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The Effect of Teacher-Child Interactions on Child Outcomes

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THE EFFECT OF TEACHER-CHILD INTERACTIONS ON CHILD OUTCOMES

By

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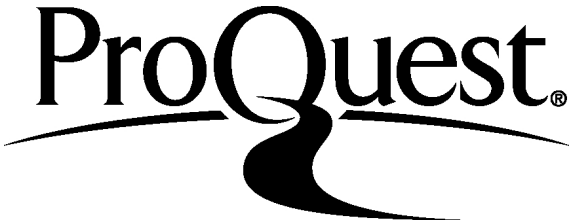

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ABSTRACT

THE EFFECT OF TEACHER-CHILD INTERACTIONS ON CHILD OUTCOMES

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University of Nebraska, 2015

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There is a strong body of research that suggests teacher-child interactions have a positive impact on child outcomes. Quality preschool programs include a focus on intentional positive interaction between teachers and children. To support positive developmental gains in young children, early childhood settings must include responsive and cognitively stimulating daily interactions between adults and children (Hamre, 2014). Children with more responsive teachers show improved outcomes across social, behavioral and cognitive domains (Hamre, Hatfield, Pianta, & Jamil, 2014).

The purpose of this correlation study was to determine the effect of teacher-child interactions on child outcomes. This focus of the study was to measure child outcomes with an authentic measure, Teaching Strategies GOLD Assessment System. Teacher-child interactions were measured with the Classroom Assessment Scoring System (CLASS). This quantitative study also compared teachers' years of experience and teacher certification to child outcomes.

Spearman rank order coefficient analysis indicated there was not a significant relationship between teacher-child interactions and child outcomes nor teacher-child interactions and teacher experience. Furthermore there was not a statistically significant

difference in teacher-child interactions between teachers based on the type of teacher certification.

Implications from the research worth further examination: teachers need ongoing support and coaching to ensure they are implementing the assessment tool with fidelity, and studies that includes both an authentic assessment and an authentic measure paired with standardized measures to assess child outcomes.

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My educational journey that has led me to this point started with my grandparents. They believed in education and their legacy is the root of this degree. My parents encouraged and supported my education and career. I wish my Dad could be here to see this but I know he is looking down with pride. My Mom is a great friend and knows how to listen. My siblings are pretty darn special. They each provide a different type of encouragement and humor that I treasure. Zachary, Mallory, and Abigail, my three wonderful children provided support by proofing my writing, designing infographics and endless technical support. It was my youngest daughter, Abigail, that told me to "find a new hobby" when I dropped her off at college as a freshman. Going back to school became my new hobby!

My husband Kurt has been my rock. He understands the rigor of going back to school at a mature age. What he didn't know was going back to school would decrease the number of homemade meals. Thanks for your understanding, love, support, and Excel expertise. The kitchen is back in full operation!

One of the significant benefits of going back to school are the relationships you develop. I am thankful for the new colleagues and friendships I gained. Heather, Troy, and Chris pushed me along the way and made this journey fun.

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CHAPTER ONE

INTRODUCTION

As the school year begins preschool teachers will prepare for days or weeks to ensure they create the foundation for a high quality early childhood experience for children and families. Teachers will intentionally design a classroom environment that will help children develop social skills through play and interactions to enhance a child's learning and development. Lessons are developed based upon research validated curriculum that is aligned to state standards. The curriculum includes early literacy and math activities delivered with developmentally appropriate rigor. Teachers, along with their paraprofessionals will engage in professional development on assessment that includes methods for collecting ongoing observations to monitor progress. Teachers will kick off the year with an open house that will be the first of many opportunities families have to learn and participate in the preschool program. During open house, families will be informed about the educational opportunities available to them and how progress is communicated throughout the year. Teachers will start to build a trusting relationship with children and families through a home visit before school starts. Why does all this matter? Increasingly, high quality preschool programs play a vital role in child development and learning in elementary school and beyond.

High quality preschools are places where children feel safe and well cared for. Effective preschool environments include well-crafted spaces and learning centers with quality materials and toys that promote development through play and interactions with teachers and peers. Quality preschool programs include a focus on intentional positive interactions between teachers and children. High quality teacher-child interactions are

essential in supporting and advancing child development. According to Pianta, La Paro, & Hamre (2008), interactions between children and adults are the primary mechanism of student development and learning.

Preschool children learn through play. Play is essential to development because it contributes to the cognitive, physical, social, and emotional well being of children (Ginsberg, 2007). Play is a major, central activity in the classroom and provides opportunities to learn and develop creativity, curiosity, and independence (Bordrova & Leong, 2005). Dramatic play enriches cognitive development by supporting the development of abstract and symbolic processes (Bodrova & Leong, 2005). Perhaps above all, play is so much more than childhood pastime; play is complex and is integral to a high quality preschool program.

Defining quality in early childhood is a complex task (Denny, Hallam, & Homer, 2012). Measuring quality in preschool programs includes multiple assessments that measure various aspects of program quality including classroom environments, curriculum, teacher-child interactions, child outcomes, and family engagement. Individual states have established their definitions of quality through quality rating improvement systems (QRISs). Nebraska's QRIS program is Step Up to Quality and it assesses and rates various aspects of program quality in childcare and early education.

Nebraska also has a measurement system designed to improve the programs and supports for all children served by school districts and community partners, Results Matter (Nebraska Department of Education). Results Matter in Nebraska is a child, program and family outcome measurement system. Results Matter was implemented in 2006 as a response to the Office of Special Educations requirement to report child

outcome data annually on the progress of children receiving special education services for at least six months of service (Greenwood, Walker, Hornbeck, Hebbeler, & Spiker, 2007).

Results Matter specifies the tools school districts must use to measure program and child outcomes. According to Results Matter, all children birth through kindergarten entrance must be included in Teaching Strategies GOLD Assessment System (GOLD). GOLD is a well-known observational measure for assessing young children's progress in all domains of development and it is considered to represent a developmentally appropriate, authentic approach to assessment (Kim & Smith 2010).

Beginning with the 2016-2017 school year, districts in Nebraska will be required to use the Classroom Assessment Scoring System (CLASS) (Pianta et al., 2008) to measure program quality. CLASS is an observational measure of the quality of several dimensions of teacher-child interactions in the classroom.

Given the fact that these two assessments are required, is there a relationship of strong CLASS scores to higher GOLD scores? In other words, do quality teacher-child interactions lead to children who are demonstrating knowledge and skills commensurate with their age?

Purpose of the Study

The purpose of this study was to determine the effect of high quality teacher-child interactions in 3 and 4-year-olds in preschool classrooms, as measured by the CLASS assessment, on child outcomes in the developmental domains of language, literacy, and cognitive development as measured by the GOLD assessment.

A correlation design was used to determine if a relationship exists between the CLASS and the GOLD assessments. In this study, there were two variables and the design methodology determined if the variables influenced each other.

The study participants were 37 preschool classrooms. Trained observers who have completed the publisher's inter-rater reliability conduct the CLASS assessment. Classroom teachers who completed the publisher's inter-rater reliability conduct the GOLD assessment. Data from the 2014-2015 school year was used. Site permission was obtained from the school district to use the data for the study.

Theoretical Base

Lev Vygotsky, Jean Paiget, and Uri Bronfenbrenner are three key theorists influencing early childhood education. The work of these three theorists explains the important connection between early learning and interactions. According to Bronfenbrenner and Ceci, (1994), Piaget, Vygotsky, and Bronfenbrenner identified the critical role of modeling language and behavior by the primary caregiver during the developmental stages before entering kindergarten.

According to Bronfenbrenner's ecological theory of child development, every day interactions between adults and children are the proximal processes that influence children's development (Bronfenbrenner & Morris, 1998). Bronfenbrenner (1986) emphasizes the importance of considering multiple social contexts and the connection to children's development and how they are entwined to indirectly explain child outcomes. Social contexts molds cognitive processes and are a part of early development (Bodrova & Leong, 2005).

Piaget's Cognitive- Developmental Theory emphasized how children's thinking and reasoning changed over time and is a direct result of their experiences and interactions with their environment. Children actively contribute to their own cognitive development during their experiences with materials and working to resolve discrepancies between prior knowledge and new information (Swim, 2007).

Russian psychologist Lev Vygotsky's Social Development Theory explains the connection between social interactions and cognitive development. Young children interact in shared experiences with others, those interactions play a vital role in how children think, reason, and communicate (Dombro, Jablon, & Stetson, 2011). Furthermore, the range of knowledge and skills a child can develop interacting with a peer or teacher is greater than the knowledge and skills the child will develop alone (Vygotsky, 1978). From this perspective, knowledge is actively and socially constructed through interactions with others. Children's learning and development is dependent on the discrete social exchanges between children or between children and adults.

Piaget and Vygotsky's constructivism theory is based upon the notion that children learn through interactions with the world. Piaget and Vygotsky's theories are best known for their insights into development of thought processes (Bodrova & Leong, 2007). Both theorists believed that children are active in their acquisition of knowledge and construct their own understanding (Bodrova & Leong, 2007).

Research Questions

The following research questions were used to explore the effects of high quality teacher-child interactions on child developmental outcomes.

Research Question #1. At the end of the 2014-2015 school year, what is the strength of the relationship between the Language Modeling score (CLASS) and the Language score in GOLD?

Research Question #2. At the end of the 2014-2015 school year, what is the strength of the relationship between the Concept Development score (CLASS) and the Cognitive score in GOLD?

Research Question #3. At the end of the 2014-2015 school year, what is the strength of the relationship between the Language Modeling score (CLASS) and teacher experience?

Research Question #4. Is there a significant difference between CLASS scores in the area of language modeling for teachers based on teacher certification?

Definition of Terms

Child Outcomes: Child outcomes describe the knowledge and skills in the developmental domains that children should acquire at defined age periods.

Classroom Assessment Scoring System: Classrooms Assessment Scoring System™ (CLASS) is an observation based instrument developed to assess classroom quality, based solely on interactions between students and teachers (Pianta et al., 2008)

Cognitive Development: Cognitive development, also called intellectual development, is the process of growth and change in mental abilities such as problem-solving, decision-making, reasoning, and understanding.

Concept Development: Concept development measures the teacher's use of instructional discussions and activities to promote higher order thinking skills, encourage understanding, and cognition (Pianta et al., 2008).

Emotional Support: Emotional support assesses the degree to which teachers sensitively respond to children to establish and promote a positive relationship.

Language Development: Language development is the process by which children come to understand and communicate and is the principal tool for establishing and maintaining relationships with adults and children (Heroman, Burts, Berke, & Bickart, 2010).

Language Modeling: Language modeling is the quality and amount of the teacher's use of language stimulation and language facilitation techniques (Pianta, La Paro, & Hamre, 2008).

Literacy: Literacy is the ability to read, write, and interpret that leads to the ability to communicate meaning.

Preschool: Preschool is the educational period before kindergarten, typically defined as programs for children ages 3-5.

Results Matter: Results Matter in Nebraska is a child, program, and family outcomes measurement system designed and implemented to improve programs and supports for all young children birth to age five served by school districts (Office of Early Childhood Nebraska Department of Education. n.d.).

Rule 11: Rule 11 is Nebraska's Department of Education's regulations for early childhood programs.

Social Emotional Development: Social-emotional development in young children involves learning how to understand their own and others' feelings, regulate and express emotions appropriately, build relationships with others, and interact with peers individually and in groups (Rubin, Bukowski, & Parker, 1998).

Teacher-Child Interactions: Teacher-child interactions are the back-and-forth exchanges that teachers and children have with one another throughout each day, including those that are social and instructional in nature (Hamre et al., 2012).

Teaching Strategies GOLD: Teaching Strategies GOLD is an authentic assessment system that blends ongoing observational assessment for children birth through kindergarten in all areas of development and learning (Heroman et al., 2010).

Assumptions

This study has several strengths. All teachers have a minimum of a four-year bachelors degree and are certified to teach early childhood education. All teachers completed the Teaching Strategies Inter-rater Reliability Certification. All CLASS observers are reliable reviewers, trained and certified as CLASS observers through Teachstone. Reviewers are required to attend a two-day observation training provided by a certified CLASS trainer and then pass a reliability test. It is assumed that the teachers and paraprofessionals provide the same quality of interactions when not being observed. Children enrolled with the preschool classrooms are a mix of socioeconomic status as well as disabled and nondisabled. Each school is equally supported by the district through financial resources, school and district leadership, professional development, and curriculum.

Limitations

There are a few limitations of this study. One is that the researcher is the administrator for the program. Another limitation is some children attend a half-day program and others attend a full day program. There is a level of subjectivity when administering and scoring the Teaching Strategies GOLD assessment. A final limitation

is some classrooms have a heavier concentration of students who are eligible for special education.

Delimitations

A few delimitations exist for this study. One delimitation is that it takes place in one suburban school district. Also, only data from one year group of preschool children was used.

Significance of the Study

This study contributes to research, practice, and policy. It is of significant interest to school district administrators as they gain a better understanding of the importance of quality early childhood programs. The experiences of children before kindergarten are critical in reducing the achievement gap and affecting their long-term development. On both the state and national level there is a gaining momentum on the importance of investing in programs that support the development of children birth through age 5. Early childhood programs foster cognitive and improve social emotional skills and both of these are critical to a child's later success in school. The research results will be of value to school districts as they look for funding sources and partnerships to bolster the number of programs for children below age 5.

Contribution to Research. A review of literature suggests a body of research exists on the use of CLASS however; the majority of the studies include one of the authors of CLASS. Also, much of the research on the impact of CLASS on student outcomes utilized an individual standardized assessment. There was not a single study that compared CLASS to an authentic assessment such as Teaching Strategies GOLD.

The research study will contribute to the existing body of literature on the impact of teacher-child interactions on children's development.

Contribution to Practice. Districts may decide to provide professional development in the area of teacher-child interactions to increase their child outcome data. Furthermore, districts may decide to provide instructional coaching for preschool teachers to help boost their performance on the indicators of CLASS and improve teacher-child interactions.

Contribution to Policy. The Nebraska Department of Education, Results Matter Task Force Committee may want to use the outcomes of the study to determine the best tools to measure child and program outcomes. In addition, others will be able to access the finding in order to guide their decisions about the use of CLASS.

Outline of the Study

Chapter One presents a brief overview of the importance of high quality preschool programs, specified the problem, and described the significance of the problem. Also included in this chapter are the limitations and definition of terms. A review of the literature is shared in Chapter Two. Chapter Two included topics related to high quality preschools including measuring teacher-child outcomes and assessment topics. In addition, the chapter included the impact of high quality teachers and accountability in early childhood. Chapter Three presented a description of the research design, participants and program description, and the instrumentation used in the study.

The Fourth Chapter provides an analysis and interpretation of the data. The findings of the relationship between the two assessments are presented in tables.

In Chapter Five a clear and concise summary is presented. Implications of the study are discussed and recommendations for further study are explored.

CHAPTER TWO

LITERATURE REVIEW

High Quality Preschools

Quality in preschool is often defined as the terms of the child's engagement in the classroom environment, curriculum, and the teacher's capacity to provide stimulating instruction through interactions with children (Mashburn et al., 2008, Pianta et al., 2008). Research supports the long and short benefits of attending high quality preschool programs. Children in high-quality care have shown greater academic skills once they are in school (Cost, Quality, and Child Outcome Study, 1999).

Theoretical definitions of preschool quality generally reflect two overarching areas: program infrastructure and aspects of the classroom environment that are directly impacted by the child's participation in the program (Vandell & Wolfe, 2000). The infrastructure defined by The National Association for the Education of Young Children (NAEYC) sets forth ten program standards that are viewed foundational to the program and requisite components to quality education in preschool environments (National Association for the Education of Young Children, 2005). Features of program infrastructure and design include features typically included in licensing regulations, such as teacher education and training, curriculum, class size, teacher-child ratio, and if the program offers services to families (Mashburn et al., 2008). Furthermore, Hamre and Pianta (2007) conceptualize program quality in terms of children's direct participation and experiences while they are enrolled in the programs, such as ways teachers organize the

schedule, make engaging material available to children, implement activities and lessons and the quality of teacher-child interactions.

Program Monitoring

In response to a growing need to monitor the quality of early childhood programs, the federal government has become strongly invested in the improving of early childhood programs. The federal government authorized $500 million to a state-level grant program, Race to the Top-Early Learning Challenge. A goal of the Early Learning Challenge was to increase the number participating in states' Quality Rating and Improvement Systems (QRIS) (Sabol & Pianta, 2014). QRIS are used to improve the performance of individual programs by assessing, observing, rewarding, and reporting the level of quality in early childhood programs. The theory of change for QRIS is built on the assumption that there are valid and reliable measures of quality in early childhood education programs (Sabol & Pianta, 2014).

Teacher-Child Interactions

According to the biological theory of human development and the ecological model of child development every day interactions between adults and children are the proximal processes that influence children's development (Bronfenbrenner & Morris, 1998). Bronfenbrenner (1986) emphasizes the importance of considering multiple social contexts and the connection to children's development and how they are entwined to indirectly explain child outcomes. As teachers continually engage children in quality instructional interactions over time, these exchanges can improve the children's academic performance (CaBell, DeCoster, LoCasale-Crouch, Hamre, & Pianta , 2013).

Young children and their teachers have a significant number of interactions throughout a school day. The quality of the interactions plays an important role in the early development of young children. Rigorous studies indicate that teachers' interactions with children are the vehicle through which curriculum and well-developed instructional activities are transmitted to children (Hamre & Pianta, 2007; Mashburn et al., 2008). The content of the curricula, experiences teachers provide, and the types of questions teachers ask all contribute to a quality preschool experience for children (Mashburn et al., 2008). The interactions that take place between teachers and children each day are the mechanisms through which children learn (Hamre & Pianta, 2007).

Quality preschool programs include a focus on intentional positive interaction between teachers and children. To support positive developmental gains in young children, early childhood settings must include responsive and cognitively stimulating daily interactions between adults and children (Hamre, 2014). Children with more responsive teachers show improved outcomes across social, behavioral, and cognitive domains (Hamre, Hatfield, Pianta, & Jamil, 2014). According to Howes, Fuligni, Hong, Huang, and Lara-Cinisomo (2013) high quality early education can develop children's cognitive skills in a context that is deeply rooted in positive and well-supported social interactions. Effective teaching in early childhood settings requires skillful teaching that includes: warm and sensitive interactions, explicit instruction, responsive feedback, and verbal engagement intentionally directed to ensure children's learning (Burchinal et al., 2000). These elements of skillful teaching must be embedded throughout the child's day to ensure multiple opportunities to interact positively with adults in the environment. The research of Burchinal et al. (2006) validates these aspects of instruction and interaction

predict gains in children's literacy, language, and social development for children greater at risk.

Emotional Climate and Teacher-Child Interactions

The preschool period is critical time for the development of social-emotional competence and may predict child outcomes in later childhood (Halberstadt, Denham, Dunsmore, 2001). Young children's social emotional competence is linked to school readiness and friendship development (Ladd, Herald, & Kochel, 2006). The quality of social emotional interactions within the classroom, both teacher-child and child-child, creates the emotional climate in the classroom (Pianta, Mashburn, Downer, Hamre, & Justice, 2008). The emotional connections children make with caring adults and peers in their classroom leads to improved student engagement.

Preschool environments provide an opportunity for children to develop their social emotional skills. Within these contexts, young children participate in significant interactions with teachers that are focused on emotions and their cause and effect (Garner, Mahatmya, Moses, & Bolt, 2014). When teachers create a sense of community, respond to students' needs, and provide a positive climate, students are more successful perhaps because they are more engaged in the learning environment (Reyes, Brackett, Rivers, White, & Salovey, 2012). Furthermore Reyes et al. (2012) findings suggest that academic success to some extent is dependent upon the emotional components of learning and motivation.

High Quality Preschools and Language Development

Young children benefit from preschool programs that are rich in language input as well as print and literacy experiences. Increased exposure to the enriched language

learning experiences is an important mechanism for promoting improved language achievement of preschool children (Logan, Piasta, Justice, Schatschneider, & Petrill, 2011). A major study that evaluated classroom quality found that classrooms scoring higher on quality indicators are more likely than classrooms of lesser quality to improve preschool-age children's language, literacy, and cognitive development (Early et al., 2007). Conversely, the rate at which children acquired expressive language skills was slower for children in lower quality classrooms than those in higher quality classrooms. Higher classroom quality has been linked to increases in expressive language skills (Mashburn et al., 2008).

Guo, Piasta, Justice, & Kaderavek (2010) found that teacher's with high levels of self-efficacy was positively associated with children's gains in print awareness.

Measuring Teacher-Child Interactions

The Classroom Assessment Scoring System (CLASS) (Pianta et al., 2008) is an observational measure of quality used in preschool and early elementary classrooms. The theoretical framework for CLASS (Hamre & Pianta, 2007) is based on the interactions that take place among teachers and students are the primary mechanisms of student development and learning. Bronfenbrenner and Morris (1998) referred to these interactions as proximal processes. Examples of proximal processes in classrooms include teachers' interactions with students regarding behavior management, questioning and feedback, and teacher's facilitation of peer interactions (Hamre & Pianta, 2007).

The CLASS measures the quality of several dimensions of teacher-child interactions. The framework includes three broad domains of classroom interaction including emotional support, classroom organization, and instructional support.

Emotional support includes the domains of positive climate, negative climate, teacher sensitivity, and regard for student perspectives. Classroom organization includes the domains of behavior management, productivity, and instructional learning formats. Instructional support includes the dimensions of concept development, quality of feedback, and language modeling. These ten dimensions reflect social features and interactions (e.g., the extent that teachers are sensitive to children's needs and responsive to cues) and instructional aspects of interactions (e.g., the extent that teachers promote concept development through scaffolding children's skills and support concept development) (Mashburn et al., 2008). Each dimension is rated along a 1-7 scale, with a 1 or 2 indicating low quality; 3, 4, or 5 indicting mid-range of quality and a 6 or 7 indicating high quality. The results provide a measure of two factors of the quality of classroom interactions, emotional support and instruction Support (La Paro, Pianta, & Stuhlman, 2004).

CLASS observations typically last at least two hours. Within the two hours there are a series of four 30-minute cycles (i.e., 20 minute observe, 10 minute record). Observers are trained and must pass an on-line reliability test.

Impact of High Quality Teachers

As part of quality predictors, such as QRIS, in early care and early childhood education, federal and state governments have invested strengthening teacher qualifications. For example, Head Start programs have credentialing requirements that as of September 30, 2013 at least 50% of teachers in center-based classrooms must have a baccalaureate or advanced degree in early childhood education or a baccalaureate or advanced degree in any subject, with related coursework and teaching experiences

(ECLKE, n.d.). In a study of Head Start Classrooms, Son, Kwon, Jeon, & Hong (2013) found that educational background were associated with children's school readiness. Son et al. (2013) also found that teacher's who majored in early child education or child development provided higher quality social emotional practice, which in turn demonstrated improved early math and teacher reported social skills. These findings are consistent with an earlier study that found pre-kindergarten teachers in a state funded with a bachelors degree in early childhood education/child development was meaningfully associated with the classroom's emotional support and related to improved classroom quality (Pianta et al., 2005).

Early et al. (2007) posed the question, is the educational attainment of preschool teachers likely to lead to increased classroom quality or improved children's academic goals? The data from this study indicated that teacher education alone was not a predictor of improved quality or child outcomes (Early et al., 2007). Instead, teacher education must be part of a system of factors to train and support teachers, including a comprehensive system of pre-service and ongoing training (Early et al., 2007). This is supported by the research of Pianta et al. (2008), concluding that intensive professional development that targets teacher-child interactions paired with classroom based coaching is effective in improving classroom quality. The research shows that there is no single factor that improves classroom quality. Teachers and programs must be supported through on-going training and mentoring to demonstrate quality.

Assessment in Early Childhood

Broadly stated, assessment is the process of gathering and analyzing information about children that will guide teaching and learning. According to Bagnato &

Neisworth (1991), early childhood assessment is a flexible, collaborative, decision-making process. McLean, Worley, and Bailey (2004) defined assessment as "a generic term that refers to the process of gathering information for decision making". The Division of Early Childhood (DEC) Recommended Practices in Early Intervention/Early Childhood Special Education includes "ideally from multiple sources of information" in their definition (Division for Early Childhood, 2014). According to The National Association for the Education of Young Children (NAEYC, 2003), assessment of young children is developmentally appropriate, ongoing, purposeful, and strategic and the results should be used to inform planning and program improvement.

Purpose of Assessment

Assessment is a well-integrated practice in early childhood education. According to Neisworth and Bagnato (2004) there are four purposes for assessment: screening, eligibility, program planning and progress monitoring, and program evaluation. When children's development appears uneven or possibly delayed a screening is a relatively quick method to determine which children may need further detailed assessments. Eligibility for special education services is determined through comprehensive assessments across all areas of development. Assessment is used for program planning and monitoring (formative) progress, and for program (summative) evaluation (Neisworth & Bagnato, 2004). Assessment for accountability purposes has received greater attention in the last decade. Program accountability measures the percent of children that progressed toward predetermined common goals or standards. Accountability in public education and agencies is to demonstrate that services are producing the intended effects (Hebbeler, Barton, & Mallik, 2008) and thus children

are making progress. The purpose of all childhood assessment should be to further education goals by informing teaching to improve the effectiveness of the service provided" (Frede, Gilliam, & Schweinhart, 2011).

Assessment of young children is challenging in part due to the fact that preschool is their first experience in formal education. As such, they have not learned the common test taking skills of sitting and comprehending verbal instructions. A child's behavior and limited attention may impede the testing results. According to Meisels (2007), developmentally, young children are unreliable test takers. Young children change rapidly and learn at different rates and in different ways and this presents unique challenges to any assessment process. For young children, assessment in everyday environments using indirect tools such as classroom observations is key to obtaining valid and reliable results. To avoid the one time "snap-shot" approach, observations must be done over multiple sessions and by multiple observers. Assessments are validated whose ages, cultures, abilities, and disabilities and other characteristics are similar of those children being assessed (National Association for the Education of Young Children & National Association of Early Childhood Specialists in State Departments of Education, 2003). Assessment practices must be developmentally appropriate for the age of the child. A fundamental concept of developmentally appropriate practice is that assessment must take place in the natural context and be compatible with the child's interests and behaviors (Bagnato, Elliott, & Witt, 2007).

Effective Assessment Practices

In a joint statement from the National Association for Education of Young Children (NAEYC) and the National Association of Early Childhood Specialists in State

Departments of Education (NAECS/SDE), indicators of effective assessment practices are established. These key recommendations of effective assessment practices include two important items. First, make ethical, appropriate, valid, and reliable assessment a central part of all early childhood programs. Secondly, assess young children's strengths, progress, and needs by the use of developmentally appropriate methods (NAEYC & NAECS/SDE, 2003). Another professional organization, the Division of Early Childhood (DEC), has published a set of recommended practices in assessment. These recommended practices reflect eight professional standards that serve as a basis for selecting tools for assessment and include the following: acceptability, authenticity, collaboration, convergence, equity, sensitivity, congruence, and utility (Neisworth & Bagnato, 2004). The eight standards are based on two fundamentals: assessment must be developmentally appropriate and it must be in concert with parent participation (Neisworth & Bagnato, 2004).

Types of Assessment

The value of authentic assessment has emerged over the past 25 years because of the need to make assessments more developmentally appropriate and functional. This has led to a professional sanctioning of observation-based assessments (i.e., authentic assessment) over conventional testing (i.e., standardized measures) (Bagnato et al., 2007; Neisworth & Bagnato, 2004). As defined by Bagnato and Ho (2006), "Authentic assessment refers to the systematic recording of developmental observations over time about the naturally occurring behaviors and functional competencies of young children in daily routines by familiar and knowledgeable caregivers in a child's life". The developmental and authentic assessment approach is intended to identify strengths and

areas of concern (Kim & Smith, 2010). Authentic assessment is a process of gathering information through observation and multiple sources and use the information to evaluate what children know and can do.

Conventional assessment is "the administration of a highly structured array of testing tasks by an examiner in a contrived situation" (Bagnato, Neisworth, Pretti-Frontczak, & Bagnato, 2010). Standardized assessments have long been used to determine eligibility for special education services. Norm-referenced tools compare the results of the assessment to a sample population. Administration is given in a standardized manner with the assumption that administering every item in the same fashion will produce greater comparability to the normative population (Hebbeler et al., 2008). Testing a young child in a conventional method requires presenting items in a standardized way while responding to correct and incorrect answers and to other child behaviors. It is common practice to use the results of conventional assessments to make decisions about a child performance or abilities.

General outcome measurement approach is designed to be a brief, continual measurement of a child's growth toward an outcome (Phaneuf & Silberglitt, 2003). Repeated administration of the tool shows a child's progress over time. Compared to conventional assessments, general outcome measurement or progress monitoring is measurement on a few critical skills using repeatable probes with the purpose of estimating individual growth (Pretti-Frontczak, Bagnato, Macy, & Sexton, 2011; Walker, Carta, Greenwood, & Buzhardt, 2008). Progress monitoring is not a comprehensive assessment but serves as a measure or indicator on a general outcome and can be used to compare interventions or curricula. Thus, progress monitoring can provide

teachers with data on an individual child's performance and growth pattern of trajectory that can be used to adjust instruction.

Preschool children learn through play. Play is essential in a child's experience. Play is an ever-present part of any early childhood program. According to Kelly-Vance and Ryalls (2008) "play assessment is when play is used as the context for evaluating a child's current level of functioning and determining whether there are areas that require intervention". Play as a context for assessment represents play as a naturally occurring activity (Lifter, Mason, & Barton, 2011). Play assessment is a valid and reliable means for assessing young children (Kelly-Vance & Ryalls, 2008). Furthermore, the results of play assessments guide interventions and progress monitoring (Kelly-Vance & Ryalls, 2005). Play assessment is an authentic assessment and yields different information compared to standardized or conventional measures.

Program evaluation is used to evaluate and document the extent to which the program is meeting the desired goals or benchmarks. In *The Pre-K Debates* (Zigler, Gilliam, & Barnett, 2011), program evaluation is defined as a method to evaluate effectiveness and efficiency and a valuable source to inform decision-making. Simply stated, program evaluation answers the question, "Does the program work?" Multiple sources of assessment tools and data are included in a comprehensive program evaluation, including outcomes children are achieving, classroom environmental measures, and information gathered from family input. The ideal program evaluation makes use of assessment tools that align to each purpose and goals. According to DEC's Recommended Practices (2014), "comprehensive program evaluation can answer many questions and serve a number of purposes". Ultimately the selection of the assessment

tool(s) and how professionals utilize the information is integral to providing high quality programs for young children.

Validity in an assessment instrument begs to answer the question "Does the tool accurately measure what it is supposed to do?" Reliability refers to the consistency of the assessment instrument. If an assessment demonstrates consistent results after repeated measures it is considered reliable. NAEYC (2003) recommended best practices for assessing children's learning and development include assessments that demonstrate reliable and valid information. In the era of accountability in early childhood education, assessments must produce data that is valid and reliable (Hebbeler et al., 2008).

Accountability in Early Childhood

Historically, accountability in K-12 education has been in the forefront since the enactment of No Child Left Behind (NCLB) in 2001. Early childhood intervention, or special education services for infants, toddlers, and preschoolers, was immune to the accountability requirements when NCLB was enacted. As states worked to design and implement accountability systems for school age children, early childhood special education had yet to realize their time was coming.

Historically, accountability within Individuals with Disabilities Education Act (IDEA) was limited to monitoring how states spent their funds and met compliance requirements in serving children with disabilities. The focus has since shifted to one of responsibility for performance and results for children with disabilities. The reauthorization of IDEA stated that the primary focus of monitoring activities should be on improving educational results and functional outcomes and ensuring that all states meet program requirements for children with disabilities (IDEA, 2004).

As a result of an internal government review, the Office of Special Education Programs (OSEP) had yet to provide evidence of effectiveness of early childhood programs (OMB, n.d.). States now faced a new era of accountability for young children with disabilities. Under IDEA, federal special education funds are distributed to states to offset part of the costs of the education needs of children with disabilities. In 2005, OSEP required that states receiving IDEA Part C and Part B (section 619) funds report outcome data annually on the progress of children receiving services for at least six months of service (Greenwood et al., 2007). Beginning in February 2007, states were required to report data on children, birth through age 5, upon entry into special education services. In February 2008, and annually thereafter, states had an additional requirement of reporting data on children upon entry and exit from special education services. OSEP's program of accountability required states to report data on three functional outcomes: positive social skills, knowledge, and skills, and appropriate behavior to meet needs. Each state designed their individual accountability plan to report outcomes in these three functional areas.

Measuring Child Outcomes

The Teaching Strategies GOLD is an observation-based teacher rating instrument designed to assess the ongoing development and learning of children birth through kindergarten (Kim, Lambert, & Burts, 2013). The tool has 38 objectives that are operationalized into 53 rating scale items organized into the following developmental domains: social-emotional, physical, language, cognitive, literacy, and mathematics (Kim et al., 2013). Many of the objectives include dimensions that are intended to help guide teachers thinking and decision making. Teachers collect on-going observations and rate children's skills, knowledge and behavior along a 10-point progression of development

and learning from "Not Yet" (Level 0) to Level 9 (exceeds kindergarten expectations) (Lambert, Kim, & Burts, 2013). Levels 2, 4, 6, and 8 are indicators and include examples tied to chronological ages. Levels 1, 3, 5, 7, and 9 and in-between levels allow for more steps to the progression, so that teachers can indicate skills are emerging but not yet fully developed (Heroman et al., 2010). Teachers rate children three times. These checkpoint periods are fall, winter, and spring.

The Early Childhood Outcome Center cross-referenced the dimensions assessed within Teaching Strategies GOLD with the three child outcomes required by OSEP for Part B/619 and Part C programs, to assess the degree to which these instruments measure the required outcomes (ECTA Center, n.d.).

CHAPTER THREE

METHODOLOGY

This chapter describes the purpose of the study, participants, procedures, independent variables, dependent measures, research questions, and data analysis.

The purpose of this descriptive correlational study was to determine the effect of high quality teacher-child interactions in preschool classrooms, as measured by the CLASS assessment, on child outcomes in the developmental domains of language, literacy and cognitive development as measured by GOLD assessment.

Research Design

This quantitative correlational study was designed to determine if a significant relationship exists between teacher-child interactions and child outcomes as measured by the GOLD assessment. The independent variable in this study was teacher-child interactions as measured by the CLASS assessment. The dependent variable was child outcomes.

Research Questions

The following research questions guided this study:

Research Question #1. At the end of the 2014-2015 school year, what is the strength of the relationship between the Language Modeling score (CLASS) and the Language score in GOLD?

Research Question #2. At the end of the 2014-2015 school year, what is the strength of the relationship between the Concept Development score (CLASS) and the Cognitive score in GOLD?

Research Question #3. At the end of the 2014-2015 school year, what is the strength of the relationship between the Language Modeling score (CLASS) and teacher experience?

Research Question #4. Is there a significant difference between CLASS scores in the area of language modeling for teachers based on teacher certification?

Questions 1, 2 and 3, were analyzed using a Spearman correlation and alpha level .05 to avoid type one errors. Question 4 was analyzed using an independent sample two-tailed *t*-test and alpha level .05 to avoid type one errors.

Participants and Program Description

The participants in the study are groups of children in preschool classrooms. There are 37 sessions of preschool; this included seven full day classes and 30 half-day classes taught by 24 teachers. The groups were comprised of either 3 or 4-year-old children. Children were enrolled into the program if they have a verified disability, Title 1 eligible, or are parent pay. In 2014- 2015, 480 children were enrolled in the program. The school district employs teachers who hold a state teaching certificate and are endorsed to teach either early childhood education or early childhood special education.

The district preschool program provides learning experiences that will promote developmental rigor for each learner. The curriculum is aligned with the kindergarten through fifth grade program to provide a seamless transition from preschool to kindergarten. In addition, the curriculum is aligned to the Nebraska Early Learning Guidelines and the GOLD assessment. A child's day is equally divided between whole group, small group and child choice experiences to support social-

emotional, physical, cognitive, and language development. Language, literacy, and mathematical experiences are integrated throughout the day.

In 2014-2105, 89% of 4-year-old classes and 25% of the 3-year old classes were blended. Blended programs in the district are based on the belief that best teaching practices, integrated throughout the child's day, benefit all children. Furthermore, all children regardless of ability or funding source have the necessary opportunities and supports to learn and thrive.

Data Collection Procedures

For the purposes of this quantitative study, data contained within this study was collected using the GOLD and CLASS assessments. GOLD data was collected and archived within the district data management system. CLASS data was collected and archived by district administrators. The data represented by the CLASS and GOLD assessments was correlated with a specific preschool teacher.

Instruments

Teacher-child interactions were measured and reported using the Classroom Assessment Scoring System (CLASS). The CLASS is an observational instrument developed to assess classroom quality in preschool classrooms and has been validated in 2,000 classrooms (Pianta et al., 2008). CLASS is comprised of three broad domains: Emotional Support, Classroom Organizations, and Instructional Support. CLASS was developed based on an extensive literature review as well as scales used in large-scale studies from the National Institute of Child Health and Human Development (Pianta et al., 2008). Classroom observers participate in a two-day CLASS training to provide observers with a clear and comprehensive understanding of purpose and procedures of

the instrument (Pianta et al., 2008). At the end of the course, observers must take and pass a reliability test in which they watch and code classroom segments (Pianta et al., 2008). Furthermore, according to Pianta et al. (2008), the criterion validity is strong as CLASS relates to the Early Childhood Environmental Rating Scale, Revised Edition (ECERS-R), a widely used measure of classroom quality. Specifically CLASS has strong associations with the ECERS-R factor, interactions. Interactions measure the extent to which classrooms promote teacher-child interactions.

Teaching Strategies GOLD assessment system is an authentic, observational assessment system for all areas of development and learning (Heroman et al., 2010). Teachers observe and document children's development during meaningful everyday experiences across six developmental domains. Three times a year teachers score the observations by comparing a child's skills and behaviors to research-based indicators of learning and development (Heroman et al., 2010). According to Kim and Smith (2010), Teaching Strategies *GOLD* has adequate internal consistency reliability and is appropriate for measuring a broad scope of development and learning for children in a wide range of ages.

Data Analysis

The results of the data were analyzed to determine if there was correlation between the effects of teacher-child interactions and child outcomes. The data analysis used descriptive and inferential statistics on each of the research questions. Descriptive statistics include mean and standard deviation. Questions 1, 2, and 3 were analyzed using a Spearman correlation and alpha level .05 to avoid type one errors. Question 4 was analyzed using an independent sample two-tailed *t*-test and alpha level .05 to avoid type

one errors. According to Creswell (2012), a correlational research design is used to describe the degree of association between two or more variables. Additionally, it is used to determine the strength of the relationship as well as the direction (Creswell, 2012).

CHAPTER FOUR

RESULTS

Accountability in early childhood is required by state and federal regulations. High quality early childhood programs are where children thrive and grow and thus set the foundation for future learning. Strong child outcomes and teacher-child interactions are two critical indicators of quality. In Nebraska, school districts are required to measure children's progress in learning and development utilizing the Teaching Strategies GOLD (GOLD) assessment system. School districts are also required to measure early childhood program quality. Currently, school districts are required to use the Early Childhood Rating Scale (ECERS-R) to measure program quality; however beginning in 2016-2017 school districts may choose to use the Classroom Assessment Scoring System (CLASS).

The purpose of this correlation study was to determine the effect of teacher-child interactions on child outcomes. The study analyzed preschool children outcomes on the GOLD and measured teacher-child interactions with the CLASS in 37 preschool classrooms.

For research question 1, 2, and 3, the study sample included 37 preschool classrooms. Data were analyzed using a Spearman Correlation to determine the significant relationship between the variables. The design study was quantitative comparing teacher-child interactions and child outcomes, teachers' years of experience and child outcomes. The dependent variable in this study was teacher-child interactions as measured by the CLASS assessment. The independent variable was teacher certification.

For research question 4, the study sample included 24 preschool teachers. An independent *t*-test compared teacher certification to child outcomes in the area of language. The independent variable in this study will be teacher-child interactions as measured by the CLASS assessment. The dependent variable will be the child outcomes as measured by GOLD.

Research Question #1

At the end of the 2014-2015 school year, what is the strength of the relationship between the Language Modeling score (CLASS) and the Language score in GOLD?

Language Modeling is the way in which teachers intentionally encourage, respond to and expand on children's language. It consists of meaningful conversations between children and teachers. The Language domain broadly measures expressive and receptive language including understanding complex language and conversational skills. As seen in Table 1, a correlation for the data revealed that there was not a significant relationship between the Language Modeling score (CLASS) and the Language score in GOLD, $r_2 = +0.019$, $n = 37$.

Table 1

Spearman Rank-Order Correlation Coefficient for Classroom Assessment Scoring System Language Modeling Score and Teaching Strategies GOLD Language Domain Score

Classroom	Language Modeling CLASS High = 6.13 Low = 2.75	Language GOLD High = 736 Low = 523.9	R_1	R_2	r_s
1	3.75	692.59	13	27	
2	3.75	676.83	13	23	
3	2.75	543.36	2.5	4	
4	2.75	692.87	2.5	28	
5	4.38	567.58	19.5	8	
6	4.38	591.60	19.5	12	
7	3.63	524.63	8.5	2	
8	3.63	665.25	8.5	21	
9	4.75	662.09	25	19.5	
10	5.75	615.23	33.5	14	
11	5.75	607.80	33.5	13	
12	5.13	695.44	31	31	
13	4.50	552.89	22	6	
14	4.50	589.00	22	11	
15	3.75	540.00	13	3	
16	3.75	662.09	13	19.5	
17	3.13	569.55	5	9	
18	3.13	736.00	5	36	
19	4.88	695.00	28	30	
20	5.88	736.06	35.5	37	
21	5.88	630.67	35.5	16	
22	4.25	693.07	17.5	29	
23	4.25	659.27	17.5	18	
24	6.13	671.60	37	22	
25	3.75	562.33	13	7	
26	5.13	523.90	31	1	
27	5.13	698.88	31	32	
28	3.88	686.60	16	25	
29	2.50	714.50	1	34	
30	4.88	579.45	28	10	
31	4.88	627.50	28	15	
32	4.75	687.17	25	26	
33	3.13	735.06	5	35	
34	3.63	545.89	8.5	5	
35	3.63	682.00	8.5	24	

36	4.50	644.88	22	17	
37	4.75	701.93	25	33	
					0.019ns

Research Question #2

At the end of the 2014-2015 school year, what is the strength of the relationship between the Concept Development score (CLASS) and the Cognitive Development score in GOLD?

Language Modeling is the way in which teachers intentionally encourage, respond to and expand on children's language. It consists of meaningful conversations between children and teachers. The Cognitive Development score broadly measures intellectual development including memory, classification and problem solving. As seen in Table 2, a correlation for the data revealed that there was not a significant relationship between the Concept Development score (CLASS) and the Cognitive Development score in GOLD, $r_s = -0.031$, $n = 37$.

Table 2

Spearman Rank-Order Correlation Coefficient for Classroom Assessment Scoring System Concept Development Score and Teaching Strategies GOLD Cognitive Domain Score

Classroom	Concept Development CLASS High 5.75 Low = 2.00	Cognition GOLD High = 733.83 Low = 498.70	R_1	R_2	r_s
1	2.63	733.00	3.5	34	
2	2.63	705.92	3.5	27	
3	2.50	529.18	2	3	
4	3.00	651.20	5	17	
5	3.75	583.92	18	8	
6	3.75	628.40	18	15	
7	3.25	592.50	7.5	11	
8	3.25	715.00	7.5	29	
9	4.00	689.91	23	23	
10	4.75	587.38	30.5	10	
11	4.75	608.80	30.5	12	
12	4.25	724.28	27.5	31	
13	3.63	539.89	15.5	4	
14	3.63	615.13	15.5	14	
15	4.13	556.36	25	5	
16	5.25	683.36	33.5	22	
17	3.50	579.45	12.5	7	
18	3.50	730.58	12.5	32	
19	5.25	667.50	33.5	19	
20	5.38	748.24	35.5	36	
21	5.38	629.33	35.5	16	
22	3.38	710.36	9.5	28	
23	3.38	674.73	9.5	20	
24	5.75	656.93	37	18	
25	4.25	737.42	27.5	35	
26	4.13	498.70	25	1	
27	4.13	611.31	25	13	
28	3.88	690.00	21	24	
29	2.00	692.25	1	25	
30	3.88	523.18	21	2	
31	3.88	584.17	21	9	
32	4.75	698.56	30.5	26	
33	3.13	773.83	6	37	
34	3.50	572.89	12.5	6	
35	3.50	722.55	12.5	30	

36	3.75	679.63	18	21	
37	4.75	731.07	30.5	33	
					0.013 ns

Research Question #3

At the end of the 2014-2015 school year, what is the strength of the relationship between the Language Modeling score (CLASS) and teacher experience?

Language Modeling is the way in which teachers intentionally encourage, respond to and expand on children's language. It consists of meaningful conversations between children and teachers. Teacher experience includes the total number of years of teaching. As seen in Table 3, a correlation for the data revealed that there was not a significant relationship between the Language Modeling score (CLASS) and teacher experience, r_s = -0.03, n = 37.

Table 3

Spearman Rank-Order Correlation Coefficient for Teacher Experience and Classroom Assessment Scoring System Language Modeling Score

Classroom	Teacher Experience (years)	Language Modeling CLASS High = 5.75 Low = 2.50	R_1	R_2	r_s
1	11	3.75	14.5	8	
2	8	2.75	11	2	
3	5	4.38	5.5	12	
4	2	3.63	1.5	5.5	
5	31	4.75	24	15.5	
6	6	5.75	7.5	21.5	
7	10	5.75	12.5	21.5	
8	7	5.13	9.5	19.5	
9	13	4.50	16.5	13.5	
10	18	3.75	19	8	
11	28	3.13	23	3.5	
12	13	4.88	16.5	17.5	
13	7	5.88	9.5	23	
14	20	4.25	20	11	
15	21	6.13	21	24	
16	4	3.75	4	8	
17	27	5.13	22	19.5	
18	6	3.88	7.5	10	
19	11	2.50	14.5	1	
20	10	4.88	12.5	17.5	
21	2	4.75	1.5	15.5	
22	3	3.13	3	3.5	
23	16	3.63	18	5.5	
24	5	4.50	5.5	13.5	
					0.05 ns

Research Question #4

Is there a significant difference between CLASS scores in the area of Language Modeling for teachers based on teacher certification?

Language Modeling is the way in which teachers intentionally encourage, respond to and expand on children's language. It consists of meaningful conversations between children and teachers. Teacher certification describes the type of endorsement a particular teacher holds. The fourth hypothesis was tested using an independent sample two-tailed *t*-test. There was not a statistically significant difference in CLASS Language Modeling scores between teachers who hold a early childhood special education teaching certificate ($M = 3.53$, $SD = 1.09$) and teacher's who hold an early childhood teaching certificate ($M = 4.8$, $SD = 0.85$), $t(22) = -0.90$, $p = 0.38$ (two-tailed). An alpha level of .05 was used to control for Type I errors.

Table 4

Independent t-test for CLASS Language Modeling Scores

	Early Childhood Special Education Certified		Early Childhood Certified				
	M	*SD*	*M*	*SD*	*t*	*p*	*d*
CLASS Language Modeling	3.53	1.09	4.8	0.85	0.90	0.38	1.01

CHAPTER FIVE

DISCUSSION AND CONCLUSIONS

The purpose of this correlation study was to determine the effect of teacher-child interactions on child outcomes. The study analyzed preschool children outcomes on the Teaching Strategies GOLD (GOLD) assessment system and measured teacher-child interactions with the Classroom Assessment Scoring System (CLASS) in 37 preschool classrooms.

This study compared teacher-child interactions to child outcomes in 3 and 4 year old preschool student classrooms. Children enrolled in the school district's preschool program were a mix of special education eligible children, parent pay, and Title eligible children. Title eligible children included those who were low birth weight, an English language learner, born to a mother less than 18 years old, or from a family that met the criteria for free or reduced lunch. The study also analyzed the effect of teacher certification on child outcomes.

Conclusions

The following conclusions were drawn from the study for each of the four research questions.

Research Question #1

The Spearman rank order of coefficient of correlation was used to determine the strength of the relationship between the rank order of classrooms rated for teacher-child interactions, as measured by the CLASS in the area of Language Modeling, and the rank order of mean classroom gains for student outcomes, as measured by GOLD in the Language Domain. No significant rank order correlation was found. Taken as a whole,

all groups met or exceeded the Widely-Held Expectations in the area of language as measured by GOLD. Widely-Held Expectations are generalizations about children's patterns of development and learning over time (The Primary Program: Growing and Learning in the Heartland Widely-Held Expectations, n.d.). The mean of the CLASS scores in area of Language Modeling was 4.3, in a 7-point range. According to the CLASS Manual (Pianta et al., 2008), 4.3 falls within the mid-range (3-5).

Research Question #2

The Spearman rank order of coefficient of correlation was used to determine the strength of the relationship between the rank order of classrooms rated for teacher-child interactions, as measured by the CLASS in the area of Concept Development, and the rank order of mean classroom gains for student outcomes, as measured by GOLD in the Cognitive Domain. No significant rank order correlation was found. Taken as a whole, all groups met or exceeded the Widely-Held Expectations in the area of cognition as measured by GOLD. The mean of the CLASS scores in area of Concept Development was 3.9. According to the CLASS Manual (Pianta et al., 2008), 3.9 falls within the mid-range (3-5).

Research Question #3

The Spearman rank order of coefficient of correlation was used to determine the strength of the relationship between the rank order of classrooms rated for teacher-child interactions, as measured by the CLASS in the area of Language Modeling, and the rank order of mean of teacher's teaching experience. No significant rank order correlation was found. Factors that may contribute to these results include: 1) in the study sample there were few teachers in their first 3 years of teaching, 2) the school district has a well

established 3 year new teacher induction program, 3) teachers are provided professional development that focuses on language development, and 4) teachers are paired with a speech language pathologist to model and support the language development of all children.

Research Question #4

Research question #4 was used to compare teachers certified in early childhood special education, and teachers certified in early childhood education to determine if there was a difference in teacher-child interactions as measured by the CLASS. There was no statistically significant difference in teacher-child interaction based on teacher certification. Factors that may contribute to these results include: 1) teachers are provided professional development that focuses on language development, 2) the sample size of the general education certified teachers was small and, 3) teachers are paired with a speech language pathologist to model and support the language development of all children.

Discussion

A high quality preschool classroom provides opportunities to develop the skills and knowledge associated with children's school readiness. The classroom environment and child outcomes are two dimensions of quality that are measured and reported at both the local and state level. Evidence does suggest that classroom quality directly impacts child outcomes; however quality has been measured in various ways in the research literature (Denny et al., 2012).

The purpose of this study was to explore the relationship of teacher-child interactions on child outcomes. The research design was a correlational study to explore

the relationship between teacher-child interactions as measured by CLASS and child outcomes as measured by GOLD. These tools were specifically chosen to align to the statewide measurement system, Results Matter, designed to improve programs and supports for young children served by school districts and community partners (Nebraska Department of Education). Currently, Results Matter requires school districts to use GOLD to measure child outcomes and the Early Childhood Environmental Rating Scale (ECERS-R) to measure program quality. Beginning with the 2016-2017 school year, school districts may choose the CLASS as the program quality tool.

Although the results of the research did not show a statistically significant relationship between teacher-child interactions and child outcomes (in the areas of language and cognition) this is not a negative result. All children made progress and as a whole, the group met or exceeded the developmental expectations for their given age. In addition, the CLASS scores in both Language Modeling and Concept Development fell within the average range.

The first part of this discussion will focus on two factors, the assessment tool and the user. Both are essential to appropriately measure child outcomes.

The Assessment. This study utilized an authentic observation based assessment, GOLD, to measure child outcomes. The developmental and authentic assessment approach is intended to identify strengths and areas of concern (Kim & Smith, 2010). Professionals use the information obtained to guide planning and interventions. The value of authentic assessment has emerged over the past 25 years because of the need to make assessments more developmentally appropriate and functional. This has led to a professional sanctioning of observation-based assessments (i.e., authentic assessment)

over conventional testing (i.e., standardized measures) (Bagnato, 2007; Neisworth & Bagnato, 2004; Neisworth & Bagnato, 2005). As defined by Bagnato and Yeh-Ho (2006), "Authentic assessment refers to the systematic recording of developmental observations over time about the naturally occurring behaviors and functional competencies of young children in daily routines by familiar and knowledgeable caregivers in a child's life" (p.16).

Research indicates that teachers impact children's outcomes, including language and cognition through interactions that provide instructional support (Curby et al., 2009; Hamre & Pianta, 2005; Mashburn et al., 2008). This strong body of research supporting teacher-child interactions impact on children's outcomes utilizes individual standardized measures of achievement. For example, in the studies by Curby et al., (2009), Hamre and Pianta, (2005), Mashburn et al., (2008), the researchers used the Peabody Picture Vocabulary Test-third edition, Oral and Written Language Scale, and the Woodcock – Johnson-III Test of Achievement to measure child outcomes. In each of these studies teacher-child interactions were measured using the CLASS. A review of the literature was unable to find studies that compared the teacher-child interactions to child outcomes utilizing an authentic assessment to measure child outcomes. Further research is necessary comparing the relationship of teacher-child interactions to child outcomes as measured by an authentic assessment.

The User. To measure child outcomes in GOLD, teachers collect observations throughout the school year. Three times a year, teachers rate each child's observable knowledge, skills and behavior according to bands of development based on widely-held expectations for children's development and learning. As a way to measure reliability

with the GOLD assessment tool, teachers are required to complete the inter-rater reliability certification. According to Heroman, Burts, Berke, and Bickart, (2010) inter-rater reliability certification helps teachers increase effectiveness when identifying levels of children's development and learning. By comparison, an outside observer completes the CLASS assessment. The observer completes a two-day training and must successfully pass a rigorous reliability assessment.

As mentioned earlier, the child outcome scores in this study as a whole demonstrated children's skills and knowledge were age appropriate. As a whole, teacher-child interactions were in the average range. However, it is interesting to note that when looking at the ranking of classrooms individually, there are examples of classrooms with some of the lowest CLASS scores (low range) that recorded the strongest child outcome scores. This questions the reliability of some of the GOLD classroom scores. To put it simply, when teachers identify and rate the levels of children's development within their classroom they are self-reporting. Is it possible that teachers are inflating their scores to demonstrate their effectiveness as a teacher? Are teachers consistently implementing the GOLD assessment tool with fidelity?

Teacher-based observational assessment, such as GOLD, is more subjective than individual standardized measures (Cabell, Justice, Zucker, & Kilday, 2009). Mashburn and Henry (2004) found that teacher ratings of children's skills had high variability. Miesels, Wen, and Beachy-Quick (2010) underscore the importance of ongoing professional development and support for teachers to include the significance of performing and understanding the assessment tool within its context. This leads to the conclusion that successful completion of the inter-rater reliability by teachers, which is

required once every three years, is insufficient to ensure that the assessment is being implemented as intended. In other words, there must be additional supports and processes in place to demonstrate that teachers are implementing the assessment tools with fidelity.

Implementation fidelity is the focus on the supports that are necessary to ensure that a program is being implemented as intended (Downer, 2013). Improving teachers' implementation of GOLD is a key mechanism to ensuring child outcomes are measured and ultimately reported with fidelity. In addition to the required online reliability test every three years, ongoing coaching and self-reflection tools are two approaches that hold promise to improve the implementation of GOLD or other authentic assessments. Fox, Hemmeter, Snyder, Binder, and Clark, (2011) found that systematically designed coaching can support teachers to implement with fidelity evidence based practices.

Collecting observations on more than 23 developmental objectives, three times a year on an average of 23 children can be a daunting task for teachers. Use of a self-reflection tool may help teachers see the big picture and understand the "why" behind measuring child outcomes. Colorado Department of Education has developed the *Self-Reflection Tool for Early Childhood Teachers on the Effective Use of TS GOLD for Results Matter Colorado* (Results Matter/Colorado Department of Education, 2013). This tool is designed for teachers to use at the beginning of the school year and during the three checkpoint periods. A self-reflection tool paired with coaching may be used to build the confidence and competence of teachers to implement an authentic assessment.

Teacher Experience and Certification. The results of this study indicate that neither years of experience nor type of teacher certification had a statistically significant

impact in the area of Language Modeling. Specifically, teachers holding an early childhood special education endorsement did not show a statistically significant difference compared to teachers who hold an early childhood general education endorsement. It is important to look at the area of language modeling because the large majority of children with an Individualized Education Plan (IEP) in the preschool classrooms have a language delay. In inclusive classrooms, children with IEPs are taught by either a general education teacher or a special education teacher. Although all children with a language delay have the support and services of a speech language pathologist, it is the classroom teacher that intentionally facilitates language development throughout the school day. This study provides evidence that children receive high quality instruction that stimulates language development regardless of the type of early childhood teaching endorsement. Delivery of high quality, stimulating preschool education is challenging and requires a strong skill set (Early et al., 2007). Furthermore, educational attainment and/or major will not substitute for the skill set needed to teach preschool (Early et al., 2007).

Implications for Research

When measuring child outcomes, authentic measures are important when comparing children's current functional performance to age-expected functioning. Previous research concludes that there is a strong relationship between teacher-child interactions and child outcomes utilizing individual standardized measures. Based on the review of literature, further research is necessary to compare the relationship of teacher-child interactions to child outcomes as measured by an authentic assessment (i.e.,

GOLD). Furthermore, there is a need for research that includes authentic measures paired with standardized measures to assess child outcomes.

In the review of the literature, there was very limited information available on the psychometric properties of Teaching Strategies GOLD. Further research is needed on the reliability and validity data of Teaching Strategies GOLD including children with varying disabilities.

Implications for Practice and Policy

School readiness and school achievement are at the forefront of local, state, and national concern and policy development. Early childhood education continues to receive national attention and this focus is great for children. There is a clear body of research that indicates high quality early childhood programs provide opportunities to develop the skills and knowledge associated with children's school readiness. Assessment and accountability plays a pivotal role in quality early childhood education and intervention. An authentic assessment tool should be used as part of the outcome measurement process, along with other sources of evidence, not as a stand-alone tool, to report outcomes for children.

The Nebraska Results Matter Task Force Committee should review their current practices. A unified and sustained focus on valid and reliable methods for measuring outcomes for young children, including those with disabilities, coupled with quality programs, is needed to improve early children education programs. The Task Force or school districts may also want to consider developing self-reflection tools, similar to those used in Colorado, as a way to increase the reliability of the child outcome measurement tool. Also, the Nebraska Department of Education may want to consider

the incentive grants for school districts to train coaches specific to early childhood implementation of Results Matter. School districts may want to consider the results of this research study when selecting environment measurement tools as required at the end of the 2015-2016 school year.

Summary

Measuring child outcomes is not a simple task. If school districts are required to measure and report child outcomes then we must ensure that the right tools(s) are being used. The tools must have strong psychometric properties. Teachers need ongoing support and coaching to ensure they are implementing the assessment tool with fidelity.

There is a disconnect between the research and practice. As mentioned throughout this study, current research provides evidence of a relationship between teacher-child interactions and child outcomes using standardized individualized evaluation measures. Yet, in practice, child outcomes are assessed with authentic measures. Further research should focus on studies that include both an authentic assessment and an authentic measure paired with standardized measures to assess child outcomes.

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