A PRETEND PLAY GROUP INTERVENTION
FOR ELEMENTARY SCHOOL CHILDREN

by

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Table of Contents

Abstract ........................................................................................................................................... xiii

Literature Review ........................................................................................................................... 10
  Introduction ........................................................................................................................................ 10
  Play in Schools ............................................................................................................................... 11
  Pretend Play and Development ................................................................................................. 13
  Play Intervention Research ....................................................................................................... 20
  Summary ....................................................................................................................................... 28

Method ............................................................................................................................................... 29
  Pilot Phase ....................................................................................................................................... 29
  Participants ...................................................................................................................................... 31
  Procedure ........................................................................................................................................ 32
  Measures .......................................................................................................................................... 38

Specific Hypotheses ...................................................................................................................... 46

Results ............................................................................................................................................... 47
  Data Analysis ................................................................................................................................. 47
  Interrater Reliability ..................................................................................................................... 48
  Intervention Fidelity ....................................................................................................................... 49
  Changes in Pretend Play ............................................................................................................. 51
  Changes in Creativity .................................................................................................................... 52
  Changes in Affect and School Satisfaction .................................................................................. 53
  Correlations among Play, Creativity and Well-Being Variables at Baseline ......................... 53
  Individual Differences ............................................................................................................... 56
Discussion……………………………………………………………………………57

Effects of the Play Intervention on Play Skills…………………………………….58

Effects of the Play Intervention on Divergent Thinking…………………………61

Effects of the Play Intervention on Storytelling…………………………………64

Effects of the Play Intervention on School Well-Being…………………………66

Relationships among Variables at Baseline…………………………………….67

Refining the Play Intervention……………………………………………………70

Limitations and Future Directions………………………………………………..73

Tables……………………………………………………………………………….77

Figures………………………………………………………………………………86

Appendices………………………………………………………………………..87

References………………………………………………………………………..109
List of Tables

Table 1. Assessment Measures and Scores .......................................................... 77
Table 2. Descriptive Statistics for Overall Sample ............................................. 78
Table 3. Fidelity Check Means Between Groups ................................................. 79
Table 4. Descriptive Statistics and ANOVA Results for All Variables ............... 80
Table 5. Correlations among Pretend Play and All Other Variables...................... 81
Table 6. Correlations among Creativity Variables ............................................. 82
Table 7. Correlations among Creativity and Well-Being Variables ...................... 83
Table 8. Grade Effects for All Variables at Baseline .......................................... 84
Table 9. Descriptive Statistics for Intervention Participants by Baseline Score ....... 85
List of Figures

Figure 1. Group Formation Method............................................................. 86
Appendices

Appendix A. Intervention Manual and Control Group Protocol .......................... 87

Appendix B. Intervention Fidelity Rating Forms ............................................. 93

Appendix C. Affect in Play Scale Administration and Scoring Manual .............. 97

Appendix D. Baseline and Outcome Assessment Measures ............................ 101
A Pretend Play Group Intervention
For Elementary School Children

Abstract
by

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Pretend play is an important part of child development associated with constructs of adaptive functioning such as creative thinking and positive affect. Research has demonstrated that interventions aimed at improving play skills can be effective. By targeting the cognitive and affective processes occurring in fantasy play, children’s creative potential can theoretically be facilitated. In the current study, a 6-session, pretend play intervention was administered to forty participants, ages 5 to 8 years old, enrolled in a private school for girls. The purpose of the study was to adapt a manualized play intervention so that it could be administered to groups of participants. The main hypothesis was that pretend play skills, creativity and subjective well-being would improve for those children enrolled in the pretend play intervention compared to children in the control group. In groups of four, children were asked to make up stories using a set of toys including animals, people, blocks and props while control groups completed puzzles, coloring sheets and beadwork. The group format added elements of peer modeling, teamwork and socio-dramatic play to the intervention, elements not found in the original individual play intervention. At baseline and outcome, play skills were
assessed using the Affect in Play Scale, a 5-minute play task measuring the cognitive and affective processes of fantasy play. Creativity was assessed using the Alternate Uses Test (divergent thinking) and a storytelling task. Subjective school well-being was measured using the PANAS-C to assess state positive and negative affect, and the school subtest of the MSLSS-C to assess school satisfaction. Repeated-measures ANOVA analyses indicated significant improvement in organization, imagination and affect expression in play for the intervention group compared to the control group, as well as a significant interaction of time and group for divergent thinking. No other significant group effects emerged for the storytelling or subjective well-being variables. At baseline, pretend play was found to significantly relate to divergent thinking and storytelling, and divergent thinking and storytelling significantly related to each other. Together, these findings suggest that this particular play intervention is promising for children and is feasible within the school setting.
A Pretend Play Group Intervention for Elementary School Children

**Literature Review**

**Introduction**

Throughout history the perceived value of fantasy play in normal child development has been expressed. In *The Republic*, Plato maintained that “enforced learning will not stay in the mind…let your children’s lessons take the form of play” (Plato, 360 BCE/1951). In 2010, a Gallup Poll sponsored by the Robert Wood Johnson Foundation, the National Association of Elementary School Principals (NAESP), and Playworks surveying 1,951 schools found that parents, teachers and principals still believe play is important for their students. Despite this, teaching children through play seems to be decreasing, especially in schools, where statistics suggest that opportunities for free play have been decreasing for decades (Hirsh-Pasek & Golinkoff, 2003; Hirsh-Pasek, Golinkoff, Berk, & Singer, 2009). Research showing the importance of pretend play in typical child development exists, but whether play can also be used to facilitate other areas of adaptive functioning during the school day remains controversial. It is this uncertainty about the possible applications and benefits of play during the school day that is currently being reflected in the classroom. Further research is needed to explore the more specific ways in which play can be beneficial, and the types of play interventions that will be most appropriate and effective within elementary schools.

The purpose of the present study was two-fold. First, this study examined the feasibility of conducting group play interventions within an elementary school setting. The study explored how best to translate empirical knowledge about play and child development into actual practice within an elementary school curriculum. In particular,
the study examined the possibility of working with students as a group rather than using an individual intervention format to reach more students more efficiently. Secondly, the study examined the effects of a group pretend play intervention on areas of child development related to school functioning. Changes in pretend play skills, creativity and subjective school well-being were explored pre- and post-intervention.

**Play in Schools**

In the United States, elementary schools are trusted with the task of teaching young children not only academic knowledge, but also a host of other social and emotional skills such as turn-taking and accepting disappointment; however, in recent decades, Western culture has shown a trend toward longer school days with more academic drilling. High-stakes testing has become commonplace and is sometimes the sole marker of academic learning. Play time, child-directed activities, and creative modalities for learning are being squeezed from the curriculum (Elkind, 2007). For some elementary schools this shift may be reflective of parents who no longer value play. Johnson, Christie and Wardle (2005) note that parents are pressured to provide more academics earlier in their children’s lives, including earlier literacy, and that for many parents this push creates an anti-play bias. If play is viewed as a way to master skills and gain independence, a school might be more likely to incorporate play into their teaching. If play is not valued by parents, it will likely be missing from the early childhood curriculum and thus from many children’s lives altogether.

Past studies have reported that a lack of pretend play among young children is particularly noticeable among low SES families. Smilansky (1968) observed a sample of Israeli children and concluded that the disadvantaged children had less and poorer-quality
sociodramatic play. Rosen (1974) replicated these findings with American kindergarteners, finding that middle-class kindergarteners showed significantly more role-playing and sociodramatic play at a more sophisticated level than the disadvantaged kindergartners. Christie and Johnsen (1983) also reported observing low frequencies of make-believe play in low SES children in the United States. Several possible reasons for these differences have been suggested. Smilansky (1968) noted that the play differences were unrelated to emotional atmosphere or the quantity of toys in the home but instead to differences in verbal, cognitive and social skills, thus just providing these children with more toys would not improve their play. Johnson et al. (2005) have suggested that communities with limited resources may tend to view play as superfluous. This may mean that children are given less time to play or do not receive instruction or positive reinforcement during pretend play. These observational studies took place within the schools, suggesting that it may be parents’ decreased focus on providing play time which is being reflected in the classroom.

Counterintuitively perhaps, some of the reasons why pretend play is decreasing in school (e.g. the emphasis on increasing the amount of learning each day, earlier literacy) are also the exact reasons why play time during school may be crucial. Johnson et al. (2005) assert that longer school days would indicate that teachers should shift teaching approaches more often, use a larger range of teaching modalities, and attempt to tap as many areas of intelligence or skills as possible to help their students stay focused, interested, and able to absorb information. In contrast to lectures, learning through play gives children initiative and allows them to be self-directed. Play can give young children exposure to new or challenging information, provide time for hands-on learning
and exploration, or create opportunities to practice mastery of new skills (Golinkoff, Hirsh-Pasek, & Singer, 2006).

Research on play interventions in schools has been heavily focused on the impact of play on academic performance; however, healthy socio-emotional functioning during the school day may be an important factor in achieving that academic success (Hoagwood et al., 2007). The 2010 survey conducted by the NAESP reported 8 out of 10 principals thought recess positively impacted academic achievement and social development. Furthermore, two-thirds of the same principals felt students listened and focused better after a recess break. Katz and McClellan (1979) assert that play in school may have a significant impact on bullying behavior; children who do not build appropriate social skills are at risk for becoming bullies and failing academically. Singer, Golinkoff and Hirsh-Pasek (2006) have also emphasized the importance of play for cognitive and socio-emotional development. Some research has explored how play interventions relate to emotional functioning in school, showing a direct link between play ability in young children and school adjustment, oral language development, improved social skills and self-regulation (Bodrova & Leong, 2003). Pretend play interventions that impact socio-emotional areas of child development, such as subjective well-being, or school satisfaction, are not mutually exclusive with the school’s main goal of improving academic achievement but, instead, may be integral to it.

**Pretend Play and Development**

Psychological theory suggests that play is important for children’s cognitive and emotional development. The cognitive developmental theory of play maintains that play and work are complementary (Elkind, 2001). Work might precede play when a child
learns a new skill and then uses play as a technique to gain mastery of this new skill. For example, after learning about the conservation of mass, a child may then play at a water table with beakers of different sizes to gain mastery of the concept. In other situations, play may precede work, such as when a child is attempting to master an emotional situation, perhaps in play therapy. Vygotsky (1978) suggested that in play, children create their zone of proximal development and may develop self-regulation. Fantasy play may be a safe space in which to experiment with handling negative feelings or complex social situations before doing so in “real life”. At other times still, play and work occur simultaneously for children, such as during a game with rules where children may learn frustration tolerance, impulse control or planning all within a playful social interaction (Johnson et al., 2005). Piaget (1962) theorized that play provides a context in which children interact with their environment and can create their own knowledge about the world. Regarding the link between play and learning, Singer et al. (2006) maintained that play equals learning.

Play is a multidimensional construct and varies in meaning depending on the context (Cohen, 2006). One particular type of children’s play is pretend play, or fantasy play. Pretend play is defined as play that uses fantasy and make-believe and involves the use of symbolism (Russ, 2004). Symbolism in the context of play can be understood as behaviors in which a child treats one thing as if it were something else (Fein, 1987). For example, a child might pretend a toy block is a car. Pretend play possesses an “as if” component (Fein, 1987) and is defined by factors such as one’s ability to engage in play, to transform objects, and to use make-believe action (Udwin, 1983).
Pretend play involves both cognitive and affective processes which can be observed, such as the organization of a story’s plot or the expression of emotion during play. Pretend play also involves interpersonal processes such as empathy and communication. Problem-solving processes can also be observed as a child uses play to find solutions to problems as they arise (Russ, 2004). Through play, researchers have found that children display cognitive skills such as the ability to organize thoughts into logical sequences with cause and effect relationships, creativity (Russ, Robins & Christiano, 1999), abstract thought (Saltz, Dixon & Johnson, 1977) and perspective-taking (Fisher, 1992). Piaget (1962) emphasized play as an important way for children to make sense of new experiences and integrate this information into their conceptualization of the world.

Imaginative play is therefore an important means by which cognitive skills and social competencies are developed (Singer & Rummo, 1973). A great value of pretend play is the disconnection from real-world consequences. Pretense frees children to experiment with creativity, emotional expression, and social relationships (Johnson et al., 2005). Theoretically, play should facilitate imaginativeness and creative problem-solving, identity and self-expression, and social belonging. Johnson et al. (2005) maintain that children’s play should contribute to flexibility and thus a better ability to maintain multiple identities, multicultural or otherwise. As children develop problem-solving abilities and creative thinking, they should also demonstrate better coping strategies and improved adjustment (Christiano & Russ, 1996).

**Play and creativity.** Christie and Johnsen (1983) reviewed the role of play in child development, examining effects and correlations between play and other constructs.
One consistent finding is the link between fantasy play and creativity. Creativity can be defined as one’s ideational fluency, flexibility and originality (Wallach & Kogan, 1965). The constructs of play and creativity have much in common, as play often includes symbolic transformations and the combining of ideas, both tools also used in creative production. Wallach and Kogan (1965) established that children’s playfulness differentiated the more creative from the less creative children. Torrance (1961) showed how a series of guiding questions could train primary school children to produce more numerous and creative ideas than children who had not received training. Russ (2004) concluded that pretend play might facilitate creativity in children in five ways: (1) play involves practice making associations, an important part of divergent thinking, (2) pretend play leads to the use of symbols, recombining of ideas, and manipulation of object representations which are also creative skills, (3) play allows for expression and experiencing of positive affect, important for creativity, (4) pretend play allows players to express positive and negative affect themes, allowing greater access to memories and associations helpful for creativity, and (5) pretend play helps a child develop cognitive structure to contain, integrate and modulate affect, an ability that can also facilitate creative thinking.

One type of creativity is divergent thinking, the ability to generate a variety of ideas and associations to a problem (Guilford, 1968). Divergent thinking involves free association, broad scanning ability, and fluidity of thinking. It has also been found to be relatively independent of intelligence (Runco, 1991). Pretend play facilitates many of the same processes involved with divergent thinking as players make up alternate story endings, using the same object as multiple props, and access affect-laden associations. A
large number of studies have found a relationship between divergent thinking and pretend play (Fisher, 1992; Russ, 2004). Both the affective and cognitive elements of pretend play have been found to relate to divergent thinking independent of intelligence (Hoffmann & Russ, 2012; Russ & Grossman-McKee, 1990).

The association between affect expression in play and divergent thinking ability has been established in many studies. For example, Lieberman (1977) focused on playfulness which included affective components of spontaneity and joy and found that playful children performed better on divergent thinking tasks than non-playful children. Affective expression in play has been shown to positively relate to divergent thinking (Hoffmann & Russ, 2012; Russ & Grossman-McKee, 1990). Using a larger sample, the relationship between affect expression in play and divergent thinking were also shown to be independent of intelligence (Russ & Peterson, 1990). A later study found that negative affect expression in pretend play was related to both the child’s fluency and originality in divergent thinking (Russ & Schafer, 2006). Similar findings relating affect expression in play to divergent thinking have also been shown in a preschool sample (Kaugars & Russ, 2009).

A second form of creative production is storytelling. A recent meta-analysis on mood and creativity divided creativity into three domains: open-ended tasks such as divergent thinking, tasks with a single correct answer such as insight tasks, and creative performance tasks such as storytelling (Baas, De Dreu & Nijstad, 2008). The authors asserted that it is important to distinguish between these different facets of creativity, as each may be the function of different psychological processes. When assessing creativity
or possible changes in creativity, using multiple creativity tasks that tap these three
domains can be useful.

Storytelling tasks have been used widely for their linguistic assessment value (e.g.
Justice et al., 2006; Paul, Hernandez, Taylor & Johnson, 1996); however, the ability to
verbally create a story with likeable, imaginative and emotional elements can also be
considered a creative process leading to a creative product. Creativity in storytelling may
take the form of fantasy elements, novel ideas or plot twists, and access to a variety of
affect-laden themes, all of which could make a story more enjoyable for the listener or
reader. Divergent thinking and storytelling, both forms of creativity, have been shown to
be related to each other. In one study with children ages five to ten, the children who
performed better on the divergent thinking task, also produced stories rated to have more
fantasy, emotional expression, novelty, and likeability (Hoffmann & Russ, 2012).

Storytelling and pretend play also have much in common theoretically. As a child
engages in pretend play, they often develop a story rich with characters, fantasy, and
emotional elements. Some connections between pretend play and storytelling have been
reported (Hoffmann & Russ, 2010; Russ et al., 1999). The presence of emotion in
storytelling, as well as the amount of detail and the straightforwardness of the story, were
found to relate with pretend play (Russ et al., 1999). Similarly, in a study of pretend
play, creativity and emotion regulation, children who included more emotion words
during their storytelling also displayed more affect expression in their pretend play.
Specifically, when the children’s stories were rated by two independent raters, the
likeability, creativity and imagination of the children’s stories were related to the amount
of positive affect the children had expressed in their fantasy play (Hoffmann & Russ,
2012). These results suggest a positive relationship between affect expression and creativity. In addition, it appears that those children who express more emotion in their play and storytelling are able to do so across different types of tasks.

**Play and subjective school well-being.** Subjective well-being refers to the perceived quality of one’s life (Huebner, 1994). Research using adult subjects has identified three robust, interrelated factors: positive affect, negative affect, and life satisfaction. Positive and negative affect can be operationalized as the frequency of affective responses such as happiness or sadness. Life satisfaction is a more personal evaluation of the quality of one’s life according to one’s own standards (Huebner, 1994; Shin & Johnson, 1978).

The affective component of well-being includes both the pleasant and unpleasant emotions that an individual associates with different experiences (Lee & Browne, 2008). The frequency of positive emotions such as joy and pride, and the frequency of negative emotions such as anger or sadness are included. One widely accepted scale to measure the affective component of subjective well-being is the Positive and Negative Affect Schedule (PANAS; Watson, Clark & Tellegen, 1988). The scale defines positive affect as “high energy, full concentration and pleasurable engagement” and defines negative affect as “sadness and lethargy and includes emotions such as anger, contempt, disgust, guilty, fear and nervousness” (Watson et al., 1988, pp. 1063). In this model, positive and negative affect are independent and a lack of negative affect is also associated with greater subjective well-being.

An adapted version of the PANAS, the PANAS-C has been developed for use with children. Pretend play has been shown to relate to children’s self-reported positive
affect (Fiorelli & Russ, 2011; Udwin, 1983). Fiorelli and Russ (2011) found that children who demonstrated greater positive affect expression in their pretend play also rated themselves as having greater positive affect in daily life on the Positive and Negative Affect Schedule for Children (PANAS-C). This relationship remained significant even when controlling for verbal intelligence. In the longitudinal portion of this same study, Fiorelli and Russ (2011) found that greater positive affect expression in play predicted positive affect on the PANAS-C at follow-up 18 months later.

Satisfaction is considered the cognitive component of overall subjective well-being. Subjective well-being is not merely the absence of pathology, but may include one’s satisfaction across multiple areas of their life. The Multidimensional Student Life Satisfaction Scale for Children (MSLSS-C) is one measure of the cognitive component of subjective well-being. In a series of studies (Huebner, 1994), identified five factors: family, friends, school, living environment and self that comprised subjective well-being. By breaking global life satisfaction into specific domains, a more nuanced assessment of children’s perceived quality of life is possible. A greater understanding of the relationship between school satisfaction and pretend play may inform whether play interventions could have any impact on improving a child’s overall school experience. Furthermore, knowledge of a child’s general subjective well-being perceptions may be fundamental in a preventative approach to mental health within the school system. Awareness of specific problem areas can result in more focused and earlier interventions.

**Play Intervention Research**

Given that pretend play helps children develop cognitively and socio-emotionally, an important question is whether pretend play abilities can be increased through guided
intervention. If parent, teachers or other adults can significantly improve children’s play abilities, play interventions may hold promise as brief, feasible, school-based and child-centered methods for helping some children develop. The impact that adults can have on a child’s play skills is thus an important research area.

Research to date suggests that play interventions can successfully improve children’s play skills. Smilansky (1968) was one of the first to demonstrate that play skills could be taught. Working with Israeli children from low socioeconomic backgrounds, she showed that children who engaged in a nine-week sociodramatic play intervention guided by teachers displayed significantly improved play skills compared to controls. Similarly, Freyberg (1973) found that children from disadvantaged backgrounds showed lower levels of imaginative play than middle-class children at baseline, but that training procedures increased fantasy play as well as positive affect, enjoyment and concentration during free play. Dansky (1980) found that over three weeks, children assigned to a play intervention group showed increased amounts of complexity and imagination in their play compared to children given free play time or non-play tutoring.

If children’s play skills can be improved, then theoretically other areas of functioning related to play should also improve. For example, pretend play is related to creativity. Thus, if a child’s pretend play skills were enhanced through intervention, their creative skills should also show improvement. Play interventions within classrooms have sought not only to improve play but cognitive performance as well. Smilansky’s (1968) early attempt increased sociodramatic play of disadvantaged preschoolers but did not result in significant effects on the cognitive performance of the children. However,
Saltz and Johnson (1974) built on Smilansky’s (1968) study using a thematic-fantasy play intervention with similarly disadvantaged preschoolers. This intervention showed large effects on children’s performance on intelligence subtests, story interpretation, sequential memory and empathy compared with controls. Rosen (1974) conducted a study examining a sociodramatic play intervention for kindergarten children from low socioeconomic backgrounds and found that children in the experimental group demonstrated improved play skills and improved problem-solving skills. Udwin (1983) showed that after ten, 30-minute play sessions, children in a play group showed improvements in imagination, positive affect and interaction with peers. Hartmann and Rollett (1994) also found that play intervention groups conducted in Austrian elementary schools had better divergent thinking and were happier in school than controls. In each of these studies the play interventions were delivered to groups of children, allowing for adult tutoring but also playful interactions among peers. The results of these studies support Dansky’s (1999) assertion that even brief play interventions can be effective and may have significant implications for children’s future functioning.

Unfortunately, the majority of play intervention studies to date have enrolled groups of children with documented play deficits, particularly children from disadvantaged backgrounds. This limits the generalizability of the findings and the possible intervention applications to a specific subset of the population. To address play interventions for typically developing children, Russ, Moore and Farber (2004) focused on improving both the cognitive and affective elements of play in young children. Participants were 50 first and second grade children who were randomly assigned to an imagination play group, an affect play group or a puzzle/coloring control group.
Participants engaged in five, 30-minute play sessions, meeting individually with the experimenter. Russ et al. (2004) found that the play intervention was effective in improving play skills for both the imagination group and the affect play group. Children in play intervention groups had more imagination and emotion in play, better divergent thinking and scored higher on a life satisfaction measure compared with a control group. In a follow-up study 4-8 months later, Moore and Russ (2008) found that the imagination group continued to have improved play skills, while the affect group did not maintain their play changes over time. Moore and Russ (2008) hypothesized that perhaps increases in affect expression from a play intervention are temporary, while a focus on imagination during play is longer lasting.

In 2010, Russ, Dillon, Fiorelli and Burck completed a similar play intervention with 57 female students enrolled in the kindergarten through fourth grade at a private school, building on the original Russ et al. (2004) play study. Since both the affect play group and the imagination play group from the Russ et al. (2004) study had yielded positive results, the two play intervention groups were combined into one play intervention group targeting both imagination and affect expression. Participants met individually with researchers for four half-hour play intervention sessions. At outcome, no significant changes were found using the whole sample; however, those participants who had shown poor pretend play skills at baseline showed significant improvement in their imagination and organization when compared to the control group. A similar pilot study has been completed with preschool aged students (Christian, Fehr, & Russ, 2010) where all participants who engaged in the play intervention showed improved play skills at outcome. These results are promising for future play intervention research; however,
the possible differences between meeting with children individually or as a group are not yet fully understood.

**Elements of a successful play intervention.** Some research has focused on the mechanisms of change within play interventions. What are the essential components? What types of play interventions appear most effective? Operationally defined, play is often characterized by behavioral and motivational factors, such as positive affect, nonliterality, intrinsic motivation, process orientation and free choice (Johnson et al., 2005). In other words, play should be enjoyable and motivated by the player, rather than having external motivations. The usual meanings of objects or actions are free to be replaced by new meanings, and the purpose is the activity itself rather than an end goal. Finally, free choice is important, especially for younger children.

King (1979) showed that, while fifth graders distinguished play from work by the amount of pleasure they experienced, kindergarteners identified play by their sense of free choice. For example, building with blocks is considered work when it is assigned by a teacher, but would be considered play if a child chose to do it on their own. This implies that adults can act in ways that promote play such as modeling, prompting, verbally reinforcing and providing access to a variety of play materials, or adult’s actions can limit play, through interrupting, correcting, and directing (Malone & Langone, 1999). A successful play intervention should therefore be mostly child-directed to enhance the child’s sense of enjoyment and free choice. A play intervention can incorporate free choice in many ways including allowing the children to choose the story, develop the plot independently or choose which toys to use.
Goldstein and Cisar (1992) completed a play intervention teaching scripts to triads of preschoolers. From this work, the authors outlined four categories of teacher intervention to be used during a play intervention: (1) general prompts that are nonspecific and remind the group of the activity, (2) specific prompts to remind an individual child of their role or that it is their turn next, (3) physical prompts used for behavior management, and (4) praise to acknowledge student’s behavior, given specifically to an individual child or generally to the group. Using these strategies, Goldstein and Cisar (1992) reported clear improvements in theme-related behavior, high rates of social interaction, and significant decreases in the frequency of unrelated behavior as scripts were taught.

A study of preschoolers in South Africa found that structured play intervention groups and unstructured play intervention groups showed significantly higher imagination, affect expression and focus during play than did an attention control group and a no-contact control group (Shmukler & Naveh, 1984–1985). The authors suggest that groups do not need to be highly structured or highly unstructured to be effective; however, the adult’s behavior does add to or detract from the effectiveness of the intervention (e.g. Saltz & Johnson, 1974; Goldstein & Cisar, 1992). After a review of the play intervention literature, Dansky (1999) concluded that successful play tutoring studies have some characteristics in common: (1) they are typically between 8 – 12 sessions spread out over 3 – 6 weeks; (2) the sessions are most typically small groups with an adult who models and encourages participation and social interaction, and (3) the pretend stories are typically about either everyday activities or fairy tales.
Saltz et al. (1977) sought to parse the differences between types of play groups, particularly the difference between playing out everyday activities and playing out more fantastical stories. The study used four conditions: (1) a thematic-fantasy play group, (2) a fantasy discussion group, (3) a sociodramatic play group and (4) a control group. The study compared fantasy play and sociodramatic play (playing out typical social scripts such as buying something at a store) specifically examining how each intervention group might facilitate children’s cognitive development and impulse control in school. From this study, the authors concluded that thematic-fantasy play groups, due to their increased use of fantasy and imagination, were more effective than the sociodramatic play group, fantasy discussion group and control group. Furthermore, the fantasy had to be acted out in the play, since the fantasy discussion group did not show the same gains over the school year. This study suggests that successful play interventions will include elements of fantasy and make-believe and that the stories should be acted out by the children rather than simply narrated.

**Play intervention considerations.** Play interventions may be completed with either individual children or groups of children. There are some advantages to conducting play interventions with groups. Play intervention groups that have players at different levels allow for some children to serve as peer mentors, helping to facilitate the development of play skills in those children who may be less responsive to teacher guidance. Children in the group may also introduce different ideas or affect themes that an individual child might not have incorporated on their own, thereby broadening the groups associations in a way that would not be possible with an individual. In addition, conducting interventions with groups allows for more children to be included in an
intervention in less time. A teacher may work with multiple students for 30 minutes a day rather than an individual student, making group interventions more feasible for school programs.

A methodological challenge occurring in play intervention research is ensuring an adequate control group. Smith and Syddall (1978) emphasized the importance of a control group that involves experimenter-child interaction in a format other than pretend play; however, they concluded that this kind of control group usually results in improvement for both the play and the control conditions. A later review of the literature by Dansky (1999) however, led to the conclusion that many studies were able to control for experimenter involvement and still demonstrate positive effects of play tutoring on imaginativeness and creativity. For a group pretend play intervention, an adequate control group must account for both experimenter-child interaction and the social interaction among peers without incorporating elements of fantasy play or practice in imagination or access affect-laden thoughts. Activities should be group projects (just like the group process of acting out a story) without the fantasy or affective elements. These activities might include group coloring projects, board games or working on a puzzle together. While such a group might show some improvements in school functioning depending on the control activity, studies comparing types of groups (Saltz et al., 1977) suggest that the fantasy play group will show the most improvement.

An adequate research design should also have separate researchers for gathering the baseline and outcome data from those who perform the play intervention. This methodology ensures that the researcher collecting the baseline and outcome data will be
blind to the research question as well as which children were enrolled the experimental group or control group.

**Summary**

Pretend play is an important part of child development theorized to facilitate other areas of adaptive functioning including creativity and subjective school well-being. Pretend play has related to positive affect and other areas of child development impacting school functioning. Pretend play interventions have focused on improving children’s play skills so as to aid the development of these other adaptive skills as well. Such interventions have shown some success, but further research is needed to demonstrate that development of stronger play skills can facilitate development of other adaptive skills. A group intervention format has the advantages of reaching more children in less time, and incorporating “peer mentors” into the play tutoring process; however, greater exploration of group interventions using adequate control groups is needed. While the current pretend play intervention protocol has shown some successes, a group format may be more manageable for schools to implement. Therefore, streamlining of pretend play interventions to the correct length and group size, so as to be feasible for implementation in schools, is important.

The main purpose of the present study was to adapt an individual play intervention to a group format. The study explored the feasibility of a group play intervention being included in a typical elementary school curriculum by including an elementary school teacher as co-facilitator. In addition, the effectiveness of the group play intervention was examined through pre- and post- measures of pretend play, creativity and school well-being.
The main hypothesis of the study was that the 6-session group play intervention would positively impact outcome scores of pretend play, creativity and school well-being. The relationship between play and creativity is robust. Since the cognitive and affective processes involved in play overlap with those used in creativity, it makes theoretical since that improved play ability might also facilitate creativity. Play ability and creativity have been shown to relate to a variety of measures of adaptive functioning including school adjustment, suggesting that scores of subjective well-being could also improve. It was also expected that the baseline measures of pretend play, creativity and school well-being would be positively correlated.

**Method**

**Pilot Phase**

The method for this study was derived from the previous research using a pretend play intervention protocol (Russ et al., 2004; Russ et al., 2010). The method was adapted to a group format following previous literature reporting successful group play interventions (e.g. Saltz et al., 1977). The method was then piloted for 8-sessions, over 4 weeks. In the pilot phase, one experimental group and one control group, each consisting of 5 second grade female students, met two times per week, for four weeks. Each session was 30 minutes long. The experimental group worked together to act out stories using a set of toys while the control group completed puzzles, coloring sheets and board games together. The purpose of the pilot study was to test group size, session length, number of sessions and technique for organizing group tasks. The pilot also allowed the experimenter to practice working with a co-facilitating teacher and determine that two facilitators were needed to run the groups effectively.
Based on this pilot study and feedback from the participating students, some portions of the procedure were refined while others were maintained. The number of group intervention sessions was reduced from eight to six. Based on observations from the co-facilitators, children in the experimental group showed noticeable improvements in their play skills and teamwork from session one through session six and then seemed to plateau in sessions seven and eight. The control group reported boredom beginning in session six as well. For these reasons, six sessions was deemed optimum.

Five children per group worked well in the pilot phase. The group size was small enough to allow organized turn-taking but large enough to generate many imaginative ideas; however, since the study planned to form groups with an even number of below and above average players in each group, the group size was reduced to four participants each.

The use of two co-facilitators was essential for keeping all children engaged and encouraged consistently. Instructions were altered so that all instructions were given before any toys were presented in order to keep the group’s attention. Turn-taking regarding beginning stories and making up the ending was managed by the lead facilitator. Trading of toys between stories was strongly encouraged to promote sharing, perspective-taking and flexibility. A rule about remaining seated at the table was added, as some children sought to control the plot of the story by leaving the play area.

For the control group, feedback from the children included requests for more difficult puzzles and more developmentally advanced board games. Puzzles included in the study were two, 100 piece puzzles which could be completed within a single session, and one, 300 piece puzzle which took two sessions to complete. The puzzles were
developmentally appropriate for kindergarten through second grade students and many students reported enjoying the more challenging puzzles. The protocol for the coloring sheets was adapted to include more group interaction by providing fewer crayons to promote sharing, and facilitation of discussion while coloring by the co-facilitators. In place of board games upon which students had difficulty sustaining attention, two sessions were devoted to making bracelets and necklaces using string and beads. This activity again promoted artistic creativity, sharing and some team work, but does not incorporate any fantasy or affect expression. The reduction from eight to six sessions also prevented control subjects from becoming bored.

Groups met around a table in the back of the primary school library. This quiet space reduced distractions and helped keep the group organized because all library rules (sitting on chairs appropriately, no running, using inside voices) were maintained. Because the co-facilitator was a classroom teacher and the interventions took place during all students’ and teachers’ lunch and recess hour, students arrived to the study on time and were reminded of dates by the co-facilitating teacher. By having a teacher included in all group meetings, feasibility of conducting extra groups outside the classroom during the school day was shown to be possible and relatively seamless. Feedback from teachers, students and the headmistress of the primary school was that the groups were not disruptive to the school day and enjoyable for the students.

Participants

Participants for this study were 42 students recruited from the kindergarten through second grade at Laurel School, a local private school for girls. The study was presented to teacher, students and parents as “Creativity Club”. Participants between the
ages of 5 and 8 years old, enrolled in the kindergarten, first or second grade were eligible for the study. Letters explaining the study and consent forms were sent home with each student in their “Friday folders”, the school’s established system for giving parents newsletters, handouts, and other permission forms. Parents consenting to the study returned their consent forms to the school either through the mail or by sending the form back to school with their child to be collected by classroom teachers. Overall, forty-two permission forms were completed and returned, yielding a 52% participation rate.

**Procedure**

The procedure for this study followed a pre- and post-test design. Participants were administered a baseline assessment individually. After group assignment, each group met for six, 30-minute sessions, approximately twice a week for three weeks. Following the last group session, participants were then individually administered the outcome assessment (see Figure 1). The researcher and teacher who conducted the play intervention were blind to the baseline performances of each participant when meeting with the groups. The experimenter conducting pre-tests and post-test assessments were blind to the study hypotheses as well as whether each participant had completed the intervention or control sessions.

**Baseline.** Participants recruited for the study first met individually for one, 30-minute session with an examiner to complete the baseline assessment. In order to reduce disruption to the school day, baseline assessments took place during the students’ lunch and recess hour. The baseline assessment consisted of the Affect in Play Scale (APS), a storytelling task, the Alternate Uses Test, the Positive and Negative Affect Schedule for
Children (PANAS-C) and the School Satisfaction subscale of the Multidimensional Student Life Satisfaction Scale for Children (MSLSS-C).

**Group assignment.** Following the completion of all 42 baseline assessments, two children had decided not to participate despite being enrolled by their parents, leaving a sample of 40 participants. Participants were then divided into ten groups of four participants each, based on their baseline performance on the Affect in Play Scale and by age. To determine baseline play skills, the Affect in Play Scale variables of Organization, Imagination, Comfort, Frequency of Affect and Variety of Affect were converted to z-scores for the sample and added together to give each child one composite play score. The composite scores were then used to determine the 20 participants with below average play and the 20 participants with above average play for the sample. Participants were then placed into groups by age, so that each group had two above average and two below average players. Due to good variability in play skills across ages, groups were able to be formed such that no group had students more than 1 year apart in age. Once the ten groups had been formed, groups were randomly assigned to the control or experimental conditions, resulting in five control groups \((n = 20)\) and five intervention groups \((n = 20)\). See Figure 1.

This technique for composing the groups served three purposes. First, it ensured a similar balance in each group of participants adept and comfortable engaging in pretend play and participants requiring continued practice and support. Secondly, inclusion of those children who already performed well on the play task into the study served to keep anonymous those children whose play skills were less well developed, a request of the hosting school. Third, inclusion of participants who performed well on the play task
followed research findings that ‘peer mentors’ could be effective in building play skills for some students less responsive to teacher/researcher tuition.

**Play intervention.** Groups enrolled in the play intervention met for six half-hour sessions. Sessions took place approximately twice a week for three weeks during the school year. Groups met with one researcher and one classroom teacher who volunteered to be part of the study. To interfere with the school schedule as little as possible, play groups took place during one half of the lunch/recess hour. (See Appendix A for the Intervention Manual)

Session one of the play intervention began with a brief explanation of the group’s purpose, using a scripted introduction adapted for a group format from the script developed by Russ et al. (2004) for the individual intervention. The introduction was:

“All my name is Jessica and I am here to learn about how children play and work together. We have some toys for you to play with (show bag). In this group, we will be making up stories about different things.”

A few rules were also introduced at the first session and reviewed at the beginning of each following session. To ensure the children had ample freedom to be imaginative, express emotion and engage in child-directed play, rules were minimal: stay seated at the table at which we are playing (participants may not run around the classroom), be respectful of all toys, be open and accepting of other participants’ ideas.

The remainder of session one was spent working with the first story stem. Each session began with a story stem presented by the experimenter using the following script:

“We are going to make up different stories using the toy on the table. We will make up a story and play it out with the toys. Good stories have a beginning,
middle and an end and use lots of imagination and pretend. Good stories also
have lots of feelings, like happy, sad or angry. We are all going to think about
what will happen next in the story and take turns deciding what could happen
next. Today we are going to make up a story about…”

Session 1 was about a girl who goes to school. Session 2 was a happy story about a girl
who goes to a birthday party. Session 3 was about a girl who goes to the zoo. Session 4
was a sad story about a girl who loses her favorite toy. Session 5 was about a girl who
goes to the moon. Session 6 was about a girl who has super powers. Story stems
encouraged both fantasy and prompted for expression of emotion. Stories also increased
in how novel the fantasy elements were over the weeks, so as to build imagination skills
gradually. These story stems were adapted from the individual play intervention manual
developed by Russ et al. (2004) also used in the Russ et al. (2010) play intervention
study.

During each session, the following format was used to work with the story stem.
First the story stem was presented to the group. Each participant then picked a character
from the toys available on the table. Participants then took turns adding to the plot. The
facilitators aimed to have each story take approximately five to seven minutes so that four
stories could be played out within the session. Participants took turns getting to start the
story, be in the middle, or make up the ending. During the play sessions, facilitators used
techniques to encourage good play including questions to guide the play, modeling of
ideas, summarizing and labeling of affect, reinforcement and reflection. These are the
same prompts that were used for the Russ et al. (2004) and Russ et al. (2010) play
interventions used when working with children individually. These techniques were
meant to encourage good play skills and to gently guide the play; facilitators aimed for the play to remain mostly child-directed.

The toys used during intervention sessions was determined based on the set of toys outlined in the individual play intervention manual developed by Russ and colleagues from past intervention studies (Russ et al., 2004; Russ et al., 2010). The toys set was also tailored during the pilot phase of this study. Toys included male and female dolls, aggressive and non-aggressive animal toys, a variety of vehicles including a car, van, red wagon, snowboard, and jet ski, and props for the dolls including clothing, instruments, and books. The toy inventory also included more ambiguous toys that encouraged imagination including wooden blocks, Legos, and plastic shapes. Adapted for the group intervention, a larger number of human dolls were included in the toy set so that each child had access to a choice of human dolls in each session.

**Control group.** Participants assigned to the control group also met with facilitators twice a week for three weeks, for a total of six sessions. The control group was meant to control for both extra time in adult interaction as well as the group interaction but without any fantasy or emotional expression being acted out. During sessions participants worked together to complete puzzles, coloring tasks and make bracelets and necklaces out of beads and string. Session one began with a similar introduction to what children would be doing over the six sessions and included a similar presentation of rules regarding staying seated, appropriate handling of puzzle pieces, crayons and other materials, and respect for fellow participants. Facilitators provided modeling, prompting and praise to promote on-task behavior, and describing of participants’ behaviors to give control groups equivalent attention and social engagement.
as the intervention group. Facilitators worked to ensure that equal amounts of social interaction, team work, goal-directed behavior and positive attention were present for the control groups as was being received by participants in the intervention groups. The control group did not receive equivalent amounts of practice in play skills, use of fantasy nor emotional expression. (See Appendix A for the Control Group Protocol)

**Fidelity.** To ensure that the requirements of the play intervention and control group sessions were followed, and to help control for experimenter bias, an independent rater, blind to the hypotheses of the study, reviewed videotape and assessed 20% of sessions (12 sessions). The experimenter was rated on both fidelity to the play protocol outlined as well as interactive elements of praise, redirection, warmth, and engagement. See Appendix B for fidelity rating forms.

Given the importance of free choice in young children’s play (King, 1979; Johnson et al., 2005) an effort was made to incorporate as much choice into the sessions as possible. For the intervention, children did not get to choose the story stem but were able to choose which toys they wished to use, how the plotline would develop, and the order in which they wished to contribute to the story. For the control group, children did not get to choose the day’s activity, but did get to choose the strategy for working on the puzzle, the portion of the puzzle they wished to complete (the edges, the animal, the flowers), which picture to color and the crayon colors they wanted, which beads and string to use, and what piece of jewelry they wished to make.

**Outcome.** To be included in the study for outcome data purposes, participants were required to have attended at least 4 of the 6 play intervention or control sessions. If a participant had missed 3 or more of the play group sessions they would have been
allowed to continue attending the group, but would not have had their outcome data included in analyses examining the intervention’s effects. In the present study, no participant missed more than two sessions; therefore, all 40 participants were included in the outcome analyses.

Outcome assessments took place individually for one, 30-minute session in which the Affect in Play Scale, Alternate Uses, storytelling task, Positive and Negative Affect Schedule for Children and School Satisfaction Subscale of the Multidimensional Student Life Satisfaction Scale will be re-administered. Outcome assessments took places between 1 and 14 days after completion of the group sessions, depending on school scheduling and student availability. One-way ANOVAs to test for an effect due to time before outcome assessment revealed no significant differences in outcome scores.

Measures

**Affect in Play Scale (APS; Russ, 2004).** The Affect in Play Scale is a standardized 5-minute play task. Children are met with individually and given two puppets and three blocks to play with. Instructions for the task are:

I’m here to learn about how children play. I have here two puppets and would like you to play with them any way you like for five minutes. For example, you can have the puppets do something together. I also have some blocks that you can use. Be sure to have the puppets talk out loud. The video camera will be on so that I can remember what you say and do. I’ll tell you when to stop.

The child’s play is scored from the videotape using a criterion-based rating scale. There are five main scores: (1) Organization, the quality of the plot and the complexity of the story scored from 1 - 5; (2) Imagination, the novelty and uniqueness of the play
including the child’s ability to use fantasy elements, scored from 1–5; (3) Comfort, a
global rating of the child’s comfort engaging in play and their level of enjoyment, scored
from 1-5; (4) Frequency of Affect, a total counts of affect units expressed within the play
narrative. For example, a child might have the puppets say “Yikes, a monster!” or “Wee!
This slide is fun!” and (5) Variety of Affect, a total count of the number of affect
categories out of 11 possible categories, expressed during the play. The 11 affect
categories are: Happiness/Pleasure, Anger/Aggression, Sadness/Hurt,
Nurturance/Affection, Anxiety/Fear, Oral, Oral Aggression, Anal, Sexual, Competition,
and Frustration/Dislike. (See Appendix C for Affect in Play Scale administration and
scoring manual).

The validity of the APS has been examined in a variety of studies examining the
relationship between pretend play and criteria that should theoretically be related.
Multiple studies have found the APS to positively relate with divergent thinking
Research has also established relationships between play and emotion regulation
(Hoffmann & Russ, 2012), and play and subjective well-being (Fiorelli & Russ, 2011).
Inter-rater reliability for the APS scores has been consistently good, typically in the .80s
and .90s using Cohen’s kappa. Internal consistency on the APS using the Spearman-
Brown split-half reliability is also high (.85; Seja & Russ, 1999). In a recent study, inter-
rater reliability was calculated using a two-way random effect model to test for absolute
agreement, and reported intraclass coefficients of: .94 for Organization, .96 for
Imagination, .95 for Comfort, .96 for Frequency of Affect and .97 for Variety of Affect
(Hoffmann & Russ, 2012). For the present study, inter-rater reliability was calculated by
having one rater score all of the videos and a second independent rater score 20 of the videos for comparison.

**Alternate uses task.** The Alternate Uses Task is a test of divergent thinking that asks children to think of uses for six common objects: a newspaper, a button, a key, a shoe, an automobile tire, and a knife. This version of the task is Wallach and Kogan’s (1965) adaptation of Guilford’s Alternate Uses Test. There is no restriction on the amount of time children have to respond to the items. The instructions are as follows:

Now I am going to name an object, any kind of object, like a light bulb, and it will be your job to tell me all the different ways that the object could be used. Any object can be used in a lot of different ways. For example, think about a string. What are some of the ways you might use string? (child tries). Yes, those are fine. You can also use a string to attach a fish hook, to jump rope, to sew with, to hang clothes on, and to pull shades. There are lots more too and yours were good examples. Now I’m going to name different objects and I want you to tell me all the different ways you could use the object I name. Newspaper – All the different ways you can use a newspaper. (Prompt for the first two – Can you think of anything else?).

The same 6 items were given at baseline and outcome. Using all of a child’s answers to the six items, three scores were calculated: (1) Fluency, the total number of acceptable answers the child generated; (2) Flexibility, the number of different categories of uses a child drew from. For example using a newspaper to fold the paper into something and make origami would be two acceptable answers, but both are from the same category; and (3) Originality, a score calculated by the number of answers a child
gives that less than 1% of other participants also gave. The Alternate Uses Test has excellent reliability and validity, shown in many studies conducted with children (Kogan, 1983; Runco, 1991). For example, the Fluency score from the Alternate Uses task has been positively associated with creative achievement in art, writing and science (Kogan & Pankove, 1972; Wallach & Wing, 1969). See Appendix D for complete packet of measures used for baseline and outcome assessments.

**Storytelling task.** The storytelling task is a measure of creativity during which children are asked to look through a picture book and tell a story that goes along with the pictures. Practice effects were minimized by using the two different picture books. Mercer Meyer’s (1967) picture book, *A Boy, A Dog and a Frog* was used at baseline and Meyer’s (1969) picture book *Frog, Where Are You?* was used at outcome. The instructions for the task were as follows:

“I want you to tell me the story in this book. (Hand child the picture book and turn to the first page). I can’t see the pictures so make sure to tell me the story so that I will understand it. Make it the kind of story we would read in a book. Go all the way to this page that says stop. I will be writing down what you say, so I may have to ask you to slow down. Go ahead.”

As the children narrated, the experimenter typed the story on a laptop. Typing rather than handwriting stories minimized instances of stopping the child to catch up or asking the child to repeat narration while transcribing. Stories were scored using a consensus scoring system as defined by Hennessey and Amabile (1988). Two clinical psychology graduate students familiar with the areas of creativity and children’s pretend play rated the stories on five-point Likert-type scales (1 = lowest, 5 = highest) for Creativity,
Imagination, Novelty and Likeability, the four variables which Hennessey and Amabile (1988) found to load highly on a creativity factor for storytelling. Raters were not be given specific criteria for rating the stories other than to rate the stories relative to each other rather than relative to an outside standard and brief definitions of the four variables. Imagination was to be judged as the amount of extra information included in the story beyond that provided in the pictures, including background information, thoughts, feelings and dialogue. Novelty was scored by examining the imaginative elements and judging their unusualness relative to the other stories in the sample. Creativity was scored by again examining the imaginative elements but this time judging both the novelty and the usefulness. For example, some random details might improve an imagination score but not the creativity score if the random details did not add to the quality of the story. Finally, Likeability was rated on readability and the chronological logic of the story, the use of good storytelling elements such as “once upon a time” or “all of a sudden”, and the use of enough detail to make the story understandable without seeing the pictures. Both raters scored all of the stories. For statistical analyses, a composite score for each of the four variables was calculated by averaging the two raters’ scores.

In the past, this scoring system has shown moderate to strong inter-rater reliability, with intraclass coefficients of .80 for Imagination, .80 for Creativity, .68 for Novelty and .70 for Likeability (Hoffmann & Russ, 2012). The storytelling variables have related to other measures of storytelling as expected, as well as to divergent thinking and pretend play (Hoffmann & Russ, 2012).
Positive and Negative Affect Schedule for Children (PANAS-C). The PANAS-C is a 30-item self-report scale based on direct questioning, designed to assess state affect, or recent experiences of positive and negative affect in children. The scale asks children to report on how they have been feeling over the past two weeks, yielding a Positive Affect score and a Negative Affect score which are independent of each other. Directions for the task are as follows:

“This scale has a lot of different words that name different feelings and emotions. I will read each word to you and then you point to the number that describes how often you feel that way. You can see the pictures and the words are: Hardly at all, a little, a medium amount, a lot, and very very much. If you don’t understand a word, please tell me. This is about the way you have felt for the past two weeks.”

The examiner then proceeds to read the child each of the 27 feeling-words and invite the child to point to the appropriate pictures to state how often they have felt that way.

The PANAS-C is an adapted version of the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). The PANAS-C has good psychometric properties, with reliability alpha coefficients ranging from .89 to .94 for the two affect scores (Laurent et al., 1999). Convergent and divergent validity for the PANAS-C has also been demonstrated. For example, Laurent et al., (1999) found the Positive Affect scale to negatively correlate with the Children’s Depression Inventory (CDI), and the Negative Affect scale to positively correlate with self-report measure of anxiety and depression.
The PANAS-C was originally validated for children in grades four through eight but was adapted for younger children by Moore and Russ (2008) by replacing two items with words more appropriate for first graders and by deleting three of the more difficult items, leaving 27 items. Some convergent validity has been demonstrated using this adapted PANAS-C. Moore & Russ (2008) reported a significant negative correlation between Negative Affect on the PANAS-C and negative affect expression in play. Fiorelli and Russ (2011) have shown that Positive Affect in pretend play related to Positive Affect in the adapted version of the PANAS-C when it was given during an 18-month follow-up. These results suggest that children with more negative affect in their play experience less negative affect in daily life. Additionally, the adapted PANAS-C Positive Affect subscale significantly related to an overall measure of life satisfaction (Moore & Russ, 2008). While the adapted version of the PANAS-C has been used with first graders, this study was the first to administer the measure to kindergartners and children as young as five-years-old.

The Multidimensional Student Life Satisfaction Scale for Children (MSLSS-C). The MSLSS-C is designed to assess life satisfaction, the cognitive component of subjective well-being. The MSLSS-C assesses how satisfied children feel with different areas of their life, including family, friends, school, living environment and the self. The original version of the scale is validated for children in grades three and above (Huebner, 1991; 1994). Russ et al. (2004) adapted the scale for use with younger children. Six of the original 40 items were removed from the scale due to more advanced vocabulary. For other items, language was changed so as to be more developmentally suitable for younger
children. This adapted version has been piloted and administered to a sample of children six- to eight-years of age.

In the current study, to assess the students school well-being, just the school satisfaction subscale of the MSLSS-C was used. The instructions were:

I’m here to find out how children feel about their lives. I’d like to know what you’ve been thinking about your life for the last few weeks. Think about what you have done during the day and night and how you feel about it. We want to know what you really think, so tell me how you really feel, not what you think you should say. This is not a test. There are no right or wrong answers. Your parents and teachers won’t be told what you say. Now I’m going to ask you some questions about your life. Point to the circle that tells how you feel (show circles).

So if I asked you how much you like to eat ice cream, which one would you point to? What if I asked you how much you play outside?

The MSLSS-C overall has good psychometric properties. The five factor structure has been demonstrated (Huebner, 1994), and alpha for the total score was reported to be .92. For the school factor, internal consistency was found to be acceptable for research purposes, with alphas ranging from .72 to .84 across samples. Convergent validity has been demonstrated through predicted correlations with other self-report well-being indices. For example, the school domain significantly, positively correlated (.68) with the Quality of School Life Scale (Epstein & McPartland, 1977). In addition Moore & Russ (2008) found that the PANAS-C Positive Affect subscale was significantly, positively related to the MSLSS-C total score, suggesting that young children are able to
report on their life satisfaction and that life satisfaction is related to a positive mood state. See Table 1 for list of all measures and variables.

**Specific Hypotheses**

1. At baseline, APS scores would be significantly related to divergent thinking as measured by the Alternate Uses Task, as established in previous studies.
2. At baseline, APS scores would be significantly related to storytelling scores as measured by the consensus scoring system of the storytelling task.
3. At baseline, APS scores would be significantly related to measures of subjective school well-being.
   a. The cognitive components of play, Organization and Imagination, would be positively correlated with the cognitive component of school well-being, the school domain of the MSLSS-C.
   b. The affective components of play, the Frequency of Affect and Variety of Affect, would be positively correlated with the affective component of subjective well-being, the Positive Affect score on the PANAS-C.
4. Post-intervention, outcome scores of pretend play, creativity, and school well-being would show significant improvement for the intervention group compared to the control group.
   a. Pretend play scores of Organization, Imagination, Comfort, Frequency of Affect and Variety of Affect would show significant improvement at outcome for the intervention group compared to the control group.
b. Divergent thinking scores of Fluency, Flexibility and Originality would show significant improvement at outcome for the intervention group compared to the control group.

c. Storytelling scores of Imagination, Novelty, Creativity and Likeability would show significant improvement at outcome for the intervention group compared to the control group.

d. Subjective school well-being scores would show significant improvement at outcome for the intervention group compared to the control group.

   i. Positive Affect, measured by the PANAS-C would significantly increase at outcome for the intervention group compared to the control group.

   ii. Negative Affect, measured by the PANAS-C would significantly decrease at outcome for the intervention group compared to the control group.

   iii. School satisfaction, measured by the MSLSS-C would significantly increase at outcome for the intervention group compared to the control group.

**Results**

**Data Analysis**

Repeated-measures ANOVAs were used to test for significant changes in pretend play, creativity, storytelling, positive and negative affect and school satisfaction.

Specifically the interaction effect of group and time was examined to identify variables
where the participants enrolled in the intervention group performed significantly better at outcome compared to the control group, while controlling for baseline scores. In addition, Pearson product-moment correlations were used to test for significant correlations among the measures at baseline. An alpha value of .05 was used for all statistical tests. One-tailed tests were used for a priori hypotheses where appropriate.

Table 2 presents the overall descriptive statistics for the sample. All variables were checked for skewness and kurtosis. Where variables were found to be skewed, transformations were performed and analyses re-run. No differences in results were found using transformed data; therefore, all results presented below use original, untransformed data.

Three examiners, two female and one male, performed the baseline and outcome assessments. All researchers were systematically trained on the standardized delivery of the instruments and at outcome, all researchers were blind to whether the participant had been in the control or intervention condition. One-way ANOVAs were performed to check for experimenter effects on the baseline and outcome scores. No differences in scores on pretend play, divergent thinking, storytelling, PANAS-C and School Satisfaction were found between examiners.

**Inter-rater Reliability**

Inter-rater reliability was calculated for the Affect in Play Scale variables and for the storytelling variables. Inter-rater reliability was assessed using a rigorous form of intraclass correlation coefficient that measures absolute agreement rather than just consistency between raters (Shrout & Fleiss, 1979). A two-way random effects model was used, testing for absolute agreement using a 95% confidence interval. For the Affect
in Play Scale variables inter-rater reliability was calculated for the present study using 20 randomly chosen participant baseline videotapes, scored independently by two raters. The average scores for the intraclass coefficients were: Organization, .60, Imagination, .66, Comfort, .79, Frequency of Affect, .83, Variety of Affect, .78, Positive Affect, .81, Negative Affect, .86. These ICC’s are all within the moderate to strong agreement range.

For the storytelling task, inter-rater reliability was calculated using all 40 baseline stories, scored independently by two raters, using the same test for absolute agreement. The average scores for the intraclass coefficients were: .84 for Imagination, .80 for Novelty, .80 for Creativity, and .80 for Likeability. These ICC’s indicate strong agreement between the two raters.

**Intervention Fidelity**

To check that the play intervention and control protocols were followed accurately, and that equal amounts of attention, warmth, praise and direction were given to each group, 20% of sessions (12 sessions) were videotaped and reviewed by an independent rater (see Appendix B). The rater was blind to the hypotheses of the study. Videotapes were reviewed to ensure that the pretend play intervention and control protocols were followed regarding length of sessions, materials provided, and behavior of the facilitators. Of the six control and six intervention sessions reviewed, all contained the correct materials, had at least 3 of the 4 participants present, and had both co-facilitators present. Sessions were to be between 20 and 30 minutes long; however, two sessions included in the fidelity check were 19 minutes long, so that 83% of the sessions complied with the intervention and control protocol for length. Of the intervention videotapes reviewed, 100% included prompts, modeling and praise for imagination and
affect. All sessions also included presentation of a story stem and encouragement by facilitators to have all children contribute to the story equally and to share the toys fairly. For the control sessions reviewed, 100% included prompts and praise for on task behavior as well as group discussion to promote social interaction. All sessions also included presentation of the activity and encouragement to share materials.

Videotapes were also used to tally the total number of times co-facilitators praised, modeled and provided social interaction in other ways during each of the 12 randomly chosen group sessions. Independent samples t-tests showed no differences between the amount of praise given to the control groups versus the intervention groups, t(10) = -0.95, p = .37. There were also no differences found for the amount of describing/summarizing done by the examiner, t(10) = 0.47, p = .65, nor for the overall other forms of social interaction provided by co-facilitators, t(10) = 0.90, p = .39. Looking specifically at modeling/labeling for children’s use of fantasy and emotional expression in play, as per protocol, these behaviors were seen significantly more during intervention sessions than during control conditions, t(10) = -9.27, p < .001, t(10) = -5.86, p < .001, respectively. Modeling on on-task behavior without any fantasy or emotional expression was seen significantly more in the control condition, t(10) = 4.57, p = .001.

The twelve sessions were also evaluated using 5-point Likert-type scales for warmth, praise, level of engagement, fairness and overall social interaction. Using independent t-tests, no significant differences were found between how the co-facilitators treated the control and intervention groups: praise, t(10) = -0.63, p = .54, warmth, t(10) = 0.00, p = 1.0, engagement, t(10) = -0.88, p = .40, fairness, t(10) = -1.00, p = .34, and
social interaction $t(10) = -1.00, p = .34$. (See Table 3 for complete fidelity check results).

**Changes in Pretend Play**

Repeated-measures ANOVA was used to calculate significant changes in pretend play variables, examining the interaction of group assignment and time. As hypothesized, the 6-session pretend play intervention had a statistically significant effect on pretend play skills over time for Organization, Imagination, and Frequency of Affect. Organization in play increased significantly from pretest to posttest for those children enrolled in the play intervention compared to controls, $F(1, 38) = 7.18, p = .01$, which was a large effect size, $\eta^2_p = .16$. Similarly, Imagination in play increased significantly over time for the intervention group compared to control, $F(1, 38) = 5.16, p < .05$, which was a medium effect size, $\eta^2_p = .12$. Contrary to hypotheses, the variable measuring Comfort engaging in the play task did not change significantly over time for either group and no interaction with group assignment was observed, $F(1, 38) = 1.37, p > .05$, and calculation of effect size showed a small effect, $\eta^2_p = .04$.

For the affect expression variables, the play intervention significantly increased the Frequency of Affect expression in play for children in the intervention group over time compared to the control group, $F(1, 38) = 4.57, p < .05$, as hypothesized. This effect was a medium effect size, $\eta^2_p = .11$. The Variety of Affect variable did not meet significance but did show a trend towards the intervention group increasing their use of many affect categories during play compared to controls, $F(1, 38) = 3.91, p = .06$. Calculation of the effect size for Variety of Affect revealed a medium effect, $\eta^2_p = .09$. A more specific examination looking at changes in Positive Affect and Negative Affect separately showed that the significant change in Frequency of Affect expression is driven
by a significant change in Positive Affect expression, $F(1, 38) = 8.88, p < .01$, a large effect size, $\eta_p^2 = .19$, while there was no effect of the intervention over time on the expression of negative affect, $F(1, 38) = .001, p = .98$ (see Table 4).

**Changes in Creativity**

Using repeated-measures ANOVAs for the divergent thinking variables, significant interaction effects were found for all three variables, as hypothesized: Fluency, $F(1, 38) = 10.40, p < .01$, Flexibility, $F(1, 38) = 9.44, p < .01$, and Originality, $F(1, 38) = 6.98, p = .01$. For all three variables, the effect sizes were large, $\eta_p^2 = .22$ for Fluency, $\eta_p^2 = .20$ for Flexibility, and $\eta_p^2 = .16$ for Originality. However, an examination of means for each group at baseline and outcome indicate that the magnitude of this interaction effect is due not only to a slight increase in divergent thinking scores for the intervention group but also to a significant decrease in divergent thinking scores for the control group. See Table 4 for pretest and posttest means and standard deviations by group and ANOVA results.

Repeated-measures ANOVA did not reveal any significant effects of the play intervention over time for performance on the storytelling task. Creativity on the task showed a main effect for time, $F(1,38) = 5.40, p < .05$, meaning that all subjects performed significantly better at post-test; however, there was no interaction effects of time by group, $F(1, 38) = 0.86, p = .36$. Interaction effects were also not found for the storytelling variables of Imagination, $F(1,38) = 1.35, p = .25$, Novelty of ideas in the story, $F(1, 38) = 0.65, p = .43$, nor for Likeability of the story, $F(1, 38) = 0.79, p = .38$.

An examination of effect sizes revealed all small effect sizes. The hypothesis that storytelling performance would improve for the intervention group at outcome compared
to the control group was not supported.

**Changes in Affect and School Satisfaction**

Repeated-measures ANOVA calculations did not reveal any effect of the play intervention over time for the variables of recent affect experience over the past two weeks as measured by the PANAS-C: Positive Affect, $F(1, 38) = 1.06$, $p = .31$; Negative Affect, $F(1, 38) = 2.70$, $p = .11$. Additionally, the self-reported measure of school satisfaction did not significantly change over time, and no interaction was found between groups, $F(1, 38) = 0.79$, $p = .38$. Hypotheses regarding increases in Positive Affect and school satisfaction, and a decrease in Negative Affect for the intervention group were not supported.

**Correlations among Play, Creativity and Well-Being Variables at Baseline**

Pearson product-moment correlations were used to calculate the correlations among the pretend play variables, the creativity variables and the variables assessing affect and school satisfaction in school. One-tailed tests were used for hypothesized correlations. As in past studies, a significant pattern of correlations emerged between pretend play and divergent thinking. Specifically, Organization, Imagination and Comfort during pretend play significantly correlated with Fluency, Flexibility and Originality on the divergent thinking task. In addition, the Frequency of Affect expression during pretend play significantly correlated with Fluency and Flexibility in divergent thinking. A parsing of this frequency count reveals that only Positive Affect expression significantly correlated with divergent thinking while Negative Affect expression during play did not (see Table 5).
Multiple regression analyses were used to test if the baseline pretend play scores predicted participants’ baseline divergent thinking scores. Theoretically, the cognitive processes of pretend play (measured by the Organization and Imagination scores) as well as the affective processes (measured by affect expression in play) should both facilitate creativity and therefore predict divergent thinking scores. In this sample, however, Organization and Imagination in play were highly correlated (.90), so Imagination was used in the multiple regression as the sole cognitive variable rather than entering two variables which such high overlap. Similarly, an examination of the baseline correlations revealed that while overall affect expression related to play, for this sample of girls, the positive affect expression in play accounted for the significant relationship between affect in play and divergent thinking; therefore, Positive Affect was used as the affective variable in the multiple regression. The results of the regression indicated that Imagination and Positive Affect in play explained 31% of the variance for Fluency in divergent thinking ($R^2 = .31$, $F (3, 36) = 9.58$, $p < .001$). However, Imagination in play significantly predicted Fluency in divergent thinking ($\beta = .51$, $p < .05$) while Positive Affect did not reach significance. For Flexibility in divergent thinking, Imagination and Positive Affect in play explained 35% of the variance ($R^2 = .35$, $F (3, 36) = 11.46$, $p < .001$). Again, Imagination significantly predicted Flexibility in divergent thinking ($\beta = .66$, $p = .001$) while Positive Affect did not reach significance. For Originality in divergent thinking, Imagination and Positive Affect in play explained 21% of the variance ($R^2 = .21$, $F (3, 36) = 6.23$, $p = .005$). Imagination significantly predicted originality in divergent thinking as well ($\beta = .54$, $p < .05$), and Positive Affect did not
reach significance. From these analyses it appears that Imagination in play is the strongest predictor of participants’ divergent thinking performance.

Additionally, pretend play variables correlated with storytelling ability. Organization, Imagination, Comfort, Frequency of Affect and Variety of Affect during pretend play correlated with the storytelling variables of Imagination, Novelty, Creativity and Likeability. Again, a parsing of the Frequency of Affect variable reveals that only Positive Affect expression correlated with storytelling, while Negative Affect expression during play did not, with the exception of Novelty in storytelling.

Pretend play variables did not relate to Positive Affect or Negative Affect on the PANAS-C with the exception of Comfort during pretend play relating to Positive Affect on the PANAS-C. Pretend play variables also did not correlate with the measure of school satisfaction (see Table 5).

Exploratory analyses revealed other significant correlations among the creativity and well-being variables (See Table 6). Pearson product-moment correlations using two-tailed tests of significance were used for these analyses. Notably, Fluency in divergent thinking related to all of the storytelling scores (Imagination, Novelty, Creativity and Likeability). In addition, Likeability in storytelling related to all three of the divergent thinking scores of Fluency, Flexibility and Originality. Negative Affect on the PANAS-C positively correlated with all four of the storytelling scores as well, while Positive Affect on the PANAS-C only significantly correlated with Imagination in storytelling. School satisfaction was negatively correlated with both Novelty in storytelling and Negative Affect on the PANAS-C. This means that people who reported more trait
negative affect had lower school satisfaction and people who reported lower school satisfaction had higher creativity in storytelling.

**Individual Differences**

**Grade effects.** Exploratory analyses were carried out to examine whether baseline scores on measures of pretend play, creativity, or school well-being varied by grade. One-way ANOVAs revealed some differences between grades for pretend play, divergent thinking and storytelling variables (see Table 7). More specifically, the cognitive variables of pretend play (Organization, Imagination and Comfort) were all found to vary by grade as well as divergent thinking scores of Fluency, Flexibility and Originality, and the storytelling variable of Likeability. T-tests to explore which grades significantly differed from each other revealed no differences between kindergarten and first grade scores on any of the variables. Differences in scores occurred between first and second graders and between kindergarteners and second graders.

Partial correlations were then calculated for all baseline variables controlling for grade. Several correlations among play scale variables and divergent thinking variables no longer reached significance (see Table 5). Comfort in play no longer significantly correlated with Originality in divergent thinking, Frequency of Affect in play no longer significantly correlated with Fluency or Flexibility in divergent thinking, Positive Affect no longer significantly correlated with Originality in divergent thinking and Negative Affect in play no longer significantly correlated with Novelty in storytelling. Additionally, Variety of Affect in play no longer significantly correlated with Negative Affect on the PANAS-C. When controlling for grade, one new significant correlation emerged between Imagination in play and Positive Affect on the PANAS-C. Positive and
Negative Affect on the PANAS-C were no longer significantly correlated with each other.

**Target participants.** In the development of the group intervention protocol it was determined that groups of four participants would allow for each group to contain two above average players and two below average players as determined by each participant’s baseline play scores. For the purposes of including peer mentors and keeping all participants’ play abilities confidential, all participants were included in the intervention; however, a main interest of the hosting school was the effects of the play intervention specifically on those children who had shown difficulty engaging in pretend play at baseline. Of the twenty participants whose baseline play scores were below average, half (ten participants) were randomly assigned to intervention groups and considered the “target” participants whose play had shown the most room for improvement at baseline. Given the small numbers, statistical analyses to determine significant changes in play scores for these target children were not calculated; however, an examination of the descriptive statistics (see Table 8) shows that both peer mentor and target players’ play scores increase at outcome, but that the increases in scores appear larger for those target players who had more room to improve.

**Discussion**

The primary purpose of the present study was to test the hypothesis that a brief, pretend play intervention using a group format could improve the pretend play skills and creativity of elementary school children. The main findings were that the intervention group’s pretend play skills did improve compared to the control group post-intervention. In addition, children enrolled in the intervention maintained their performance on the
divergent thinking task post-intervention while children in the control group performed significantly worse. The pretend play intervention did not appear to have an effect on children’s storytelling ability, self-reported positive and negative affect or school satisfaction.

Effects of the Play Intervention on Play Skills

Overall, the pretend play intervention had a significant effect on improving children’s pretend play skills compared to the control group, as hypothesized. Specifically, children enrolled in the pretend play intervention showed significantly improved organization, imagination and affect expression in their pretend play post-intervention when compared to children in the control group. For the changes in affect expression, the significant difference was a large increase in the expression of positive affect, while no change in negative affect expression was detected.

These findings support the theory that children’s pretend play skills can be improved through brief intervention (Dansky; 1999; Russ, 1993). Past play intervention studies have suggested that play skills can be taught to groups of children in school and that the number of sessions can be relatively small (Dansky, 1980; Freyberg, 1973; Saltz & Johnson, 1974; Smilansky, 1968; Udwin, 1983). These studies have shown improvements in play skills using both sociodramatic play as well as thematic-fantasy play. The present study, while focusing on thematic-fantasy play, did also incorporate sociodramatic play as all four children typically chose to be four dolls that were either sisters or friends, engaging in everyday activities like going to school, a birthday party or the zoo together. Results of the current study add to the body of literature maintaining that brief, school-based pretend play interventions can be conducted successfully and that
improvements in play skills can be measured. Furthermore, the results support the promise of this particular intervention and its use with young children within the school setting.

The results of this study are also similar to previous results reported using the individual pretend play intervention manual from which the protocol for this study was adapted (Hoffmann, Fiorelli & Russ, 2012; Russ et al., 2004). Specifically, the changes in the frequency of affect expression, organization and imagination reported by Russ et al. (2004) for their affect play group were replicated in the present study. In addition, while Hoffmann et al. (2012) reported significant changes in organization and imagination for below average players following a 4-session individual intervention, the current study was able to produce improvements in organization and imagination for all players, including those who started out above average. One possible mechanism of change during the intervention sessions was how the facilitators promoted the use of affect to bolster imagination. For example, when children had trouble thinking what to do next in the story (imagination), facilitators would encourage more variety of affect (have something scary happen, have something funny happen) which would lead to new and more diverse ideas. This technique of using alternative emotions to jump start imaginative thinking was practiced with the intervention groups and is reflected in the improved imagination and affect in play scores.

There are also several possible benefits to the group format that might account for these results. The group play may have increased the breadth of skills the children acquired as they were able to learn from each other, and be exposed to more numerous and diverse ideas within each 30-minute session. In addition, the groups were required to
keep stories organized and express affective states out loud in order to communicate with their peers and work as a team. Moreover, despite adding to the complexity of the study by introducing group dynamics, the number of sessions was only increased from the 4-session individual intervention to 6 sessions for the group format. It is possible that keeping play sessions brief (around 30 minutes), and the total number of sessions low, is part of what makes the play feel pleasurable and child-guided in contrast to schoolwork which has been imposed by teachers or parents.

This study is the first to adapt this specific pretend play intervention protocol to a group format and the results suggest that similar intervention effects can be achieved with groups. While conducting an intervention with a group does not allow for as much individualized instruction, there are many advantages, including opportunities for peer modeling of imagination and emotional expression, teamwork and perspective taking. One example of peer modeling occurred among a group of girls who typically resolved each story with a happy ending. One participant in this group used her turn to end the story by having a monster kill all of the dolls. At first, the other girls were uncomfortable with playing out this idea; however, the student received praise from the play facilitators for both the affect expression and the novel plot twist and in later stories the group showed more willingness to incorporate negative affect themes into their contributions to the story as well.

The social dynamics of the group may also have played a role in the improved play skills observed. Unlike playing individually in which much of the story may take place within the child’s mind, when children play in a group they must voice what is happening or what their character is thinking or feeling clearly out loud. Furthermore,
while plot twists and fantasy elements were encouraged, children had to be more creative with how to incorporate their ideas into the story so that their ideas would be accepted by the other children with whom they were playing. While unexpected elements were suggested often, those that were too far off base were typically not used by the group. For example, in a story about going to a birthday party, one girl decided to be a pad of butter (a yellow block) and wanted to be chased by a monster from space. The rest of her group insisted that she could be a talking pad of butter but that she needed to come to the birthday party to maintain the organization of the story. This girl benefited from the group helping her to see the importance of story continuity, but she was also able to contribute to the group by expanding their play beyond only being human characters at the birthday.

**Effects of the Play Intervention on Divergent Thinking**

Changes in children’s divergent thinking were also observed at post-intervention, though not as predicted. The intervention group showed a slight, but not significant, increase in divergent thinking post-intervention but the significant interaction effect reported is due mainly the control group’s significant decrease in divergent thinking post-intervention. This effect was found for all three divergent thinking scores: Fluency, Flexibility and Originality. These findings are also similar to those found for an individual play intervention conducted by Russ, Dillon, Fiorelli & Burck (2009) in which no significant changes in divergent thinking were found between the participants in the individual play intervention and the control condition. Russ et al. (2004) found significant group effects on divergent thinking; however, the individual group comparisons did not reach significance and the divergent thinking measure was not given
at baseline so the group differences could not necessarily be attributed to the play intervention.

Given the well-established relationship between pretend play and divergent thinking, it makes theoretical sense that children who improved their pretend play skills would also show improvement on divergent thinking. Good pretend play requires many of the same cognitive and affective processes as divergent thinking including idea generation, flexible thinking and access to a variety of emotions. Not only are pretend play and divergent thinking related, but pretend play may in fact facilitate creative thinking in children through practice making associations and using symbols as well as practice expressing and experiencing positive and negative affect (Russ, 2004). The pretend play intervention requires children to practice divergent thinking as they are asked to generate multiple ideas to a story stem, make up alternate endings, and use the same props as multiple objects within multiple stories.

The lack of improvement in divergent thinking for the intervention group in the current study may be interpreted several different ways. First, an examination of the divergent thinking means for the intervention shows that the intervention groups’ outcome means are headed in the predicted upwards direction. It may be that with a bigger sample size, the increase in divergent thinking outcome scores for the intervention group compared to the control group would have reached significance. Second, while past play intervention studies have been able to show an improvement in divergent thinking, it is possible that something about this particular play intervention was unable to produce those same results. It may be that the group format which allowed children to work as a team and ask their peers for ideas, required less individual accountability and
therefore less practice with divergent thinking compared to individual interventions. Third, the lack of significant improvement in divergent thinking at outcome may also suggest that while children are experiencing improvements in their pretend play skills, they are not translating these skills to other areas, such as creative problem-solving. This theory has been proposed by Russ and Dillon (2011) to interpret their recent findings that pretend play skills have shown significant increase over the last two decades while other research has reported significant decreases in creativity test scores for young children (Kim, 2011). Ways of developing creativity in children is a complex area of research that is not fully understood. While pretend play and divergent thinking are significantly correlated, improvement in pretend play may not necessarily facilitate improvement in divergent thinking. The age of the children as well as possible gender differences that could affect the creative thought process require further investigation.

More of a surprise was the significant decrease in divergent thinking found for the control group. There are several possible explanations for this change. Given the large number of analyses run in the study, this finding may be due to chance. Alternatively, it may be that the control group did not exert as much effort on the divergent thinking task at outcome because there had been little reward or reinforcement for thinking creatively at pre-test due to the neutral stance taken by the investigators. Without participating in the intervention sessions where creative thought, idea production and risk-taking were all promoted and reinforced participants in the control group may have been less motivated to do well on the divergent thinking task the second time. Alternatively, there may have been some negative effect of the control intervention activities on children’s divergent thinking. Puzzles, coloring sheets and beads were all presented as creativity tasks, as
they were used for creating an end product as a team; however, all three of these tasks are also one’s where children practiced creating an end product without any risk-taking, mental flexibility or use of emotional content. This may have then led to a non-emotional stance taken during post-test and a lack of access to emotional content would most likely decrease one’s performance on divergent thinking (Russ, 2004). Alternatively, these results may suggest negative effects of rote tasks or drilling in school. It may be that when portions of the school day involve rote tasks, it decreases children’s ability to thinking creatively during other parts of the day.

To determine whether the control sessions had a negative impact on children’s creative thinking, a future study might include an additional control group that did not meet as a group but rather maintained the typical school curriculum. If this additional control group maintained their creative performance at outcome, this result would suggest a negative impact of the control condition and the additional rote tasks inserted into the school day (those performed by the present study’s control condition: puzzles, coloring and beadwork). Yet, if the additional control group’s performance on divergent thinking also decreased at outcome, then it may be hypothesized that the play intervention served some mitigating role, allowing those participants to maintain their creative performance across the school year.

Effects of the Play Intervention on Storytelling

The intervention group did not differ significantly from the control group on any of the outcome variables measuring storytelling ability. These outcome variables may have been too far removed from the intervention procedures to be effected by such a brief intervention, or the measure and scoring system used may not have been sensitive enough
to pick up on any changes occurring. It may have been that storytelling ability, measured by asking children to tell the story that went along with pictures in a book, may have been too structured. The logical story that went along with the pictures may not have left enough room for children to display their true individual differences in creative storytelling abilities the way that a more open-ended or less-structured storytelling task might have. Alternatively, storytelling which is considered a more performance-based form of creativity may be less affected by changes in cognitive and emotional process associated with pretend play than divergent thinking.

It is also possible that the nature of the consensus scoring system made it difficult to detect differences in children’s performance. Each child’s story was rated relative to the other stories in the sample. This means that while many of the children may have exhibited improved storytelling ability at outcome, this would not necessarily be reflected in their scores because it would also cause a shift in what was considered an “average” story. In other words, a score of 3 for Imagination at baseline does not necessarily mean the same thing as a score of 3 for Imagination at outcome, as stories are being rated relative to each other after the raters have reviewed all stories in the sample. To avoid this in the future, a few strategies could be employed. First, the same story could be used at baseline and outcome, so that all the stories from baseline and outcome could be combined and scored relative to each other with a rater blind to which stories were baselines or outcomes. Alternatively, it may be that a different system for scoring the stories that employs fixed criteria or frequency counts, in which the story books would need to be counterbalanced, would be more likely to reveal differences due to the intervention.
Effects of the Play Intervention on School Well-Being

The hypotheses that the play intervention group would significantly increase in positive affect and school satisfaction and significantly decrease in negative affect were not confirmed. For the variables, meant to address children’s well-being (positive and negative affect and school satisfaction), it is likely that any effect that improved pretend play could have on these variables would not be evident across such a short time period (approximately one month for the intervention and outcome session to be completed). It may be that a follow-up study would be able to detect changes on these variables of well-being after children had ample time to implement their pretend play skills and integrate them into their daily life. This, however, was not the case in the study by Moore and Russ (2008), in which the intervention groups did not differ from the control group on the PANAS-C at follow-up. It may be that there are so many other influences that affect these scores of well-being beyond one’s pretend play skills that a shift in one’s play may not account for enough of the variance in one’s daily emotional experience to impact how one scores on the PANAS-C or School Satisfaction questionnaire.

Alternatively, there may have been some difficulty with using the PANAS-C on such a young sample of children. While the original PANAS-C was validated for children as young as fourth grade (Laurent et al., 1999), the version adapted for even younger children, used in the present study, has been used in only a few studies (Fiorelli & Russ, 2011; Moore & Russ, 2008) and therefore has not been thoroughly validated. Children five- to eight-years-old may have had difficulty understanding some of the items, or may have had trouble with accurate self-report of their mood state over the past two weeks. Similarly, the school subset of the adapted MSLSS-C had not been used with
kindergarteners, nor by itself instead of the total score that the entire 37-item MSLSS-C produces. It therefore remains possible that children did experience some changes in their daily affect at school that were not identified by the measure.

**Relationships among Variables at Baseline**

Relationships among measures at baseline were obtained to further explore the relationships among pretend play, creativity and emotion variables. As hypothesized, pretend play related to divergent thinking and storytelling. These significant associations between pretend play and divergent thinking variables replicate past studies using the Affect in Play Scale (Hoffmann & Russ, 2012, Cordiano & Russ, 2008). Of particular interest is the finding that positive affect in play related to divergent thinking and storytelling while negative affect in play did not relate, with the exception of negative affect in play relating to novelty in storytelling. These findings fit with much creativity theory and research regarding the enhancing effects of access to positive affect on creative thought (Isen, Daubman & Nowicki, 1987; Russ, 1993); however, within the creativity literature, the debate regarding the effects of negative affect on creativity is ongoing (Kaufman & Vosburg, 1997; Russ & Schafer, 2006). The limited relationships between negative affect and creativity found in the current study may be partially due to the all-female sample. Several studies examining links between primary process thinking, which includes negative affect, and divergent thinking in children have found a significant relationship for boys but not for girls (Russ, 1982; Russ, 1988). Russ and Grossman-McKee (1990) also found that primary process thinking on the Rorschach related to divergent thinking for boys but not for girls, and many play and creativity studies have noted similar sex differences (e.g. Lieberman, 1977; Singer & Rummo,
Russ (1982) has suggested that girls are not as free to express primary process material in play and, therefore, do not learn to use it as effectively as boys during other tasks requiring cognitive and affective processes such as creative problem-solving.

Pretend play was not associated with self-reported positive or negative affect on the PANAS-C, except for a small, positive relationship between self-reported positive affect and comfort engaging in the play task. This finding was again different than that reported by Moore and Russ (2008) in which an inverted relationship between negative affect in play and daily experience of negative affect was reported, meaning that children with more negative affect expression in their play reported less negative affect on the PANAS-C. Again, the difference in results in the current study may be due to the all-female sample. As mentioned previously, females may not be translating the negative affect in their play to creative problem-solving or coping in the same ways as male children seem to be. Alternatively, Fiorelli and Russ (2011) found that positive affect in play related to positive mood on the PANAS-C when the PANAS-C was administered 18-months later to an all-female sample. This suggests that perhaps the effects of play skills on one’s daily mood may require more time to take effect. Play skills also did not relate to children’s self-reported school satisfaction. As with the intervention results, it may be that children’s positive and negative affect and school satisfaction are influenced by so many variables in their daily life, that pretend play ability does not have enough influence to account or a significant portion of the variance.

As hypothesized, divergent thinking and storytelling, which are considered two types of creativity were associated. Fluency and flexibility in divergent thinking were associated with all of the storytelling variables. Originality in divergent thinking was
associated with creativity and likeability of storytelling. These findings are quite similar to those reported by Hoffmann & Russ (2012) using the same measures of divergent thinking and storytelling. Thus, it appears that children who have higher divergent thinking scores also tend to create stories that are more likeable, novel, creative and imaginative. This is suggestive of some common creative ability across creative tasks.

Intercorrelations among the well-being variables (PANAS-C and school satisfaction) and creativity also revealed an interesting pattern and demonstrated that while divergent thinking and storytelling are associated, they are somewhat different tasks that appear to be differentially affected by one’s experience of emotion. While Positive Affect on the PANAS-C showed only a small correlation with storytelling, Negative Affect on the PANAS-C correlated with all four storytelling variables. However, neither Positive nor Negative Affect on the PANAS-C related to divergent thinking. These results suggest that one’s daily experience of negative affect is associated with creativity of the performance type, but not creativity of the divergent thinking type. Such a pattern of negative affect differentially affecting creativity by task-type has been hypothesized in the past (Baas et al., 2008; Russ, 1993). For example, positive affect might allow one to be more confident or think more broadly which may help performance creativity like play; meanwhile, negative affect may cause one to be more detail-oriented and persist at a task longer which should enhance divergent thinking (Schwarz, 1990). Furthermore, Negative Affect on the PANAS-C was associated with school satisfaction, such that children reported more negative affect also reported less school satisfaction. This finding makes theoretical sense that the children more satisfied with their school experience are the same children who reported more positive affect
during their week. Those children who reported lower school satisfaction were rated to have higher creativity on the storytelling task but showed no significant association with divergent thinking. These findings appear consistent with the PANAS-C and creativity correlations discussed previously: children who feel less satisfied at school also report experiencing more negative affect, but for some students this negative affect can be translated into heightened creativity in storytelling.

**Refining the Play Intervention**

The present study continues the research program of Russ and colleagues in the development of feasible, school-based, pretend play interventions. This study is the first to adapt the intervention to a group format and the first to include a teacher as co-facilitator. Much refinement was made to the intervention protocol following the pilot phase; however, additional refinements may be appropriate for future research. First, groups were formed using children’s baseline pretend play scores but also limited to age differences less than 1-year between children. This one year age range allowed for children of different grades to be placed in the same group. This resulted in groups where three children where in the same grade and a fourth child was in a higher grade. During control sessions, facilitators had to work to ensure the one older child was not left out of conversations about grade-specific field trips or classroom projects. In future studies, developing groups so that all children are in the same grade rather than the same age may be more appropriate.

Having completed the intervention and reviewed the videotape, a few logistical comments might be added to the standardized play intervention protocol. First, this intervention happened to use a set of dolls based on the Strawberry Shortcake television
show. The dolls were named Strawberry, Lemon and Orange and most of the children were familiar with the characters. When working with the groups, it was convenient that the dolls already had agreed-upon names so that more time could be devoted to playing. Participants could address each other in character without having to break out of the fantasy to ask names. Future studies might benefit from purposely having dolls with pre-arranged names to both save time and promote extended engagement in the fantasy.

Second, while it is not specifically called for in the play intervention manual, the co-facilitators chose to be characters within the groups’ stories, playing along with the participants. Over the course of conducting the pilot and main study, both co-facilitators found that it was much easier to shape the story and model fantasy and affect expression as a character in the story; however, it is also necessary to have a co-facilitator redirecting participants when necessary. For example, children will get up from the table, run around the library, or throw toys. Other times, a participant would have their character “get sick” so as to not have to go along with the group’s story. At these times, a co-facilitator not playing along in the story was needed to bring the participant back on track. Rather than having a co-facilitator model breaking out of character when there was a problem, it was best if one facilitator shaped the group from within the story while the other co-facilitator organized the group from outside the story. In future play group play interventions this would be the optimal set up and could be specified in the manual.

Another refinement of the play intervention that may be relevant to both the group intervention developed in this study and the individual play intervention continuing to be refined would be a more explicit reduction in the number of toys presented over the course of the play sessions. For example, during early sessions, many toys are provided
so that the participants can more easily generate ideas, have many characters to choose from, and can rely on some more structured props if they are having difficulty. For example, the wagon which can be filled with other toys is an easy place to begin for those children unsure of what to do with the dolls and props. Over the course of sessions however, a reduction in the overall number of toys on the table, particularly the structured toys, can challenge children who are now well practiced at pretend play to generate more ideas purely from their mind, and begin to transform the more ambiguous toys more imaginatively. A reduction in the number of human dolls on the table as well encouraged some participants to be animal characters or even talking cars, food or blocks. For standardization across groups, a refinement of the current play intervention manual might include more specific instructions regarding toy sets for each session, gradually reducing the toys on which the children can rely.

Further standardization of the play intervention protocol may also be achieved through more formal training of the researchers completing intervention sessions. This is true for both the present group intervention and the individual intervention in which the current study was based. In the current study, the same two co-facilitators completed all sixty intervention and control sessions, eliminating the possibility of stylistic differences that might occur across facilitators. However, in order to implement studies with larger samples it may be necessary to include additional facilitators. Play intervention manuals have been developed for both the group intervention and individual intervention; however additional research exploring the process and the mechanisms of change within the intervention could lead to more specific training. For example, closer examination of videotape taken during intervention sessions may show that children respond better to
modeling than to praise, or vice versa. Knowledge of this kind could lead to more standardized training of play intervention facilitators and more effective implementation of the play interventions.

**Limitations and Future Directions**

One limitation of the current study is the small sample size and therefore low power for detecting group differences; however, the promising results of the current study suggest that implementation of the group intervention with a larger sample seems warranted. The positive changes in pretend play skills and creativity obtained using the group format are quite similar to those reported by the original individual intervention (Russ et al., 2004), yet the ability to meet with children in groups rather than individually has beneficial implications. Meeting with four children at a time rather than one allows for greater efficiency in implementing the intervention. The reduction in time may make the intervention more feasible and cost-effective for schools and classroom teachers, making the group format intervention more likely to be considered for the curriculum. Replication of this study protocol with a larger sample would also allow for more detailed examination of intervention effects on the below and above average players as separate groups. It may be that the intervention was most effective for those children who struggled at baseline; however, it is also possible that the intervention most helped those children who already knew how to use play get even better at it. This distinction would add important knowledge about the types of populations for whom the group play intervention would be most appropriate in the future. Pretend play interventions have often been tested on children from largely disadvantaged backgrounds (e.g. Smilansky, 1968; Russ et al., 2004), and these children often have poorer pretend play skills to begin
with. The current study used a sample of private school girls, largely middle- to upper-class students; successful improvement of these children’s play skills adds to the generalizability of the intervention results and the possible applications of the protocol.

Another limitation of the current study was the number of researchers involved in the baseline and outcome testing. Some participants met with the same researcher at baseline and outcome while other participants met with a different researcher for each assessment session. This may have led to some variability in comfort level during post-intervention testing. Ideally, all participants would have been assessed by the same researcher but this was not possible due to time limitations, scheduling and the sheer number of assessments completed. However, as reported in the results, all researchers were systematically trained, and analyses did not reveal any examiner effects. It is also important to note that this all-female sample showed no differences in performance or reporting between those who met with female examiners versus those who met with the male examiner.

Due to time limitations, this study was not able to incorporate an additional follow-up assessment to test for more lasting effects of the intervention and control conditions on play, creativity and subjective well-being. An additional follow-up assessment conducted 6 months post-intervention might reveal additional details regarding the lasting effects of the intervention. For example, while Russ et al. (2004) found that their affect play group was more effective than the imagination play group at the immediate post-test, Moore and Russ (2008) who conducted the 2-8 month additional follow-up found more lasting changes in play processes for the imagination group. This finding is what led to the combination of affect and imagination play groups into one
intervention condition addressing both affect and imagination simultaneously. Additional follow-up of the current study might help to distinguish additional distinctions between the individual- and group- formats, or uncover the more long-term effects of good play skills such as improved creative problem solving or increased experience of positive affect.

Finally, the young age of the children enrolled in the study made reliable and valid assessment of their affect states and school satisfaction more difficult. Even with adaptation of the PANAS-C to include vocabulary appropriate for young children, some kindergarteners did seem to have difficulty reliably reporting their feelings, giving some contradictory responses and sometimes asking for definitions of the words. Furthermore, the school satisfaction questions which were taken from the Multidimensional Student Life Satisfaction Scale for Children (MSLSS-C) has only been validated for grades 3 and above, and was adapted by Russ et al. (2004) for younger children. More reliable and valid measures of subjective well-being are still needed for young children.

Future directions for research in this area also include refinement of the pretend play intervention in both individualized and group formats. Further study of pretend play interventions could examine effects on specific play skills (transformations, expression of negative affect), and how improvements in play skills can affect other outcome measures over time. For example, longitudinal studies may be able to show how improvements in young children’s play effect later development of adaptive functioning. Further refinement of the group format may also address ways to make the intervention feasible for the classroom so that it could be implemented by school teachers. The ability to improve children’s play skills through brief intervention has potential clinical
implications for addressing those children who could benefit from more play, for the purposes of coping, practicing social scripts, mastery of academic concepts, or many other ways in which we know play to be helpful.
Table 1. Assessment Measures and Scores

<table>
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<tr>
<th>Construct</th>
<th>Measure</th>
<th>Scores</th>
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<td><strong>Play</strong></td>
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<td>Pretend Play</td>
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<td>Organization, Imagination, Comfort, Frequency of Affect, Variety of Affect, Positive Affect, Negative Affect</td>
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<tr>
<td><strong>Creativity</strong></td>
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<td></td>
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<tr>
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<td>Fluency, Flexibility, Originality</td>
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<tr>
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<td>Consensus Scoring System (Hennessey &amp; Amabile, 1988)</td>
<td>Novelty, Imagination, Creativity, Likeability</td>
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<td>Positive Affect Subscale, Negative Affect Subscale</td>
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Table 2. Descriptive Statistics for Overall Sample

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<th>Posttest (SD)</th>
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<tr>
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Table 3. Fidelity Check Means Between Groups

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<th>Variable</th>
<th>Control Group Mean (SD)</th>
<th>Intervention Group Mean (SD)</th>
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<tbody>
<tr>
<td>Praise for on-task bx.*</td>
<td>8.50 (3.15)</td>
<td>0.33 (0.82)</td>
</tr>
<tr>
<td>Praise for fantasy*</td>
<td>0.00 (0.00)</td>
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<tr>
<td>Praise for Affect*</td>
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<td>4.50 (0.55)</td>
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<tr>
<td>Social interaction</td>
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<td>5.00 (0.00)</td>
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*indicates p < .05 significant differences between intervention and control group.
Table 4. Descriptive Statistics and ANOVA Results for All Variables at Pretest and Posttest by Group Assignment

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<tr>
<th>Measure</th>
<th>Intervention Group</th>
<th>Control Group</th>
<th>ANOVA</th>
<th>Effect Size</th>
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<td>Pretest (SD)</td>
<td>Posttest (SD)</td>
<td>Pretest (SD)</td>
<td>Posttest (SD)</td>
</tr>
<tr>
<td>Affect in Play Scale</td>
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<tr>
<td>Organization</td>
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<td>2.40 (1.31)</td>
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<td>Affect</td>
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<tr>
<td>Negative</td>
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<td>3.15 (4.51)</td>
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<tr>
<td>Divergent Thinking</td>
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N = 40
NS = Not Significant
\( \eta^2_p \) effect sizes - .01 = small effect, .06 = medium effect, .14 = large effect (Cohen, 1988)
Table 5. Correlations among Pretend Play and All Other Variables

<table>
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<tr>
<th>Measure</th>
<th>Organization</th>
<th>Imagination</th>
<th>Comfort</th>
<th>Affect in Play Scale Variables</th>
<th>Frequency Of Affect</th>
<th>Variety Of Affect</th>
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<td>.63***</td>
<td>.38**</td>
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<td>.43**</td>
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<td>(.56***)</td>
<td>(.33*)</td>
<td>(.35*)</td>
<td>(.40*)</td>
<td>(.44**)</td>
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<tr>
<td><strong>PANAS-C</strong></td>
<td>Positive Affect</td>
<td>.11</td>
<td>.18</td>
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<td>.06</td>
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<td>.07</td>
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<td>(.36*)</td>
<td>(.35*)</td>
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<td></td>
<td>Negative Affect</td>
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<td>(.28)</td>
<td>(.11)</td>
<td>(.20)</td>
<td>(.28)</td>
<td>(.10)</td>
<td>(.22)</td>
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<tr>
<td><strong>School Satisfaction</strong></td>
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<td>-.12</td>
<td>-.12</td>
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<td>-.09</td>
<td>-.04</td>
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<td></td>
<td>Satisfaction</td>
<td>(-.07)</td>
<td>(-.03)</td>
<td>(-.09)</td>
<td>(-.10)</td>
<td>(-.06)</td>
<td>(.02)</td>
<td>(-.17)</td>
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</table>

N = 40
*p < .05, ** p < .01, *** p < .001
( ) partial correlations controlling for grade
Table 6. Correlations among Creativity Variables

<table>
<thead>
<tr>
<th>Measure</th>
<th>Divergent Thinking Variables</th>
<th>Storytelling Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flexibility</td>
<td>Originality</td>
</tr>
<tr>
<td>Divergent Thinking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluency</td>
<td>.96****</td>
<td>.87****</td>
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<tr>
<td>Flexibility</td>
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<td>.85****</td>
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<tr>
<td>Originality</td>
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<tr>
<td>Storytelling</td>
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<tr>
<td>Imagination</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Novelty</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Creativity</td>
<td>1.00</td>
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<tr>
<td>Likeability</td>
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</table>

N = 40
*p < .05, **p < .01, ***p < .001
Table 7. Correlations among Creativity Variables and Well-Being Variables

<table>
<thead>
<tr>
<th>Measure</th>
<th>PANAS-C Variables</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Positive Affect</td>
<td>Negative Affect</td>
<td>School Satisfaction</td>
</tr>
<tr>
<td>Divergent Thinking</td>
<td>- .21</td>
<td>- .13</td>
<td>- .15</td>
</tr>
<tr>
<td>Fluency</td>
<td>- .16</td>
<td>- .16</td>
<td>- .10</td>
</tr>
<tr>
<td>Flexibility</td>
<td>- .16</td>
<td>- .09</td>
<td>- .10</td>
</tr>
<tr>
<td>Originality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storytelling</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Imagination</td>
<td>.26*</td>
<td>.48***</td>
<td>- .24</td>
</tr>
<tr>
<td>Novelty</td>
<td>.20</td>
<td>.30*</td>
<td>- .22</td>
</tr>
<tr>
<td>Creativity</td>
<td>.19</td>
<td>.31*</td>
<td>- .32*</td>
</tr>
<tr>
<td>Likeability</td>
<td>.11</td>
<td>.30*</td>
<td>- .25</td>
</tr>
<tr>
<td>PANAS-C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Affect</td>
<td>1.00</td>
<td>.27*</td>
<td>- .04</td>
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<tr>
<td>Negative Affect</td>
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<td>- .37**</td>
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N = 40

*p < .05. **p < .01. ***p < .001
Table 8. Grade Effects for All Variables at Baseline

<table>
<thead>
<tr>
<th>Measure</th>
<th>Kindergarten</th>
<th>First Grade</th>
<th>Second Grade</th>
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<tr>
<td></td>
<td>n</td>
<td>M (SD)</td>
<td>n</td>
<td>M (SD)</td>
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<tr>
<td>Affect in Play</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization</td>
<td>14</td>
<td>2.14 (1.23)</td>
<td>15</td>
<td>2.07 (1.10)</td>
</tr>
<tr>
<td>Imagination</td>
<td>14</td>
<td>1.92 (0.83)</td>
<td>15</td>
<td>2.07 (1.16)</td>
</tr>
<tr>
<td>Comfort</td>
<td>14</td>
<td>3.29 (1.54)</td>
<td>15</td>
<td>2.60 (1.50)</td>
</tr>
<tr>
<td>Frequency of Affect</td>
<td>14</td>
<td>5.79 (6.13)</td>
<td>15</td>
<td>5.47 (8.09)</td>
</tr>
<tr>
<td>Variety of Affect</td>
<td>14</td>
<td>2.14 (1.92)</td>
<td>15</td>
<td>1.80 (2.34)</td>
</tr>
<tr>
<td>Positive Affect</td>
<td>14</td>
<td>3.21 (3.19)</td>
<td>15</td>
<td>3.20 (4.86)</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>14</td>
<td>2.57 (3.99)</td>
<td>15</td>
<td>2.27 (3.92)</td>
</tr>
<tr>
<td>Divergent Thinking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluency</td>
<td>14</td>
<td>13.29 (4.34)</td>
<td>15</td>
<td>15.40 (6.86)</td>
</tr>
<tr>
<td>Flexibility</td>
<td>14</td>
<td>11.07 (3.08)</td>
<td>15</td>
<td>13.00 (5.52)</td>
</tr>
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<td>Originality</td>
<td>14</td>
<td>3.07 (3.15)</td>
<td>15</td>
<td>3.27 (3.28)</td>
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<tr>
<td>Storytelling</td>
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<td></td>
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</tr>
<tr>
<td>Imagination</td>
<td>14</td>
<td>3.29 (1.20)</td>
<td>15</td>
<td>2.87 (1.51)</td>
</tr>
<tr>
<td>Novelty</td>
<td>14</td>
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<td>15</td>
<td>2.33 (1.35)</td>
</tr>
<tr>
<td>Creativity</td>
<td>14</td>
<td>2.64 (1.65)</td>
<td>15</td>
<td>2.47 (1.60)</td>
</tr>
<tr>
<td>Likeability</td>
<td>14</td>
<td>2.79 (1.31)</td>
<td>15</td>
<td>3.13 (1.25)</td>
</tr>
<tr>
<td>PANAS-C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Affect</td>
<td>14</td>
<td>54.00 (6.85)</td>
<td>15</td>
<td>49.53 (10.01)</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>14</td>
<td>30.29 (11.90)</td>
<td>15</td>
<td>28.67 (12.52)</td>
</tr>
<tr>
<td>School Satisfaction</td>
<td>14</td>
<td>27.14 (4.31)</td>
<td>15</td>
<td>26.27 (4.83)</td>
</tr>
</tbody>
</table>

a = significant difference between kindergarten and first grade
b = significant difference between kindergarten and second grade
*p < .05, ** p < .01, ***p < .001
Table 9. Descriptive Statistics for Intervention Participants by Baseline Score

<table>
<thead>
<tr>
<th>APS Variables</th>
<th>Above Average Baseline Players</th>
<th>Below Average Baseline Players</th>
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<tbody>
<tr>
<td></td>
<td>Baseline Mean (SD)</td>
<td>Outcome Mean (SD)</td>
</tr>
<tr>
<td>Organization</td>
<td>3.20 (1.23)</td>
<td>3.60 (1.26)</td>
</tr>
<tr>
<td>Imagination</td>
<td>3.20 (0.63)</td>
<td>3.20 (0.92)</td>
</tr>
<tr>
<td>Comfort</td>
<td>4.20 (1.03)</td>
<td>3.90 (1.29)</td>
</tr>
<tr>
<td>Frequency of Affect</td>
<td>12.70 (7.35)</td>
<td>18.60 (6.15)</td>
</tr>
<tr>
<td>Variety of Affect</td>
<td>3.60 (1.43)</td>
<td>4.70 (1.77)</td>
</tr>
<tr>
<td>Positive Affect</td>
<td>6.10 (2.85)</td>
<td>10.40 (5.34)</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>6.60 (7.68)</td>
<td>8.20 (6.39)</td>
</tr>
</tbody>
</table>
Figure 1. Group Formation Method

1. Baseline Assessment
   \((N = 40)\)
   - Analysis of Baseline Play Skills
     - Below Average Players \((n = 20)\)
     - Above Average Players \((n = 20)\)

2. Group Assignment
   \((N = 40)\)
   - Assignment to Group by Play Score and Age
     - Group 1
       - Age 5, \(n = 4\)
     - Group 2
       - Ages 5-6, \(n = 4\)
     - Group 3
       - Ages 5-6, \(n = 4\)
     - Group 4
       - Age 6, \(n = 4\)
     - Group 5
       - Age 6, \(n = 4\)
     - Group 6
       - Ages 6-7, \(n = 4\)
     - Group 7
       - Ages 6-7, \(n = 4\)
     - Group 8
       - Age 7, \(n = 4\)
     - Group 9
       - Ages 7-8, \(n = 4\)
     - Group 10
       - Ages 7-8, \(n = 4\)

3. Condition Assignment
   - Random Assignment of Groups to Conditions
     - Control Condition
       - Groups 2, 3, 6, 7, and 10
       - 6 Control Sessions
       - Outcome Assessment \((n = 20)\)
     - Experimental Condition
       - Groups 1, 4, 5, 8, and 9
       - 6 Intervention Sessions
       - Outcome Assessment \((n = 20)\)
Appendix A. Intervention Manual and Control Group Protocol

GROUP INTERVENTION MANUAL

Introduction to Intervention:

First session: “My name is Jessica and I am here to learn about how children play and work together. We have some toys for you to play with (show bag). In this group, we will be making up stories about different things.”

Beginning of Sessions: “We are going to make up different stories using the toys on the table. We will make up a story and play it out with the toys. Good stories have a beginning, middle and an end and use lots of imagination and pretend. Good stories also have lots of feelings, like happy, sad or angry. We are all going to think about what will happen next in the story and take turns deciding what could happen next. Today we are going to make up a story about:

Session 1: A girl who goes to school
Session 2: A happy girl who goes to a birthday party
Session 3: A girl who goes to the zoo
Session 4: A sad girl who loses her favorite toy
Session 5: A girl who goes to the moon
Session 6: An girl with super powers

Bring out toys and allow each participant to pick a character.

Initial Creating of Story

Let’s start with (Child 1 Name). What could happen first in a story about a ________________?

(Child 1 starts out the story)

Great, so far (Facilitator summarizes). (Child 2 Name), what could we have happen next?

(Child 2 continues the story)

Then what happens, (Child 3 Name)?

(Child 3 continues story)

Ok, so (Facilitator summarizes story so far). (Child 4 Name), what would be a good ending to this story?
That was a great story! (Summarize what happened, including any feelings expressed).
**Manipulations of Original Story**

Now that we know what happens in our story, let’s act it out with the toys again. This time we are going to make the story:

1. Longer, with lots and lots of details
2. Shorter, with just the most important parts
3. Have a different ending that is a surprise!
4. Be just like last time but with even more feelings; Everyone has to really say AND show how their character FEELS.
5. Be just like last time, but let’s switch character so we can practice showing different feelings.
6. Have a different [middle, ending] that is [happier, more caring, scary, sad, angry]

* Rotate which participant starts and ends each story so that each child gets to begin a story and end a story in each session. *

Notes:
1. The aim is to have the children tell 4 stories each session, each story taking around 5-7 minutes of the 25-30 minute session.
2. Especially for weeks where affect-laden stories are told, the aim is to end the session on a positive/happy note.
3. Prompt children to play out/act out the story and the feelings (show not tell)
4. The story stems and prompts to manipulate the story are to get the children engaged in creativity and problem-solving – stories will most likely stray from the original and/or will not necessarily follow the prompts to manipulate the story
**Prompts/Reinforcement/Modeling**

*Organization*
- What happens first?
- What happens next?
- What happens at the end?
- Summarizing story at various points
- That was a really good story

*Imagination*
- We could use this object to be ______
- That was cool how you used _____ to be something else
- Wow, that never happens in real life!
- What a creative idea

*Emotion Expression*
- Labeling feelings
  - How does ___ feel right now?
- Model feelings
  - I can tell she is feeling (emotion) because she is (behavior).

*Additional directions for staying on task*
- That is a great idea but it is (name)’s turn now. Let’s ask her what could happen next.

Oh that’s a new idea, how can we fit that in with the story we already made up?

*For child who has trouble participating –*
- 1. How does (character) feel right now?
- 2. What does s/he want to do?
- 3. (Peer model’s name), help us think of something (child name) could have happen next.

*For narration –*
- Show us. Let’s play it out with the dolls/toys.
- Great idea, now let’s play it out.

*To add more characters in –*
- Maybe you could be the (girl doll, boy doll, animal, etc). What are they thinking? /
  What could they do next? / How could they join the story?

**Toys for Intervention**

- Male and female dolls
- Aggressive and non-aggressive animals (plastic and stuffed)
- Vehicles (car, jet ski, skis, skateboard, red wagon)
- Building blocks (wooden and Legos)
- Ambiguous objects that encourage imagination
Props that go with dolls (instruments, books, hats, wigs, shoes)

CONTROL GROUP PROTOCOL

First session: “We are here to learn about how children play. During this time we will be doing different activities so that I can see how you all play and work together.”

Beginning of Sessions: “Today we are going to be completing this puzzle/working on coloring sheets/making necklaces with beads and string. There are plenty of materials for everyone so let’s share nicely. Please remember that we are in the library and need to respect the space and keep in clean. (Bring out materials and allow children to begin working).

Session 1 and 2 – 300 piece puzzle
On-task prompts
• How should we begin?
• Which part do you want to work on?
• Can anyone help (name) find all the edge pieces?
Praise/Reinforcement
• Great job working together!
• You are really good at puzzles!
• Smart thinking – all of those blue pieces probably go together.
Modeling
• I am going to work on this corner
• Maybe the box top can show me where this orange piece will go
Describing
• (name) has finished the entire corner
• (name) is going to put the last piece in

Session 3 and 4 – Group coloring activity and crayons
On–task prompts
• What color will you need for those flowers?
• Have you decided which picture you’d like to color first?
Praise/Reinforcement
• I like how hard (name) is working.
• Great colors!
• I really like that pattern you are making
Modeling
• I think I am going to color in this cat picture today
• I am going to make this princess dress pink.
Describing
• (name) has finished her first picture
• (name) and (name) are going to work on the same picture today
Session 5 and 6 – Arts and crafts (beads, string for necklaces/bracelets), scissors

On-task behavior
- Are you going to make a necklace or bracelet today?
- Let me know if you need the scissors
- Can anyone help (name) find more red beads?

Praise/Reinforcement
- Wow! You are really fast at stringing beads!
- I really like the colors you chose today
- Thank you for helping (name) find the color she needed

Modeling
- I made a necklace last time so I am going to make a bracelet today
- I am going to think about my pattern first before I start

Describing
- (name) is using only black and white beads
- It looks like everyone will finish their projects today.

Ending sessions
- A 2-minute warning is given so that children can complete their drawing, necklace or last puzzle piece.
- Children are allowed to take their drawings and necklaces with them at the end of the session to finish at home and keep.
- All activities can be carried over from one session to the next unless it is the last session of a particular activity. Materials for unfinished projects should be stored by the facilitators so that children do not forget to bring them back.

*Note* Fantasy and imagination may be spontaneously expressed by the children during control sessions (for example: coloring their cat as a magic rainbow cat). While this type of behavior is not encouraged, it is also not discouraged directly. Facilitators might instead describe what the child is doing but without using reinforcing praise or praise another child at the table for coloring in the lines.
Appendix B. Intervention Fidelity Rating Forms
Fidelity Checklist

<table>
<thead>
<tr>
<th>Category:</th>
<th>Check off each time play facilitator does this:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Praise/Positive Reinforcement for On-Task Behavior, Following Directions, Effort, etc.</strong></td>
<td></td>
</tr>
<tr>
<td>Examples: Cool! Good idea. I like that you...You’re working hard on that. Thank for keeping that on the table.</td>
<td></td>
</tr>
<tr>
<td><strong>Praise for Fantasy in Play</strong></td>
<td></td>
</tr>
<tr>
<td>Examples: Wow! That’s a cool idea. I like how you used that block as a rocket. That was really cool how you ended the story that way!</td>
<td></td>
</tr>
<tr>
<td><strong>Praise for Emotion Expression in Play</strong></td>
<td></td>
</tr>
<tr>
<td>Examples: Wow, she is really happy! You did a great job showing how all the dolls felt in that story. I could really tell how angry that doll was because you...</td>
<td></td>
</tr>
<tr>
<td><strong>Describe/Summarize (Just like a sports announcer: “She’s doing X”)</strong></td>
<td></td>
</tr>
<tr>
<td>Examples: First X happened, and then X. You’re putting that piece together first. The doll fell. You’re using pink for that flower. You’re putting that piece there.</td>
<td></td>
</tr>
<tr>
<td><strong>Model or Prompt Imagination in Play</strong></td>
<td></td>
</tr>
<tr>
<td>Examples: Maybe we could pretend this block is the surfboard. What else could we use for a rocket? Facilitator having doll or animal talk to child’s doll.</td>
<td></td>
</tr>
<tr>
<td><strong>Model, Label or Prompt Feelings in Play</strong></td>
<td></td>
</tr>
<tr>
<td>Examples: He sound’s sad. She’s angry! How can the doll show he feel X? Facilitator’s doll crying, jumping up and down, or verbally expressing feelings (I’m excited! Whee! Uh oh)</td>
<td></td>
</tr>
<tr>
<td><strong>Model or Prompt On-Task Behavior</strong></td>
<td></td>
</tr>
<tr>
<td>Examples: This puzzle piece has X on it – can you find another piece that has X? I’m finding where this piece goes. I’m coloring this flower pink. Demonstrating connecting pieces. Showing child puzzle pieces or method to put puzzle together. (e.g. edges first)</td>
<td></td>
</tr>
<tr>
<td><strong>Interacting with Group using Questions or Prompts</strong></td>
<td></td>
</tr>
<tr>
<td>Examples: What happens next? What color is that? Where will that piece go? I wonder what will happen next. I wonder where that piece will go.</td>
<td></td>
</tr>
</tbody>
</table>
Fidelity Rating of Investigator’s Behavior

1. How much verbal praise does the investigator give the group?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No praise given</td>
<td>Some praise</td>
<td>Praise given throughout session</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. How much warmth does the investigator exude toward the group?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No warmth, Critical or harsh</td>
<td>Some warmth, and criticism, ambivalent</td>
<td>Great deal of warmth</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. How much does the investigator engage with the group during the task (showing interest, verbally or nonverbally acknowledging)?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all focused or acknowledging child</td>
<td>Engaged and some acknowledgement but with periods of distraction</td>
<td>Entirely engaged with child and acknowledging child’s behavior</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. How much does the investigator ensure fairness of opportunities/access to materials?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Group is unbalanced, one child dominates</td>
<td>Some direction/ redirection given to ensure balance</td>
<td>Children have equal opportunities to participate/use materials</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. What is the overall amount of verbal and nonverbal social interaction taking place during the session?

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None at all, little talking or working together during session</td>
<td>Some interaction/ discussion during session, some silence</td>
<td>Conversation, interaction, or team work present for majority of session</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Intervention Protocol Fidelity (please check is present)

Variety of toys were provided
- Human dolls (male and female)
- Animals
- Vehicles (cars, bus, jet ski, skis, skateboard)
- Props for dolls (shoes, hair, hats, dresses)
- Building blocks

Session composition
- At least 3 of the 4 participants were present for session
- Session length between 20 and 30 minutes
- 2 facilitators present

Imagination
- Prompted for imagination (What could happen next? What could we use as the food?)
- Modeled imagination (That could be the bed)
- Praised for imagination (Great idea to make the dolls sisters!)

Affect Expression
- Prompted for affect expression (How does that doll feel now? How can you show she is sad?)
- Modeling affect expression (Ah! I’m scared!)
- Praised for affect expression (I can really tell she is sad. Good idea to add something angry)

Fairness of Opportunities/Organization
- Facilitators provided prompt/story stem at beginning of session
- Facilitators encouraged different children to begin and end each story during session, using redirection when necessary to ensure equal opportunity for contribution
- Facilitators encouraged children to switch toys/share dolls between stories
Control Protocol Fidelity

Activity provided
☐ Puzzle
☐ Coloring sheets and crayons
☐ Beads and string

Session Composition
☐ At least 3 of the 4 participants were present for session
☐ Session length between 20 and 30 minutes
☐ 2 facilitators present

Praise/Prompting
☐ Participants praised for on-task behavior (Good job staying in the lines. I like the pattern you are making)
☐ Participants prompted to maintain on task behavior (What color do you need next? Have you decided what sort of pattern to do for your bracelet?)
☐ Facilitators encourage group discussion and social interaction between participants while working on task (Are you girls all participating in the play this Friday? How did you all like the fieldtrip yesterday?)

Fairness of Opportunities/Organization
☐ Facilitators provided activity and directions at beginning of session
☐ Facilitators encouraged sharing of materials as necessary (not grabbing puzzle pieces, sharing crayon colors, helping others find needed bead colors)
Appendix C. Affect in Play Scale Administration and Scoring Manual

Appendix: Affect in Play Scale*

Sandra W. Russ
Case Western Reserve University

The Affect in Play Scale (APS) consists of a standardized play task and a criterion-based rating scale. The APS is appropriate for children 4–6 years of age, which includes children in Grades 1 through 3.

The Affect in Play Scale assesses the amount and types of affect expression in children's fantasy play. The scale rates the frequency and intensity of affective expressions, variety of affect categories, quality of fantasy, imagination, creativity in play, and integration of affect. Play sessions are 5-minute standardized puppet play periods.

THE APS PLAY TASK

The play task consists of two huma/propots, one boy and one girl, and three small blocks that are laid out on a table (see Fig. A.1 for propots). The propots have neutral facial expressions. Both Caucasian and Asian-American versions of propots are used, depending upon the child's population. The blocks are brightly colored and of different shapes. The play propots and instructions are unstructured enough so that individual differences in play can emerge. The task is administered individually to the child and the play is videotaped. The instructions for the task are:

'I'm here to learn about how children play. I have been two propots and would like you to play with them any way you like for five min-

*Copyright © 1985 by Sanda W. Russ.
FIG. A1. Puppets for the Affect in Play Scale.

Uses. For example, you can have the puppets do something together. You also have some blocks that you can use. Be sure to have the puppets talk out loud. The video camera will be on so that I can remember what you say and do. I'll tell you when to stop.

The child is told when there is one minute left with the instruction, "You have one minute left."

Prompts and Special Circumstances

1. If the child does not know how to put on the puppets, tell the child to put them on. Let the child know when they can start and start timing from that point.
2. If the child does not start to play, prompt the child after 30 seconds by saying, "Go ahead, have the puppets do something together." Two prompts of this sort can be given. After two minutes of no play, the task should be discontinued.
3. If the child plays but does not have the puppets talk, prompt with "Have the puppets talk out loud so I can hear" after 30 seconds. Two prompts can be given, spaced about one minute apart.
4. If a child has been playing, but then stops before time is up, prompt with "You still have time left, keep on playing." Prompt a second time if needed with "Keep on playing, I'll tell you when to stop." Most children who already played will be able to continue with prompts. If they cannot, task discontinued after two minutes of no play.
5. Be sure not to give any verbal reinforcement during the child's play. It is important however to be attentive and watch the child and be interested. After the child has finished, say "That was good" or "That was fine."
APPENDIX

6. Be sure to stop after five minutes. A wristwatch with a second hand is adequate. Time in an unobtrusive manner.

THE APS RATING SCALE

The APS measures the amounts and types of affective expression in children's fantasy play. The APS measures affect themes in the play narrative. Both emotion-laden content and expression of emotion in the play are coded. The APS also measures affective dimensions of the play, such as quality of fantasy and imagination.

Reda Hobb's (1977) Scoring System for Primary Process on the Roschbach and Singer's play scales were used as models for the development of the scoring system. In addition, the work of Kline (1977) and Tannenbaum (1962, 1963) was consulted to ensure that the affect categories were comprehensive and covered all major types of emotion expressed by children in the 4-10 age group.

There are three major affect themes for the APS:

1. Total frequency of units of affective expression. A unit is defined as one articulate expression by an individual puppet. In a two puppet dialogue, expressions of each puppet are scored separately. A unit can be the expression of an affect state, an affect theme, or a combination of the two. An example of an affect state would be one puppet saying, "This is fun." An example of an affect theme would be "Here is a bunch that is going to explode." The expression can be verbal ("I hate you") or non-verbal (one puppet punching the other). The frequency of affect scores is the number of units of affect expressed in the five minute period. If non-verbal activity, such as fighting, occurs in a continuous fashion, a new unit is scored every five seconds.

2. Variety of affect categories. There are 11 possible affect categories. The categories are: Happiness/Pleasure; Anxiety/Fear; Sadness/Hurt; Frustration/Disappointment; Nervousness/Anxiety; Aggression; Competition; Oral; Oral Aggression; Sexual; Anal. The variety of affect score is the number of different categories of affect expressed in the 5-minute period. Affect categories can be classified as positive affect (Happiness, Nervousness, Competition, Oral, Sexual) and negative affect (Anxiety, Sadness, Aggression, Frustration, Oral Aggression, Anal). Another classification is primary process affect (Aggression, Oral, Oral Aggression, Sexual, Anal) and non-primary process affect (Happiness, Sadness, Anxiety, Frustration, Competition, Nervousness).

3. Mean intensity of affective expression (1-5 rating). This rating measures the intensity of the feeling state or content theme. Each unit of affect is rated for intensity on a 1-5 scale.
Organisation
This rating scale measures the clarity of the plot and the complexity of the story:
1. Series of unrelated events, no cause and effect, disjointed.
2. Some cause and effect; series of loosely related events.
3. Cause and effect, organized in a temporal sequence, but an overall integrated plot.
4. More cause and effect, closer to an integrated plot.
5. Integrated plot with beginning, middle and end.

Elaboration
This rating scale measures the amount of embellishment in the play. One should consider theme, leadership style, voice tone, character development.
2. Minimal embellishment.
3. Much embellishment, in one or two dimensions.
4. Moderate embellishment across many dimensions.
5. Much embellishment across many dimensions, many details, high activity, sound effects, changes in voice, lots of facial expressions and verbal inflection.

Imagination
This rating scale measures the novelty and uniqueness of the play and the ability to pretend and use fantasy. Ability to transform the block and pretend with them.
1. No symbolisms or transformations, no fantasy.
2. One or two instances of simple transformations. No novel events.
3. Three or more transformations. Some fantasy and pretend events, such as "Let’s play house." Some variety of events. No novel events or events removed from daily experience.
4. Many transformations. Variety of events. Some novel fantasy events. Some fantasy with unusual twists or removed from daily experience such as living in a castle or building a space ship. Other characters in addition to the two prophets are included in the story.
5. Many transformations and many fantasy themes. Novelty of idea is evident. Fantasy has new twists and often has elements outside of daily experience.
Appendix D. Baseline and Outcome Assessment Measures

Affect in Play Scale

Directions:
“I am here to learn about how children play. I have here two puppets and would like you to play with them any way you like for five minutes. For example, you could have the puppets do something together. I also have some blocks that you can use. Be sure to have the puppets talk out loud. The video camera will be on so that I can remember what you say and do. I’ll tell you when to stop.”

When one minute left, say “You have one minute left to play with the toys.”

Stop the play after 5 minutes and say, “That was good!” or “That was fine.”

Prompts and Special Circumstances:
1. If the child does not know to put on the puppets, tell the child to put them on. Let the child know when they can start and start timing from that point.
2. If the child does not start to play, prompt the child after 30 seconds by saying, “Go ahead, have the puppets do something together.” Two prompts of this sort can be given. After two minutes of no play, the task should be discontinued.
3. If the child plays but does not have the puppets talk, prompt with “Have the puppets talk out loud so I can hear” after 30 seconds. Two prompts can be given, spaced about one minute apart.
4. If a child has been playing, but then stops before time is up, prompt with “You still have time left, keep on playing.” Prompt a second time if needed with, “Keep on playing, I will tell you when to stop.” Most children who already played will be able to continue with prompts. If they cannot, then discontinue after two minutes of no play.
5. Be sure not to give any verbal reinforcement during the child’s play. It is important however to be attentive and watch the child and be interested. After the child has finished say, “That was good” or “That was fine.”
6. Be sure to stop after five minutes. A wristwatch with a second hand is adequate. Time in an unobtrusive manner.
**Storytelling Directions**

Introduction to the task:

"The next activity we are going to do is with this picture book. (Show child the cover). I want you to tell me the story that goes along with the pictures in this book. Start here (open book to first page and show child) and go through all the pages until you get to the page that says STOP. Now you take the book (hand book to child) so that I can't see the pictures. Make sure to tell me a story so that I will understand it. Make it the kind of story we would read in a book. I am going to write down what you say, so I might have to ask you to slow down. Ok? Begin."

- Researcher then writes the child's story verbatim.
- Can ask child to slow down or wait if child is talking too fast to record the story by hand.
- When asking a child to repeat something they have said, read back to them what you have recorded to encourage them to repeat themselves rather than say something new.
Alternate Uses Test

Instructions:

Now, I am going to name an object, any kind of object, like a light bulb, and it will be your job to tell me all the different ways that the object could be used. Any object can be used in a lot of different ways. For example, think about string. What are some of the ways you might use string? (Child tries.) Yes, those are fine. You can also use string to attach a fish hook, to jump rope, to sew with, to hang clothes on, and to pull shades. There are lots more too and yours were good examples. Now I'm going to name different objects and I want you to tell me all the different ways you could use the object that I name. Newspaper - All the different ways you can use a newspaper. (Prompt on the first two - Can you think of anything else?)

Additional Administration Rules
1. Prompt only on items one and two. Prompt is „can you think of anything else.” Prompt after child indicates “that’s all” or if a 1 second silence passes.
2. On item one, if child doesn’t start after 1 second, prompt with “all the different ways you can use a newspaper.”
3. On final 4 items, end after 1 second silence and move into next item, making sure the child is done.
4. Probe. Only if you are not clear on the meaning of the response. Do not probe in order to make more specific (i.e. – game – “what kind of game” – do not probe in this way.)

Objects
1. Newspaper
2. Button
3. Key
4. Shoe
5. Automobile Tire
6. Knife
Alternate Uses Test

Newspaper:

Button:

Key:

Shoe:

Car Tire:

Knife:
PANAS-C

Directions: “This scale has a lot of different words that name different feelings and emotions. I will read each word to you and then you point to the number that describes how often you feel that way. You can see the pictures and words are: Hardly at all, a little, a medium amount, a lot, and very very much. If you don’t understand a word, please tell me. This is about the way you have felt for the past two weeks.

<table>
<thead>
<tr>
<th>Word</th>
<th>Hardly at all</th>
<th>A little</th>
<th>A medium amount</th>
<th>A lot</th>
<th>Very very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interested</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Sad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Frightened</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Alert</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Excited</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Ashamed</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Upset</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Happy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Strong</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Nervous</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Guilty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Lots of Energy</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Scared</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Calm</td>
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<td>5</td>
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<td>Miserable</td>
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<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Jumpy</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Cheerful</td>
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<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Active</td>
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<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Proud</td>
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<td>3</td>
<td>4</td>
<td>5</td>
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<td>Afraid</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Joyful</td>
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<td>5</td>
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<tr>
<td>Blue</td>
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<td>3</td>
<td>4</td>
<td>5</td>
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<tr>
<td>Glimpy</td>
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<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Lively</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Multidimensional Life Satisfaction Scale – Child Version, School Scale

Directions:
I’m here to find out how children feel about their lives. I’d like to know what you’ve been thinking and your life for the last few weeks. Think about what you have done during the day and night and how you feel about it. We want to know what you really think, so tell me how you really feel, not what you think you should say. This is not a test. There are no right or wrong answers. Your parents and your teachers won’t be told what you say. Now I’m going to ask you some questions about your life. Point to the circle that tells how you feel (show circles). So if I asked you how much you like to eat ice cream, which one would you point to? What if I asked you how much you play outside?

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Sometimes</th>
<th>A Lot</th>
<th>Almost All the Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>I look forward to going to school</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I like being in school</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>School is interesting</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I wish I didn’t have to go to school</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>There are many things about school I don’t like</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I enjoy school activities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I learn a lot at school</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>I feel bad at school</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>
NEVER  SOMETIMES  A LOT  ALMOST ALL THE TIME
References


