Self-Regulation using teacher raters. Median internal consistency reliability coefficients across the three protective factors were .88 and .92 for parent and teacher raters, respectively, while the coefficients for the Total Protective Factors scale were .92 for parent and .95 for teacher ratings. Coefficients for the Behavioral Concerns scale were .80 for parent raters and .86 for teacher raters.

Cognitive Development: The Pencil Tap (Diamond & Taylor, 1996). The Pencil Tap, an adaption of the peg-tapping task, is an executive function measure that specifically assesses the child's inhibitory control. As an example, the child is asked to

tap once when the assessor taps twice. The child must also tap one time when two taps are demonstrated. Three trial items are demonstrated to ensure that children understand the rules of the assessment. During the trial items the examiner provides feedback to the child. After the three trials are complete, the assessment is administered without feedback and the assessor records the child's responses without comment. If the child fails all three trial items the assessment is not administered. Scores represent the number of correct responses out of the 16 trial items. The Cronbach alpha for the Pencil Tap was .86 (Fall 2014) and .88 (Spring 2015) based on the 2014-15 CAP Tulsa sample.

Cognitive Development: Head Toes Knees Shoulders (HTKS; McClelland et al, 2014). The HTKS is administered as a short game in three sections with 10 items each in which an examiner asks a child to perform a movement opposite of what is stated. Section one consists of a head/toes pairing such that when asked to touch their toes, children should touch their head. Section two adds a new pairing of knees/shoulders such that when asked to touch their shoulders, children should touch their knees. Section two includes a mix of head/toes and knees/shoulders pairings. Section 3 switches pairings to head/knees and shoulders/toes. There are two parallel forms of the HTKS: A, which starts with head/toes, and B, which starts with knees/shoulders. Validation studies have found no significant differences between the two forms (McClelland et al., 2014). The assessment is scored by assigning scores of 0, 1 and 2 assigned for incorrect, self-correct and correct, respectively, for a total score range of 0 to 60, with higher scores indicating higher self-regulation. Self-correct refers to any motion toward the incorrect response, but stopping and ending with the correct response (McClelland et al., 2014, p. 4). Section 2 is administered only if children score at least 4

points on section 1; administration of section 3 requires at least 4 points on section 2. There is no basal or ceiling scores. The internal consistency: Cronbach's alphas across the four waves ranged from .92 to .94. and interrater reliability was assessed using a random subsample of children (n = 28) and resulted in a significant coefficient of 0.88 and high inter-rater agreement (92.29%), with a significant weighted Cohen's kappa of .79.

Classroom Observations

Classroom Quality: Classroom Assessment Scoring System, Pre-K (CLASS-Pre-K, 2008). The CLASS is designed to assess three domains: Emotional Support, Classroom Organization, and Instructional Support. The tool measures the level of interaction in each domain provided by the teacher to the majority of the students in the classroom. Each domain has several dimensions that are coded during four 20-minute cycles. The Emotional Support dimensions include positive climate, negative climate (reversed coded), teacher sensitivity, and regard for student perspective. Under the domain of Classroom Organization, behavior management, productivity, and instructional learning format dimensions are observed. The last domain of Instructional Support measures concept development, quality of feedback, and language modeling provided by the teacher. Each domain is scored using a 7-point scale ranging from 1= low to 7= high range interactions.

The reliability of the tool was measured using internal consistency and test-retest. The stability of the CLASS Pre-K scales and their dimensions among the National Center for Early Development and Learning Multi-State Prekindergarten Study (NCEDL MS Pre-K) classrooms are available within observations and across

time periods. Scale correlations across the four cycles of the observation ranged from 0.86 (Instructional Support) to .91 (Emotional Support). Dimension coefficients ranged from .79 (Instructional Learning Formats) to .90 (Teacher Sensitivity). Over two consecutive days, scale coefficients ranged from .81 (Classroom Organization) to .86 (Instructional Support). Dimension coefficients ranged from .73 (Productivity) to .85 (Teacher Sensitivity). Between fall and spring, dimension coefficients ranged from .25 (Quality of Feedback) to .64 (Behavior Management).

Data Analysis Plan

This study described the successes and challenges of classroom teamwork of Head Start teaching teams. It also examined the relationship between those teamwork processes, teachers perceived level of teamwork, classroom quality and child outcomes. Five research questions were explored. The following sections describe the major data analytic approaches, which include;

Research question 1. *What teamwork processes do teaching staff identify as factors in their success and challenges as a teaching team?*

This question was analyzed by 1) creating a table that lists the types of successes and challenges described by the teachers on the 2016 survey, 2) tallying the number of times they were used by the lead or assistant teacher, 3) combining similar types of successes and challenges to create themes. This information was described and discussed to answer research question 1. These types were then imported into SPSS and analyzed quantitatively to answer question three.

Research question 2. *What level of perceived teamwork is reported by lead and assistant teachers in Head Start?*

a. *To what extent are perceptions of teamwork consistent among team members?*

b. *Do levels of perceived teamwork vary across teachers' role?*

Research question 2 examined the distribution and patterns of teachers' levels of perceived teamwork. Internal reliability scores were computed within rater (Cronbach's Alpha) and between raters (Cohen's Kappa) to examine the degree of internal and between-rater consistency. Classroom level values (i.e., match between a given lead teacher and assistant teacher) were included in the data file to use as a predictor variable in other research questions. Next the utilization of an independent sample *t*-tests examined whether teachers' individual ratings of perceived teamwork differ by teacher role (i.e., lead teacher vs assistant teacher).

Research question 3**.** *How do teaching teams' structural characteristics associate with teamwork processes and level of perceived teamwork?*

Research question 3 focused on variation within teachers' reported teamwork processes and perceived teamwork and examined whether this variation is linked to teams' structural characteristics such as years working together as a team and ethnicity match. To address this question, a variety of methods were utilized to compute tests of mean differences or expected counts as appropriate based on the nature of the variables in a particular analysis. Specifically, because teamwork processes are categorical outcome variables, association with years working together was examined using ANOVA and association with ethnicity match was examined using a cross-tab and Chi-Square test. To examine differences within teachers' perceived levels of teamwork (continuous) individual teacher scores were computed then the difference of the lead

and assistant teachers' scores were used as the team value of perceived teamwork. Bivariate correlations computed for associations with years working together as a team and an independent sample *t*-test was conducted to examine differences by ethnicity match.

Research question 4. *To what extent do teamwork processes and perceived teamwork associate with observed classroom quality?*

Research question 4 examined the relations between teacher-reported teamwork processes and perceived teamwork and observed levels of classroom quality. Because the data for this project are nested (i.e., classrooms are nested within sites), the assumption of independence of data points required by ordinary least squares regression was not met. To account for the nested data and to provide corrected, unbiased parameter estimates, the researcher will employ Multilevel Modeling techniques using MPLUS. Additionally, Full Information Maximum Likelihood methods will be utilized to account for missing data. Due to sample size constraints and multicollinearity among the predictors, models were estimated separately for each predictor and for each domain of observed quality. Specifically, the researcher estimated models in which classroom quality was regressed on lead and assistant teachers' reported teamwork processes or levels of perceived teamwork.

Research question 5. *To what extent do teamwork processes and perceived teamwork associate with children's cognitive and social emotional development? Is this association mediated by classroom quality?*

Research question 5 was an extension of question 4 and analysis was conducted similarly. This question built on the models in question 4 by regressing child outcome

variables (i.e., HTKS, Pencil Tap, and DECA modeled separately) on domains of classroom quality. Models examined both direct effects of teachers' teamwork processes and teamwork on children's outcomes, as well as indirect effects through classroom quality, will be examined. To test for indirect effects, bootstrapping was employed and confidence intervals for the indirect effects were inspected to determine whether or not indirect effects are supported in these data.

Potential Limitations and Threats to Validity

Several potential limitation exist with the research study and current sample. First, it is important to recognize that the study was correlational and represent a snapshot of the teaching team's effectiveness on classroom quality and child outcomes. Secondly, the sample is recognized as a high quality Head Start center, has access to many resources, and has at least one Bachelor degreed teacher in most classrooms. This is atypical of most Head Start programs. Teaching team effectiveness data was collected using teacher self-report. The sample size is also small. A threat to validity is the lack of psychometric properties for the teaching team practice and perceptions scale. These factors limit the generalizability of the findings.

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Appendix A: Teacher Survey-Teaching Team Practices and Perception

Teaching Team Practices and Perceptions

The purpose of this scale is to examine the perceptions of Head Start teaching teams and to measure the use of cooperative teaching team best practices. The scale is a modification of questions from Salend, Gordon & Lopez-Vona's (2002) article, *Evaluating Cooperative Teaching Teams*. The questions were piloted at a 3-Star NAEYC Accredited child development center.

For the purpose of this study, a teaching team consists of the lead and assistant teacher working together in one classroom

On a scale of 1-5 please rate the following statements		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
1	I enjoy working as a team with my co-teacher	1	2	3	4	5
2	I feel that my co-teacher and I share responsibilities for all activities in our teaching team	1	2	3	4	5
3	I find it easy to communicate with my co teacher	1	2	3	4	5
4	My co teacher and I incorporate each other's teaching styles into our teaching team	1	2	3	4	5
5	At least once a week, my co-teacher and I discuss the teaching responsibilities. *E.g. decide who will facilitate circle time or small group*	1	2	3	4	5
6	At least once a week, my co-teacher and I discuss how to handle the classroom management techniques as a team. *E.g. how to ensure the classroom rooms smoothly, prevention of disruptive behavior*	1	2	3	4	5
7	My co-teacher and I vary workload so that both of us perform meaningful activities. *E.g. We each take turns facilitating circle time and performing cleaning task*	1	2	3	4	5
8	As a team, my co-teacher and I have sufficient time to communicate	1	2	3	4	5
9	I address any conflicts with my co-teacher immediately	1	2	3	4	5
10	My co-teacher and I incorporate each other's strengths into our teaching team	1	2	3	4	5
11	My co-teacher and I rarely incorporate each other's cultural perspectives or beliefs into our teaching team.	1	2	3	4	5
12	My co-teacher and I discuss our curricula at least once a week e.g. *what theme or project to use, which objectives to cover, etc.*	1	2	3	4	5
13	My co-teacher and I discuss child assessments as a team at least once a week *e.g. who will observe which child, what objectives will be observed, where to place to child in the GOLD system, etc.*	1	2	3	4	5
14	My co-teacher and I rarely agree as a team on our teaching responsibilities. E.g. *Who will facilitate circle time*	1	2	3	4	5
15	My co-teacher and I agree on how to handle the classroom management	1	2	3	4	5
What factors contribute to the success of your classroom teaching team?						
What challenges have you encountered with your co-teacher as a classroom team?						

Appendix B: Teacher Survey-Demographic Information

Do not put your name or the name of your school or center on this form. There are no correct or wrong answers and your responses will be anonymous and confidential. Your answers will not be shared with your director, principal, or professor

.

1. Date of Birth _____Month _____Day _____Year

2. Gender _____ Female _____ Male

3. Which of the following best describes your racial group? (*Check one*.)

_____White (Caucasian) _____Native Hawaiian or Other Pacific Islander

_____ Black or African American _____Middle Eastern

_____Asian _____Biracial/Multi-racial

_____American Indian or Alaska Native _____Hispanic or Latino or Spanish culture

_____Other race or ethnicity _____Not Hispanic (*specify*)

_____

C3. What is your current marital status? (Check one)

□ **a**. Single, never married □ c. Married, living with spouse □ e. Divorced

□ b. Single, living with a partner □ d. Married, separated □ f. Widowed

C4. What is your total annual household income?

□Less than $10,000 □$60,000 to $69,999

□$10,000 to $19,999 □$70,000 to $79,999

□$20,000 to $29,999 □$80,000 to $89,999

□$30,000 to $39,999 □$90,000 to $99,999

□$40,000 to $49,999 □$100,000 or more

□$50,000 to $59,999

C5. How many people, including yourself, live in your household? __

C6. How many of the people in your household are under 18 years of age? __

4. Education and Graduation Dates

__ Some High School ____ ___ Associate Degree from _____ college/university ____year

__ High School Diploma/GED___ ___Bachelor's Degree from _____college/university ____year

__ *CDA* Credential _____ ___ Master's Degree from _____college/university ____year

__Other (describe)_____ ___PhD/EdD from _____college/university ____year

5. Experience in early childhood education _____ Years _____ Months

6. Teacher Licensure ____No _____Yes ____ ECE ____El Ed _____Other (describe)

8. Do you plan to continue to work in the early childhood education profession? ____ Yes ____No

Please explain why.

_____

10. How do you keep current with early childhood teaching knowledge and practices? *Check all that apply.*

_____ read professional journal articles _____ attend workshops/trainings
_____ read professional web based information _____meet with supervisor or mentor
_____ read professional books _____consult with more experienced teacher
____ attend conferences and/or meetings _____other
_____
_____take college credit courses _____other _____

10. I feel that my early childhood knowledge and teaching skills are: *(Circle one of the answers below)*

Have None	Few	Limited	Good	Very Good	Excellent/Extensive
0	1	2	3	4	5

Appendix C: IRB Outcome Letter

The UNIVERSITY of OKLAHOMA

Institutional Review Board for the Protection of Human Subjects

Human Research Determination Review Outcome

Date: October 27, 2016

Principal Investigator: Diane M Horm, PHD

Study Title: Characteristics of Head Start Teaching Teams: Associations with Classroom Quality and Child Outcomes

Review Date: 10/27/2016

I have reviewed your submission of the Human Research Determination worksheet for the above-referenced study. I have determined this research does not meet the criteria for human subject's research. The proposed activity involves data that were originally collected for research purposes and will be de-identified with low potential for deductive re-identification based on the number of cases. Therefore, IRB approval is not necessary so you may proceed with your project.

If you have questions about this notification or using iRIS, contact the HRPP office at (405) 325-8110 or irb@ou.edu. Thank you.

Cordially,

Aimee Franklin, Ph.D.
Chair, Institutional Review Board

Appendix D: Project Timeline

Projected Date	Activity
November 9, 2016	Prospectus Defense
Early November	Data Cleaning
November - January	Data Analysis
January-February	Writing Empirical Manuscript
February-March	Writing Theoretical Manuscript
March 1, 2017	Final day to file graduation application
April 1, 2017	Final day to request authority for dissertation defense
Early April	Finalize Practitioner Manuscript
Week of April 10	Manuscripts submitted to committee
Week of April 24	Tentative dissertation defense
May 5, 2017	Final day for dissertation defense
May 12, 2017	Final day for dissertation deposit library

Publishable Articles-Empirical

Target Journal: Early Childhood Research Quarterly

Manuscript Focus: The extent of teamwork processes and perceived teamwork associations with classroom quality and child outcomes.

Research Questions:

Research question 4. To what extent do teamwork processes and perceived teamwork associate with observed classroom quality?

Research question 5. To what extent do teamwork processes and perceived teamwork associate with children's cognitive and social emotional development? Is this association mediated by classroom quality?

Paper Focus & Journal Fit

Early Childhood Research Quarterly is a top tier journal that publishes mostly empirical research. The journal publishes quarterly and has a 20% acceptance rate. Some of the topics of interest include children's development, program quality, public policy, and professional. The proposed manuscript would be ideal for the journal as the empirical findings will discuss how teaching team's teamwork processes and perceived teamwork associates with classroom quality and child outcomes.

Due to the limited information regarding Head Start teaching teams, the findings has the potential to influence Head Start and early childhood program administrators structuring of teaching teams. The sharing of the findings could also strengthen the links between research and practice; which is an interest of the journal.

Publishable Articles-Theoretical

Target Journal: Journal of Applied Psychology

Manuscript Focus: Teamwork processes and the link to years working together and ethnicity.

Research Questions:

Research question 3. How do teaching teams' structural characteristics associate with teamwork processes and level of perceived teamwork?

Paper Focus & Journal Fit

The Journal of Applied Psychology publishes original investigations that contribute new knowledge that enhances an understanding of behavioral psychological phenomena. Some of those phenomena may include work settings in business or education. The journal also considers phenomena such as groups, individuals, or cultures. The findings from this question will be a perfect match for this journal given their desire to share new knowledge. This study, is one of few if any that will examine the link between individual's ethnicity and behaviors within a teaching team.

The proposed manuscript will discuss the variation within teachers' reported teamwork processes and perceived teamwork and examine whether this variation is linked to teams' years working together as a team and ethnicity match. The paper will also discuss how teaching teams fit within Bronfenbrenner's bioecological model.

Publishable Articles-Practitioner

Target Journal: Young Children

Manuscript Focus: Teamwork processes, successes, and challenges of teaching teams.

Research Questions:

Research question 1. What teamwork processes do teaching staff identify as factors in their success and challenges as a teaching team?

Research question 2. What level of perceived teamwork is reported by lead and assistant teachers in Head Start?

Paper Focus & Journal Fit

Young Children is one of the leading practitioner journals. It is peer-reviewed and publishes five times a year. It boast a 25% acceptance rate for manuscripts and focus on publishing practical research-based articles. This proposed manuscript will focus on teachers reported teamwork process and the successes and challenges of the teaching team. The manuscript will provide practical application for administrators and program staff to use when determining teaching teams. The findings will also provide information for possible professional development topics such as teamwork and diversity in the workplace.