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The relationship among self-regulation, sociodramatic play, and preschoolers' readiness for kindergarten

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THE RELATIONSHIP AMONG SELF-REGULATION, SOCIODRAMATIC
PLAY, AND PRESCHOOLERS' READINESS FOR KINDERGARTEN

A dissertation presented

by

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to

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Abstract

The purpose of this study was to explore the relationship among self-regulation, sociodramatic play, and preschoolers' readiness for kindergarten. The participants were 38 children enrolled in a public pre-kindergarten program in a rural town in Maine. The pre-kindergarten children were observed during free play using the Smilansky Scale for Evaluation of Dramatic and Sociodramatic Play (SSEDS). In addition, the pre-kindergarten teachers completed the Behavior Rating Inventory of Executive Function-Preschool Version (BRIEF-P) to assess the participants' self-regulation skills and the Brigance Preschool Screen-II to assess readiness skills. The following three questions were addressed: (1) Does a preschooler's ability to engage in complex levels of sociodramatic play predict the capacity for self-regulation? (2) Does a preschooler's ability to engage in complex levels of sociodramatic play predict readiness for kindergarten? And, (3) does a preschooler's capacity for self-regulation predict readiness for kindergarten?

The results of the multiple regression analyses indicated several statistically significant relationships. First, total sociodramatic play predicted the BRIEF-P clinical scale, *Shift*, at a statistically significant level. Second, the SSEDS subcategory, *Verbal Communication*, predicted the BRIEF-P clinical scales: *Working Memory* and *Plan/Organize*, and the BRIEF-P index, *Emergent Metacognition*, at statistically significant levels. Third, the BRIEF-P index, *Flexibility Index*, predicted total readiness at a statistically significant level.

The results of the present study provide support for sociodramatic play as a facilitator of the self-regulation skills necessary for attention shifting and problem-solving. The results of the study also revealed that verbal communication within the context of sociodramatic play influenced the self-regulatory ability to hold onto information, follow directions, plan, and organize. Lastly, the results indicated that the self-regulatory capacity to problem-solve flexibly, shift attention, and control emotions and behaviors positively influenced preschoolers' readiness for kindergarten.

Throughout the early childhood literature, sociodramatic play as a context within which preschool children learn has been widely acknowledged and supported. The results of the present study contribute to the literature by providing additional support for sociodramatic play predicting aspects of self-regulation and self-regulation predicting aspects of readiness.

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CHAPTER ONE

Statement of the Problem

The expectations for children entering kindergarten are much greater than they were 15 years ago. According to the National Association for the Education of Young Children (1995), children entering kindergarten are now expected to be ready for what used to be a first grade curriculum. These expectations are in large part due to a report issued by the National Education Goals (1993) that stated, “By the year 2000, all children in America will start school ready to learn”. As a result of the nation’s increased focus on school readiness, preschool teachers are faced with the challenge of ensuring that their students are “ready to learn” when they enter kindergarten.

There are three major problems with the amount of attention that has recently been given to the issue of school readiness: (a) there is no clear definition of school readiness; (b) readiness measures typically do not take into account the skills that kindergarten teachers identify as important; and (c) the role of sociodramatic play as a context within which preschoolers learn is often sacrificed in favor of attention to academic readiness. Each of these problems is presented below.

Inconsistent Definitions of School Readiness

There has been much debate regarding the definition of “ready to learn” and the concept of school readiness. Although there have been several national school readiness initiatives that have been implemented during the past few years (e.g., the national education goals, the good start, grow smart initiative, the national governor’s association

task force on school readiness, and the national school readiness indicators initiative), there continues to be disagreement within the literature regarding the skills a child should possess in order to be “ready to enter” kindergarten.

The problem with these initiatives is that preschool teachers are faced with the pressure of being accountable in preparing their students for kindergarten and the students are expected to be ready for kindergarten, yet there is no clear definition of readiness. As a result of the inconsistency in defining school readiness, there are several different readiness measures currently used within the public and private school systems across the country. Readiness tests often measure a child’s perceptual skills, awareness of the use of prepositions, receptive vocabulary, knowledge of color, letter identification, number/counting, comparisons, and shape recognition (Belsky, Friedman, & Hsieh, 2001; Bowman, Donovan, & Burns, 2001; Bracken, 2002; Nurss, 1995).

Skills Important to Kindergarten Teachers

Although these academic readiness skills are important, research has suggested that kindergarten teachers are more concerned with a child’s capacity to be attentive, responsive, and engaged in the classroom than with their academic readiness skills (Blair, 2002). Consequently, only is the definition of school readiness unclear, but the measurements used to assess readiness are not taking into account the skills, attentiveness, responsiveness, and engagement that kindergarten teachers have identified as essential for students to be successful in kindergarten. The skills that teachers regard as essential are identified as self-regulation skills. In the broadest sense, self-regulation

refers to a person's ability to modulate his or her emotions, control behaviors, attend, plan, and problem-solve.

Diminished Role of Sociodramatic Play in Preschool Classrooms

There is growing concern that increased academic expectations for children entering kindergarten has shifted the focus away from teaching children through play, which is their "natural learning mode", to learning through "formalized" academics such as "worksheets" and "workbooks" (Klugman & Smilansky, 1990). The National Association for the Education of Young Children (NAEYC) considers sociodramatic play to be an important context within which preschool children learn. The NAEYC (1996) position on developmentally appropriate practice recommends that sociodramatic play be used as a "tool for learning curriculum content" and further emphasizes that "child-initiated, teacher-supported play" be an "essential component" of all preschool programs (NAEYC, 1996). Although the importance of sociodramatic play as a context within which preschool children learn has been widely acknowledged within the field of early childhood education, there is concern that play is no longer a priority (Klugman & Smilansky, 1990). Moreover, research studies support the contribution of sociodramatic play to children's ability to regulate themselves for learning, which are the very skills that teachers regard as important for kindergarten readiness.

Background of the Problem

The following section provides the background of the national initiatives that have driven the concern for school readiness. Current definitions of school readiness as well as kindergarten teachers' perceptions of school readiness, which include the notion of "regulatory readiness", will be discussed. A connection between the skills that have been described within the literature as "readiness skills" and the emotional, behavioral, and cognitive aspects of self-regulation will be proposed. Self-regulation in relation to academic success will also be addressed. Finally, sociodramatic play, an important aspect of the preschool environment, will be discussed in relation to its role in developing a child's self-regulation skills and subsequent readiness for kindergarten.

Since the 1990's, there has been an increase in the amount of national attention given to the topic of school readiness. Policymakers have attempted to identify and define the various dimensions of school readiness through several federal and state initiatives. The next section will summarize the following initiatives: The National Education Goals, The Good Start, Grow Smart Initiative, the National Governors' Association Task Force on School Readiness and the National School Readiness Indicators Initiative.

National and State Initiatives for School Readiness

The National Education Goals. The National Education Goals (1990) were intended to improve learning and teaching by providing a national framework for

education reform. One of the goals was to ensure that “all disadvantaged and disabled children will have access to high quality and developmentally appropriate preschool programs that help prepare children for school.” The National Education Goals Panel identified the following five dimensions of school readiness: health and physical development, emotional well-being and social competence, approaches to learning, communication skills, and cognition and general knowledge (Kagan, Moore, & Bredekamp, 1995).

National School Readiness Initiative, “Good Start, Grow Smart”. In recognition of the need for elementary school students to meet the 2001 *No Child Left Behind* accountability standards, the government focused attention on early childhood education needs and the importance of preparing children to enter school. As a result, in 2002, President Bush proposed the *Good Start, Grow Smart* initiative to help states and local communities strengthen early learning for young children. One of the concerns addressed was the lack of information for early childhood teachers, parents, grandparents, and child-care providers on ways to prepare children to be successful in school. The *Good Start, Grow Smart* initiative recommended that future research focus on identifying early childhood curriculum that “effectively promotes language and cognitive development, early literacy, and mathematics concepts and skills, while simultaneously developing children’s self-regulatory and social emotional competencies, motivation, and positive attitudes toward learning” (Executive Summary, 2002, p. 12).

The National Governor’s Association Task Force on School Readiness. In addition to federal initiatives, several organizations have been established in effort to

identify the steps that can be taken to support and develop a child's readiness for kindergarten. In 2003, the National Governors Association established a Task Force on School Readiness to identify the ways in which states can support families, schools, and communities in their efforts to ensure that "all children begin school ready to reach their full potential" (NGA, 2005). The NGA's recommendations included: establishing a comprehensive and coordinated statewide system for school readiness; ensuring accountability for results across agencies and between the state and local levels; supporting schools, families, and communities in facilitating the transition of young children into the kindergarten environment; aligning state early learning standards with K-3 standards; and supporting elementary schools in providing high quality learning environments for all children.

The National School Readiness Indicators Initiative. Similar to the NGA's task force, the National School Readiness Indicators Initiative, which included 17 states, sought to develop measurable indicators related to school readiness that could be tracked at the state level (NSRII, 2005). The multi-state initiative stated that a child's readiness for school should be measured across the following five domains: physical well-being and motor development; social and emotional development; approaches to learning; language development; cognition and general knowledge. Considering an ecological perspective, the National School Readiness Indicators Initiative developed a "Ready Child Equation", which described the various components that influence a child's ability to be ready for school. The ready child equation states, "ready families

+ ready communities + ready services + ready schools = children ready for school” (NSRII, 2005). This multi-state initiative emphasized that in order to improve school readiness the child’s skills and the environment within which the child spends his or her time must be addressed. Similarly, Maxwell and Clifford (2004) argued that children’s “skills and development are strongly influenced by their families and through their interactions with other people and environments before coming to school” (p. 1). In summary, the initiative underscored the influential role that the environment has in preparing a child for school.

Summary of federal and state initiatives. To summarize, the National Education Goals Panel and the National School Readiness Indicators Initiative outlined the following similar domains of readiness: physical and motor development, social and emotional development; approaches to learning; language skills; and cognition and general knowledge. Both the National Goals Panel and the National School Readiness Indicators emphasized the importance of considering the “whole child” when defining the concept of readiness. In addition to the above domains, the *Good Start, Grow Smart*, initiative recommended that future research also focus on developing self-regulatory competencies, motivation and positive attitudes toward learning. Lastly, the National Governors Association recommended the establishment of a statewide system for school readiness to ensure accountability as well as support school, families, and communities in the transition to kindergarten.

Although the recent federal and state initiatives outlined various domains of

school readiness and future implications for research, there continues to be disagreement within the literature regarding the definition of school readiness. In addition to the various domains of school readiness, other definitions have included classroom adaptation skills, motivation to learn, task persistence, autonomy, reading and math skills, and adaptive skills such as dressing, eating, and toileting (Fantuzzo & McWayne, 2002; Lowenthal, 1999; Lamb-Parker et al., 1999). As a consequence of these various perspectives of school readiness, a clear and consistent definition does not exist. A national survey indicated that as of January 2000, “no state had an official statewide definition of school readiness.” (Saluja, Scott-Little, & Clifford, 2000). If statewide goals are to reduce inequalities, identify children at-risk, implement effective intervention strategies, and promote access to quality early childhood programs, then an accurate understanding of “readiness” skills is critical. One of the ways in which to develop this understanding is to become aware of how kindergarten teachers define readiness.

Teacher Perceptions and Self-Regulation

This section will include a review of the readiness skills that kindergarten teachers consider most important. The relationship between these readiness or “teachability” skills and self-regulation skills will be described. The skills assessed by current readiness measures will be discussed and a recommendation for the use of a comprehensive measure of self-regulation for assessing readiness will be proposed.

Teacher perceptions of readiness. Kindergarten teachers have indicated that

listening to instructions and following directions are two of the most important skills related to academic success (Foulks & Morrow, 1989). However, at least 50% of children entering kindergarten do not have the ability to follow directions and work independently (Rimm-Kaufman, Pianta, & Cox, 2000).

In a national sample of 3500 kindergarten teachers, 46% of the teachers reported that at least half of the students in their classes had difficulty following directions; 34% of the teachers reported that at least half of their class had difficulty working independently; and 30% reported that half of their class or more had difficulty working as part of a group (Rimm-Kaufman, Pianta, & Cox, 2000). Pianta and LaParo (2003) stressed that following directions, working independently for a short period of time, and working as part of a group ultimately determine the child's "teachability" and these "teachability skills" are most important in determining a child's readiness for kindergarten.

Teachability skills. The early childhood education literature indicates that kindergarten teachers agree that a child's "teachability skills" and appropriate participation are critical to their academic success. For example, a national survey of kindergarten teachers' views of readiness indicated that more than 75% of the teachers considered it important that children are enthusiastic and curious in approaching new activities and that they are able to communicate needs, wants, and thoughts verbally. Almost half of the teachers reported that the child's ability to sit still, pay attention, and finish tasks were important readiness skills. More than 50%

of the teachers reported that a child's ability to take turns, share, be sensitive to other children, be able to follow directions, and not be disruptive in class, were very important. (U.S. Department of Education's National Center for Education Statistics, 1993). Like kindergarten teachers, preschool teachers report that disruptive behavior is the greatest challenge that they face (Raver & Knitzer, 2002).

Some of the early predictors of future learning disabilities evidenced during preschool that correspond to self-regulation skills include: hyperactivity, impulsivity, distractibility, inattention, disinhibition, disorganization, and social-emotional problems (Cook, Tessier, & Klein, 1996). A recent study reported that 31% of kindergarten students were behind in social and emotional development (Wertheimer & Croan, 2003).

Classroom participation. Similar to the notion of a child's "teachability" is the significance of a child's ability to participate appropriately in class. Classroom participation, defined as following directions, complying with rules of the classroom, and displaying independent and self-directed behaviors, has been positively related to achievement among kindergarteners (Ladd, Birch, & Buhs, 1999). The research also suggests that academic achievement depends on two forms of participation: (a) willingly engaging in (or acquiescing to) classroom tasks and demands (e.g., attending, following directions), and (b) taking initiative within the classroom (e.g., asking questions, working independently) (Finn, 1993).

Summary of teacher perceptions. The majority of the skills that teachers have

identified as critical to academic success are self-regulatory skills. These essential, yet overlooked skills include the emotional, behavioral, and cognitive aspects of self-regulation. For example, the ability to control emotions and behaviors, control attention, take initiative, work independently, and problem-solve are all aspects of self-regulation (Bronson, 2000). Likewise, working successfully within a group involves the ability to regulate emotions and control or inhibit negative and inappropriate behaviors. It is important to note that not only are these self-regulatory abilities considered necessary for a child to be ready for kindergarten, but research has also suggested that a child's ability to regulate his or her emotions, impulses, and attention significantly predicts whether he or she will repeat kindergarten (Agostin & Bain, 1997; Raver & Knitzer, 2002).

Taking into consideration the teachers' concerns and the research that has indicated that children who have difficulty paying attention, following directions, getting along with others, and controlling emotions do less well in school (i.e., Raver, 2003; Arnold et al., 1999; and McClelland et al., 2000), it is essential that readiness measures appropriately assess for these self-regulatory skills. Unfortunately, readiness measures typically do not assess for the emotional, behavioral, and cognitive self-regulatory skills that have been most identified by kindergarten teachers as essential for academic success. Instead, they focus on academic skills.

Self-Regulation and Academic Success

Although it is argued that self-regulatory abilities are independent of

intelligence and possibly equally powerful predictors of school adjustment (Blair, 2002) and that high levels of motivation and self-regulation among elementary age children are associated with academic achievement independent of intelligence (Gottfried, 1990), research on the self-regulation abilities among preschool-age children is limited. The following section will review the research related to self-regulation and academic success among preschoolers and discuss the limitations of these studies.

Preschool self-regulation studies. To date, there are no known studies that have provided a comprehensive assessment of self-regulation among preschoolers. Comprehensive assessment is defined as an assessment of the emotional, behavioral, and cognitive aspects of self-regulation.

Self-regulation research among preschoolers has typically focused on one or two aspects of self-regulation (e.g., emotion regulation, behavioral regulation, or attention). For example, Denham et al., (2003) studied emotion regulation among preschoolers and found that emotion regulation predicted concurrent social competence. Howse et al., (2003) longitudinally examined emotion regulation and behavioral regulation of preschool and kindergarten students. The results indicated that children who had greater emotion regulation skills in preschool had higher achievement scores in kindergarten. Similarly, children with greater behavioral self-regulation in preschool had higher achievement scores in kindergarten. These studies are significant; however, they leave out several important cognitive self-regulation

skills. For example, Gioia, Espy, and Isquith (2003) identified the following as self-regulatory functions: flexible problem-solving, holding information in mind to stay with and complete a task, planning, organizing information, and making transitions. Although self-regulation is a complicated, multidimensional construct, previous studies have narrowly defined and investigated the term. In addition, there are very few research studies pertaining to self-regulation among preschoolers. A more accurate assessment of a preschooler's emotional, behavioral, and cognitive aspects of self-regulation is necessary to assess many of the skills previously described as "dimensions of school readiness".

Sociodramatic Play and Self-Regulation Skills

Because the early childhood education literature and the National Association for the Education of Young Children (NAEYC) identifies the importance of sociodramatic play, this section will review the research related to the influential role of sociodramatic play on a child's learning and self-regulation skills. Implications for the use of sociodramatic play as a means for developing self-regulation will be proposed.

Metacognitive skills and sociodramatic play. A review of the research related to the kinds of preschool programs that promote learning and school success, suggested that curriculum, which encouraged the development of metacognitive skills, (e.g., reflection, prediction, and questioning), facilitated effective and engaged learning (Bowman, Donovan, & Burns, 2001).

Metacognitive skills are aspects of cognitive self-regulation, which suggests that strategies, which promote the development of self-regulation, may benefit a child who is preparing to enter kindergarten. One preschool activity that has been linked to the development of metacognitive skills is sociodramatic play. Three studies have indicated that sociodramatic play, which should be an important component of the preschool curriculum, encourages the development of metacognitive skills, including problem solving, reasoning, and planning (Smilansky, 1990; Bretherton, 1984; Dansky & Silverman, 1973).

In addition to the connection between sociodramatic play and metacognitive skills, sociodramatic play corresponds significantly with increased language abilities, improved sequencing and comprehension, and social competence (Saltz et al., 1977; Pelligrini & Dresden, 1992; Pelligrini, 1980; Bowman, Donovan & Burns, 2001). During sociodramatic play, a child uses his or her language skills to verbally express him or herself, engage in role-play scenarios, and problem-solve the different rules of the imaginary situation (Bodrova & Leong, 1998; Vygotsky, 1976). Through verbal and social interactions that occur within sociodramatic play situations, a child learns to control his or her impulses, compromise disagreements, reflect on choices, and participate as a productive member of a group. There are many valuable learning opportunities that exist within the “social”, as well as the pretend aspects of sociodramatic play situations that occur within the preschool classroom.

Social-constructivist perspective on play. Vygotsky’s (1976) social

constructivist perspective further emphasized the important role that social play interactions have in the learning process. In particular, verbal interactions and language play a key role in the development of self-regulation. Vygotsky (1976) noted, "... what children can do with the assistance of others may be more indicative of their mental development than what they can do alone" (p. 85). He believed that there is a *zone of proximal development*, which is the distance between "independent problem solving" and "problem solving under adult guidance or in collaboration with capable peers" (p. 86). Children learn through imitating and interacting with adults and peers. Vygotsky argued that "play creates a zone of proximal development of the child," which suggests that the social interactions that exist within play may influence a child's learning and the capacity to be available for learning.

Processes in play. Russ (2004) presented the following framework for categorizing the cognitive, affective, interpersonal, and problem-solving processes that are expressed during pretend and/or sociodramatic play (see Table 1). Several of the processes outlined by Russ (2004) overlap with self-regulatory skills, suggesting that sociodramatic play provides a context within which preschoolers can develop and improve their self-regulation skills and subsequent readiness for kindergarten. Some of the overlapping abilities include: organization, divergent thinking, emotion regulation, communication, and problem-solving. Also, during sociodramatic play, it is important for a child to control his or her impulses and emotions while taking on a

specific role (e.g., a chef), attend to the role, stay on task within that role, and communicate and cooperate with his or her peers.

Table 1

The Cognitive, Affective, Interpersonal, and Problem-Solving Processes Manifested through Play

Processes in Play
Cognitive Processes
Organization
Divergent thinking
Symbolism
Fantasy/Make-believe
Affective Processes
Expression of emotion
Expression of affect themes
Comfort/Enjoyment of play
Emotion regulation/modulation
Cognitive integration of affect
Interpersonal Processes
Empathy
Interpersonal schema
Communication
Problem Solving Processes
Approach to problems
Problem solving/Conflict resolution ability

Russ (2004).

Sociodramatic Play, Self-Regulation, and Readiness Skills

Because research studies have indicated that children who are academically behind when they start school are unlikely to catch up and that early school performance is predictive of later school outcomes (Coley, 2002; Raver & Knitzer, 2002), effective preschool interventions are essential. Based on the similarities between kindergarten teachers' perceptions of readiness skills, self-regulatory abilities, and the skills that are utilized during sociodramatic play, it is important to examine the potential role of sociodramatic play as a facilitator of self-regulation development and subsequent readiness skills among preschoolers. Table 2 outlines the similarities among teachers' perceptions of school readiness skills, self-regulation skills, and sociodramatic play processes, which suggest that there is a relationship among the variables of teachers' perceptions of school readiness, self-regulation skills, and sociodramatic play.

Table 2

*The Similarities among Kindergarten Teachers' Perceptions of School Readiness,
Self-Regulation Skills, and Sociodramatic Play Processes*

Kindergarten Teachers' Perceptions of School Readiness	Self-Regulation Skills	Sociodramatic Play Processes
<ul style="list-style-type: none"> ▪ Attentive ▪ Engage in classroom tasks ▪ Listen to instructions; Control behaviors; Follow directions; Comply with rules ▪ Take initiative; Independent learner ▪ Communicate thoughts verbally ▪ Work as part of a group; Take turns and share 	<ul style="list-style-type: none"> ▪ Attention ▪ Ability to stay on task ▪ Inhibit impulses/self-control; Modulate emotions ▪ Initiate; Problem-solve; Plan; Organize; Reflect; Evaluate 	<ul style="list-style-type: none"> ▪ Concentration ▪ Take on different roles within task ▪ Monitor behavior; Self-control; Follow rules of play situation ▪ Problem-solve ▪ Verbal communication ▪ Flexibility; Social competence; Cooperation; Reasoning; Creativity

Rationale for the Study

Since the nation's increased focus on school readiness during the 1990's, there have been several state and federal initiatives designed to clarify and define school readiness. Unfortunately, there continues to be no clear definition of readiness that is widely accepted throughout the school systems across the United States. As a result, there are many different readiness measures administered to children who are preparing to enter kindergarten, which confound the concept and assessment of readiness. In addition to the inconsistencies in the definitions and measures used to assess school readiness, kindergarten teachers' perceptions of the skills they believe children need to be successful in the classroom are discrepant with the measurement of readiness. Several of these identified skills are dimensions of emotional, behavioral, and cognitive self-regulation. However, children's self-regulatory skills are often not assessed when considering their preparedness for kindergarten.

There is also concern that the nation's preoccupation with school readiness has undermined the importance of sociodramatic play as a context for learning during the preschool years, despite the fact that a number of research studies as well as theoretical perspectives have supported the contribution of sociodramatic play to the development of children's ability to regulate themselves and be available for learning.

Purpose of the Study

The purpose of this study is to examine the relationships among sociodramatic play, self-regulation, and kindergarten readiness within a preschool population. To

date, there are no known empirical studies that have examined the relationship between sociodramatic play and the emotional, cognitive, and behavioral aspects of self-regulation skills among preschoolers', and their readiness for kindergarten. The objective is to examine the relationships among sociodramatic play, self-regulation, and school readiness within both a *social-constructivist* and an *interactionist* or *bi-directional* framework. The goals are to identify the knowledge, skills, and processes that promote preschoolers' readiness for kindergarten, while considering the social environment and potential intervention strategies that may facilitate the development of these identified skills. For the purpose of this study, the social environment is the preschool classroom. The knowledge, skills, and processes are those that are learned through engagement in sociodramatic play.

Research Questions

The following three questions were explored in this research study:

1. What is the relationship between sociodramatic play and self-regulation among preschoolers?

Hypothesis 1: It is hypothesized that preschoolers' complexity in sociodramatic play will positively predict preschoolers' capacity for self-regulation.

2. What is the relationship between sociodramatic play and kindergarten readiness?

Hypothesis 2: It is hypothesized that preschoolers' complexity

in sociodramatic play will positively predict preschoolers' readiness for kindergarten.

3. What is the relationship between self-regulation and kindergarten readiness?

Hypothesis 3: It is hypothesized that preschoolers' capacity for self-regulation will positively predict preschoolers' readiness for kindergarten.

The quantity and quality of sociodramatic play behaviors will be assessed using the Smilansky Scale of Evaluation of Dramatic and Sociodramatic Play (Smilansky & Shefatya, 1990). Self-regulation will be measured by the Behavior Rating Inventory of Executive Function – Preschool Version (BRIEF-P, Gioia, Espy, & Isquith, 2003). The BRIEF-P measures a preschool child's ability to: (a) control impulses and behaviors, (b) attend to the task at hand; (c) solve problems flexibly; (d) move independently from one activity to the next; (e) modulate emotional responses; (f) hold information for the purpose of completing a task; and (g) plan (Gioia, Espy, & Isquith, 2003). Because all of the skills assessed by the BRIEF-P have been identified by teachers as important for a successful transition to kindergarten, this measure is most appropriate for the present study. The Brigance Preschool Screen-II will be the measure used to assess readiness.

Research Definitions

Some working definitions that would be important to clarify at this point are

the following:

1. Sociodramatic Play- “Cooperation” of at least two children “taking on roles in which they pretend to be someone else”. The play activities involve *imitation* and *make-believe* (Smilansky, 1990).
2. Self-Regulation-The exercise of control by the self of one’s thoughts, impulses, emotions, task performances, motivation, and attentional processes (Bronson, 2000 & Vohs & Baumeister, 2004).
3. Kindergarten Readiness- The National Education Goals Panel (1990) outlined the following domains of readiness: physical and motor development; social and emotional development; approaches to learning; language skills; and cognition and general knowledge.

Potential Contributions of the Study to School Psychology and Education

The potential contributions of the proposed study center on providing school psychologists with valuable information that will assist in their understanding and use of comprehensive measures and take into consideration preschoolers’ capacity for self-regulation in preparing children for kindergarten. School psychologists need to be aware of measurements of self-regulation, which go beyond the standard measurements of kindergarten readiness. In addition, school psychologists need to be knowledgeable of intervention strategies, such as those that employ sociodramatic play, and how they can be used to support the development of self-regulation. Knowledge about the connections and directions of influence among sociodramatic

play, self-regulation, and kindergarten readiness will help school psychologists. As a result of using more thorough assessment measures, school psychologists can assist teachers in developing effective intervention strategies, such as sociodramatic play, which will promote kindergarten readiness and future academic success.

According to the National Association of School Psychologists (NASP, 2006), the goals of a school psychologist are to “help children and youth succeed academically, socially, and emotionally...and “collaborate with educators and parents...to create... supportive learning environments” (p. 12). The results of this study should provide school psychologists with the necessary tools to assist them in meeting these goals within the preschool setting. Overall, the evaluation of the relationship among sociodramatic play, self-regulation, and kindergarten readiness addresses the important role that school psychologists have in providing consultation, evaluation, intervention, prevention, and research that makes a positive difference in children’s learning as well as in the school’s effectiveness in meeting the needs of their students.

CHAPTER TWO

Review of the Literature

The purpose of the chapter is to review the literature pertaining to self-regulation, sociodramatic play, and school readiness. The emotional, behavioral, and cognitive aspects of self-regulation will be defined. In order to understand the history of the various definitions of self-regulation, the neuropsychological, cognitive, social cognitive, and social constructivist theoretical perspectives will be summarized. The chapter will continue with a discussion of the Vygotskian perspective on the importance of play in relation to the development of self-regulation. Next the literature pertaining to the relationship between sociodramatic play behaviors and learning skills will be reviewed and discussed in relation to the implications for school readiness. Finally, the current views and definitions of school readiness skills will be described.

Self-Regulation

Self-regulation is a multidimensional construct, which includes emotional, behavioral, and cognitive or executive regulatory abilities. Often, when one thinks about self-regulation, the child's ability to stay on task, modulate emotions, and control one's level of activity and impulsivity are considered. However, cognitive processes, such as the ability to sustain attention and monitor one's thoughts, are also defining features of self-regulation. In addition, the regulation of cognitive skills includes the ability to organize information into categories, develop rules and

strategies for problem solving, plan ahead, monitor progress, and adjust thinking and behavior (Bronson, 2000). The following sections will review the emotional, cognitive, and behavioral aspects of self-regulation.

Emotion regulation. Emotion regulation has been described as the individual's ability to manage, modulate, inhibit, and enhance emotions (Howse et al., 2003). Similarly, Eisenberg et al., (2002) defined emotion regulation as the process of "initiating, maintaining, modulating, or changing the occurrence, intensity, or duration of internal feeling states and emotion-related physiological processes, often in the service of accomplishing one's goals" (p.48). Emotion regulation has also been defined as the "extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions...to accomplish ones' goals" (Thompson, 1994, p. 27-28). These definitions describe emotional regulation as a process in which individuals actively regulate their emotions according to their abilities and intentions.

According to Blair (2002), "emotional reactivity plays a key role in focusing selective attention and applying mental processes necessary for learning" (p. 118). For example, an organized emotional response to stimulation within the classroom facilitates the focusing of attention that is necessary for learning to occur. In contrast, poor emotional reactivity may "disrupt" cognitive control processes such as sustaining attention, holding information in mind, and inhibiting impulses (Blair,

2003). Blair underscored the importance of emotional regulation in social interactions, goal-directed behaviors, and successful adjustment to school.

In reference to preschoolers, emotional regulation has also been studied as a component of emotional competence, considered vital to a preschool child's development of social competence, which in turn is critical to school readiness (Denham, et al., 2003; Carlton & Winsler, 1999). Denham et al., (2003) found that emotional regulation, at age three to four, predicted concurrent social competence and kindergarten social competence. The sample included 143 predominantly Caucasian middle-income children between the age of 3 and 4 years who were enrolled in urban preschool centers. Emotion regulation was defined by the following: (1) maternal reports of the children's coping behaviors when faced with emotionally difficult situations with peers; and (2) observations of children's negative reactions to peers' emotions. Social competence was assessed by teacher-rated social competence and peer-rated social competence measures in preschool (ages 3 to 4 years, N=143) and again, in kindergarten (ages 5 to 6 years, N=104). The results of the structural equation modeling indicated that preschoolers depicted by their mothers as emotionally dysregulated, and observed by raters to have dysregulated coping behaviors, were also seen by teachers and peers as less socially competent. Likewise, in kindergarten, these children were considered less socially competent than their peers. Based on the research of Denham et al., (2003), children who are better able to regulate their emotions are more likely to enter school socially competent, meaning,

that they are successful at initiating and sustaining positive relationships with peers and teachers. They are more likely to feel positive about school, participate more in school, and achieve more in school.

Mendez, McDermott, and Fantuzzo (2002) noted that there is a frequent demand for school psychologists to assess preschoolers' level of social competence as an indicator of their academic readiness. They described social competence as a multidimensional construct that includes domains of temperament, language, self-regulation, and peer play. Within the context of their study, self-regulation referred to emotional regulation and autonomy.

In summary, the literature emphasizes that the way in which children modify or regulate their emotional reactions to certain stimuli may have an effect on their ability to learn and be successful within the classroom. This connection suggests that emotional regulatory abilities may likely facilitate a preschool child's readiness for kindergarten. The following section describes the connection between emotional regulation and cognitive processes.

Cognitive regulation. Cognitive processes are actively involved in the regulation of an individual's emotions and behaviors. For example, Bronson (2000) argued that in order to control emotions and behaviors, one must have an understanding of the environmental constraints, the self-regulatory ability to exercise control, and the motivation to do so. Furthermore, cognitive development is required for the child to learn to "recognize, interpret, and remember her own emotions and to

recognize constraints on their expression in the environment.” (p. 60). Bronson (2000) stated that in order to develop strong self-regulatory skills, one must have the cognitive capacity to make sense of information and situations and to modify one’s behaviors, emotions, and thought processes, accordingly. These cognitive interpretations are based on prior knowledge, previous experiences, beliefs about one’s ability to influence others, and inferences about goal attainment. Similarly, Shonkoff and Phillips (2001) emphasized that the more children learn about emotions the more capable they become of regulating their emotions. Shonkoff and Phillips (2001) reported that this process of learning about emotions, and how and when to express emotions, occurs within “real-life” situations.

As previously stated, cognitive regulatory abilities interrelate with many of the behavioral and emotional aspects of self-regulation. Rothbart (1989) conceptualized self-regulation to include the processes of attention, inhibitory control, and impulsivity; all contribute to the modulation of emotionality. Similarly, Eisenberg, Fabes, Guthrie, and Reiser (2002) argued that emotion regulation is achieved through effortful management of attention (e.g., attention shifting and focusing or cognitive distraction) and through cognitive processes that affect the interpretation of situations. Attention regulation is considered important for the regulation of emotion-related physiological processes and internal emotional states (Eisenberg et al., 2002). Rothbart, Ahadi, and Evans (2000) found that modulation of emotions is achieved through attention shifting, which regulates exposure to stimuli, and through attention

focusing, which regulates the cognitive processes related to emotional experiences. Similar research suggested that children with low attention regulation and low inhibitory control are more vulnerable to the effects of risk (Lengua, 2002). In a sample of 101 third-through fifth-grade children representing various demographic characteristics and ethnicities, regression analyses indicated that children with low attention regulation and low inhibitory control as measured by questionnaires, observations, and structured tasks, were more affected by demographic, psychosocial, and environmental risk factors than children with high attention and inhibitory control (Lengua, 2002).

Additional cognitive self-regulatory abilities include the following: planfulness, control, reflection, competence, and independence (Paris & Newman, 1990). Cognitive self-control, often used interchangeably with cognitive self-regulation, has been defined as the ability to plan, to evaluate, and to self-regulate one's problem-solving activities and one's attention to a task (Normandeau & Guay, 1998; Cognitive Self-Control Scale, CSCS, Kendall & Wilcox, 1979). Cognitive self-control has also been defined as a self-regulatory process "whereby, children activate and sustain cognitions, behavior, and affects that are systematically oriented toward the attainment of goals" (Schunk, 1994, p. 75). Similarly, Zimmerman (1998) described self-regulation as self-directedness and control before, during, and after an activity.

Research has indicated that cognitive self-control is important in the early grades. Cognitive self-control has been found to mediate the influence of

kindergarten behaviors on school achievement in the first grade; and a first grader's ability to concentrate and participate in class has been linked to later school achievement (Normandeau & Guay 1998; Alexander et al., 1993).

In Normandeau and Guay's (1998) study, teachers rated the behaviors of 291 public school kindergarten children. These children received scores for the following three subscales: *aggressive behavior*, *anxious-withdrawn behavior*, and *prosocial behavior*. In first grade, the same children were rated by their first-grade teachers using their end of the year school grades and the Cognitive Self-Control Scale (Kendall & Wilcox, 1979). Results of the structural equation model suggested that children who were less aggressive or more prosocial in kindergarten presented with better cognitive self-control over their school tasks in first grade. In addition, cognitive self-control was positively related to school achievement at the end of first grade.

The longitudinal study conducted by Alexander et al., (1993) examined the effects of children's classroom behavior on school performance over a four-year period, beginning in first grade. The teacher-rated classroom behaviors were classified in three domains: Interest-Participation, Cooperation-Compliance, and Attention Span-Restlessness. School performance was measured by the children's yearly report card grades and bi-annual scores on the California Achievement Test (CAT). The stratified random sample included a total of 790 children from 20 urban, public elementary schools. The results of the multiple regression analyses indicated

that Interest-Participation and Attention Span-Restlessness influenced CAT scores and grades in every year. The greatest gains were evident during the first year, which the authors suggested may indicate that there is a “window of opportunity” in the first full year of schooling (Alexander, et al., 1993).

There is an overlap between the abilities that comprise the defining characteristics of self-regulation (i.e., cognitive processes) and those that are considered executive function skills. Often the terms are used interchangeably. For example, Grattan and Eslinger (1992) defined executive functions as, “cognitive and self-regulatory processes which include cognitive flexibility, impulse control, synthesis of multiple pieces of information across time and space, divergent production of ideas and alternatives, decision making, planning, and regulation of goal directed activity” (p. 192).

To clarify the terms, Barkley (2000) defined self-regulation as “any self-directed action that serves to alter the probability of a subsequent response so as to alter the likelihood of a future consequence.” (p. 1065). He stated that self-regulation is an “inherent” part of executive function and he referred to the “executive” skills of *response inhibition, nonverbal working memory, verbal working memory, self-regulation of emotion and motivation, and reconstitution (self-directed) play* as the executive function/self-regulation system (EF/SR system). For example, response inhibition includes impulse control and delay of gratification; non-verbal working memory refers to the ability to hold events in mind; and verbal working memory or

the internalization of language refers to reflection, instruction, and questioning. Self-regulation of emotion and motivation refers to emotional self-control and intrinsic persistence. Finally, reconstitution or self-directed play includes fluency, and flexibility in goal-directed behavior (Barkley, 2000).

Barkley contended that executive function skills are “self-directed” actions used to “engage” in self-regulation toward “conjectured social futures.” In his view, the executive function/self-regulation system is the “...seat of social intelligence.” Barkley’s theory emphasized the social link between the executive function/self-regulation system and goal-directed behaviors.

Behavioral regulation. Behavioral regulation is the third component of self-regulation, and it can influence social interaction. Behavioral regulation often refers to an individual’s activity level, distractibility, ability to stay on task, sustain attention, and planning skills (Howse, et al., 2003). Eisenberg, Fabes, Guthrie, and Reiser (2002) defined emotion-related behavioral regulation as the “process of initiating, maintaining, inhibiting, modulating, or changing the occurrence, form, and duration of behavioral concomitants of emotion.” (p.49). From this perspective, behavioral regulation includes control of the overt behaviors that are associated with internal emotion-related psychological or physiological states and goals. Children’s ability to be successful at modifying and controlling their behavioral impulses will likely affect their relationships with other classmates, their ability to focus in class, and their ability to be academically successful.

The Development of Self-Regulation

To understand the history of the various definitions and components of self-regulation it is important to consider the existing theoretical perspectives on the development of self-regulation. The following sections discuss the neuropsychological, cognitive, social-cognitive, and social constructivist theories of self-regulation development.

Neuropsychological perspective. The neuropsychological perspective takes into consideration the relationship between emerging skills and the development of self-regulation. The ability to regulate one's behavior in response to the cognitive, emotional, and social demands of a specific situation is considered a major developmental task (Ruff & Rothbart, 1996).

According to neuropsychological theory, attention is considered a “vehicle for self-regulation” and it is a mechanism that allows the individual to regulate sensory input, motor output, and emotional behaviors (Rothbart & Posner, 2001). Rothbart and Posner (2001) examined the mechanisms of emotion and cognition and the individual differences between these mechanisms within the domain of emotional reactivity and self-regulation. Their research linked the behavioral development of a child’s ability to plan and regulate cognitive skills with the neurodevelopment of brain areas related to selective attention.

The development of the nervous system is considered a time when “infants gain control of their behavior and mental state, so that as older children and adults,

they can exercise a degree of control over their emotions, thoughts, and actions” (Rothbart & Posner, 2001, p. 356). For example, Rothbart and Posner (2001) have shown when infants attend to external cues or shift their attention to new stimuli, their distress is reduced. Their study suggests that as the child develops, she/he begins to gain more direct control of her/his attention and the child becomes capable of seeking attention from others. In other words, the child becomes less dependent on the caregiver’s presentation of relevant information in order to attend. Self-regulation develops along a continuum with the infant engaging primarily in emotional regulation and then with neural development and environmental influences, the child develops the capacity to use more cognitive or higher functioning regulatory skills. For example, the coping mechanisms that underlie emotional self-regulation in early development broaden to include the control of cognition during later infancy and childhood. These results suggest that there is a relationship between the development of emotional regulation and cognitive control.

Self-regulation has been studied and defined as a characteristic of an individual’s temperament. According to Rothbart and Bates (1998), temperament is defined as “constitutionally based differences in emotional, motor, and attentional reactivity and self-regulation” (p. 109). Rothbart and Posner (2001) believed that there are individual differences in the ability to focus, shift attention, and sustain attention. The individual differences perspective views attention as a “property of the brain that develops under the control of genetics and of the environment” (p. 354.).

This perspective emphasizes the influential interactions that exist between biology and experience.

Reactivity and self-regulation are viewed as psychological processes within the temperament domain. Variability in arousability and distress to overstimulation, activity, and attention are measures of reactivity. Rothbart and Bates (1998) stated, “self-regulatory processes, such as executive attention, serve to modulate reactivity” (p. 109). Blair (2002) argued that from a neuroscientific framework, emotional reactivity plays a key role in focusing selective attention and applying the mental processes that are essential for learning.

The temperament variable that relates to the development of executive attention is known as effortful control (Rothbart & Posner, 2001). Effortful control is defined as the, “ability to inhibit a dominant response in order to perform a subdominant response” (p. 360). In summary, the neural system related to effortful control develops between the second and fourth years of life and continues into adolescence with an increased ability to use more sophisticated forms of self-regulation such as verbal information. The authors suggested that the temperament variable, effortful control, and the subsequent functions of attention, provide an important regulatory function and contribute to the child’s emotional, cognitive, and social development.

Piagetian/Cognitive perspective. Piaget’s theory of cognitive development focused on the active role of the child in understanding the world. According to

Piaget's theory, the first stage, the sensorimotor stage, is characterized by the infant's reliance on sensations and movements to make sense of the world (Guenther, 1998). In terms of self-regulation, the child in the sensorimotor stage can learn to control only sensory-motor actions (Bronson, 2000). The preoperational stage begins around age two and is described by the toddler's ability to form mental representations and think about objects and events in their absence. Piaget's third stage, concrete operations, is characterized by the child's ability to perform mental transformations on concrete and observable ideas and objects (Guenther, 1998). Beginning at about the age six, the concrete operational child can think logically about concrete objects, consider another person's perspective, take independent responsibility for her own actions, and consider more than one aspect of a problem or situation (Bronson, 2000). Piaget's final stage of cognitive development, formal operations, begins in early adolescence and is characterized by the individual's ability to understand and transform abstract or hypothetical concepts (Guenther, 1998).

Piaget's mechanisms of cognitive development are assimilation and accommodation. Assimilation refers to the process of associating new information with what is already known (schemas) and accommodation refers to the process of changing what is already known when the current knowledge is inadequate for solving a problem (Guenther, 1998). Piaget believed that the purpose of mental self-regulatory processes was to allow "optimal adaptation to the external environment" (Bronson, 2000, p. 22). According to Piaget, the child actively constructs

representations to make sense of new or conflicting information. Piaget's theory suggested that as the child increases her/his ability to cope with new information more effectively, she/he regulates cognitive activity more efficiently (Bronson, 2000). In Piagetian terms, self-regulation requires the capacity to assimilate new information with the old and accommodate the information to form more appropriate interpretations.

Social cognitive theory. Bandura, in his social cognitive theory (1989) emphasized the importance of motivation and postulated that self-efficacy beliefs determine one's level of motivation. According to Bandura (1989), individuals who have a strong belief in their abilities are more likely to "...exert greater effort to master a challenge" (p. 1176). Furthermore, Bandura suggested that self-efficacy beliefs affect thought processes through the "dual influence" of motivational and information processing operations. Self-efficacy beliefs about the ability to perform actions create a means of control by which the individual determines the level of effort and motivation that s/he will apply to complete a task. Bronson (2000) stated, "motivation is at the center of self-regulation..." (p. 5). In terms of Bandura's social cognitive theory, the person regulates his or her emotions, thoughts, and behaviors, according to their self-efficacy beliefs. Consequently, the child is viewed as an active participant in the process of developing self-regulation.

Bandura described three processes involved in the regulation of cognitive activity: (1) the ability to observe one's thinking and decision-making strategies, (2)

the capacity to judge the efficacy of these processes in reaching goals, and (3) the evaluation and modification of one's thought processes.

Social constructivist perspective. Vygotsky's social constructivist perspective emphasized the importance of language in the development of self-regulation. Language is the key "psychological tool" needed for self-regulation and it is the initial means of self-expression and communication between the child and the environment" (Vygotsky, 1978). Vygotsky stressed that only upon conversion to internal speech, does language become a means to organize thought. For example, the young child uses self-talk while engaging in his or her activities. At this point, self-talk or private speech is the primary means of voluntary self-regulation. Around the age of six or seven, children internalize the self-talk and uses it to guide their actions. Once the internalization process has occurred, private speech is "indistinguishable from thinking itself" and language becomes the primary vehicle for thought and self-regulation (Bronson, 2000). According to Vygotsky, internal speech and reflective thought arise from the interactions between the child and the individuals in his/her environment. Similar to the neuropsychological perspective, there is an emphasis on the influential role that the environment has on the development of a child's self-regulatory abilities.

Vygotsky stated that in order to be successful in supporting the development of the child's independent, self-regulated actions, adult guidance, or collaboration with peers is essential. According to the Vygotskian perspective, this guidance must be

provided in the child's "zone of proximal development" (Bronson, 2000). Vygotsky (1978) defined the zone of proximal development as the "distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p.86). Therefore, with the assistance of others in his or her social world, the child evolves from regulation by others to the internalization of voluntary self-regulation. Vygotsky's theory of self-regulation included voluntary attention, memory, language, and logical thinking, all of which he believed developed with guidance from others.

Summary

The neuropsychological, cognitive, social-cognitive, and social constructivist theoretical perspectives are similar in their emphasis on the importance of the early childhood years, namely the preschool years, in setting the foundation for the development of self-regulation skills. The theories differ, however, in their emphasis on the significance of biology and the environment on the development of self-regulation. For the purpose of this study, Vygotsky's perspective was emphasized, given that it addresses the relationship between the social environment and the internalization of self-regulation, and the role of more competent peers and adults in the development of internal self-regulatory abilities. The dominant social environment for the preschool child is the environment provided by the family; however, many young children attend preschool classes in order to become ready for

school, which includes learning to get along with their peers. Consequently, the preschool classroom constitutes an important social environment for young children. In addition, play activities, especially sociodramatic play, comprise a major portion of the children's experiences in the preschool classroom.

The following sections will review the importance of play during the preschool years, the Vygotskian theoretical perspective on the relationship between play and self-regulation, and the research pertaining to the influence of sociodramatic play on both self-regulation and academic skills. In addition, this section will review the literature pertaining to the relationships among self-regulation, academic skills, and school readiness.

Play and the Preschool Years

“Play evokes thought, language, and activity; it permits the child to deal with her intellectual processes in a way which makes these processes acceptable, and accessible, to her. When it is not forced, rigid, restricted, or circumscribed, it allows her to structure her world, using language, gestures, body movements, and the objects in her environment. No other activity motivates, nor permits a child to find out about herself, as well as play” (Weininger & Daniel, 1992, p. 69).

There is concern that today, preschool teachers often find themselves defending the importance of play to parents, colleagues, and administrators (Elias & Berk, 2002). Elkind (1990) emphasized that there are too many academic pressures being placed on our children at such a young age and he considers this “earlier is better”

ideology regarding exposure to pre-academic skills to be detrimental to early childhood play. The National Association for the Education of Young Children, which sets the standards for developmentally appropriate practice with preschool-age children, emphasizes that play is a “highly supportive context” for developing social, emotional, and cognitive skills (NAEYC, 2005). The NAEYC recognizes the importance of having preschool teachers provide sociodramatic play as a tool for learning curriculum content (NAEYC, 2005).

Sociodramatic play is defined as “...*cooperation* of at least two children...taking on roles in which they pretend to be someone else...both verbally and in terms of acts performed” (Smilansky, 1990). There are two basic elements to sociodramatic play: *imitation* and *make-believe*; imitation includes both “actions and speech patterns” and make-believe “depends heavily on verbalization” (Smilansky, p. 19). According to Smilansky (1990), the major researcher and educator in the field of sociodramatic play, “most children around the world between the ages of two and eight engage in a form of voluntary sociodramatic play” (p. 18).

Vygotskian Perspective on Sociodramatic Play

The NAEYC often refers to the Vygotskian perspective when discussing the principles of early childhood education. This section will discuss the Vygotskian perspective and its theoretical emphasis on the importance of play in the preschool years.

Vygotsky (1976) believed that play was the leading source of development in the preschool years and imaginary play is the “highest level of preschool development” (p. 552). Vygotsky’s view of development regarded the ability to create an imaginary situation as a means of developing abstract thought. Symbolic play, considered a higher level of play activity than the manipulative play of infancy, emerges around 18 months and develops throughout the preschool years (Piaget, 1962; Vygotsky, 1976).

According to the Vygotskian perspective, “play provides a uniquely motivating context in which children can develop the ability to self-regulate their behavior through imaginary situations, roles, and rules” (Bodrova & Leong, 1998, p. 117). For example, through an imaginary play situation, children may take on different roles (i.e., mom, dad, or baby) and rules of the play situation are established. Bodrova and Leong (1998) noted that through these roles and rules of an imaginary play situation, limits are placed on the child, which require the child to self-regulate, regulate other children, and be regulated by other children who are in different roles. It is within this imaginary peer-play situation that children learn to alternate between regulation by others and self-regulation. In addition, Vygotsky (1978) noted that the actions that occur within an imaginary situation teach a child to guide their behavior, not only by the “immediate perception” of the objects and the situation, but also by the “meaning” of the situation (p. 97).

Sociodramatic play situations may provide excellent opportunities for preschool children to develop and internalize self-regulation. In fact, Vygotsky stated, “Play continually creates demands on the child to act against immediate impulse” and therefore, “A child’s greatest self-control occurs in play” (p. 99).

Yang (2000) argued that it is important that preschool teachers be involved in child-initiated free play by teaching the children how to reflect upon their choices. Yang suggested that teacher guidance during free play promotes self-regulation by helping the child plan, follow-through, and evaluate their actions. Similarly, Epstein (2003) emphasized that through planning and reflecting, the child is better able to identify their goals, consider their options, recognize problems, propose solutions, anticipate consequences, and learn by generalizing to other situations. All of these skills are important for developing self-regulation and academic readiness.

Sociodramatic Play and Self-Regulation Research

There are few studies that have explored the relationship between sociodramatic play and self-regulation among preschoolers. Elias and Berk (2002) measured the relationship between sociodramatic play and self-regulation of behavior among preschoolers and found that complex sociodramatic play behaviors predicted future self-regulatory competence. Elias and Berk (2002) studied 51 middle-class, Caucasian preschoolers in the fall (Time1) and then in the late winter (Time 2). The authors found a strong correlation between the frequency and persistence of complex sociodramatic play, as measured by an adaptation of the Smilansky Scale for the

Evaluation of Sociodramatic Play (Smilansky & Shefatya, 1990), and preschoolers' responsibility for cleaning up after free play during time 2, but not Time 1. Based on the results, Elias and Berk concluded that Complex Sociodramatic Play significantly predicts development of self-regulation. Elias and Berk's (2002) research was limited by their definition of self-regulation, which included behavioral observations of children picking up their toys during clean-up, attentiveness during circle times, results from a parent-rated measure of impulsivity, and results from a teacher-rated measure of impulsivity. Elias and Berk's measures of self-regulation focused specifically on self-regulation of behavior and did not include measures of emotion regulation or cognitive regulation skills.

Additional research has indicated that make-believe play at the preschool level "...serves as a vital context for the development of self-regulation" (Krafft & Berk 1998, p.637). In their study of 59, predominantly Caucasian, middle-class preschoolers, the authors found that frequency of sociodramatic play was positively associated with frequency of self-guiding private speech (Krafft & Berk, 1998).

Although there are limited studies related to the influence of sociodramatic play on self-regulation among preschoolers, the results are promising in terms of the potential role that sociodramatic play might have on the development of self-regulation in preschool. Accordingly, new studies are needed.

Sociodramatic Play and Academic Skills

Several researchers have investigated the relationship between sociodramatic play and academic skills. This section will review the research related to sociodramatic play and academic skills among preschoolers.

Pellegrini (1980) found dramatic play to be a significant predictor of kindergartners' achievement in pre-reading, language, and writing. Pellegrini's (1980) sample consisted of 65 kindergarten children from mixed socioeconomic backgrounds. Achievement was measured by the children's performance on standardized tests and play was measured by Smilansky's (1968) hierarchy of play scale: functional, constructive, drama, and games-with-rules. Results of the multiple regression analyses indicated that dramatic play was the best predictor of overall achievement.

In addition, Saltz et al., (1977) found evidence that preschool children who were trained in sociodramatic play scored higher on sequence and comprehension tests than the control group. The sample included 150 preschool children from lower socioeconomic families and various ethnic groups. The sociodramatic play enactment training condition consisted of 15 minutes, three days a week for six months, while the control condition allowed for opportunities of play, but did not encourage play enactment. The children trained in sociodramatic play scored significantly higher on a task that required them to place pictures of a story in sequential order and then explain the relationships among the pictures. Similarly,

Pelligrini and Dresden (1992) emphasized that when engaged in fantasy play, children enact, disagree, and reach compromise over role interpretation. Accordingly, the fantasy play engagement is similar to reconstructing stories from different perspectives, which in turn, helps children comprehend stories.

Smilansky (1990) emphasized the significance of play by stating that dramatic and sociodramatic play is “a medium for the development of the cognitive, creative, and socioemotional abilities that will be useful within a school environment” (p. 18). For example, Smilansky (1990) noted that make-believe in sociodramatic play depends “heavily” on verbalization, which provides a means for interpretation, cooperation, problem solving, and management of the play activities. All of these sociodramatic play skills can affect the child’s ability to successful in school. In particular, Smilansky emphasized that problem solving, which is a major component of many school-subjects, requires considerable make-believe in order to conceptualize and visualize a situation, project oneself into a situation, and imagine a solution. In fact, Smilansky emphasized that history, literature, and geography are all make-believe because the child never directly experiences them.

Smilansky (1990) considered the following factors of sociodramatic play to be important to school behavior: (a) playing a role demands intellectual discipline to include only behavior appropriate for that role, (b) the child must understand the major features of a character or theme, the child learns to concentrate on a given theme, (c) the sociodramatic activity requires the child to discipline their own actions,

(d) the child learns flexibility by considering other children's approaches to the story line, (e) the child learns alternative problem-solving methods, the child develops abstract thought, and (f) through increased participation in sociodramatic play the child is more likely to become acquainted with different interpretations of various roles and different definitions of various situations.

To summarize, the literature strongly suggests that a positive relationship exists between sociodramatic play and preschoolers' academic skills (e.g. pre-reading, language, writing, comprehension, categorization, reasoning, and problem-solving). In addition, several of these identified academic skills overlap with self-regulatory abilities (e.g. attention, problem-solving, flexibility, and self-control).

Sociodramatic Play and School Readiness

In addition to the research related to sociodramatic play and academic skills among preschoolers, the following two studies have focused specifically on the relationship between sociodramatic play and the concept of school readiness.

Fantuzzo and McWayne (2002) explored the relationship between preschooler's peer play at home and school readiness. The sample included 242 predominantly African American, low-income preschool children from a large, urban Head Start program. Peer-play behaviors were measured by teacher and parent versions of a peer-play rating scale. The multiple dimensions of school readiness included measures of learning behaviors, emotion regulation, autonomy, and behavior problems observed in the preschool classroom. Correlational analysis revealed a

significant positive relationship between play competencies at home and prosocial behavior in the classroom, which included, motivation to learn, task persistence, and autonomy. Likewise, disruptive and disconnected home play behaviors were significantly related to disruptive and dysregulated experiences with peers in the classroom and with the learning process. Fantuzzo and McWayne (2002) included several aspects of self-regulation in their definition of school readiness: emotion regulation, independence, initiative, and staying on task.

Directly associated with the concept of positive peer interaction is the relationship between social competence and pretend play. Social competence is defined as “the ability to engage the interest of the partner, to attend to the social communication of the partner, to work collaboratively with the partner to construct complex and interesting play sequences, to sustain interaction, and to resolve conflict” (Bowman, Donovan, & Burns, 2001, p. 222). The authors argued “social competence is one of the primary skills that children develop and practice through engagement in pretend play” (p. 219).

Lamb-Parker et al., (1999) underscored the importance of play in a preschooler’s social-emotional development and development of school readiness skills. The sample included 173 predominantly Hispanic mothers and their children who attended an urban Head Start preschool program. School readiness was defined as a multidimensional concept that included behavior, cognitive development, and classroom adaptation. In their study of parental involvement and school readiness,

preschool children whose parents had a good understanding of the importance of play presented with higher verbal intelligence, higher extroversion, higher creativity, and higher independence.

Self-Regulation and Academic Skills

The following sections will review and summarize the recent empirical literature, which has focused on the relationship between self-regulatory abilities and academic skills. Some of the common terms identified within the research include “self-regulated learning”, “learning-related social skills”, and “learning behaviors”.

Self-regulated learning. The concept of self-regulated learning has been increasingly described and studied within the literature pertaining to academic success. Pintrich and Zusho (2002) defined self-regulated learning as “an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior in the service of those goals, guided and constrained by both personal characteristics and the contextual features in the environment” (p. 250). Pintrich and Zusho (2002) noted that students, who can regulate their own cognition, motivation-affect, and behavior, are more likely to be successful in academic settings. Likewise, the ability to regulate emotions and behaviors in preschool has been positively related to kindergarten academic success (Howse et. al, 2003). Howse et al., (2003) conducted a longitudinal study of 122 children and collected data at preschool and kindergarten. During the preschool data collection, the children were observed in a laboratory assessment of

emotion regulation and the parents completed a rating scale of their children's emotion regulation. In kindergarten, the children were administered an achievement assessment and the teachers rated the children's behavioral self-regulation. Results of the correlational analyses indicated that emotion regulation and behavioral self-regulation were positively related to achievement in kindergarten.

Learning-related social skills. Prior research has also focused on the relationship between “learning-related social skills” and academic success (McClelland, Morrison, & Holmes, 2000). Learning-related social skills are defined as listening and following directions, participating appropriately in groups, staying on task, and organizing work materials (McClelland & Morrison, 2003). McClelland et al., (2000) found that learning-related social skills predicted reading and mathematics skills at the beginning of kindergarten and end of second grade. These findings emphasize the need to support the development of these skills prior to entering kindergarten.

The ability to plan, organize, and regulate behavior have also been identified as learning-related social skills (Bronson, 2000). Epstein (2003) stated that planning involves deciding on actions, predicting interaction, recognizing problems, proposing solutions, and anticipating consequences. Likewise, Epstein (2003) described reflection as “remembering with analysis” (p. 2). Epstein (1993) collected data on early childhood programs and found that children who have had more opportunities to plan and reflect on their own activities scored higher on measures of language,

literacy, and social skills. By encouraging a child to make decisions, take the initiative, and evaluate their actions, children develop the thinking skills that are necessary for academic success (Epstein, 2003).

Learning-related social skills have been found to be present in children as young as three years (McLelland & Morrison, 2003). Fantuzzo and McWayne (2002) identified classroom peer interaction, approaches to learning, self-regulation, and conduct as a few of the emergent competencies relevant to school readiness within the preschool population.

Agostin and Bain (1997) screened the developmental and social skills of 184 predominantly African-American kindergarten children. Then in first grade, 135 of the original sample were administered a group achievement test. Results of the multiple regression analyses indicated that cooperation and self-control significantly predicted first grade academic success. Based on their results, Agostin and Bain (1997) suggested that in order to determine the need for early intervention services that promote future academic success, an assessment of social skills should be included in kindergarten screenings.

Learning behaviors. “Learning behaviors” is another term that has been used to describe a child’s ability to be successful in school (McDermott, Leigh, & Perry, 2002). Some of the dimensions of preschool learning behaviors include: attentiveness, responses to novelty and correction, observed problem-solving strategy,

flexibility, reflectivity, initiative, self-direction, and cooperative learning

(McDermott, Leigh, & Perry, 2002).

Self-regulated learning behaviors observed in kindergartners include: planning, monitoring, problem solving, and evaluating during reading and writing tasks (Perry, et al., 2002). Sperling, Walls, and Hill (2000) have identified self-regulation capabilities, such as planning and predicting performance, during their observations of preschooler's engaged in problem-solving tasks. The problem-solving tasks included sorting by shape and color and puzzle matching. To date, there is limited research related to the identification of self-regulated learning constructs within the preschool population.

School Readiness

Theoretical notions of school readiness. Meisels (1999) reviewed and outlined the following four theoretical perspectives of school readiness: *idealist/nativist*, *empiricist/environmental*, *social constructivist*, and *the interactionist*. The *idealist/nativist* perspective argued that children are ready to learn when they are ready, regardless of any environmental manipulation. In contrast, the *empiricist/environmental* position focused on what the child can do and how the child behaves. For example, if the child can demonstrate specific skills, then he or she is ready for school. The *social constructivist* definition of readiness took into consideration the child's social or cultural environment. Finally, the *interactionist* perspective viewed readiness as *bi-directional*. The focus is on the child's skills and

development and the environment's capacity to meet the individual child's needs (Meisels, 1999).

Definitions of school readiness. In addition to the various theoretical notions of school readiness, several definitions of readiness exist. School readiness skills have been described as the ability to listen and follow directions, the motivation to learn, independence in work habits and in adaptive behaviors such as dressing, eating, and toileting, an age-appropriate attention span and self-regulation of behaviors, and readiness skills in reading, math, and written expression (Lowenthal, 1999).

According to Carlton and Winsler (1999), school readiness incorporates the following two concepts: readiness to learn and readiness for school. Readiness to learn has been identified as the "level of development at which an individual is able to learn specific material" and readiness for school suggests that the individual will also be able to be successful in a "typical" school setting (Carlton & Winsler, 1999). Current school readiness practices require that the following three assumptions be met: (a) there is a minimum definable developmental level at which children can function well in school; (b) there are assessments that can determine whether or not a child has reached this point; and (c) there are alternatives for children found to be not ready that will help them be more successful when they enter kindergarten (Carlton & Winsler, 1999, p. 339).

In contrast to this "maturationist" perspective on school readiness, Carlton and Winsler recommended that a paradigm shift was needed in the area of school

readiness. Rather than waiting for “development to lead learning”, the authors proposed a Vygotskian school readiness perspective that considers social interactions and scaffolding learning experiences as “catalysts” for development. According to this perspective, Carlton and Winsler viewed readiness as “bi-directional” and suggested that rather than the child growing into readiness, he or she must be exposed to situations that involve the assistance of others to aid in the development of the skills necessary to be successful in school. This experience involves scaffolding. Scaffolding refers to a “non-directive style of assisting children on tasks that provide a high degree of support for children’s autonomy and self-regulation” (Carlton & Winsler, 1999, p. 346). After the child demonstrates that he or she can do the task independently, then the social support system or “scaffolding” is removed. In this respect, the school takes more responsibility in preparing the child to be “ready” for school.

The purpose of this study is to examine the relationships among sociodramatic play, self-regulation, and school readiness within both a *social-constructivist* and an *interactionist* or *bi-directional* framework. The advantage of incorporating the social constructivist and bi-directional perspectives within this study is that these perspectives emphasize the active role of the environment, in addition to the child’s active participation, in assisting the child in developing the skills that will prepare him or her for kindergarten. Therefore, the primary purpose of this study is to examine the relationships among a preschooler’s complexity of sociodramatic play,

self-regulatory abilities, and school readiness, with the expectation that the children's ability to engage in sociodramatic play will contribute to their ability to self-regulate and their readiness for kindergarten. A secondary purpose is to examine the contribution of self-regulation skill to kindergarten readiness.

CHAPTER THREE

Method

Participants

The participants included 38 students from the Central Public Elementary school pre-kindergarten program in South Berwick, ME. South Berwick is a rural community in southern Maine with a population of approximately 7,000. In 2005, the estimated median household income was \$60,600; 97.2% of the population were White Non-Hispanic; 91.4% of the residents over the age of 25 had a high school diploma or higher; and 25.3% had a bachelor's degree or higher. All of the participants lived in South Berwick and attended either the morning or the afternoon pre-k program Monday through Friday from 8:25am – 11:00am or 12:00-2:25pm. There were two morning pre-k classes and two afternoon pre-k classes; one morning class had 10 students and the other class had 12 students. The afternoon classes had nine students in one room and seven students in the other. There were 15 girls and 23 boys ranging in age from 4-6 years. Since the participants of this study were children, the Division for Research Integrity at Northeastern University reviewed and approved the procedures of this study prior to the data collection. The Informed Consent Document, which was signed by the children's parents or guardians, is presented in Appendix A.

The participants were a sample of convenience due to the accessibility of this school district and the difficulty in collecting this type of data, without having an established relationship with a preschool program. The children's parents or guardians were asked to complete a demographic questionnaire (presented in Appendix B). The

information included the child's age, gender, use of psychotropic medication, and history of special education, attention, or developmental disabilities. The information drawn from the questionnaire was used to describe the sample of children more comprehensively and served to identify the limits of external validity of this sample of convenience. Supplementary information about the children was obtained from the teachers' completion of the BRIEF-P measure, which included demographic information about the child's age, gender, in addition to how well and how long the teacher had known the child.

The children's teachers participated by (1) sending the informed consents and demographic questionnaires in an envelope home to the parents of all the children enrolled in the morning and afternoon pre-k classes, and (2) completing the measure of self-regulation (BRIEF-P). The envelopes with the informed consents and demographic questionnaires were sent home in the children's backpacks with their daily mail. The informed consents included the principal's, teachers', and examiners' contact information if the parents have any questions. The contact information for Northeastern's Division for Research Integrity and the chairperson of the study was included on the statement of informed consent.

The student author of this study observed and videotaped the pre-k participants. A master's level speech and language pathologist assisted in the videotaping.

Setting

The setting consisted of the two pre-kindergarten classrooms located within the public elementary school. Each classroom included: a large carpeted area for

circle, calendar, and morning meeting; an area with an easel and art supplies; a dress-up area filled with boxes of dress-up clothes, props, and hats and a full-length mirror; a kitchen area with pots, pans, tea set, dishes, utensils, and food; a doll area with a crib, high chair, bottle, baby blankets, and other stuffed animals; an area with wooden blocks, plastic manipulatives, and plastic toy animals; a center with a sand and water tray with various plastic toys; and an area with books and puzzles. The arrangement of these pre-k classrooms and the materials within the rooms were similar to most preschool environments and follow the NAEYC (1996) guidelines, which require the physical environment of the preschool classroom to include dramatic play equipment and sensory materials such as sand, water, paint, and blocks.

Measures

A demographic questionnaire and three measures were used to examine sociodramatic play, self-regulation, and kindergarten readiness. These measures were respectively, the Smilansky Scale for Evaluation of Dramatic and Sociodramatic Play (SSEDS, Smilansky & Shefatya, 1990), the Behavior Rating Inventory of Executive Function –Preschool Version (BRIEF-P, Gioia, Espy, & Isquith, 2003), and the Brigance Preschool Screen-II (Brigance, 2005). For the primary analysis, the SSEDS served as the independent variable, and the BRIEF-P and the Brigance Preschool Screen-II served as the dependent variables. In a secondary analysis, the BRIEF-P served as an independent variable in relationship to the children's performance on the Brigance Preschool Screen-II.

Demographic questionnaire. The information in the questionnaire included the child's age, gender, race, use of psychotropic medication, and history of special education, attention, or developmental disabilities. (Appendix B).

Smilansky Scale for Evaluation of Dramatic and Sociodramatic Play. The Smilansky Scale for Evaluation of Dramatic and Sociodramatic Play (SSEDS, Smilansky & Shefatya, 1990) was used to assess the level of each child's dramatic and sociodramatic play. According to Smilansky (1990), "dramatic play consists of children taking on a role in which they pretend to be someone else." The dramatic play is considered "sociodramatic play" when the activity "involves *cooperation* of at least two children and the play proceeds on the basis of interaction between the players acting out their roles..." Smilansky noted that both types of play activity involve *imitation* and *make-believe*. Imitation establishes a "reality level" for children in that they try to act, talk, and look like a real adult person. Make-believe or imagination involves the children "projecting" themselves into activities and situations that are "represented" and "not exact".

Smilansky and Shefatya's (1990) procedures guideline recommends dividing the play evaluations into either a 30-minute period divided into 6, five-minute units, or a 20-minute period divided into 4, five-minute units. For the purpose of this study, evaluations of the child's play level were based on a 20-minute videotaped recording of the child's play behaviors in the free-play/choice areas of the pre-k classrooms. There were four, 5-minute intervals of recorded observations of the participants' play

during a period of four days, for a total of 20 minutes of recorded data per student.

The following six categories of dramatic and sociodramatic play were observed:

1. Imitative Role-Play.
2. Make-Believe with Objects.
3. Make-Believe with Actions and Situations.
4. Persistence in Role-Play.
5. Interaction.
6. Verbal Communication.

According to the SSEDS rating guidelines (Smilansky & Shefatya, 1990), each of the six elements is rated within the four, 5-minute observation units and then an overall summary score is calculated. Scoring of each element ranges from 0 to 3 based on the following:

I. *Imitative Role Play*. The child engages in a make-believe role and expresses it in imitative action and/or verbalization. The child enacts a character other than himself or herself in another context.

- 3 Role-play is highly elaborated. Carries out many different ideas; imitation of voices, gestures, posture.
- 2 Role-play to a moderate degree. Child enacts one or more roles with some elaboration within the five-minute period.
- 1 Role-play is present but there is little or no elaboration.
- 0 Role-play is not present.

II. *Make-Believe with Objects*. Toys, unstructured materials, gestures, verbal declarations are substituted for real objects. A toy being used in a way other than intended (a cash register is used as a typewriter or a screwdriver is used as a nail) is also make-believe with objects.

- 3 The child uses some combination of the actions described above extensively while enacting a role or roles. The child uses words or actions referring to or substituting for objects. The use of toys alone, no matter how extensive cannot be rated 3.
- 2 The child uses some gestures or words as a substitute, either with or without toys, but usually in addition to toys. The use of toys and one pretend action is usually rated 1; the use of toys and a few pretend actions would be 2.
- 1 Slight use of one or more of the actions listed above. This need not be within an episodic context, i.e., the child makes an imaginary phone call to someone present (or not).
- 0 No use of any of the actions listed above (no make-believe with objects).

III. *Make-Believe with Actions and Situations.* Verbal descriptions are substituted for actions and situations. This category includes verbal behavior only.

- 3 Extensive and imaginative use of make-believe
- 2 Moderate. Two or three different situations are referred to verbally or there is some elaboration of a single situation.
- 1 Slight. One or two related statements. *“I’m going to the doctor.” “Let’s go to the store.”*
- 0 No Make-believe with actions and situations.

IV. *Persistence in Role-Play.* The child persists in a play episode for at least five minutes.

- 3 Extensive. The child stays with a single role or related roles for all of the five-minute period. The play can be repetitious or elaborated. There may be a brief interruption as long as the child returns to the main theme. A child can get a low score on role-play and a high score on persistence. Role involvement is considered; if he stays with the role but is not involved, he cannot get more than a 2.
- 2 Moderate. The child undertakes one or two roles with some elaboration or repeats activities of the roles to moderate extent. Some interruption activity can take place. The child definitely has a theme around which he plays.
- 1 The child undertakes three or more roles with slight elaboration or repetition. The child follows through on some role-play; i.e., he goes to the store, gets groceries and takes the groceries home.

- 0 There is no persistence in role-play.

V. *Interaction*. There are at least two players interacting in the context of the sociodramatic play episode. Interaction means that the child directs an action or words to another child. He intends for the other child to respond at least by listening. A child waiting at the cash register to check out is an example of interaction whether or not the child responds.

- 3 Truly reciprocal role-play (doctor, nurse; husband, wife; worker, boss) is an integral feature of the play behavior for most of the five-minute period. This category includes two children who interact with each other as two mothers (“we need groceries” or “Your baby is sick.”).
- 2 Moderate degree of interaction. The child does interact but his play does not require or reflect the presence of a partner to the same extent as that rated as 3. As soon as play activity occurring during the five-minute period is predominately interaction with another child, the rating is 2. A 2 means interaction is more than minimal but not necessarily integral.
- 1 Slight interaction, verbal or non-verbal. We would not consider a child with interaction scores of 1 to be one who engages in sociodramatic play. To receive a 2 or more the child must evidence some reciprocal cooperative role-play. A 1 means interaction is present but play activity is predominately solitary or parallel.
- 0 No interaction with another child.

VI. *Verbal Communication*. There is some verbal interaction related to a sociodramatic play episode. The child generates verbal dialogue for one or more pretend characters; verbally play acting a role or providing a voice for a character.

- 3 Extensive and integral play.
- 2 Moderate verbal interaction
- 1 Present but slight. Verbal interaction exists, but only just.
- 0 No verbal communication or verbal interaction.

As reported by Smilansky (1990), inter-rater reliability of the Smilansky Scale for Evaluation of Dramatic and Sociodramatic Play was determined by pairwise correlations. The correlations for total play scores were .88 and .89 for two pairs of

raters respectively. The pairwise correlation coefficients between evaluations of different raters, by play variables, ranged from .73 to .92. Inter-rater reliability was also obtained with the Hebrew version of the scale with correlations of total play scores between pairs of three raters of .84, .85, and .87. Test-retest reliability was established for 20 out of 45 of the Hebrew children, after a three-week period without intervention. Total scores correlated .84.

According to Smilansky (1990), the construct validity of the scale is based on the “definition of sociodramatic play and the description of its elements” (p. 253). Smilansky (1990) noted construct validity as also being based by the fact that, “training for sociodramatic play activity (based on the same six elements) results in considerable improvement in performing that type of play behavior, as measured by the scale’ (p. 253). Construct validity is evidenced by the demonstration of improved play behaviors following training for sociodramatic play activity based on the six elements.

In summary, the six categories of dramatic and sociodramatic play (*Imitative Role-Play, Make-Believe with Objects, Make-Believe with Actions and Situations, Persistence in Role-Play, Interaction, and Verbal Communication*) and the *Total Play* score of the SSEDS will serve as the independent variable of this study (Appendix C).

Behavior Rating Inventory of Executive Function-Preschool Version. The Behavior Rating Inventory of Executive Function-Preschool Version (BRIEF-P, Gioia, Espy, & Isquith, 2003) was designed to assess executive function behaviors in

the preschool environment. As stated in the BRIEF-P manual, executive functions are a collection of processes that are responsible for “guiding, directing, and managing cognitive, emotional, and behavioral functions, particularly during active, novel problem solving” (p. 1).

The BRIEF-P contains 63 items in which the teachers are asked to rate how often a child has had a problem with each item over the past six months by either responding *never* (N), *sometimes* (S), or *often* (O). The responses are then reproduced as circled item scores with 1 corresponding to *never* (N), 2 corresponding to *sometimes* (S), and 3 corresponding to *often* (O). The raw scores are converted to T scores with a mean of 50 and a SD of 10. Higher T-scores indicate the possibility of self-regulation difficulties. T-scores within the range of 60 to 69 suggest that the child may be *at risk* of self-regulation difficulties, where as T-scores of 70 and above, suggest that the child may have *clinically significant* self-regulation challenges that warrant further intervention.

The 63 items are divided into five clinical scales that measure the following aspects of executive functioning: *Inhibit*, *Shift*, *Emotional Control*, *Working Memory*, and *Plan/Organize*. The *Inhibit* scale (16 items) measures the child’s ability to inhibit or not act on impulse. The *Shift* scale (10 items) measures the child’s ability to make transitions, shift attention, or problem-solve flexibly. The *Emotional Control* scale (10 items) assesses a child’s ability to modulate emotional responses. The *Working Memory* scale (17 items) measures the child’s ability to hold information in mind for

the purpose of completing a task. The *Plan/Organize* scale (10 items) measures the child's ability to anticipate future events or goals and the ability to bring order to information to achieve an objective.

The five clinical scales form three indexes: *Inhibitory Self-Control (ISCI)*, *Flexibility (FI)*, and *Emergent Metacognition (EMI)*, and one overall composite score, the *Global Executive Composite (GEC)*. The *Inhibitory Self-Control Index (ISCI)*, comprised of the *Inhibit* and *Emotional Control* scales, represents a child's ability to modulate actions, responses, and behaviors. The manual indicates that inhibitory self-control or behavioral regulation "enables the metacognitive processes to support appropriate self-regulation and to guide active, systematic problem solving successfully" (p. 19). The *Flexibility Index (FI)*, composed of the *Shift* and *Emotional Control* scales, represents a child's ability to "modulate behavioral and emotional reactions according to different response contingencies and environmental demands." Flexibility is considered an important aspect of behavioral regulation. The *Emergent Metacognition Index (EMI)* represents the child's developing ability to "initiate, plan, organize, implement, and sustain future-oriented problem-solving...to cognitively self-manage tasks and use information from working memory to guide his or her performance or behavior." The *EMI* is composed of the *Working Memory* and *Plan/Organize* scales. All five clinical scales of the BRIEF-P are incorporated into the *Global Executive Composite (GEC)* score.

The BRIEF-P is considered a reliable and valid measure of executive function skills in preschoolers (Gioia, Espy, & Isquith, 2003). The normative sample group approximated the U.S. Census (1999) population data by race/ethnicity, socioeconomic status, age, gender, and geographical population density. The normative data samples were obtained through public and private schools and pediatric well-child visits. Questionnaires were sent to parents and teachers or day care providers for voluntary participation. The following criteria were used for inclusion in the normative sample: (a) the child was between the age of 2 and 6 years; (b) the child had no history of special education, attention problems, developmental difficulties, cognitive difficulties, or psychotropic medication usage; and (c) no more than 10% of the items on the questionnaire could have missing responses. The demographic questionnaire asked the parents to answer questions related to all the items listed in criterion B.

The normative sample for the teachers included a total of 302 children (164 boys, 138 girls) and the normative sample for the parents included 460 children (246 boys, 214 girls). Since the BRIEF-P teacher rating form and not the parent rating form is being administered in this study, only reliability and validity data for the teacher rating scales will be mentioned. For the teacher-rating normative sample, internal consistency ranged from .90 to .97. For the teacher normative subsample (n=67), test-retest correlations for the clinical scales ranged from .65 to .94, with a mean of .83. The average test- retest T-score change for the teacher normative

sample was 1.6 for the clinical scales and less than 2.0 points for the indexes and the GEG. The average test-retest interval was 4.2 weeks.

According to the BRIEF-P manual (Gioia, Espy, & Isquith, 2003), there are no other rating scale measures of executive functions for preschool-age children; therefore the multitrait-multimethod matrix (Campbell & Fiske, 1959) was used to examine the convergent and discriminant validity between the teacher ratings on the BRIEF-P and the ADHD Rating Scale IV-Preschool Version (McGoey et al., 2000). As reported in the manual, the BRIEF-P *Working Memory* scale correlated with the ADHD-IV-P Inattention scale and Hyperactivity-Impulsivity scales (Inattention, $r = .84, p < .001$; Hyperactivity-Impulsivity, $r = .73, p < .001$). The BRIEF-P *Inhibit* scale correlated with the ADHD-IV-P Hyperactivity-Impulsivity scale ($r = .85, p < .001$) and the Inattention scale ($r = .75, p < .001$). The BRIEF-P *Plan/Organize* scale correlated with the ADHD-IV-P inattention scale ($r = .74, p < .001$). The manual reports evidence of both convergent and discriminant validity based on their correlations with frequently used measures of attention and behavior.

In summary, the five clinical scales (*Inhibit, Shift, Emotional Control, Working Memory, and Plan/Organize*); the three indexes (*Inhibitory Self-Control, Flexibility, Emergent Cognition*); and the *Global Executive Composite* scores of the BRIEF-P will serve as the dependent variable in the primary analysis, and as an independent variable in the secondary analysis.

The Brigance Preschool Screen-II (Brigance, 2005). The Brigance Preschool Screen-II was included to examine the impact of sociodramatic play on readiness for kindergarten, and then the impact of self-regulation on kindergarten readiness. The pre-kindergarten teachers administered the Brigance Preschool Screen-II to all pre-k students in the spring, as a means of assessing the children's readiness for kindergarten. The following skills were measured in this assessment: *color recognition, picture vocabulary, visual discrimination, visual motor skills, gross motor, rote counting, identification of body parts, following verbal directions, number concepts, and syntax and fluency.* The Brigance Preschool Screen-II provided a total score with a range of 0 to 100. The teachers released the records of the children's performance on this measure, given the consent by the parents and guardians.

According to the Brigance Screen technical report (Glasco, 2005), the Brigance Preschool Screen-II has "substantial" content, construct, and predictive validity and "excellent" concurrent validity. The internal consistency of the Brigance Preschool Screen-II was .99 for the four-year-olds and .90 for the kindergartners.

Equipment and Materials

A Canon Digital Video Camcorder ZR200 was used to record the participants' play interactions.

The materials in this study included all available materials within the pre-kindergarten classrooms. Some of the choices of play materials within the classroom included: pretend kitchen, pots and pans, play food, tea set, plastic dishes/utensils,

cash register, telephone, doll high chair, doll crib, dolls, doll blankets and bottles, stuffed animals, puppets, dress-up clothes for boys and girls, mirror, blocks, Legos, easel, paints, art supplies, water tray, and a sand tray.

Upon completion of the study, additional play materials (i.e. role-play outfits, puppets, kitchen and restaurant food, utensils, menus, aprons, and plastic or wooden toolkits), were given to the pre-k classrooms to thank them for their generosity in participating in this study.

Study Design and Data Analysis

The present study was a descriptive study that described the relationships among sociodramatic play, self-regulation, and readiness for kindergarten. The study was conducted toward the end of the preschool year for the following reasons. The children would have established sociodramatic play with their peers; the BRIEF-P requires that the rater report on a child's behaviors within the past six months; and measures of readiness for kindergarten are often completed during the end of the preschool year or the beginning of the kindergarten year.

For the purpose of this study, the independent variables that operationalized sociodramatic play were measured by the seven dimensions of the Smilansky Scale for Evaluation of Dramatic and Sociodramatic Play and included total scores for each of the six play categories and also the total play score. The dependent variables that operationalized self-regulation were measured by the BRIEF-P. They included calculated T-scores for each of the nine variables, the five clinical scales, three

indexes, and the global executive composite. T-scores have a mean of 50 and a standard deviation of 10 with scores above the mean suggesting that the child may be at-risk for self-regulatory problems and/or may present with significant self-regulation deficits. The dependent variable, kindergarten readiness, operationalized by the total Brigance Preschool Screen-II score, ranged from 0 to 100.

Multiple regression analysis analyzed the relationships among the independent variables of sociodramatic play: *Imitative Role-Play, Make-Believe with Objects, Make-Believe with Action/Situations, Persistence in Role-play, Interaction with Others, Verbal Communication, and Total Play* score; and the dependent variables of self-regulation: *Inhibit, Shift, Emotional Control, Working Memory, Plan/Organize, Inhibitory Self-Control Index, Flexibility Index, Emergent Metacognition Index, and the Global Executive Composite*. It is hypothesized that sociodramatic play will positively predict self-regulation.

For the second regression analysis, sociodramatic play was the independent variable and readiness, as measured by the Brigance Preschool Screen-II, was the dependent variable. The third regression analysis explored the relationship between the independent variable, self-regulation, and the dependent variable, readiness. It was hypothesized that both sociodramatic play and self-regulation would positively predict readiness.

Procedures

Obtaining informed consent. The teachers sent home the informed consents and demographic questionnaires in an envelope in the children's backpacks along with their daily mail. The informed consents included a note asking the parents to send them back to the teacher within one week of receiving them. After one week, the parents who had not responded were sent a letter reminding them to please complete and sign the informed consents. This reminder letter was sent home in an envelope in the children's backpacks along with their daily mail.

Administering the Smilansky Scale for Evaluation of Dramatic and Sociodramatic Play. The student author of this study videotaped and coded the Smilansky Scale for each participant. Each participant's sociodramatic play scores were based on 20 minutes of recorded observations of the participants' verbalizations and activities within their regularly scheduled free/choice play time. The observer was introduced to the class as a student who was learning about pre-kindergarten programs. The observer randomly selected the children to be observed prior to the beginning of the scheduled free-play time. The observations took place in the natural pre-k setting using the materials that were already available within the classroom. Since the children were playing during their regularly scheduled choice time, they did not receive any directions and they chose their play activities as they typically would have on any other day. During the free-choice play time, all the children were given the opportunity to play in any of the designated choice stations. Approximately four

to six children were observed daily. Each of the participants was observed for five-minutes a day on four separate days, for a total of 20 minutes of observation time. The observations took place over a series of weeks until play observations of all the participants had been recorded.

While standing or sitting in an area close to the play stations, the observer videotaped and took notes of the observed children's verbalizations and actions. Upon completion of the video recordings, the author coded the six play elements according to the previously outlined 0 to 3 rating scale. For every child observed, each of the six play elements was scored from 0 to 3 for every four, 5-minute observation units. For each participant, there were four separate scores for each of the six play elements and four total play scores. For the total of 20 minutes of recorded play time, each child had four scores ranging from 0 to 12 per play category and a possible total play score of 0 to 72. The mean score for each of the six play categories and the mean total play score were calculated. Mean scores ranged from 0 to 3 per play category and 0 to 12 for the total possible play score.

Once all of the observations had been coded, a trained masters-level and/or doctoral student assistant re-coded 25% of the observations to establish reliability. This writer met with the assistants and described and clarified the six play elements of the Smilansky scale and explained the 0 to 3 coding scheme for each of the six categories.

Behavior Rating Inventory of Executive Function-Preschool Version (BRIEF-P). The two classroom teachers were trained on how to complete the BRIEF-P rating form for every child participating in this study. The student author went to the elementary school and met with the teachers during their midday break and verbally read and explained the instructions for completing the BRIEF-P questionnaire. Once the teachers were prepared and all their questions had been answered, they were advised to respond to all of the questions by considering how often the student had a *problem* with each of the behaviors during the past six months. The teachers were asked to complete the rating forms within one week. Since the teachers had been instructing the participants five days a week since the beginning of the school year, they would have interacted daily with each student for approximately nine months.

The teachers put all of the completed BRIEF-P rating forms in a sealed envelope and gave them to the master's level speech and language pathologist who brought them to the dissertation chair of this study. A doctoral student trained on scoring the BRIEF-P and completely blind to the goal of the study, manually scored and summarized the data for each participant using the BRIEF-P Preschool Scoring Summary. T-scores were calculated for each of the five scales: *Inhibit*, *Shift*, *Emotional Control*, *Working Memory*, and *Plan/Organize*; the three indices: *Inhibitory Self-Control Index*, *Flexibility Index*, and *Emergent Metacognition Index*; and the *Global Executive Composite*.

Brigance Preschool Screen-II. Since the preschool teachers previously administered the Brigance Preschool Screen-II to all of the pre-k students in the spring, each participant's total score ranging from 0 to 100 were included in the data analysis.

Hypotheses of the Study

There were three formal hypotheses to this study.

Hypothesis One. Preschoolers' ability to engage in complex levels of sociodramatic play will positively predict preschoolers' capacity for self-regulation. In other words, the six categories of play scores and the total play score of the SSEDs will predict the nine scores on the BRIEF-P in the primary analysis.

Hypothesis Two. Preschoolers' ability to engage in complex levels of sociodramatic play will positively predict preschoolers' readiness for kindergarten. In other words, the six categories of play scores and the total play score of the SSEDs will predict the total readiness score of the Brigance Preschool Screen-II in the primary analysis.

Hypothesis Three. Preschoolers' capacity for self-regulation will positively predict preschoolers' readiness for kindergarten. In other words, the nine scores on the BRIEF-P will predict the total readiness score of the Brigance Preschool Screen-II in the secondary analysis.

CHAPTER FOUR

Results

The results reported here include the following sections. First, the sample demographic information and the students' ages in months, gender, and classroom teachers are presented. Then, descriptions of the play observation and data collection procedures are summarized. The next three sections present the assessment results, which include each participant's scores for the Smilansky Scale for the Evaluation of Dramatic and Sociodramatic Play (SSEDS); the Behavior Rating Inventory of Executive Function-Preschool Version (BRIEF-P); and the Brigance Preschool Screen-II. Then follows the results of the multiple regression analyses of whether (1) the ability to engage in complex levels of sociodramatic play will predict positively preschooler's capacity for self-regulation; (2) the ability to engage in complex levels of sociodramatic play will predict positively preschoolers' readiness for kindergarten; and (3) the capacity for self-regulation will predict positively preschoolers' readiness for kindergarten. Finally, although the purpose of the study was to explore the predictive ability of the independent variables, post-hoc analyses were conducted to examine correlations among sociodramatic play, self-regulation, and kindergarten readiness. The final section of this chapter presents the results of the correlational analyses.

Demographic Information about the Sample

The recruitment procedure, which involved the Letter of Introduction, Informed Consent Document, and the Demographic Questionnaire that were sent home in the backpacks of all 67 students enrolled in the South Berwick, ME public pre-kindergarten program, yielded 42 families who agreed to participate in the study. The study began with a total of 42 participants. Two of the children were absent for the majority of the play observations. As a result, the author of the study was unable to videotape a total of 20 minutes of play for each of these children. Consequently, they were both excluded from the study. In addition, two of the children's BRIEF-P protocols were classified as *inconsistent*. The Inconsistency scale of the BRIEF-P measures the degree to which the respondent (e.g., classroom teacher) answers similar items in an inconsistent manner. Since two of the children's protocols had high inconsistency ratings, they were excluded from the sample. The final sample included 38 children from the four pre-kindergarten classes: two morning and two afternoon sessions.

Information about the total sample, which includes the children's mean ages in months, gender, and classroom teachers, is presented in Table 3. Of the total 38 participants, 36 (95%) were white non-Hispanic children; one boy was Arabic; and one girl was Hispanic. There were a total of 23 boys (61%) and 15 girls (39%) whose ages ranged from 57 months to 75 months, with a mean age of 64 months (SD=4.33).

There were two teachers and four different groups of students who participated in the study; two classes in the morning pre-k session and two classes in the afternoon pre-k session.

In the two morning pre-k classes there were a total of 22 children. Teacher One's morning pre-k class had a total of 10 students: four girls and six boys. Teacher Two's morning pre-k class had 12 students: eight girls and four boys. In the two morning pre-k classes the mean age in months for girls and boys were comparable. The mean age for the girls in Teacher One's class was 65 months and the mean age for the girls in Teacher Two's class was 63 months. The mean age for the boys in Teacher One's class was 63 months and the mean age for the boys in Teacher Two's class was 65 months. In summary, the morning students were comparable in age; yet the two classes differed by gender. Teacher One had half as many girls as Teacher Two and Teacher One had two more boys than Teacher Two.

In the two afternoon pre-k classes there were a total 16 students. Teacher One's afternoon class had a total of nine students: three girls and six boys. Teacher Two's afternoon class had a total of seven students: seven boys and no girls. In the two afternoon pre-k classes the mean age in months for the boys and girls varied. In Teacher One's class the boys' mean age was six months greater than the girls. In Teacher One's class the mean age for the boys was 68 months and the mean age for the girls was 62 months. In Teacher Two's class the mean age for the boys was 63 months. The mean age for the boys in Teacher One's class was five months greater

than the mean age for the boys in Teacher Two's class. There were no girls in Teacher Two's afternoon class. In summary, the two afternoon classes varied by gender and age.

Overall, there were more children in the morning classes than the afternoon classes and there were more boys than girls. Although there were 37 girls and 30 boys enrolled in the public pre-kindergarten program, there were more boys than girls in the sample. A total of 23 boys participated in the present study compared to 15 girls. It is unclear as to why more parents of the boys than the girls gave consent for participation in the study. Perhaps, parents of boys have more concerns about their child's readiness for kindergarten than do the parents of girls.

Data from the demographic questionnaire also indicated that none of the children were taking psychotropic medications, none were identified with Attention Deficit Hyperactivity Disorder, and one of the children was identified with a speech and language disability and was receiving out-of-school supportive services for articulation. This child was a girl (#3) in Teacher One's morning class. The results of this study did not indicate that there were any significant differences between the SSEDS, BRIEF-P, and Brigance Preschool Screen-II scores of child #3 and the other children in the sample.

Table 3

Total Sample by Classroom Teacher, Gender, and Mean Age in Months

Teacher	Class	Number of Girls (mean age in months)	Number of Boys (mean age in months)	Total participants
Teacher 1	AM	4 (M=65 mos.)	6 (M=63 mos.)	10
	PM	3 (M=62 mos.)	6 (M=68 mos.)	9
Teacher 2	AM	8 (M=63 mos.)	4 (M=65 mos.)	12
	PM	0	7 (M=63 mos.)	7
Total		15 (M=64 mos.)	23 (M=67 mos.)	38

Summary of Play Observation Data Collection in the Preschool Classrooms

The play observations were collected during a period of seven days during June, 2007. The children had been together in the same classrooms with the same classmates since the beginning of the school year in September, 2006. Because the children had been together for approximately nine months, they had established relationships with their peers and they were accustomed to the daily schedule, choice of play materials, and expectations of pre-kindergarten. Accordingly, this was an ideal time to administer the Smilansky scale for the evaluation of dramatic and sociodramatic play.

The videotaped observations took place between 8:30am-10:30am and 12:00pm-2:00pm within the natural setting of the morning and afternoon preschool

classrooms. The preschool children were free to play in any of the center. Neither the author of the study nor the teachers directed the children's play or interrupted the play behaviors. If asked about the videotaping, the children were told that the taping was "to learn about what happens at pre-k." The 38 participants were videotaped for five minutes on four different days, for a total of 20 minutes of observed play behaviors per child. Once one or a group of participants were videotaped for five minutes, the observer would randomly pick another participant or group of participants to videotape.

Description of Assessment Results

Smilansky Scale for Evaluation of Dramatic and Sociodramatic Play (SSEDS).

Each of the four 5-minute play observations, totaling 20 minutes, was coded according to the Smilansky scale for Evaluation of Dramatic and Sociodramatic Play (SSEDS). For this coding procedure, the author was blind to the results of the BRIEF-P and the Brigance Preschool Screen-II. The SSEDS consists of the following categories: *Imitative Role Play (Imitative RP)*; *Make-Believe with Objects (MB w/obj.)*; *Make-Believe with Action and Situations (MB w/act.)*; *Persistence in Role Playing (Persistence)*; *Interaction with Others (Interaction)*; *Verbal Communication (VC)*; and *Total Play score (Total)*.

The results of the SSEDS coding for each of the children are presented in Table 4. The list of the children is organized according to the teacher: students 1-19 were in Teacher One's morning and afternoon pre-k classes and students 20-38 were in

Teacher Two's morning and afternoon pre-k classes. Table 4 presents the 38 participants' ages in months, gender, and scores for the SSEDs play categories.

The child can score up to three points for each 5-minute sample in each of the six play subcategories. Because there are four 5-minute recorded play intervals, the child can earn up to 12 points per play category. Consequently, the child can earn up to 72 points in the *Total Play* category: 12 points maximum for each of the six play subcategories. The six play subcategories include: *Imitative Role-Play*, *Make-Believe with Objects*, *Make-Believe with Action and Situations*, *Persistence in Role Playing*, *Interaction with Others*, and *Verbal Communication*. *Imitative role-play* refers to the child's involvement in a make-believe role. *Make-believe with objects* occurs when toys or gestures are substituted for real objects. *Make-believe with actions and situations* includes verbal behaviors that are substituted for actions and situations. *Persistence in role play* is when the child persists in a role play episode for at least five minutes. *Interaction* is when there are at least two children interacting within the context of a sociodramatic play episode. *Verbal Communication* is when the child verbally acts out a role or provides a voice for a character.

The SSEDs mean total scores for the sample (N=38) are as follows: *Imitative Role-Play* 3.87 (SD=1.95); *Make-Believe with Objects* 6.26 (SD=1.75); *Make-Believe with Action and Situations* 5.76 (SD=2.05); *Persistence in Role Playing* 6.53 (SD=3.07); *Interaction with Others* 7.61 (SD=1.22); *Verbal Communication* 4.61 (SD=2.40); and *Total Play* 34.66 (SD=10.10).

The SSEDs mean total scores for each of the six play subcategories indicate that the children as a whole in this study engaged in more elaborate *Make-Believe with Objects* and *Make-Believe with Actions and Situations* than elaborate *Imitative Role Play*. The children demonstrated *Persistence* in their sociodramatic play actions and a moderate degree of *Interaction* with their peers. The total quality of *Verbal Communication* within the sociodramatic play episode was lower than the degree of *Interaction*, which does not necessarily imply that there was minimal verbal communication during the social interactions. Instead, the lower *Verbal Communication* score may be due to the scoring guideline that requires a minimum score of one in *Imitative Role-Play* in order to receive a score for *Verbal Communication*. This specification is because the *Verbal Communication* category refers specifically to the dialogue that is generated during a pretend or imitative role. In other words, even if a child verbally communicated and demonstrated a moderate degree of *Interaction* with another child during a play episode, if that child received a score of zero for the *Imitative Role Play* category, then s/he would also receive a score of zero for *Verbal Communication*.

The SSEDs mean *Total Play* score for all four classrooms was 34.66. The mean *Total Play* score for Teacher One's morning class was 34.20 with a range of 21 to 51 and the mean *Total Play* score for Teacher Two's morning class was 36.08 with a range of 19 to 49 for Teacher Two. The mean *Total Play* scores for the afternoon classes were slightly lower for Teacher One: 32.22 with a range of 15 to 49. Teacher

Two's afternoon class' mean for *Total Play* was comparable to her morning class; 36.00 with a range of 13 to 53. The girls in Teacher One's morning class had a mean *Total Play* score of 32.25, whereas her afternoon girls had a higher mean *Total Play* score; 36.33. Teacher Two's morning girls had the highest mean *Total Play* score; 37.88. The boys in Teacher One's morning class had a mean *Total Play* score of 35.50, which was five points higher than the boys in Teacher One's afternoon class; 30.17. The boys in Teacher Two's afternoon class had a mean *Total Play* score of 36.00, which was only one point higher than Teacher One's morning boys, yet six points higher than the boys' mean *Total Play* score in Teacher One's afternoon class. Perhaps Teacher Two's all-boy afternoon class facilitated more sociodramatic play opportunities.

The results indicate a varied range of total sociodramatic play, yet similar ranges and means among the four classrooms. Overall, the children in this study actively engaged in sociodramatic play during free-choice time.

Table 4

Each Participant's Age in Months, Gender, and Smilansky Scale for the Evaluation of Dramatic and Sociodramatic Play Scores (N=38)

Student	Age in months	Gender	<i>Imitative RP</i>	<i>MB w/obj.</i>	<i>MB w/act.</i>	<i>Persistence</i>	<i>Interaction</i>	<i>VC</i>	<i>Total</i>
1	65	M	2	8	7	6	8	4	35
2	60	F	4	3	4	6	10	5	33
3	69	F	0	7	7	0	7	0	21
4	66	F	4	8	8	5	8	4	37
5	68	M	4	6	6	8	8	8	40
6	75	M	2	8	7	5	8	4	34
7	57	M	2	5	3	3	6	2	21
8	67	F	7	8	8	9	10	7	49
9	63	M	4	4	5	6	7	6	32
10	62	F	6	8	4	9	7	4	38
11	61	M	6	6	7	7	8	6	40
12	67	M	4	8	6	6	7	4	35
13	60	F	4	5	3	4	8	3	27
14	62	M	7	10	10	8	8	8	51
15	71	M	0	5	5	0	5	0	15

Self-Regulation

16	58	M	3	7	7	7	6	5	35
17	69	M	3	6	6	8	8	3	34
18	63	F	4	7	7	4	8	3	33
19	69	M	1	5	3	3	8	2	22
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20	66	F	5	7	6	9	8	6	41
21	69	M	0	4	4	0	5	0	13
22	65	F	5	7	6	8	9	5	40
23	63	F	4	6	4	6	8	6	34
24	61	F	7	6	7	11	9	9	49
25	58	M	3	4	3	6	6	3	25
26	58	F	2	4	3	3	6	2	20
27	66	M	6	10	10	11	8	8	53
28	65	M	4	5	7	9	8	7	40
29	64	M	2	4	2	3	6	2	19
30	65	M	4	9	10	9	9	7	48
31	63	M	2	6	6	4	6	2	26
32	71	M	4	5	4	8	7	5	33
33	61	M	6	5	6	9	7	5	38
34	57	F	6	7	5	11	9	8	46

Self-Regulation

35	67	F	6	4	4	10	8	4	36
36	58	M	4	8	8	10	8	8	46
37	59	M	6	6	5	10	9	5	41
38	69	F	4	7	6	7	8	5	37

Note. Imitative RP = Imitative Role Play; MB w/obj. = Make Believe with Objects; MB w/act. = Make Believe with Actions and Situations; Persistence = Persistence in Role Play; Interaction = Interaction with Others; and VC = Verbal Communication.

The SSEDS mean scores with standard deviations in parentheses for the total sample are as follows: *Imitative Role-Play* 3.87 (1.95); *Make-Believe with Objects* 6.26 (1.75); *Make-Believe with Action and Situations* 5.76 (2.05); *Persistence in Role Playing* 6.53 (3.07); *Interaction with Others* 7.61 (1.22); *Verbal Communication* 4.61 (2.40); and *Total Play* 34.66 (10.10).

Analyses of reliability for SSEDS. In order to determine inter-rater agreement for the coding of the SSEDS, 25% of the videotaped data, which consisted of five-minutes per participant, was recoded by a Northeastern University doctoral-level school psychology student who was blind to the purpose of the study and the author's SSEDS results. To assess inter-rater agreement, the intraclass correlation coefficient was calculated between the ratings given by the graduate students and the original scorer using SPSS software (SPSS, 2007). The graduate students were highly trained in the scoring system of the SSEDS; they were knowledgeable of play; and they had experience observing and working with preschool-aged children. A two-way mixed

effects model of intraclass correlation coefficient for absolute agreement of a single measure was applied (Shrout & Fleiss, 1979). The results of the single measure intraclass correlation coefficient for the SSEDS *Total Play* scores between the two raters was .80, suggesting adequate inter-rater agreement of the SSEDS.

Behavior Rating Inventory of Executive Function-Preschool Version (BRIEF-P). The two pre-k teachers completed the BRIEF-P teacher rating scales for each of the participants in June, 2007, which follows the administrative guidelines that require the rater to have known the child for at least six months. The completed BRIEF-P protocols were sealed in an envelope and delivered to Dr. Karin Lifter at Northeastern University. A Northeastern University doctoral-level student, blind to the purpose of the study, converted each participant's BRIEF-P raw score to a T-score (M=50, SD=10). A second Northeastern University doctoral-level student re-scored twenty-five percent of the protocols and the two coders worked together to establish 100% agreement in the scoring conversion.

Table 5 presents each of the 38 participant's age in months, gender, and scores for the BRIEF-P clinical scales: *Inhibit*; *Shift*; *Emotional Control*; *Working Memory*; *Plan/Organize*; indexes: *Inhibitory Self-Control Index*; *Flexibility Index*; *Emergent Metacognition Index*; and the *Global Executive Composite*. For the purpose of this study, the total self-regulation score is the *Global Executive Composite* score. The BRIEF-P results are reported as T-scores, which have a mean of 50 and a standard deviation of 10. T-scores between the range of 60 and 69 suggest the child may be

at-risk for self-regulation difficulties. T-scores of 70 or greater suggest the child may have *clinically significant* self-regulation difficulties that may warrant intervention or support.

The BRIEF-P mean scores for the total sample (N=38) are as follows: *Inhibit* 44.18 (SD=6.59); *Shift* 44.68 (SD=9.63); *Emotional Control* 45.00 (SD=9.42); *Working Memory* 46.29 (SD=7.92); *Plan/Organize* 46.05 (SD=8.81); *Inhibitory Self-Control Index* 43.61 (SD=8.37); *Flexibility Index* 44.05 (SD=10.50); *Emergent Metacognition Index* 45.76 (SD=7.88); and *Global Executive Composite* 43.87 (SD=9.40). Two of the boys in the same afternoon classroom (#15 & #19) presented with elevated T-scores, 73 and 84 respectively, suggesting that they may have significant self-regulatory difficulties. One of the girls in the other morning classroom (#35) presented with a mildly elevated T-score of 60, which indicates that she may have some self-regulatory difficulty. However 92% of the children scored within the average range suggesting that overall, the pre-kindergarten children of this study demonstrate good self-regulation skills within their classroom settings.

Table 5

Each Participant's Age in Months, Gender, and Behavior Rating Inventory of Executive Function-Preschool Version T-scores (N=38)

Student	Age	Gender	Inhibit	Shift	EC	WM	P/O	ISCI	FI	EMI	GEC
1	65	M	39	41	41	41	40	38	40	41	38
2	60	F	43	41	41	44	42	42	40	43	41
3	69	F	43	41	42	44	42	42	40	43	41
4	66	F	43	41	42	44	42	42	40	43	41
5	68	M	42	43	41	42	40	41	41	41	40
6	75	M	39	41	41	42	40	38	40	41	38
7	57	M	44	41	41	42	40	41	40	41	40
8	67	F	43	41	42	44	42	42	40	43	41
9	63	M	45	41	41	42	40	42	40	41	40
10	62	F	45	50	45	49	42	44	47	46	45
11	61	M	45	46	50	43	40	46	48	42	44
12	67	M	43	41	42	44	42	42	40	43	38
13	60	F	43	41	42	44	42	42	40	43	41
14	62	M	43	41	42	44	42	42	40	43	38
15	71	M	56	81	76	67	69	65	82	69	73
16	58	M	39	43	41	42	40	38	41	41	39

Self-Regulation

17	69	M	43	41	42	44	42	42	40	43	38
18	63	F	43	41	42	44	42	42	40	43	41
19	69	M	76	81	83	76	69	82	86	75	84
20	66	F	45	41	50	46	48	46	45	46	45
21	69	M	39	41	41	42	40	38	40	41	38
22	65	F	43	41	42	46	48	42	40	46	42
23	63	F	43	41	42	44	45	42	40	43	41
24	61	F	43	41	42	44	42	42	40	43	41
25	58	M	39	59	43	45	43	39	51	44	44
26	58	F	43	41	42	44	45	42	40	44	41
27	66	M	49	41	43	43	52	46	41	46	45
28	65	M	39	41	41	43	43	38	40	43	39
29	64	M	41	41	41	45	46	39	40	45	41
30	65	M	41	41	41	43	49	39	40	45	41
31	63	M	41	41	43	43	49	40	41	45	41
32	71	M	39	41	43	45	40	39	41	43	40
33	61	M	41	41	41	46	49	39	40	47	42
34	57	F	43	41	45	44	45	43	42	44	42
35	67	F	50	41	42	73	79	46	40	76	60

			Self-Regulation									
36	58	M	56	56	67	43	52	61	63	46	55	
37	59	M	44	41	41	51	55	41	40	52	45	
38	69	F	43	50	42	46	42	42	45	44	43	

Note. EC = Emotional Control; WM = Working Memory; P/O = Plan/Organize; ISCI = Inhibitory Self-Control Index; FI = Flexibility Index; EMI = Emergent Metacognition; and GEC = Global Executive Composite. The BRIEF-P mean scores with standard deviations in parentheses are as follows: *Inhibit* 44.18 (6.59); *Shift* 44.68 (9.63); *Emotional Control* 45.00 (9.42); *Working Memory* 46.29 (7.92); *Plan/Organize* 46.05 (8.81); *Inhibitory Self-Control Index* 43.61 (8.37); *Flexibility Index* 44.05 (10.50); *Emergent Metacognition Index* 45.76 (7.88); and *Global Executive Composite* 43.87 (9.40).

Brigance Preschool Screen-II. The Brigance Preschool Screen-II inventories were completed and scored by the pre-kindergarten teachers and teacher assistants. The Brigance Preschool Screen-II protocols were sealed in an envelope and given to the author upon completion of the SSEDs coding and the BRIEF-P scoring.

Table 6 presents each of the 38 participant's age in months, gender, and scores for the following Brigance Preschool Screen-II categories: *Personal Data Response* (max=8); *Color Recognition* (max=10); *Picture Vocabulary* (max=8); *Visual Discrimination* (max=10); *Visual Motor Skills* (max=10); *Gross Motor Skills* (max=5); *Rote Counting* (max=5); *Identifies Body Parts* (max=16); *Follows Verbal*

Directions (max=6); *Number Concepts* (max=12); *Syntax and Fluency* (max=10); and *Total Readiness* score (max=100). The categories assess the student's knowledge of their name, age, address, colors, and objects, as well as their ability to discriminate between different symbols, copy symbols, hop and stand for a brief amount of time, count, name body parts, follow two and three-step directions, understand the concept of numbers, and speak clearly and effectively.

The Brigance Preschool Screen-II mean scores for the total sample (N=38) are as follows: *Personal Data Response* 6.68 (SD=1.63); *Color Recognition* 9.32 (SD=1.21); *Picture Vocabulary* 7.74 (SD=.50); *Visual Discrimination* 8.32 (SD=3.10); *Visual Motor Skills* 5.66 (SD=3.60); *Gross Motor Skills* 2.84 (SD=1.57); *Rote Counting* 4.53 (SD=1.13); *Identifies Body Parts* 11.89 (SD=2.75); *Follows Verbal Directions* 5.76 (SD=.82); *Number Concepts* 8.03 (SD=4.65); *Syntax and Fluency* 9.34 (SD=1.71) and *Total Readiness* score 80.05 (SD=15.44).

The pre-kindergarten children presented with a mean *Total Readiness* score of 80.05 with a range of 47 to 98. This suggests that as a group the children demonstrated average readiness skills as measured by the Brigance Preschool Screen-II.

Table 6

Each Participant's Age in Months, Gender, and Brigance Readiness Scores (N=38)

Student	Age	Gender	PD	CR	PV	VD	VMS	GMS	RC	IBP	FVD	NC	SF	Total
1	65	M	6	10	8	10	8	3	5	14	6	8	5	83
2	60	F	8	10	6	10	8	2	5	16	6	8	10	89
3	69	F	8	9	8	10	10	3	5	14	6	8	10	91
4	66	F	6	10	8	9	6	5	5	10	6	12	10	87
5	68	M	8	10	8	10	10	5	5	14	6	8	10	94
6	75	M	6	6	8	4	0	2	0	10	6	0	5	47
7	57	M	6	10	8	9	4	0	5	12	6	0	10	70
8	67	F	6	10	7	10	10	2	5	12	6	8	10	86
9	63	M	4	6	7	2	2	4	3	10	6	0	10	54
10	62	F	4	6	8	0	0	0	2	12	6	0	10	48
11	61	M	8	9	8	3	0	1	5	12	6	8	5	65
12	67	M	8	10	8	10	0	5	5	10	6	12	10	84
13	60	F	8	10	8	10	10	5	5	14	6	12	10	98
14	62	M	4	10	8	10	2	5	5	16	6	4	10	80
15	71	M	4	8	8	0	0	2	2	10	6	0	10	50
16	58	M	8	10	8	1	0	0	5	10	3	4	5	54
17	69	M	8	10	8	10	6	5	5	12	6	8	10	88

Self-Regulation

18	63	F	8	10	8	10	8	4	5	14	6	12	10	95
19	69	M	6	10	7	10	4	0	5	12	6	12	10	82
20	66	F	8	10	7	10	8	5	5	14	6	12	10	95
21	69	M	8	10	8	10	10	4	5	14	6	12	10	97
22	65	F	8	10	8	10	10	4	5	6	6	12	10	89
23	63	F	8	10	8	10	8	2	5	14	6	12	10	93
24	61	F	4	8	7	7	3	4	3	6	3	4	10	59
25	58	M	6	10	8	10	4	3	5	14	6	12	10	88
26	58	F	8	9	7	10	10	3	5	12	6	12	10	92
27	66	M	8	9	8	9	10	3	5	16	6	9	10	93
28	65	M	6	9	8	10	8	3	5	10	6	12	10	87
29	64	M	8	10	8	10	6	3	5	14	6	12	10	92
30	65	M	8	10	8	10	10	2	5	8	6	12	10	89
31	63	M	8	10	8	10	8	4	5	16	6	12	10	97
32	71	M	6	9	8	10	4	2	3	14	6	0	10	72
33	61	M	8	10	7	10	6	4	5	12	6	12	10	90
34	57	F	6	10	7	9	2	2	5	14	6	12	10	83
35	67	F	6	9	8	10	6	3	5	8	6	4	10	75
36	58	M	8	7	8	10	2	2	5	10	6	12	10	80

Self-Regulation

37	59	M	6	10	8	7	4	1	4	8	6	8	5	67
38	69	F	2	10	8	6	8	1	5	8	3	0	10	61

Note. PDR = Personal Data Response; CR = Color Recognition; PV = Picture

Vocabulary; VD = Visual Discrimination; VMS = Visual Motor Skills (VMS); GMS = Gross Motor Skills; RC = Rote Counting; IBP = Identifies Body Parts; FVD = Follows Verbal Directions; NC = Number Concepts; SF = Syntax and Fluency; and Total = Total Readiness. The mean scores for the total sample, with the standard deviations in parentheses are as follows: *Personal Data Response* 6.68 (1.63); *Color Recognition* 9.32 (1.21); *Picture Vocabulary* 7.74 (.50); *Visual Discrimination* 8.32 (3.10); *Visual Motor Skills* 5.66 (3.60); *Gross Motor Skills* 2.84 (1.57); *Rote Counting* 4.53 (1.13); *Identifies Body Parts* 11.89 (2.75); *Follows Verbal Directions* 5.76 (.82); *Number Concepts* 8.03 (4.65); *Syntax and Fluency* 9.34 (1.71) and *Total Readiness* score 80.05 (15.44).

Testing the Hypotheses of the Study

Hypothesis 1: It is hypothesized that preschoolers' complexity in sociodramatic play will positively predict preschoolers' capacity for self-regulation.

To test Hypothesis One and evaluate the role of sociodramatic play in predicting self-regulation skills among preschoolers, a total of six standard multiple regression analyses were conducted. The first multiple regression analysis assessed the impact of total sociodramatic play (SSEDS *Total Play*) on total self-regulation

(BRIEF-P, *Global Executive Composite*). The second multiple regression analysis measured the impact of total sociodramatic play on each of the five clinical scales of the BRIEF-P (*Inhibit, Shift, Emotional Control, Working Memory, and Plan/Organize*). The third multiple regression analysis assessed the role of total sociodramatic play in predicting the three index scores of the BRIEF-P (*Inhibitory-Self-Control Index, Flexibility Index, and Emergent Metacognition Index*). Next, each of the six SSEDs play categories was analyzed in relation to their role in influencing total self-regulation (*Global Executive Composite*). The fifth multiple regression analysis explored the role of each of the six play categories in predicting the five clinical scales of the BRIEF-P (*Inhibit, Shift, Emotional Control, Working Memory, and Plan/Organize*). The final multiple regression explored the influence of the six play categories on the three BRIEF-P indexes (*Inhibitory-Self-Control Index, Flexibility Index, and Emergent Metacognition Index*).

Regression analysis for total sociodramatic play predicting total self-regulation. The independent variable, total sociodramatic play as measured by the *Total play* score of the SSEDs was analyzed in relation to its influence on the dependent variable total self-regulation, as measured by the BRIEF-P *Global Executive Composite (GEC)*. As shown in Table 7, the results of the standard multiple regression analysis indicated that total sociodramatic play did not predict total self-regulation (*GEC*) at a statistically significant level.

Table 7

Summary of Standard Multiple Regression Analysis for Total Sociodramatic Play Predicting Total Self-Regulation/Global Executive Composite (N=38)

	GEC		
	B	SE B	β
Total play	-0.22	0.15	-0.23

Note. GEC = *Global Executive Composite*.

Regression analysis for total sociodramatic play predicting the clinical scales of the BRIEF-P. Multiple regression analysis was used to evaluate the importance of total sociodramatic play (SSEDES *Total Play*) in predicting the five BRIEF-P clinical scales among preschoolers. The clinical scales measure the different types of behaviors related to the five domains of self-regulation: *Inhibit, Shift, Emotional Control, Working Memory, and Plan/Organize*.

As shown in Table 8, the standard multiple regression analysis indicated that the independent variable, total sociodramatic play (SSEDES *Total Play*), predicted one dependent variable, *Shift*, at a statistically significant level. The *Shift* scale measures the participants' ability to "make transitions, problem-solve flexibly, switch or alternate attention, and change focus from one mindset or topic to another" (Gioia, Andrews Espy, & Isquith, 2003). Total sociodramatic play explained 11% of the *Shift* variance, ($\beta = -0.34, p < .05$). Because higher T-scores indicate a greater degree

of difficulty with self-regulation, the negative relationship between *Total Play* and *Shift* indicates that as the participants engaged in more complex play behaviors, the T-scores for *Shift* decreased. In other words, more complex play behaviors predicted better *Shift* skills.

None of the other BRIEF-P clinical scales were predicted by total sociodramatic play. Total sociodramatic play influenced the self-regulation measures of *Emotional Control*, ($\beta = -0.21$) and *Working Memory* ($\beta = -0.25$), yet not at a statistically significant level.

Table 8

Summary of Standard Multiple Regression Analysis for Total Sociodramatic Play Predicting Self-Regulation Clinical Scales of the BRIEF-P (N=38)

	Inhibit				Shift				EC				WM				P/O			
	B	SE	B	β	B	SE	B	β	B	SE	B	β	B	SE	B	β	B	SE	B	β
Total play	-0.07	0.11	-0.11		-0.32	0.15	-0.34*		-0.20	0.15	-0.21		-0.19	0.13	-0.25		-0.09	0.15	-0.10	

Note. EC=Emotional Control; WM=Working Memory; and P/O=Plan/Organize

* $p < .05$. ** $p < .01$.

Regression analysis for total sociodramatic play predicting the index scores of the BRIEF-P. Multiple regression analysis was used to evaluate the importance of total sociodramatic play (SSDES *Total Play*) in predicting the three BRIEF-P index

scores. The five clinical scales combine to form the three indexes: *Inhibitory Self-Control (ISCI)*, *Flexibility Index (FI)*, and *Emergent Metacognition (EMI)*. The *Inhibitory Self-Control Index (ISCI)* is composed of the *Inhibit* and *Emotional Control* scales, which represents the ability to modulate emotions and behaviors; the *Flexibility Index (FI)* is composed of the *Shift* and *Emotional Control* scales and represents the ability to modulate reactions according to different environmental demands; and the *Emergent Metacognition Index (EMI)* is composed of the *Working Memory* and *Plan/Organize* scales, which refers to the child's ability to actively problem-solve.

As shown in Table 9, the results of the standard multiple regression analysis indicated that total sociodramatic play did not predict any of the three self-regulation indexes at a statistically significant level. Total sociodramatic play had its greatest influence on the *Flexibility Index*, which is comprised of the *Shift* and *Emotional Control* clinical scales; however the result was not statistically significant ($\beta = -0.28$).

Table 9

Summary of Standard Multiple Regression Analysis for Total Sociodramatic Play Predicting Self-Regulation Indexes of the BRIEF-P (N=38)

	ISCI			FI			EMI		
	B	SE B	β	B	SE B	β	B	SE B	β
Total play	-0.13	0.14	-0.16	-0.29	0.17	-0.28	-0.12	0.13	-0.16

Note. ISCI = *Inhibitory Self-Control Index*; FI = *Flexibility Index*; and EMI = *Emergent Metacognition*.

Regression analyses for sociodramatic play subcategories predicting total self-regulation. Multiple regression analysis was used to evaluate the importance of each of the six SSEDs sociodramatic play subcategories in predicting total self-regulation among preschoolers. The independent SSEDs variables of *Imitative Role Play (RP)*, *Make Believe with Objects (MB w/objects)*, *Make Believe with Actions and Situations (MB w/actions)*, *Persistence in Role Play (Persistence)*, *Interaction*, and *Verbal Communication (VC)* were analyzed in relation to their influence on the dependent BRIEF-P variable, *Global Executive Composite (GEC)*.

As shown in Table 10, the results of the standard multiple regression analysis indicated that none of the six sociodramatic play subcategories significantly predicted the *Global Executive Composite (GEC)*. The three play subcategories that mostly influenced total self-regulation as measured by the BRIEF-P *Global Executive*

Composite were: *Imitative Role Play* ($\beta = -0.30$), *Persistence* ($\beta = 0.29$), and *Verbal Communication* ($\beta = -0.27$). Although not statistically significant, the results suggest that these sociodramatic play actions that require the ability to imagine and take on role, follow through with a role and stay on task, and engage in verbal dialogue during a role, are likely to involve self-control and regulation of one's thoughts, feelings, behaviors, and actions.

Table 10

Summary of Standard Multiple Regression Analysis for Sociodramatic Play

Subcategories Predicting Total Self-Regulation/Global Executive Composite (N=38)

	GEC		
	B	SE B	β
Imitative RP	-1.43	1.68	-0.30
MB w/objects	0.01	1.59	0.00
MB w/actions	-0.69	1.48	-0.15
Persistence	0.89	1.27	0.29
Interaction	1.17	1.81	0.15
VC	-1.05	1.53	-0.27

Note. *Imitative RP* = *Imitative Role Play*; *MB w/objects* = *Make Believe with*

Objects; *MB w/actions* = *Make Believe with Actions and Situations*; *Persistence* =

Persistence in Role Play; Interaction = Interaction with Others; VC = Verbal Communication; and GEC = Global Executive Composite.

Regression analysis for sociodramatic play subcategories predicting BRIEF-P clinical scales. Multiple regression analysis was used to evaluate the importance of the SSEDS sociodramatic play subcategories in predicting the BRIEF-P clinical scales. The independent SSEDS variables of *Imitative Role Play (RP)*, *Make Believe with Objects (MB w/objects)*, *Make Believe with Actions and Situations (MB w/actions)*, *Persistence in Role Play (Persistence)*, *Interaction*, and *Verbal Communication (VC)* were analyzed in relation to their influence on the dependent BRIEF-P clinical scale variables of *Inhibit*, *Shift*, *Emotional Control*, *Working Memory*, and *Plan/Organize*.

As shown in Table 11, the results of the standard multiple regression analysis indicated that of the six sociodramatic play subcategories, only the SSEDS *Verbal Communication* subcategory predicted any of the BRIEF-P clinical scales at a statistically significant level. None of the other SSEDS subcategories predicted the BRIEF-P clinical scales. The SSEDS *Verbal Communication* subcategory predicted the BRIEF-P *Working Memory* and *Plan/Organize* clinical scales at statistically significant levels. None of the other six sociodramatic play categories predicted the self-regulation clinical scales of the BRIEF-P.

Verbal Communication explained 11% of the *Working Memory* variance,

($\beta = -0.75$, $p < .05$), which indicates that as the *Verbal Communication* scores increased, *Working Memory* T-scores decreased. In other words, the children who engaged in higher quality *Verbal Communication* presented with a better ability to carry out multi-step activities, follow complex instructions, and hold information in mind for the purpose of completing a task (*Working Memory*).

Verbal Communication also predicted the *Plan/Organize* clinical scale at a statistically significant level and accounted for 12% of the variance, ($\beta = -0.80$, $p < .05$). As the *Verbal Communication* scores increased the *Plan/Organize* T-scores decreased, suggesting that higher quality *Verbal Communication* predicts a greater ability to plan, anticipate future events, and bring order to information to achieve an objective (*Plan/Organize*).

Table 11

*Summary of Standard Multiple Regression Analysis for Sociodramatic Play**Subcategories Predicting Self-Regulation Clinical Scales of the BRIEF-P (N=38)*

	Inhibit			Shift			EC			WM			P/O		
	B	SE	β	B	SE	β	B	SE	β	B	SE	β	B	SE	β
Imitative	-1.00	1.20	-0.30	-2.05	1.67	-0.42	-2.38	1.68	-0.49	-0.02	1.33	-0.00	-0.59	1.51	-0.13
MB w/obj.	0.76	1.13	0.20	0.79	1.58	0.14	0.85	1.58	0.16	-0.46	1.25	-0.10	-1.13	1.42	-0.23
MB w/act.	-0.96	1.05	-0.30	-1.12	1.47	-0.24	-0.92	1.47	-0.20	-0.39	1.16	-0.10	0.67	1.32	0.16
Persistence	0.07	0.90	0.03	0.22	1.26	0.07	0.09	1.26	0.03	1.24	1.00	0.48	2.26	1.14	0.79
Interaction	1.42	1.28	0.26	-0.29	1.80	-0.04	0.63	1.80	0.08	1.35	1.43	0.21	0.74	1.62	0.10
VC	0.00	1.09	0.00	0.25	1.52	0.06	0.68	1.53	0.17	-2.46	1.21	-0.75*	-2.92	1.38	-0.80*

Note. EC=Emotional Control; WM=Working Memory; P/O=Plan/Organize;

Imitative = Imitative Role Play; MB w/obj. = Make Believe with Objects; MB w/act.

= Make Believe with Actions and Situations; Persistence = Persistence in Role Play;

Interaction = Interaction with Others; and VC = Verbal Communication.

* $p < .05$. ** $p < .01$.

Regression analysis for sociodramatic play subcategories predicting BRIEF-P indexes. Multiple regression analysis was used to evaluate the importance of the SSEDs sociodramatic play subcategories in predicting the BRIEF-P indexes. The

independent SSEDs variables of *Imitative Role Play (RP)*, *Make Believe with Objects (MB w/objects)*, *Make Believe with Actions and Situations (MB w/actions)*, *Persistence in Role Play (Persistence)*, *Interaction*, and *Verbal Communication (VC)*, were analyzed in relation to their influence on the dependent BRIEF-P index variables of *Inhibitory Self-Control Index (ISCI)*, *Flexibility Index (FI)*, and *Emergent Metacognition (EMI)*.

As shown in Table 12, the results of the standard multiple regression analysis indicated that of the six play sociodramatic subcategories, *Verbal Communication*, predicted at a statistically significant level the *Emergent Metacognition Index (EMI)*, which is composed of both the *Working Memory* and *Plan/Organize* clinical scales. *Verbal Communication* explained 13% of the total variance in *EMI*, ($\beta = -0.82$, $p < .05$). The negative relationship between *Verbal Communication* and the *Emergent Metacognition Index (EMI)* indicates that as the participants engaged in higher quality *Verbal Communication*, the *EMI* T-scores decreased. In other words, the quality of *Verbal Communication* significantly predicted the ability to initiate, plan, organize, and actively solve problems (*Emergent Metacognition Index*).

Table 12

Summary of Standard Multiple Regression Analysis for Sociodramatic Play Subcategories Predicting Self-Regulation Indexes of the BRIEF-P (N=38)

	ISCI			FI			EMI		
	B	SE	β	B	SE	β	B	SE	β
Imitative RP	-1.63	1.51	-0.38	-2.59	1.84	-0.48	-0.27	1.32	-0.07
MB w/objects	0.96	1.42	0.20	0.90	1.74	0.15	-0.70	1.24	-0.16
MB w/actions	-1.11	1.32	-0.27	-1.13	1.62	-0.22	-0.10	1.15	-0.03
Persistence	-0.06	1.14	-0.02	0.22	1.39	0.06	1.75	0.99	0.68
Interaction	1.45	1.62	0.21	0.09	1.98	0.01	1.43	1.41	0.22
VC	0.37	1.37	0.11	0.57	1.68	0.13	-2.68	1.20	-0.82*

Note. Imitative RP = Imitative Role Play; MB w/objects = Make Believe with Objects; MB w/actions = Make Believe with Actions and Situations; Persistence = Persistence in Role Play; Interaction = Interaction with Others; VC = Verbal Communication; ISCI = Inhibitory Self-Control Index; FI = Flexibility Index; and EMI = Emergent Metacognition.

* $p < .05$. ** $p < .01$.

Summary of Hypothesis One. The first research question explored whether the complexity of sociodramatic play predicted preschoolers' capacity for self-regulation.

The results of the multiple regression analyses revealed that the SSEDS total sociodramatic play variable predicted the BRIEF-P self-regulation clinical scale *Shift*. The complexity of play behaviors observed in the children as a whole positively predicted the children's ability to make transitions, problem-solve flexibly, and shift attention.

Further analysis of the individual SSEDS play subcategories indicated that *Verbal Communication* predicted two of the BRIEF-P self-regulation clinical scales: *Working Memory* and *Plan/Organize*. In addition, the SSEDS play subcategory, *Verbal Communication*, predicted the BRIEF-P self-regulation index, *Emergent Metacognition Index*. The *Emergent Metacognition Index* is composed of the *Working Memory* and *Plan/Organize* clinical scales. These findings indicated that preschoolers' quality of verbal communication during play positively predicted the self-regulatory ability to follow complex directions, initiate, plan, and complete a task.

Hypothesis 2: It is hypothesized that preschoolers' complexity in sociodramatic play will positively predict preschoolers' readiness for kindergarten.

To test Hypothesis Two and evaluate the role of sociodramatic play in predicting preschoolers' readiness for kindergarten, two standard multiple regression analyses were conducted. The first analysis assessed the impact of total sociodramatic play (SSEDS *Total Play*) on total readiness (Brigance Preschool

Screen-II *Total Readiness*). The second analysis explored the role of each of the six SSEDs play subcategories in predicting total readiness.

Regression analysis for total sociodramatic play predicting total readiness.

The independent variable, *Total play*, was analyzed in relation to its influence on the dependent variable, *Total readiness*. As shown in Table 13, the results of the standard multiple regression analysis indicated that *Total Play* did not predict *Total Readiness* at a statistically significant level.

Table 13

Summary of Standard Multiple Regression Analysis for Total Sociodramatic Play Predicting Total Readiness (N=38)

	Total readiness		
	B	SE B	β
Total play	-0.09	0.25	-0.06

Regression analysis for sociodramatic play categories predicting total readiness. Multiple regression analysis was used to evaluate the importance of the six sociodramatic play categories in predicting preschoolers' readiness skills. The independent SSEDs variables of *Imitative Role Play (RP)*, *Make Believe with Objects (MB w/objects)*, *Make Believe with Actions and Situations (MB w/actions)*,

Persistence in Role Play (Persistence), Interaction, and Verbal Communication (VC) were analyzed in relation to their influence on the dependent Brigance Preschool Screen-II variable *Total Readiness*. As shown in Table 14, the results of the standard multiple regression analysis indicated that none of the six sociodramatic play categories predicted *Total readiness* at a statistically significant level.

Table 14

Summary of Standard Multiple Regression Analysis for Sociodramatic Play Subcategories Predicting Total Readiness (N=38)

	Total readiness		
	B	SE B	β
Imitative RP	-0.39	2.82	-0.05
MB w/objects	-1.31	2.66	-0.15
MB w/actions	0.96	2.47	0.13
Persistence	-0.88	2.12	-0.18
Interaction	3.70	3.03	0.29
VC	-0.46	2.57	-0.07

Note. Imitative RP = Imitative Role Play; MB w/objects = Make Believe with Objects; MB w/actions = Make Believe with Actions and Situations; Persistence = Persistence in Role Play; Interaction = Interaction with Others; and VC = Verbal Communication.

Summary of Hypothesis Two. The second research question explored whether sociodramatic play predicted school readiness. First, the role of total sociodramatic play in predicting total readiness was examined. Next, the role of each of the six play subcategories in predicting total readiness was analyzed. The results of the multiple regression analyses indicated that the children's sociodramatic play behaviors did not predict their readiness for kindergarten as measured by the Brigance Preschool Screen-II. It is possible that the Brigance Preschool Screen-II did not adequately measure the concepts of readiness that may have been predicted by sociodramatic play.

Hypothesis 3: It is hypothesized that preschoolers' capacity for self-regulation will positively predict preschoolers' readiness for kindergarten.

The final hypothesis, which tested the role of self-regulation in predicting preschoolers' readiness for kindergarten, included three standard multiple regression analyses. The first analysis evaluated the ability of total self-regulation (BRIEF-P, *Global Executive Composite*) to predict total readiness (Brigance Preschool Screen-II *Total Readiness*). The second analysis explored the role of each of the five BRIEF-P clinical scales (*Inhibit, Shift, Emotional Control, Working Memory, and Plan/Organize*) in predicting *Total Readiness*. The third analysis assessed the roles

of the three BRIEF-P indexes (*Inhibitory Self-Control Index, Flexibility Index, and Emergent Metacognition Index*) in predicting *Total readiness*.

Regression analysis for total self-regulation predicting total readiness. The independent BRIEF-P variable, total self-regulation (*Global Executive Composite, GEC*), was analyzed in relation to its influence on the dependent Brigance Preschool Screen-II variable, *Total Readiness*. As shown in Table 15, the results revealed that total self-regulation did not statistically predict total readiness.

Table 15

Summary of Standard Multiple Regression Analysis for Total Self-Regulation Predicting Total Readiness (N=38)

	Total readiness		
	B	SE B	β
GEC	-0.31	0.27	-0.18

Note. GEC= *Global Executive Composite*.

Regression analysis for self-regulation clinical scales predicting total readiness. The independent BRIEF-P clinical scale variables, *Inhibit, Shift, Emotional Control, Working Memory, and Plan/Organize* were analyzed in relation to their influence on the dependent variable Brigance Preschool Screen-II, *Total Readiness*. As shown in Table 16, the results revealed that no significant

relationships were identified between each of the five BRIEF-P self-regulation clinical scales and the Brigance Preschool Screen-II *Total Readiness* score.

Table 16

Summary of Standard Multiple Regression Analysis for Self-Regulation BRIEF-P Clinical Scales Predicting Total Readiness (N=38)

	Total readiness		
	B	SE B	β
Inhibit	0.84	1.03	0.36
Shift	-0.49	0.73	-0.30
Emotional control	-0.15	0.97	-0.09
Working memory	-1.36	0.95	-0.70
Plan/organize	0.96	0.71	0.55

Regression analysis for self-regulation indexes predicting total readiness. The independent BRIEF-P index variables of *Inhibitory Self-Control Index (ISCI)*, *Flexibility Index (FI)*, and *Emergent Metacognition (EMI)* were analyzed in relation to their influence on the dependent Brigance Preschool Screen-II variable, *Total Readiness*. As shown in Table 17, the results revealed that of the three index scores, the *Flexibility Index* explained 11% of the variance in the preschoolers' *Total*

Readiness score ($\beta = -.90, p < .05$). The *Flexibility Index (FI)*, composed of the *Shift* and *Emotional Control* scales, represents a child's ability to "modulate behavioral and emotional reactions according to different response contingencies and environmental demands" (Gioia, Andrews Espy, & Isquith, 2003). The negative relationship between the *Flexibility Index* and *Total Readiness* indicates that the children with a stronger ability to shift their attention and control their behaviors and emotions presented with higher total readiness scores.

Table 17

Summary of Standard Multiple Regression Analysis for Self-Regulation BRIEF-P Indexes Predicting Total Readiness (N=38)

	Total readiness		
	B	SE B	β
ISCI	1.43	0.91	0.78
FI	-1.33	0.65	-0.90*
EMI	-0.18	0.45	-0.09

Note. ISCI = *Inhibitory Self-Control Index*; FI = *Flexibility Index*; and EMI = *Emergent Metacognition*.

* $p < .05$. ** $p < .01$.

Summary of Hypothesis Three. The third research question examined whether preschoolers' self-regulation skills predicted school readiness. First, total self-regulation was the independent variable with total readiness as the dependent variable. Next the five BRIEF-P clinical scales were the independent variables with total readiness as the dependent variable. Last, the three BRIEF-P indexes were the independent variables and *Total Readiness* was the dependent variable.

The results of the regression analyses indicated that the *Flexibility Index*, which is comprised of the *Shift* and *Emotional Control* clinical scales, positively predicted readiness. The self-regulatory ability to successfully transition from one activity to the next; to ignore irrelevant stimuli and shift attention to important information; and to modulate emotions adequately predicted positively preschoolers' readiness for kindergarten.

Post Hoc Analyses

For the primary analyses, the goal was to explore the role of the independent variables in predicting the dependent variables. Because significant predictors were found through multiple regression analyses, post-hoc analyses were conducted to provide additional information about the relationships among the variables. Pearson's product moment correlations were computed to investigate and determine whether there were significant correlations among the following relationships: SSEDS play categories and the BRIEF-P self-regulation subscales; the SSEDS play

categories and the Brigance Preschool Screen-II total readiness score; and the BRIEF-P self-regulation subscales and the Brigance Preschool Screen-II readiness domains.

The following sections provide the results.

Relationships between sociodramatic play and self-regulation. To explore relationships among the seven sociodramatic play categories (SSEDS) and the nine self-regulation subscales (BRIEF-P), Pearson's product moment correlations were computed. Overall, relationships were found between *Imitative Role Play* and *Shift*, *Total Play* and *Shift*, and *Imitative Role Play* and the *Flexibility Index*.

As shown in Table 18, *Imitative Role Play* correlated negatively with the BRIEF-P clinical scale, *Shift* ($r = -.37, p < .05$). This result suggests that a greater quality of *Imitative Role Play* was associated with lower *Shift* T-scores. The children who demonstrated more complex *Imitative Role Play* also presented with a better ability to shift attention from one task to another, to make transitions, and to problem-solve flexibly (*Shift*). A statistically significant negative relationship also was found between *Total Play* and *Shift* ($r = -.34, p < .05$). The children who demonstrated an overall higher quality of play also presented with a good ability to transition from one activity or situation to another and to switch attention from one topic (*Shift*).

There was also a statistically significant negative relationship between *Imitative Role Play* and the *Flexibility Index* ($r = -.34, p < .05$). The *Flexibility Index* is composed of the *Shift* and *Emotional Control* scales and refers to the child's ability to modulate behavioral and emotional reaction to environmental demands. The

correlation results revealed that higher quality make-believe role play was associated with a better ability to regulate behaviors and emotions.

Table 18

Correlations among the SSEDs Sociodramatic Play Subcategories and the Self-Regulation BRIEF-P Clinical Scales, Indexes, and Composite (N=38)

	Inhibit	Shift	EC	WM	P/O	ISCI	FI	EMI	GEC
Imitative RP	-0.14	-0.37*	-0.30	-0.12	-0.04	-0.21	-0.34*	-0.05	-0.22
MB w/obj.	-0.04	-0.15	-0.06	-0.26	-0.17	-0.04	-0.11	-0.23	-0.18
MB w/act.	-0.12	-0.22	-0.11	-0.31	-0.15	-0.11	-0.17	-0.26	-0.22
Persistence	-0.10	-0.30	-0.21	-0.12	-0.03	-0.16	-0.26	-0.01	-0.16
Interaction	0.05	-0.26	-0.13	-0.06	-0.03	-0.02	-0.21	0.01	-0.09
VC	-0.11	-0.30	-0.18	-0.30	-0.17	-0.14	-0.24	-0.22	-0.23
Total play	-0.11	-0.34*	-0.21	-0.25	-0.10	-0.16	-0.28	-0.16	-0.23

Note. Imitative RP = Imitative Role Play; MB w/obj. = Make Believe with Objects; MB w/act. = Make Believe with Actions and Situations; Persistence = Persistence in Role Play; Interaction = Interaction with Others; VC = Verbal Communication; EC = Emotional Control; WM = Working Memory; P/O = Plan/Organize; ISCI = Inhibitory Self-Control Index; FI = Flexibility Index; EMI = Emergent Metacognition; GEC = Global Executive Composite.

* $p < .05$ ** $p < .01$

Relationships between sociodramatic play and kindergarten readiness. To explore relationships among the seven SSEDs sociodramatic play categories and the Brigance Preschool Screen-II *Total Readiness* score, Pearson's product moment correlations were computed between them. As shown in Table 19, no significant relationships were identified between each of the seven SSEDs sociodramatic play categories and the Brigance Preschool Screen-II *Total Readiness* score. Although the sociodramatic play categories were not significantly correlated with *Total Readiness*, it is possible that the Brigance Preschool Screen-II did not assess the readiness domains that may be correlated to sociodramatic play.

Table 19

Correlations among the SSEDS Sociodramatic Play Subcategories and Total Readiness (N=38)

Play categories	Total Readiness
Imitative RP	-0.08
MB w/objects	-0.06
MB w/actions	-0.01
Persistence	-0.10
Interaction	0.10
VC	-0.07
Total play	-0.06

Note. Imitative RP = Imitative Role Play; MB w/objects = Make Believe with Objects; MB w/actions = Make Believe with Actions and Situations; Persistence = Persistence in Role Play; Interaction = Interaction with Others; and VC = Verbal Communication.

Relationships between self-regulation and kindergarten readiness. To explore relationships among the nine self-regulation BRIEF-P subscales and the Brigance Preschool screen-II *Total Readiness* score, Pearson's product moment correlations were computed. As shown in Table 20, no significant relationships were identified between each of the nine self-regulation subscales and the *Total Readiness* score.

Again, it is possible that the *Total Readiness* score as measured by the Brigance Preschool Screen-II may not adequately measure the readiness concepts that could be correlated with self-regulation skills.

Table 20

Correlations among the Self-Regulation BRIEF-P Clinical Scales, Indexes, and Composite, and Total Readiness (N=38)

Self-regulation subscales	Total readiness
Inhibit	-0.11
Shift	-0.28
Emotional control	-0.18
Working memory	-0.20
Plan\organize	-0.05
ISCI	-0.13
FI	-0.24
EMI	-0.10
GEC	-0.19

Note. ISCI = Inhibitory Self-Control Index; FI = Flexibility Index; EMI = Emergent Metacognition; and GEC = Global Executive Composite.

Relationships between self-regulation and readiness domains. To explore relationships among the nine BRIEF-P self-regulation subscales and the 12 readiness domains of the Brigance Preschool Screen-II, Pearson's product moment correlations were computed. As shown in Table 21, several significant negative relationships were identified.

The BRIEF-P clinical scale *Shift* was correlated negatively with the Brigance Preschool Screen-II *Visual Motor Skills* and *Gross Motor Skills* domains ($r = -0.34$, $p < 0.5$ and $r = -0.38$, $p < 0.5$, respectively). The results indicate that as the ability to shift attention and problem-solve flexibly increased, visual motor skills and gross motor skills also improved.

The BRIEF-P clinical scale *Emotional Control* was correlated negatively with *Visual Motor Skills* ($r = -0.32$, $p < .05$). The children who presented with a better ability to modulate their emotions also demonstrated stronger visual motor skills.

The BRIEF-P index *Flexibility Index*, which is comprised of the *Shift* and *Emotional Control* scales, also was correlated negatively with the *Visual Motor Skills* and the *Gross Motor Skills* domains ($r = -.34$, $p < .05$ and $r = -.36$, $p < .05$, respectively). Again, the children who presented with a stronger ability to modulate their emotions and behaviors also exhibited stronger visual motor and gross motor skills.

Lastly, total self-regulation, measured by the *Global Executive Composite*, correlated negatively with *Gross Motor Skills* ($r = -0.35$, $p < .05$). The children who

presented with stronger total self-regulation skills also presented with stronger gross motor abilities.

Table 21

Correlations among the Self-Regulation BRIEF-P Subscales and Readiness Subscales

(N=38)

	PDR	CR	PV	VD	VMS	GMS	RC	IBP	FVD	NC	SF	Total
IN	-0.13	-0.14	-0.19	-0.07	-0.20	-0.30	-0.00	-0.10	0.11	0.02	0.18	-0.11
S	-0.31	-0.16	-0.02	-0.31	-0.34*	-0.38*	-0.20	-0.10	0.00	-0.11	0.09	-0.28
EC	-0.13	-0.19	-0.11	-0.19	-0.32*	-0.31	-0.13	-0.07	-0.11	0.01	0.09	-0.18
WM	-0.27	-0.04	-0.08	-0.12	-0.18	-0.27	-0.11	-0.24	0.09	-0.13	0.11	-0.20
P/O	-0.09	-0.02	-0.02	0.00	-0.06	-0.17	-0.01	-0.25	0.16	0.03	0.14	-0.05
ISCI	-0.14	-0.16	-0.17	-0.12	-0.24	-0.30	-0.05	-0.84	0.10	0.02	0.16	-0.13
FI	-0.23	-0.18	-0.06	-0.26	-0.34*	-0.36*	-0.17	-0.82	0.06	-0.05	0.09	-0.24
EMI	-0.17	-0.01	-0.08	-0.00	-0.11	-0.24	-0.02	-0.24	0.12	-0.03	0.12	-0.10
GEC	-0.21	-0.13	-0.11	-0.16	-0.23	-0.35*	-0.11	-0.17	0.09	-0.05	0.13	-0.19

Note. PDR = Personal Data Response; CR = Color Recognition; PV = Picture

Vocabulary; VD = Visual Discrimination; VMS = Visual Motor Skills (VMS); GMS =

Gross Motor Skills; RC = Rote Counting; IBP = Identifies Body Parts; FVD =

Follows Verbal Directions; NC = Number Concepts; SF = Syntax and Fluency; and

Total = Total Readiness. IN= Inhibit; S= Shift; EC = Emotional Control; WM =

Working Memory; P/O = Plan/Organize; ISCI = Inhibitory Self-Control Index; FI =

Flexibility Index; EMI = Emergent Metacognition; GEC = Global Executive Composite.

* $p < .05$ ** $p < .01$

Summary of Post Hoc Analyses

The goal of the post hoc analyses was to explore the relationships among the following variables: SSEDS play categories and the BRIEF-P self-regulation subscales; the SSEDS play categories and the Brigance Preschool Screen-II readiness domains; and the BRIEF-P self-regulation subscales and the Brigance Preschool Screen-II readiness domains.

First, positive relationships that were statistically significant were found between the self-regulation subscale *Shift* and the readiness domain *Visual Motor skills*. The *Shift* subscale also was found to correlate positively with the *Gross Motor Skill* domain. In summary, the preschoolers' capacity to shift attention was correlated with their abilities to copy designs and complete gross motor tasks.

The next positive correlation was found between the self-regulation subscale *Emotional Control* and the readiness domain *Visual Motor Skills*. The children who presented with a good ability to regulate their emotional responses to various situations also presented with a good ability to copy shapes and designs.

The *Flexibility Index*, which is comprised of the *Shift* and *Emotional Control* subscales, was correlated positively to the *Visual Motor Skills* and the *Gross Motor*

Skills readiness domains. Children who demonstrated a strong ability to shift attention, problem-solve flexibly and modulate behavioral and emotional reactions also presented with strong copying skills and gross motor abilities.

The last positive correlation was found between total self-regulation (*Global Executive Composite*) and the readiness domain *Gross Motor Skills*. This result indicates the children who demonstrated strong self-regulation skills also presented with strong gross motor abilities.

CHAPTER FIVE

Discussion

The purpose of this study was to explore (1) the role of sociodramatic play in predicting preschoolers' self-regulation abilities and readiness for kindergarten; and (2) the role of self-regulation in predicting preschoolers' readiness for kindergarten. The following three questions were addressed: (1) does a preschooler's ability to engage in complex levels of sociodramatic play predict the capacity for self-regulation? (2) Does a preschooler's ability to engage in complex levels of sociodramatic play predict readiness for kindergarten? And, (3) does a preschooler's capacity for self-regulation predict readiness for kindergarten? The results in support of these questions are discussed below. In addition, limitations of the present study, educational implications of the present study, and directions for future research are presented.

Sociodramatic Play as a Predictor of Self-Regulation

Throughout the early childhood literature, sociodramatic play as a context within which preschool children learn has been widely acknowledged and supported. In 2005, the National Association for the Education of Young Children emphasized the importance of sociodramatic play as a tool for developing social, emotional, and cognitive skills. In addition to providing a context for learning, sociodramatic play has been identified as a vehicle for developing self-regulation skills (Bodrova & Leong, 1998; Elias & Berk, 2002). Similarly, the Vygotskian perspective

underscored the relevance of dramatic and sociodramatic play as a context within which children can develop the ability to self-regulate. Research studies have linked sociodramatic play to behavioral regulation, problem-solving, reasoning, and planning skills (Smilansky, 1990; Elias & Berk, 2002). For example, Elias and Berk (2002) revealed that the frequency of sociodramatic play predicted preschoolers' behavioral regulation skills, which included attentional skills.

The results of the present study supplement the Elias and Berk (2002) results by providing additional evidence for the complexity of sociodramatic play, not just the frequency, predicting the self-regulatory capacity to shift attention. The results of the present study contribute to the literature by providing partial support for the role sociodramatic play has in predicting self-regulation. Specifically, the participants' total quality of sociodramatic play predicted the self-regulatory ability to shift attention. The results also indicated that one component of sociodramatic play, verbal communication, predicted the following self-regulation skills: working memory, planning, and emergent metacognition.

Total sociodramatic play as a predictor of attention shifting. The present study found the total quality of preschoolers' sociodramatic play positively predicted the capacity to shift attention, make transitions, and problem-solve flexibly, all of which are important self-regulatory skills. The ability to shift attention from one topic to another, to transition successfully from one activity to another, and to problem-solve using different ideas and approaches are essential components of self-regulation as

well as the self-regulated learning process. In other words, the role of sociodramatic play as a predictor of the self-regulatory ability to shift attention has academic implications. Not only do the results of this study provide support for sociodramatic play as a facilitator of the self-regulation skills necessary for attention shifting and problem-solving, the results also provide valuable information for early childhood educators. As a means of supporting and developing the self-regulation skills considered essential to kindergarten transition and future academic success, preschool teachers can design and implement a curriculum that provides opportunities for their students to participate in sociodramatic play.

Verbal communication as a predictor of self-regulation. The results of the present study also revealed that verbal communication, a subcategory of sociodramatic play, predicted the self-regulation measures of working memory, planning, organization, and emergent metacognition. *Verbal Communication* as measured by the SSEDS refers specifically to the quality of verbal dialogue the child generated during a sociodramatic play episode. For example, the children who took on pretend roles often changed their voices to match their character (e.g., one student used a high-pitched mother's voice and another used a baby voice). These children also verbally communicated with the other children who were characters within the pretend role (e.g., a "mother" student placed a demand on a "baby" student, "Eat your breakfast, baby."). Several of the children in the present study demonstrated verbal communication skills to guide their play actions.

In addition to theorizing about the relationship between sociodramatic play and self-regulation, the Vygotskian perspective emphasized the role of language in the development of self-regulation. Vygotsky (1978) stated “Language enables children to provide for auxiliary tools in the solution of difficult tasks, to overcome impulsive action, to plan a solution to a problem prior to its execution, and to master their own behavior” (p. 28). The present study provides empirical evidence that verbal communication within the context of play positively predicts some of the self-regulatory skills described by Vygotsky. In particular, the results of the present study revealed that the self-regulatory skills most influenced by verbal communication within the context of play present included: the ability to plan and organize to solve tasks, and the ability to guide behaviors and actions in order to carry out the steps necessary for solving a problem and/or completing a task.

The present study supports the literature by providing evidence that verbal communication within the context of sociodramatic play predicts planning and metacognitive skills. Similarly, prior research has shown that small-group play activities develop children’s planning and reflecting skills (Epstein, 2003). In addition to planning skills, there is evidence that metacognitive skills (higher-level thinking and problem-solving) develop when children are encouraged through verbal communication to reflect, predict, and question within the context of play (Bowman, Donovan, & Burns, 2001). During a group play activity children can discuss their thoughts and ideas about the specific play activity, they can plan out different steps to

accomplish goals, and they can problem-solve to resolve conflicts or difficult tasks. For example, in the present study, there was a small group of boys who were building a city with Legos. They worked together to figure out how they wanted certain buildings to look, where the buildings should go, which Legos to use for different buildings, and which Legos would support the height of certain buildings. During this small group activity, the boys verbally communicated their ideas, they planned the layout of the city, and they problem-solved to figure out the best use of specific Legos. The group play activity provided an opportunity for these boys to verbally plan, reflect and problem-solve.

The present study also revealed that verbal communication within the context of sociodramatic play predicts the self-regulation skill of working memory. There are no prior research studies that have examined the relationship between verbal communication within the context of sociodramatic play and working memory. Other studies have analyzed the relationship between general verbal abilities and working memory skills. For example, two current research studies have found that children with specific language impairments also exhibit significant deficits in verbal working memory tasks (Alloway & Archibald, 2008; Marton, 2008). The children with specific language impairments had difficulty holding onto and manipulating verbal information in their short-term memories. Although the variables of these studies differed from the variables of the present study, the evidence that verbal communication within the context of sociodramatic play predicts working memory

provides supplemental information, which supports the positive correlation between language and self-regulation.

The role of verbal communication as a significant predictor of planning and organizing skills, emergent metacognition, and working memory, within the context of sociodramatic play, has implications not only for the development of self-regulation, but also for the development of academic skills. For example, more than 75% of public school kindergarten teachers consider it essential that children can verbally communicate their wants, needs, and thoughts (NCES, 1999). The present study revealed that verbal communication within the context of sociodramatic play influences a preschooler's ability to plan, organize, and use their thoughts to guide their actions and behaviors. Sociodramatic play provides an opportunity for preschool children to verbally communicate their thoughts, ideas, and needs to other children, which are the skills that kindergarten teachers consider very important for a successful school transition.

In addition to kindergarten teachers emphasizing the importance of verbal skills, prior research has shown that children's use of language to plan and reflect is correlated positively with reading success and vocabulary development (Dickinson & Smith, 1994). Research studies also have found associations between working memory skills and learning abilities. In particular, reading and math deficits are correlated significantly with working memory deficits (DeJong, 1998; Bull & Scerif, 2001). The present study provides evidence that verbal communication within

sociodramatic play predicts the self-regulatory skills of working memory, planning, and emergent metacognition, which these previous studies have shown to influence reading and mathematic skills.

Another consideration is the influence that verbal communication has in developing social skills. Although the present study did not explore the relationship between verbal communication and social competence, prior research has found that social interactions and communications within sociodramatic play episodes are correlated positively with social competence, classroom self-regulation, and classroom learning behaviors (Fantuzzo & McWayne, 2002). Specifically, preschool children who exhibited creative, cooperative, and helpful behaviors presented with a better ability to manage emotions and frustrations, work independently, initiate and attend to tasks, cooperate in learning groups, and they were more motivated to learn. Fantuzzo and McWayne's (2002) sample demographics differed from the present study's sample. Fantuzzo and McWayne's preschool children were enrolled in an urban Head Start program and 97% of their sample included African American children. In contrast, the present study's sample included preschool children from a rural public pre-kindergarten program, and 95% were Caucasian. The samples were different; Fantuzzo and McWayne's study researched the quality of interactions within peer-play, rather than specific sociodramatic play, yet the correlations are noteworthy. Fantuzzo and McWayne's study provides additional evidence that the social interactions that occur within peer-play interactions are positively correlated

with self-regulation skills and learning behaviors. The results from the present study examined additional aspects of self-regulation, not included in Fantuzzo and McWayne's study. Whereas Fantuzzo and McWayne focused specifically on peer-play interactions, the present study examined the total quality of sociodramatic play. The present study contributes to the literature by providing additional evidence that the total quality of sociodramatic play influences attention shifting. Also, verbal communication within the context of sociodramatic play influences the self-regulatory abilities of working memory, planning, organization, and emergent metacognitive skills.

The results of this study did not reveal a statistically significant relationship between sociodramatic play and emotional control. This result was somewhat unexpected considering that children often need to control their impulses, emotions, and behaviors in order to successfully take on a role and play with other children. Although this study did not find a predictive relationship between sociodramatic play and emotional control, the post hoc analyses did reveal a correlation between the SSEDs *Imitative Role Play* category and the *Emotional Control* clinical scale of the BRIEF-P. Instead of the subcategories of sociodramatic play predicting emotional control, one specific component of sociodramatic play, *Imitative Role Play*, was correlated positively with *Emotional Control*. Instead of a predictive relationship, this study revealed a positive correlational relationship.

The present study did not reveal a predictive relationship between sociodramatic play and emotional control; however the results did reveal a predictive relationship between total sociodramatic play and the ability to shift attention. The predictive ability of sociodramatic play on the self-regulatory skill of attention shifting has implications for emotional control. Prior research has found that preschool and kindergarten children with better regulatory control, which includes the ability to inhibit impulses, shift attention, and maintain attention, are more socially competent and better able to modulate negative emotional responses to peer interactions (Fabes et al., 1999).

The present study did not find a predictive relationship between verbal communication within the context of sociodramatic play and emotion regulation, yet the importance of language as a facilitator of emotional control has also been emphasized in the literature. In particular, Kopp (1989) noted using language to verbalize and label emotions, problem-solve, and understand how feelings affect relationships with peers can positively influence the development of emotion regulation skills (Kopp, 1989).

To summarize, the results of the present study revealed that the complexity of sociodramatic play predicted the self-regulation ability to shift attention, problem-solve flexibly, and make transitions. In addition, the present study revealed that verbal communication within sociodramatic play episodes predicted the self-regulation abilities: working memory, planning, organization, and emergent

metacognition. To explore further whether there were positive or negative relationships between sociodramatic play and self-regulation, post-hoc analyses were conducted. The results found statistically significant positive correlations among the following: (1) imitative role-play and the self-regulatory ability to shift attention, (2) imitative role play and the combined ability to shift attention and modulate emotions, and (3) total sociodramatic play and the self-regulatory ability to shift attention. These results provide additional evidence that there are positive relationships among pretend play, sociodramatic play, and self-regulation skills.

Although in the present study sociodramatic play did not directly predict school readiness, as measured by the Brigance Preschool Screen-II the capacity for sociodramatic play to positively predict self-regulation skills, has relevant implications for school readiness. In particular, the roles of sociodramatic play predicting the self-regulatory ability to shift attention, and verbal communication predicting the self-regulatory abilities of working memory, planning, and metacognition, should be considered in relation to their indirect influences on readiness and future academic success. For example, the most common characteristics of learning disabilities at the preschool age include: inattention, speech/language delays, disorganization, emotional regulation difficulties, and gross motor delays (Cook, Tessier, & Klein, 1996). In addition, preschool behavioral problems and behavioral regulation difficulties often lead to poor student-teacher relationships, which are likely to elicit more negative reactions from teachers and

peers, and, in turn, negatively affect school performance and social competence (DiLalla, Marcus, & Wright-Phillip, 2004; Rouse, Brooks-Gunn, & Lanahan, 2005). Subsequently, children who can regulate their behaviors and emotions, as well as plan and organize their thoughts are likely to have greater academic success and relationships with peers.

The results of the present study also have relevance to the National Governor's Association Task Force on School Readiness, which emphasized the following: "ready children play well with others, pay attention, respond positively to teachers instructions, communicate well verbally, and are eager participants in classroom activities" (NGA, 2005, p. 11). The results of the present study support this notion by providing evidence that the complexity of sociodramatic play predicts the ability to shift attention and verbal communication within the context of sociodramatic play predicts the ability to listen to instructions, hold onto information, plan, and follow through to complete tasks.

Self-Regulation as a Predictor of Kindergarten Readiness

The early childhood education literature indicates kindergarten teachers are concerned about a child's "teachability," which includes the ability to listen to instructions, pay attention, communicate thoughts verbally, engage in classroom tasks and demands, follow through on tasks, and work independently (Foulks & Morrow, 1989; Pianta & LaParo, 2000; Finn, 1993; Ladd, Birch, & Buhs, 1999). There is empirical research that supports the link between "teachability", or self-regulatory

skills, and academic success. In particular, children who have difficulty paying attention, following directions, and regulating their behaviors do less well in school (Agostin & Bain, 1997; Raver & Knitzer, 2002; Raver, 2003; Arnold et al., 1999; McClelland et al., 2000).

Prior studies have also indicated cognitive self-control, defined as the ability to plan, problem-solve, and attend to task, is linked to academic achievement (Normandeau & Guay, 1998; Alexander et al., 1993). In addition, the National Governor's Association Task Force on Readiness (NGA, 2005) emphasized, "problem-solving and planning increases children's understanding of the world around them" (p.27).

The present study found evidence of the self-regulatory skills of problem-solving flexibly, shifting attention, and controlling emotional and behavioral responses (*Flexibility Index*) positively predicting preschoolers' readiness for kindergarten. These results support the previous research studies that have also found relationships between self-regulation and academic skills. For example, children with poor mathematical skills are also more likely to have poor working memory skills and difficulty shifting from one task to another (Bull & Scerif, 2001). Blair and Razza (2007) found attention shifting correlated positively with mathematical ability and phonemic awareness in both preschoolers and kindergarteners. Blair and Razza (2007) studied 170 predominantly Caucasian children enrolled in rural Head Start programs. Although the present study measured attention shifting in relation to

readiness skills, the Brigance Preschool Screen-II did not provide as comprehensive a measure of mathematical ability and phonemic awareness as the measures in Blair and Razza's (2007) study.

Additionally, Duncan et al's., (2007) meta-analysis of six longitudinal data sets found school-entry attention skills were predictive of later reading and math achievement. A National Institute of Child Health and Human Development (NICHD, 2003) meta-analysis study found evidence that preschoolers' attentional skills positively predicted achievement, language, and social development. The attention skills referred specifically to the children's ability to shift their attention from irrelevant to relevant stimuli and sustain attention to relevant stimuli.

Achievement referred to math and reading skills; language included both expressive and receptive language skills, and social development included social competence skills and externalizing behaviors. The externalizing behaviors included emotional and behavioral problems. Although the NICHD (2003) study did not examine the role of sociodramatic play, it did examine self-regulated attention skills in relation to academic achievement, language, skills, and social competence, which has significance to the present study.

Similar to the present study, the NICHD results underscore the importance of the relationships that exist among self-regulation, academic achievement, language, and social competence. Whereas the NICHD found attention skills predicted positively achievement, language, and social competence, the present study found

that the combined ability to shift attention and control emotions and behavior positively predicted a preschooler's academic readiness for kindergarten.

In addition to the multiple regression analyses that examined whether the self-regulation skills predicted school readiness, one of the present study's post-hoc analyses explored the relationships between self-regulation abilities and readiness skills. The post-hoc analyses found statistically significant positive relationships among the following: (1) the self-regulatory ability to shift attention and visual motor skills, (2) the self-regulatory ability to shift attention and gross motor skills, (3) the self-regulatory ability to modulate emotions and visual motor skills, (4) the combined ability to shift attention and modulate emotions and visual motor skills, and (5) the combined ability to shift attention and modulate emotions and gross motor skills.

There is limited research related to the relationships among the self-regulatory capacities to shift attention and modulate emotions and visual and gross motor skills. Marton (2008) found children with attentional difficulties were more likely than children without attentional difficulties to perform poorly on visuo-spatial working memory tasks. Although in the present study working memory was not correlated with visual motor skills, verbal communication was found to statistically predict working memory skills. This result is noteworthy because research has shown children with specific language impairments are more likely to have significant weaknesses in visuo-spatial working memory tasks, which include design copying, space visualization, position in space, all of which can affect a child's ability to be

successful in school (Marton, 2008). These results have additional implications for academic success because visual-motor skills are important for written language tasks, handwriting, drawing geometric designs, and design copying.

Limitations

The present study was limited by the small size and homogeneity of the sample. The majority of the sample was Caucasian and all of the children lived in a small rural town in southern Maine. The sample did not approximate the U.S. census population data; however the children attended a free, public pre-kindergarten program, which was available to all of the town's children ages four to five years, regardless of socioeconomic status.

Another limitation of the study was the measure used to define readiness. The school district within the present study used the Brigance Preschool Screen-II to assess readiness; however the Brigance Preschool Screen-II does not assess all five of the domains of readiness outlined by the National Education Goals Panel (1997).

The National Education Goals Panel (NEGP, 1997) outlined the following five domains of readiness: (1) physical well-being and motor development, (2) social and emotional development, (3) approaches toward learning, (4) language development, and (5) cognition and general knowledge. Approaches toward learning refers to a child's attentiveness, task persistence, eagerness to learn, learning independence, flexibility, and organization. The Brigance Preschool Screen-II assessed visual motor and gross motor skills, some expressive and receptive language skills, and general

knowledge. The BRIEF-P assessed emotional control and several of the approaches toward learning. The students' approaches toward learning considered by early childhood researchers and kindergarten teachers to be essential for school readiness and future academic success were not assessed by the participants' school system. The Brigance Preschool Screen-II did not measure the skills that many kindergarten teachers consider essential for a successful transition into kindergarten.

The BRIEF-P provides a comprehensive assessment of the behavioral, emotional, and cognitive aspects of self-regulation; yet the measure is a subjective rating scale. The teachers rated their students based on their perceptions of the students' behaviors. The present study may have benefited from additional objective measures of self-regulation and/or having the parents complete the BRIEF-P parent rating forms. Lastly, the children were videotaped while playing and this intrusion on their play, even though occurring in their natural pre-k setting, may have impacted the quality of their play behaviors. Although the present study has limitations, the results provide relevant contributions to the field of early childhood education as well as implications for future research.

Educational Implications

The education literature underscores the relevance of self-regulation skills within the learning environment and the role of self-regulation in predicting future success and difficulty (McLelland, Morrison, & Holmes, 2000; Foulks & Morrow, 1989, Rimm-Kaufmann, 2000). Research studies emphasize the concepts of self-

regulated learning, learning-related social skills, and learning behaviors, for school readiness and future academic success (Smilansky, 1990; Pellegrini, 1980; Pintrich & Zusho, 2002; McClelland et al., 2000). Similarly, readiness is a multidimensional construct with several domains referring specifically to the emotional, behavioral, and cognitive aspects of self-regulation.

There is a need for school systems to use a better measure of readiness: one that incorporates all five domains of readiness outlined by the National Education Goals Panel (1997). Kindergarten teachers emphasize the importance of self-regulatory skills for successful transitions into school as well as future academic success. Readiness measures should assess more accurately these regulatory skills, which are likely to influence a child's transition into kindergarten. At the same time, there needs to be increased awareness of the contribution of sociodramatic play to self-regulation. Preschool teachers can continue to educate parents and advocate for a curriculum that includes opportunities for sociodramatic play, as a means of developing self-regulatory skills and academic preparedness.

School psychologists are an excellent resource for parents and teachers because they can provide comprehensive information about self-regulation abilities and readiness skills. School psychologists can also assist preschool educators in developing curriculum that will support opportunities for sociodramatic play and foster the development of self-regulatory skills, which kindergarten teachers have identified as critical for a successful school transition. It is essential that school

psychologists support high-quality preschool learning environments, which include opportunities for sociodramatic play that will ensure that children have the academic and social skills necessary for school success.

Future Research

The goal of the present study was to focus on the self-regulatory aspects of readiness by providing a comprehensive assessment of self-regulation as well as an analysis of sociodramatic play within the preschool environment as a vehicle for developing regulatory readiness skills.

The results of the present study provide evidence that supports the role of sociodramatic play in predicting the self-regulatory capacity to shift attention. In addition, the present study revealed that verbal communication within the context of sociodramatic play predicted positively the self-regulatory capacities of working memory, planning and organizing, and emerging metacognition. These relationships have implications for future research within the areas of assessment and intervention. First, readiness should be assessed as a multidimensional construct, which includes the behavioral, emotional, and cognitive aspects of self-regulation. Currently, there are no clear guidelines for assessing school readiness, and several measures do not comprehensively assess this complex construct. Second, readiness assessment should not be a high-stakes decision-making tool, but rather a means for identifying students' strengths and challenges, as well as providing teachers and parents with information that supports the learning process.

The results of the present study also have implications for future research in the area of intervention. In particular, future studies can explore further the relationships among sociodramatic play, self-regulation, and the learning process, which includes language, problem-solving, attention shifting, reflecting, and planning. Another goal of future research is to examine whether training in sociodramatic play and/or intervention within sociodramatic play episodes improves self-regulatory skills. Additionally, the roles of sociodramatic training and preschool intervention strategies can be explored in relation to their influence on a child's initial transition into kindergarten as well as future academic success. Research is needed to understand how specific intervention strategies within the context of sociodramatic play can improve and develop the self-regulation skills that are considered essential to academic success.

Summary

The results of the present study revealed the following predictive relationships among the independent and dependent variables. First, total sociodramatic play (SSEDS *Total Play*) predicted preschoolers' capacity to shift attention, make transitions, problem-solve flexibly, and change focus from one topic to another (BRIEF-P, *Shift*). Second, higher quality *Verbal Communication* predicted preschoolers' capacity to follow instructions and hold information in mind for the purpose of completing a task (BRIEF-P, *Working Memory*). Third, higher quality *Verbal Communication* predicted preschoolers' capacity to develop steps to complete

a task and bring order to information to achieve a task (BRIEF-P, *Plan/Organize*). Fourth, higher quality *Verbal Communication* predicted the combination of *Working Memory* and *Plan/Organize* (*Emergent Metacognition Index*). The Emergent Metacognition Index measured the overall ability to use information from working memory to guide actions and actively solve problems. Fifth, the ability to shift attention and regulate behavioral and emotional reactions according to different environmental demands (BRIEF-P, *Flexibility Index*) predicted preschoolers' total readiness for kindergarten (Brigance Preschool Screen-II, *Total Readiness*).

The results of the present study's post hoc analyses found several statistically significant relationships among the self-regulatory abilities and readiness skills. First, the capacity to shift attention and problem-solve flexibly (BRIEF-P, *Shift*) was positively correlated with both visual motor and gross motor skills (Brigance Preschool Screen-II, *Visual Motor Skills & Gross Motor Skills*). Second, the ability to control emotional responses (BRIEF-P, *Emotional Control*) was positively correlated with the Brigance Preschool Screen-II *Visual Motor Skills* subscale. Third, the combined ability to shift attention and regulate behavioral and emotional responses (BRIEF-P, *Flexibility Index*) was positively correlated with both the Brigance Preschool Screen-II *Visual Motor Skills* and *Gross Motor Skills* subscales. Fourth, total self-regulation as measured by the BRIEF-P *Global Executive Composite* was positively correlated with the Brigance Preschool Screen-II *Gross Motor Skills* subscale.

In summary, the results of the present study contribute to the literature by providing additional support for sociodramatic play predicting aspects of self-regulation and self-regulation predicting aspects of readiness. In addition, positive correlations were found among aspects of self-regulation and components of readiness. As a result, the present study supports the need to look beyond typical measures of readiness when assessing a child's academic preparedness. Instead, aspects of regulatory readiness should be considered in order to provide a comprehensive assessment of the multiple domains of school readiness. Finally, the contributions of sociodramatic play to self-regulation and academic readiness, as well as the valuable learning opportunities that exist within the context of sociodramatic play, support the need for additional research within the early childhood education literature.

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Appendix A

Letter of Introduction to the Parents/Guardians
*Northeastern University, Department of Counseling and Applied
Educational Psychology*

May 20, 2007

Dear Parent or Guardian,

My name is Sharyn Matthews, and I am a fourth year doctoral student in school psychology at Northeastern University. I am also a mother of three children ages 4, 7, and 9. As a mother of three children and a doctoral student in school psychology, I am very interested in learning about the skills that a child needs to be successful in school, both academically and socially. My interest in self-regulation and pretend play in childhood has influenced my decision to explore these skills in relation to kindergarten readiness. As part of my doctoral program at Northeastern University, I have designed a dissertation research project under the supervision of Karin Lifter, Ph.D., which I would like to conduct in your child's classroom.

I have received a great deal of support and enthusiasm from Principal Vicki Stewart and the pre-kindergarten teachers, Janet Cassidy and Sue Sullivan. They are looking forward to having my dissertation research conducted at Central Elementary School.

Enclosed is a copy of the Informed Consent Document, which I would like you to read. This form will tell you about the study, but the researcher will explain it to you first. You may ask this person any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to.

Sincerely,

Sharyn Matthews
4th year Doctoral Student
Northeastern University
(603) 964-7039
sharynmatthews@comcast.net

Karin Lifter Ph.D.
Professor and Dissertation Chairperson
Northeastern University
(617) 373-5916
k.lifter@neu.edu

Informed Consent Document***Northeastern University, Department of Counseling and Applied Educational Psychology***

Investigator Names:

Principal Investigator: Karin Lifter Ph.D., Professor

Student Investigator: Sharyn Matthews MSW; MS; 4th year Doctoral Student in School Psychology

Title of Project:

The Relationship among Self-Regulation, Sociodramatic Play, and Preschoolers' Readiness for Kindergarten

May 11, 2007

Informed Consent to Participate in a Research Study

We are inviting your child to take part in a research study. This form will tell you about the study, but the researcher will explain it to you first. You may ask this person any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to sign this statement and will give you a copy to keep. The researcher will be available to explain this form in more detail.

Why is my child being asked to take part in this research study?

Your child is being asked to participate in this study because he/she is 4-5 years old and is enrolled in a pre-kindergarten class in the South Berwick Central School. All the pre-kindergarten children are being asked to participate.

Why are you doing this research study?

I would like to investigate if there is a relationship between a child's executive function skills (e.g., planning, problem-solving, modifying behaviors and emotions, paying attention) and their ability to engage in imaginary play. The terms, executive function skills and self-regulation are often used interchangeably and for the purpose of this study, self-regulation will be the term used. One of the goals of this study is to explore the relationship between sociodramatic play and self-regulation in hopes of identifying pre-k interventions strategies that will likely improve a child's readiness for Kindergarten and future academic success. To date, research has shown that sociodramatic play, which involves make-believe and imaginary play with other children, has been positively related to increased language abilities, pre-reading and writing skills, comprehension and sequencing skills, and increased social competence. All of these skills are very important to a child's ability to be successful in school.

I would also like to compare the results of the self-regulation and play measures to the assessment of school readiness that the teachers previously administered to your child. Together, these measures will provide valuable information related to the relationship among self-regulation, play, and kindergarten readiness.

In summary, the goal of my dissertation research is to explore and describe the relationship between self-regulation skills and sociodramatic play among preschoolers with the hope of identifying future preschool intervention strategies that will improve a child's readiness for Kindergarten and likelihood for future academic success.

What will my child's teacher be asked to do?

The first part of my proposed study would involve asking your child's pre-k teacher to complete the BRIEF-P, (Behavior Rating Inventory of Executive Function-Preschool Version), which is a rating scale that asks the teacher to answer 63 questions about a student's behaviors within the past six months. The questions relate to the student's ability to plan, problem-solve, complete tasks, make transitions, and modify their behaviors and emotions. Previous research has indicated that Kindergarten teachers are most concerned about these executive function skills or "regulatory readiness" skills when preparing the preschool-age child for a successful transition into Kindergarten.

In addition, your child's teacher will be asked to release the record of your child's performance on the Brigance Preschool Screen-II, which was the assessment your child's teacher used to screen your child's learning skills.

What will my child be asked to do?

For the second part of my study, I would like to observe and videotape your child during their scheduled free-play time while he or she is playing in the play stations within the classroom (e.g., kitchen area, blocks, dress-up, art, etc.). My plan is to find an area within the classroom where I can videotape, observe, and write down the amount of time that your child spends playing and interacting with the other children, as well as a description of what your child is playing. For example, if I was observing a small group of children playing, I might write, "Billy was playing the chef in a pizza restaurant, while Susie was playing the waitress and taking an order, and Sam was the customer who asked for a cheese pizza...they played pizza restaurant for five minutes". My goal is to videotape each student's play for five minutes a day for four days, for a total of 20 minutes for each child who has agreed to participate. Because of the complexity in analyzing sociodramatic play, a videotaped recording is required to allow for repeated analysis.

Where will this take place and how much of my child's time will it take?

Each day that I come into the pre-k classroom, I would like to randomly select children to be observed and videotaped for five-minutes. I will only observe and videotape your child for five minutes at a time. Once I have a total of 20 minutes of recorded time per child, then I will no longer be coming into the classroom.

Will there be any risk or discomfort to my child?

There should be no risk or discomfort to your child, given that this study is descriptive and will only describe the play behaviors that were observed and report the results of the BRIEF-P and Brigance.

Will my child benefit from this research?

The individual participants will not receive any benefits from this study. If a positive relationship is identified between sociodramatic play and self-regulation, there may be future implications for preschool curriculum development, which may enhance a child's preparedness for kindergarten.

Who will see the information about my child?

It is important for you to know that I will not use real names when I write this project and your child's identity will not be revealed at any time during this study. The results are completely confidential.

If I do not want my child to take part in this study, what choices do I have?

You do not have to agree to have your child participate if you do not want to.

What will happen if my child suffers any harm from this research?

This study is strictly descriptive in nature; nothing invasive is planned.

Can I stop my child's participation in this study?

Your child's participation in this research is completely voluntary. You do not have to agree to your child's participation if you do not want to. Even if you begin your child's participation, you may withdraw your child's participation at any time. If you do not agree to have your child participate, or if you decided to withdraw your child's participation, your child will not lose any rights, benefits, or services that your child would otherwise have.

Who can I contact if I have any questions or problems?

Please feel free to contact me, sharynmatthews@comcast.net, Principal Vicki Stewart, vstewart@msad35.com, or my research supervisor K.Lifter@neu.edu, if you have any questions or concerns.

Who can I contact about my child's rights as a participant?

If you have any questions about your rights as a research participant you may contact Human Subject Research Protection, Division of Research Integrity, 413 Lake Hall, Northeastern University, Boston, MA 02115, telephone (617) 373-7570. You may call anonymously if you wish.

Will my child be paid for his/her participation?

Upon completion of this research study, I will provide more supplies and toys to the pre-k teachers for their generosity in allowing me to conduct my dissertation research within their pre-kindergarten classrooms.

Will it cost my child anything to participate?

There are no costs to participate.

Is there anything else I need to know?

There is nothing else that you need to know, but feel free to contact the researcher or principal Vicki Stewart if you have any questions.

I agree to have my child take part in this research.

Signature of parent/guardian agreeing for child to take part

Date

Printed name of person above

Signature of person who explained the study to the participant above and obtained consent

Date

Printed name of person above

Any information that I collect will be used for this project only. In order to collect and use this data in my dissertation study, I need your written permission. I will not use real names when I write this project, and your child's identity will not be revealed at any time during this study. The results of this study will be available upon your request. I believe that this research project will provide you with information about your child that may be helpful in understanding his or her learning skills. I am also hopeful that the results of this study will provide the pre-k teachers with useful information about pre-k strategies that promote Kindergarten readiness.

Please sign and return this form if you will allow me to include your child in this research project. Also, Thank you for your cooperation in completing and returning this form.

Appendix B

Demographic Questionnaire

Northeastern University, Department of Counseling and Applied Educational Psychology

Investigator Names:

Principal Investigator: Karin Iifter Ph.D. Professor

Student Investigator: Sharyn Matthews MSW; MS; 4th year Doctoral Student in School Psychology

Title of Project:

The Relationship among Self-Regulation, Sociodramatic Play and Preschoolers'

Readiness for Kindergarten

May 20, 2007

Dear Parent or Guardian,

Thank you for agreeing to participate in this study. Please complete and return this demographic questionnaire along with the informed consent in the enclosed envelope to your child's pre-k teacher. Your answers are completely confidential and will assist in providing background information that will better describe the sample used in this dissertation study.

Sincerely,

Sharyn Matthews, 4th year Doctoral student at Northeastern University
sharynmatthews@comcast.net

1. Child's Name _____
2. Date of Birth _____
3. Age _____
4. Gender _____
5. Race:
 - ____ White
 - ____ Black or African American
 - ____ American Indian or Alaska Native
 - ____ Asian
 - ____ Native Hawaiian and other Pacific Islander
 - ____ Other
 - ____ Two or more races

6. Is your child currently taking any medications? _____
7. Is your child diagnosed with a learning disability, developmental disability, ADHD, or a other disorder that requires classroom or curriculum modifications?_____

