

## Fostering Pretend Play Skills and Creativity in Elementary School Girls: A Group Play Intervention

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Pretend play is an important part of child development, associated with constructions of adaptive functioning such as creative thinking and positive affect. Research has demonstrated that interventions to improve play skills can be effective. In the current study, a 6-session, pretend play intervention was administered to 40 participants, ages 5 to 8 years old, enrolled in an elementary school for girls. The study adapted a manualized individual play intervention to be administered to groups. At baseline and outcome, pretend play skills were assessed using the Affect in Play Scale (Russ, 2004, 2014b), a 5-min pretend play task measuring the cognitive and affective processes of fantasy play. Creativity was assessed using the Alternate Uses Test (Wallach & Kogan, 1965), a measure of divergent thinking, and a storytelling task. State positive affect was measured using the Positive and Negative Affect Schedule for Children (Moore & Russ, 2008). Repeated-measures ANOVA analyses indicated significant improvement in play skills for the intervention group compared with controls. For the below-average players, improvements in divergent thinking were also observed at outcome compared with controls. Baseline correlations among pretend play, creativity, and positive affect are also presented, replicating past studies. Taken together, the findings suggest the benefits of pretend play in child development and demonstrate the feasibility of school-based interventions for improving play and creativity skills.

**Keywords:** pretend play, divergent thinking, storytelling, creativity

The theorized benefits of fantasy play in childhood are many: from cognitive development and self-directed learning (Golinkoff, Hirsh-Pasek, & Singer, 2006; Piaget, 1962) to practice with social-emotional skills (Vygotsky, 1978). Yet the value of fantasy play for child development continues to be debated. The evidence has yet to firmly establish that play facilitates other areas of development rather than merely emerging in parallel (Lillard et al., 2013). This uncertainty is often reflected in the mixed messages of our schools. For example, a 2010 Gallup Poll, sponsored by the Robert Wood Johnson Foundation, the National Association of Elementary School Principals (NAESP), and Playworks (Robert Wood Johnson Foundation, 2010), found that parents, teachers, and principals all believe play is important for their students, yet opportunities for free play in the classroom have been decreasing for decades (Hirsh-Pasek & Golinkoff, 2003; Hirsh-Pasek, Golinkoff, Berk, & Singer, 2009).

As Lillard and colleagues (2013) suggest, more rigorous research is needed to precisely define where and when pretend play can be beneficial. The purpose of this study is to test empirically

the effects of a group pretend play intervention on elementary schoolchildren's pretend play skills, creativity, and subjective well-being. Although pretend play has also been linked with a variety of other cognitive, social, and emotional skills, we will focus the present study and review of literature to the specific areas of creativity and well-being. Creativity and creative problem-solving ability are now recognized as valuable 21st-century skills, important for a successful workforce (Haring-Smith, 2006; Hartley, 2004). Richard Florida and Jim Goodnight stated, "A company's most important asset isn't raw materials . . . It's *creative capital*—simply put, an arsenal of creative thinkers whose ideas can be turned into valuable products and services" (Florida & Goodnight, 2005, p. 125). In the new millennium, creativity is now a necessity for all; beyond knowledge, our industries need originality and innovation (Csikszentmihalyi, 2006). It is therefore essential that schools begin to cultivate creative thinking abilities in their students to prepare them for the workforce they will soon enter (McWilliam & Haukka, 2008).

In this study, we present a new, group pretend play intervention protocol and findings regarding its effects on play, creativity, and well-being. Correlations among play, creativity, and well-being are also presented, replicating past studies (e.g., Hoffmann & Russ, 2012; Russ & Grossman-McKee, 1990) and fortifying the body of knowledge linking children's play and creativity.

### Pretend Play and Creativity

The constructs of pretend play and creativity have much in common. Pretend play includes symbolic transformations and the

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combining of ideas, two techniques also used in creative production. Pretend play also includes emotional processes such as accessing emotional memories to broaden associations, a skill that can also aid the creative process. 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, and has been found to be relatively independent of intelligence (Runco, 1991). Pretend players may use divergent thinking for actions such as making up alternate story endings or using the same object as multiple props.

Studies have established a relationship between divergent thinking and pretend play (e.g., Dansky, 1980; Fisher, 1992; Hoffmann & Russ, 2012; Lieberman, 1977; Russ, 2004, 2014b). 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 variety of emotions expressed in play and the number of affect categories included in the story (e.g., happiness, anxiety, aggression) both relate to fluency in divergent thinking. Another study found that specifically negative affect expression in play was related to both the child's fluency and originality in divergent thinking (Russ & Schafer, 2006). These studies look at the emotional content of the play, not the emotions felt by the player, though both have a relation to creativity tasks. For example, the content of play may be aggressive but the child is having fun. Lieberman (1977) focused on playfulness, including affective components of spontaneity and joy, and found that playful children performed better on divergent thinking tasks than nonplayful children.

Lillard et al. (2013) have critiqued studies that report correlations between play and divergent thinking but used the same examiner for both tasks; however, Russ and Wallace (2013) report finding a number of studies in which different examiners were used for the two tasks (Lieberman, 1977; Russ & Grossman-McKee, 1990; Russ, Robins, & Christiano, 1999; Singer & Rummo, 1973). Russ et al. (1999) found that play scores predicted divergent thinking scores 4 years later, using different examiners at the two time points. In several other studies, including this current study, both play and divergent thinking tasks followed standardized administrations, and the coders scoring the data were blind to study hypotheses and participant past performance (Hoffmann & Russ, 2012; Russ & Grossman-McKee, 1990; Russ & Schafer, 2006). These studies show that the relationship between play and divergent thinking is a legitimate one.

A second form of creative production is storytelling. Storytelling tasks assess a person's ability to verbally create a story with likable, imaginative, and emotional elements. Creativity in storytelling may manifest as fantastical content, plot twists, a rich variety of affect-laden themes, or the inclusion of embellishments that make the story more enjoyable. In a recent meta-analysis, Baas, De Dreu, and Nijstad (2008) divide 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. When assessing creativity or possible changes in creativity, using multiple creativity tasks that tap these three domains can be useful; thus, the current study measures both divergent thinking and storytelling ability.

Storytelling and pretend play also have much in common theoretically, as pretend play can involve a story rich with characters,

fantasy, and emotional elements. Some connections between pretend play and storytelling have already been reported. The presence of emotion in storytelling and the amount of detail of the story were found to relate to pretend play (Russ et al., 1999). Similarly, children who included more emotion words during their storytelling also displayed more affect expression in their play (Hoffmann & Russ, 2012).

Divergent thinking and storytelling have been shown to relate to each other. In one study with children Ages 5 to 10, the children who performed better on the divergent thinking task also produced stories rated to have more fantasy, emotional expression, novelty, and likability (Hoffmann & Russ, 2012). One important note is that these relationships may be at least partially explained by children's expressive language ability. Short, Noeder, Gorovoy, Manos, and Lewis (2011) note that although individual differences in play ability emerge between children with and without language impairments, attempts to disentangle language skills from play tasks is quite difficult, because play is best coded when a child talks aloud.

### Pretend Play in Schools

Pretend play provides a safe arena in which children can experiment with complex emotions and social situations without the real-world consequences (Vygotsky, 1978). Within the context of play, children can practice skills such as self-restraint, empathy, and perspective taking, which contributes to their cognitive and emotional development (Elkind, 2001; Singer & Rummo, 1973). Piaget (1962) theorized that through play children could create their own knowledge about the world through discovery and experimentation. Pretend play has been shown to relate to children's self-reported positive affect (Fiorelli & Russ, 2012; Udwin, 1983).

In recent decades, Western cultures' emphasis on academic drilling and high-stakes testing has left less time for child-directed activities and cooperative play opportunities (Elkind, 2007). Despite less time for play in schools, a recent meta-analysis reveal that children's play skills appear not to have suffered (Russ & Dillon, 2011); however, the authors emphatically argue that this does not mean that playtime is superfluous. Rather, the authors suggest several possibilities for their findings: (a) that children have a hunger to play and thus are finding time to practice play and fantasy in new ways such as through videogames; or (b) that children's play skills are remaining stable, but children are not able to transfer these skills to other areas, such as creative thinking, which has been decreasing, as documented by Kim (2011).

Some of the reasons why pretend play is decreasing in school (e.g., the emphasis on total hours of learning, high-stakes testing) are also exactly why playtime is crucial. A longer school day should indicate that teachers need to shift approaches more often and use a variety of teaching modalities to maintain student interest and maximize absorption of material (Johnson, Christie, & Wardle, 2005). Including play time following a lecture gives children a chance to be self-directed, experience hands-on-learning and practice mastery of new concepts (Golinkoff et al., 2006). Empirical studies have confirmed that playful, unstructured breaks, such as those provided by recess, are important for young children to reduce cognitive interference and maximize learning (see Pellegrini & Bohn, 2005). Play time, therefore, should not be viewed

as competing for time with academic activities, but rather viewed as integral to them.

### Play Intervention Research

For children to benefit from unstructured playtime, they need some sense of how to play. Although playing comes naturally to most children, 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 9-week sociodramatic play intervention displayed significantly improved play skills compared with controls. Freyberg (1973) found that play training procedures increased fantasy play as well as positive affect, enjoyment, and concentration during free play. Dansky (1980) found that over 3 weeks, children assigned to a play intervention group showed increased amounts of complexity and imagination in their play compared with children given free play time or nonplay tutoring.

Play interventions within classrooms have sought not only to improve play but also to achieve transfer effects. Saltz and Johnson (1974) built on Smilansky's (1968) study using a thematic-fantasy play intervention with similarly disadvantaged preschoolers, and showed large effects on children's performance on intelligence subtests, story, interpretation, sequential memory, and empathy compared with controls. Udwin (1983) showed that after ten 30-min 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 a positive impact on children's functioning.

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 address play interventions for typically developing children, Russ, Moore, and Farber (2004) focused on improving both the cognitive and affective elements of play in schoolchildren. Participants were 50 first- and second-grade children who were randomly assigned to an imagination group, an affect group, or a puzzle/coloring control group. Participants engaged in five 30-min play sessions, meeting individually with an experimenter. Russ et al. (2004) found that the play intervention was effective in improving pretend play skills for both the imagination group and the affect play group, and resulted in better divergent thinking and higher scores on life satisfaction compared with the control group. In a follow-up study 4 to 8 months later, Moore and Russ (2008) found that the imagination group continued to have improved play skills, whereas the affect group did not maintain their play changes over time. Moore and Russ hypothesized that perhaps increases in affect expression from a play intervention are temporary, whereas a focus on imagination during play is longer lasting.

In 2010, Russ and colleagues completed another play intervention with 57 female students enrolled in the kindergarten through fourth grade at a private school (Russ, Dillon, Fiorelli, & Burck, 2010), building on the original Russ et al. (2004) play study. Because both the affect play group and the imagination play group from the Russ et al. 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, those participants who had shown poor pretend play skills at baseline showed significant improvement in their imagination and organization when compared with the control group (Hoffmann, Fiorelli, & Russ, 2012).

King (1979) showed that although 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. Play is defined by behavioral and motivational factors, such as positive affect, nonliterality, intrinsic motivation, process orientation, and free choice (Johnson et al., 2005). Therefore, a play intervention would need to, at minimum, incorporate these elements and be developmentally appropriate. After a review of the play intervention literature, Dansky (1999) concluded that successful play tutoring studies have several commonalities: (a) a dosage of eight to 12 sessions spread out over 3 to 6 weeks, (b) a composition of small groups and an adult who models and encourages participation, and (c) pretend stories, typically about everyday activities or fairy tales.

To promote play, adults can act in ways that enhance the sense of fun and free choice, such as modeling, reinforcing, and providing access to play materials and by avoiding interrupting, correcting, or directing (Malone & Langone, 1999). A study of preschoolers in South Africa showed that both structured play intervention groups and unstructured play intervention groups can improve imagination and affect expression in play (Shmukler & Naveh, 1985), but what type of play is most effective? Saltz, Dixon, and Johnson (1977) compared four conditions: (a) a thematic-fantasy play group, (b) a fantasy discussion group, (c) a sociodramatic play group (involving social scripts), and (d) a control group. The study found that thematic-fantasy play was more effective than the other three conditions, emphasizing the need for fantasy in the play, and for actually acting out the stories rather than narrating them.

In summary, relationships between pretend play and other forms of creativity, such as divergent thinking and storytelling, have been demonstrated. These results have been found even when using different examiners for the tasks and raters who were blind to study hypotheses (Lieberman, 1977; Russ & Grossman-McKee, 1990; Russ et al., 1999; Singer & Rummo, 1973). Research has also shown that short-term pretend play interventions can improve play skills (Dansky, 1999; Rosen, 1974; Russ et al., 2004; Udwin, 1983), and several studies have provided evidence that improvement in play abilities can lead to improvements in creativity and positive affect (Hartmann & Rollett, 1994; Hoffmann et al., 2012; Russ et al., 2004). For this study, we investigate the effects of a group pretend play intervention on pretend play skills, divergent thinking and storytelling, and self-reported well-being. Unlike most previous play intervention studies, which have used children from disadvantaged backgrounds or children with identified men-

tal disorders leading to play deficits, this investigation uses a sample of children representing a wider spectrum of backgrounds and play abilities. This group intervention attempts to take the benefits of Russ and colleagues' (2004, 2010) individual intervention and adapt it to a group format to improve efficiency and feasibility in schools.

## Method

### Phase 1: Pilot

The intervention used in this study is a group adaptation of the individual play intervention protocol developed by Russ et al. (2004, 2010), and follows the literature on successful group play interventions reviewed here. The adapted group intervention was piloted to ensure feasibility using one experimental group and one control group, each consisting of five second-grade girls who met for eight 30-min sessions. The experimental group worked together to act out stories using a set of toys, whereas the control group completed puzzles, coloring sheets, and board games. The pilot study tested group size, session length, and number of sessions. Pre- and posttest measures were not administered. This phase allowed the cofacilitators to practice cofacilitating together.

Feedback from students and observations by cofacilitators was used to revise the group play protocol. The number of intervention sessions was reduced from eight to six, because of a noticeable plateau in play skill improvement for the experimental group, and reports of boredom beginning in Session 6 for the control group. Facilitators reduced the number of coloring sheets and crayons available to make the drawing activity more cooperative, and board games were replaced with string-and-bead materials, so that all control group activities fit the creativity theme. Group size was reduced to four students from five for the experimental purpose of having an even number of below- and above-average players in each group. Lastly, turn taking was established so that students rotated who began stories, who made up the middle, or who made up the ending, and trading of toys between stories was strongly encouraged to promote sharing and playing with a variety of dolls and animals. Groups met during the lunch and recess hour in the library so that students did not miss academic class time. Teachers, students and the headmistress of the primary school all provided feedback that the groups were enjoyable for students and did not disrupt the school day.

### Phase 2: Experimental Study

**Participants.** Students in the kindergarten through second grade at a private school for girls were recruited through letters and consent forms sent home to their parents. Forty-two students, Ages 5 to 8 years, enrolled in the study, yielding a 52% participation rate. Two students chose not to participate after being enrolled by their parents, leaving a final sample of 40 students. The sample was primarily Caucasian, with some African American, Asian American, and mixed-race students. Thirty-eight percent of the students attending the school received financial aid, and this sample was representative of that number.

**Baseline assessment and group assignment.** Participants were first administered individual, 30-min baseline measures of pretend play ability, divergent thinking, storytelling, state positive

and negative affect, and school satisfaction. Pretend play ability was measured using the Affect in Play Scale (APS; Russ, 2004, 2014b), a 5-min pretend play task administered individually to each participant. Children's play was videotaped and scored for organization of the plot, imagination and fantasy elements, comfort engaging in play, and the amount of emotion involved in the stories; these four scores were converted to z scores and summed to create one composite play ability score for each participant. The median composite score was then calculated, and the sample of participants was split into the 20 above-average and 20 below-average players. Ten groups were then randomly created, each consisting of two above-average and two below-average players. Groups were also formed so that no group had students more than 1 year apart in age. The researcher acting as play facilitator was blind to students' pretest play abilities.

This study included the already-above-average players for two reasons. First, this allowed us to maintain confidentiality about student performance, at the request of the school. Second, we theorized that above-average players could serve as peer mentors to help those students who had struggled with the play task. It is possible that some students learn better from a same-aged peer than from playing with an adult facilitator.

**Play intervention protocol.** Students participated in six 30-min sessions, twice a week for 3 weeks. All sessions took place during the lunch and recess hour. Rules were kept minimal besides the school rules about respecting the library that were already in place. This ensured that children had ample freedom to be imaginative, express emotion, and engage in child-directed play.

Each play intervention session was spent working with a single story stem, beginning with a script to describe expectations:

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 going to think about what will happen next in the story and take turns deciding what could happen. Today we are going to make up a story about . . .

Story stems were meant to encourage both fantasy and emotional expression. The stories increased in fantasy and complexity across sessions to build imagination skills gradually. Story stems also covered a range of affective themes. The story stems for each session were (a) a girl who goes to school, (b) a happy story about a birthday party, (c) a girl who goes to the zoo, (d) a sad story about a girl who loses her favorite toy, (e) a girl who goes to the moon, and (f) a girl who has super powers.

Facilitators aimed to have each story take 5 to 7 min so that four versions could be played out per session. So that the above-average players would not overshadow below-average players, children were asked to take turns adding to the plot and traded characters between stories. Facilitators encouraged good play using questions, modeling of ideas, labeling feelings, and positive reinforcement. The toy set included male and female dolls, aggressive and nonaggressive animals, a variety of vehicles, miniature props for the dolls, building blocks, and ambiguous items to stimulate imagination. Over the course of the six sessions, the number of toys available was gradually reduced so that finding the right props or setting up a scene required more and more imagination.

**Control group protocol.** The control group was designed to control for time interacting with adults and group interaction with peers without the fantasy or affect expression elements of the experimental group. Participants met the same number of times as the experimental group and completed puzzles, coloring sheets, and necklaces from beads and string. Facilitators used modeling, prompting, and reinforcement to promote on-task behavior and to give control group participants equivalent attention, praise, and social engagement as the experimental groups.

**Fidelity.** Twenty percent of sessions were videotaped and reviewed by an independent rater for fidelity of implementation. All sessions reviewed had the appropriate materials, at least three of the four participants, and both cofacilitators present. Of the intervention sessions reviewed, all contained prompts, modeling, and praise for imagination and affect, as per the intervention protocol. All of the control sessions reviewed included prompts and praise for on-task behavior, group discussions, the presentation of the activity, and encouragement to share materials.

Videotapes were also reviewed for differing amounts of praise and modeling of fantasy and affective expression, as intended in the protocols, and for equivalent amounts of overall praise, describing and summarizing of participant behavior, and amount of social interaction across all groups. The 12 sessions reviewed were also evaluated for facilitator warmth, overall praise, level of engagement, fairness, and overall social interaction. Independent samples *t* tests for each of these categories indicated strong implementation fidelity (see Table 1).

**Outcome assessment.** Outcome assessments took place individually for one 30-min session in which play, creativity, state positive and negative affect, and school satisfaction were readministered. Outcome assessments were administered within 2 weeks of the last intervention or control session. The experimenters conducting the pre- and posttest assessments were blind to the study hypotheses and to which groups the participants had been assigned. The cofacilitators who conducted the intervention and control sessions did not conduct any of the pre- or posttest assessments. To be included in the study for outcome purposes, participants were required to attend at least four of the six play inter-

vention or control sessions. In the present study, all participants met this attendance requirement and therefore all 40 were included in the outcome analyses.

## Measures

**APS (Russ, 2004, 2014b).** The APS is a standardized 5-min play task, administered individually. Children are given two puppets and three blocks, and asked to play with them anyway they wanted for 5 min, having the puppets talk out loud. The play is scored from videotape using a criterion-based rating scale with five main scores: (a) Organization—the quality of the plot and the complexity of the story; (b) Imagination—the novelty and uniqueness of the play including the child's use fantasy elements and transformation; (c) Comfort—a global rating of the child's comfort and enjoyment engaging in play; (d) Frequency of Affect—a frequency count of affect units expressed within the play narrative, for example, a character in the play saying "Yikes it's a monster!" or "Yay, it's my birthday!"; and (e) Variety of Affect—a frequency count of the number of affect categories expressed in 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.

Studies have found the APS to positively relate to divergent thinking (Hoffmann & Russ, 2012; Russ & Grossman-McKee, 1990; Russ et al., 1999; Russ & Schafer, 2006). APS scores have also been found to relate to emotion regulation (Hoffmann & Russ, 2012) and subjective well-being (Fiorelli & Russ, 2012). Interrater reliability for the APS scores has been consistently good, typically in the .80s and .90s using Cohen's kappa. Internal consistency for the APS score of affect frequency, using the Spearman-Brown split-half reliability, is also high (.85; Seja & Russ, 1999). For this study, interrater reliability was assessed using a rigorous form of intraclass correlation coefficient (ICC) 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. One rater

Table 1  
*Comparison of Implementation Fidelity Means for Control and Intervention Groups*

Variable	Control group		Intervention group		<i>t</i> test
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Tallies of facilitator behavior					
Praise for using fantasy	.00	.00	7.17	3.71	$t = -4.73, p = .001$
Praise for using affect	.00	.00	3.50	1.76	$t = -4.87, p = .001$
Modeling fantasy	.00	.00	18.50	4.89	$t = -9.27, p = .000$
Modeling affect	.00	.00	7.17	2.99	$t = -5.86, p = .000$
Modeling on-task behavior	13.50	6.86	.50	1.22	$t = 4.57, p = .001$
Total praise	8.50	3.14	11.00	5.66	$t = -.95, p = .37$
Total describing/labeling	2.67	2.34	2.17	1.17	$t = .47, p = .65$
Total interaction	7.17	3.54	5.67	2.07	$t = .90, p = .39$
Likert ratings of facilitator (1–5)					
Verbal praise	4.50	.55	4.17	1.17	$t = -.63, p = .54$
Overall warmth	4.50	.55	4.50	.55	$t = .00, p = 1.0$
Overall engagement	4.50	.84	4.83	.41	$t = -.88, p = .40$
Overall fairness	4.83	.41	5.00	.00	$t = -1.00, p = .34$
Overall social interaction	4.67	.82	5.00	.00	$t = -1.00, p = .34$

scored all 40 videotapes, whereas a second rater scored 20 randomly chosen tapes. The average scores for the ICCs were as follows: **Organization**, .60; **Imagination**, .66; **Comfort**, .79; **Frequency of Affect**, .83; **Variety of Affect**, .78; **Positive Affect**, .81; and **Negative Affect**, .86. These ICCs are all within the moderate to strong agreement range.

**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 Task. Using all of a child's answers to the six items, two scores were calculated: (a) Fluency, the total number of acceptable answers generated; and (b) Originality, a score calculated by the number of answers a child gives that less than 1% of other participants also gave. The Alternate Uses Task has excellent reliability and validity, shown in many studies conducted with children (e.g., Kogan, 1983; Runco, 1991).

**Storytelling task.** The storytelling task asks children to look through a picture book and tell a story that goes along with the pictures. Mercer Meyer's (1967) picture book *A Boy, a Dog, and a Frog* was used at baseline, and Meyer's (1969) book *Frog, Where Are You?* was used at outcome to minimize practice effects. Participants told their stories verbally and the examiner recorded the stories.

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 5-point Likert-type scales (1 = *lowest*, 5 = *highest*) for Creativity, Imagination, Novelty, and Likability, the four variables that Hennessey and Amabile found to load highly on a Creativity factor for storytelling. Raters were not given specific criteria for rating the stories or anchor points for the rating scale, but were given brief definitions of the four variables and asked to rate the stories compared with each other. *Imagination* was the amount of extra information included in the story beyond that provided in the pictures. *Novelty* was the unusualness or originality of the imaginative elements. *Creativity* was scored by examining the imaginative elements for both novelty and usefulness. *Likability* was rated on readability and the use of storytelling elements such as "once upon a time" or "all of a sudden."

Interrater reliability was calculated using all 40 baseline stories, scored independently by two raters. The average scores for the intraclass coefficients were .84 for Imagination, .80 for Novelty, .80 for Creativity, and .80 for Likability. These ICCs indicate strong agreement between the two raters. Similar interrater reliability was reported in Hoffmann and Russ (2012), in which the storytelling variables were found to relate to divergent thinking and pretend play. There were high correlations among the four storytelling variables, so a single overall storytelling score was computed by averaging the four scores for use in additional analyses.

**Positive and Negative Affect Schedule for Children (PANAS-C).** The PANAS-C is a 30-item self-report scale, designed to assess recent experiences of positive and negative affect in children. The scale asks children to report on how they have been feeling over the past 2 weeks, yielding a Positive Affect score and a Negative Affect score. The PANAS-C was originally vali-

dated for children in Grades 4 through 8, but was adapted for younger children by Moore and Russ (2008) by adjusting the vocabulary and deleting three items, leaving 27 items. The examiner reads the child each of 27 feeling words and invites the child to point to appropriate pictures to state how often they have felt that way on a 5-point scale (1 = *never* to 5 = *all the time*).

Moore and Russ (2008) reported a significant negative correlation between Negative Affect on the PANAS-C and negative affect expression in play. Fiorelli and Russ (2012) 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. Additionally, the adapted PANAS-C Positive Affect subscale significantly related to an overall measure of life satisfaction (Moore & Russ, 2008). Although 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 5 years old.

**School satisfaction (MSLSS-C).** The Multidimensional Student Life Satisfaction Scale for Children (MSLSS-C) assesses life satisfaction across family, friends, school, living environment, and self to measure subjective well-being. In the current study, the five items of the School Satisfaction subscale were used. The original version of the scale is validated for children in Grades 3 and up (Huebner, 1991, 1994). Russ et al. (2004) adapted the scale for use with younger children by editing the language to be suitable for younger children. The MSLSS-C overall has good psychometric properties; the school factor has acceptable internal consistency ranging from .72 to .84 across samples (Huebner, 1994), and convergent validity has been demonstrated through correlations with Quality of School Life Scale (Epstein & McPartland, 1977; Huebner, 1994), and Positive Affect on the PANAS-C (Moore & Russ, 2008).

## Results

### Data Analysis

Repeated-measures ANOVAs were used to test for significant changes in pretend play, creativity, positive and negative affect, and school satisfaction as a result of the play intervention, controlling for baseline scores. Pearson product-moment correlations were used to test for significant baseline correlations. An alpha value of .05 was used for all statistical tests. Two-tailed tests were used for all analyses. Table 2 presents the overall descriptive statistics for the sample and ANOVA results.

### Changes in Pretend Play

As hypothesized, the six-session pretend play intervention had a statistically significant effect on pretend play skills 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 with controls,  $F(1, 38) = 7.18, p = .01$ , which was a large effect size,  $\eta_p^2 = .16$ . Similarly, imagination in play increased significantly over time for the intervention group compared with the control group,  $F(1, 38) = 6.00, p = .02$ , which was a large effect size,  $\eta_p^2 = .14$ . For comfort in play, the hypothesis was not supported; the variable measuring comfort engaging in the play task did not change



Table 2

Descriptive Statistics and ANOVA Results for All Variables at Pretest and Posttest by Group Assignment

Measure and variable	N	Intervention group		Control group		ANOVA results	Effect size
		Pretest <i>M</i> ( <i>SD</i> )	Posttest <i>M</i> ( <i>SD</i> )	Pretest <i>M</i> ( <i>SD</i> )	Posttest <i>M</i> ( <i>SD</i> )		
Affect in play scale							
Organization	40	2.40 (1.23)	3.20 (1.44)	2.55 (1.43)	2.40 (1.40)	$F = 7.18, p = .01$	$\eta_p^2 = .16$
Imagination	40	2.35 (1.04)	3.00 (1.08)	2.45 (1.28)	2.25 (1.07)	$F = 6.00, p = .02$	$\eta_p^2 = .14$
Comfort	40	3.15 (1.53)	3.35 (1.46)	3.40 (1.67)	3.10 (1.55)	$F = 1.37, ns$	$\eta_p^2 = .04$
Frequency of affect	40	7.05 (7.80)	12.65 (8.78)	8.50 (9.27)	9.05 (11.06)	$F = 5.28, p = .03$	$\eta_p^2 = .12$
Variety of affect	40	2.15 (1.87)	3.30 (2.11)	2.60 (2.48)	2.40 (2.35)	$F = 4.56, p = .04$	$\eta_p^2 = .11$
Positive affect	40	3.60 (3.47)	7.80 (6.11)	5.20 (5.87)	4.75 (4.85)	$F = 9.87, p = .003$	$\eta_p^2 = .21$
Negative affect	40	3.45 (6.23)	4.65 (5.76)	3.30 (4.49)	4.30 (7.23)	$F = .01, ns$	$\eta_p^2 = .00$
Divergent thinking							
Fluency	40	15.70 (6.76)	17.20 (7.05)	18.70 (9.00)	13.30 (4.88)	$F = 10.58, p = .002$	$\eta_p^2 = .22$
Originality	40	3.65 (3.63)	4.60 (4.37)	4.85 (4.33)	2.55 (1.54)	$F = 6.98, p = .01$	$\eta_p^2 = .16$
Storytelling	40	2.80 (1.22)	3.28 (1.13)	3.20 (1.35)	3.26 (1.36)	$F = 1.29, ns$	$\eta_p^2 = .03$
PANAS-C							
Positive affect	40	51.55 (7.01)	50.65 (6.23)	50.05 (9.97)	51.45 (8.88)	$F = 1.32, ns$	$\eta_p^2 = .03$
Negative affect	40	33.20 (13.66)	28.70 (13.45)	25.20 (9.42)	25.10 (10.70)	$F = 2.27, ns$	$\eta_p^2 = .06$

Note.  $\eta_p^2$  effect sizes: .01 = small effect, .06 = medium effect, .14 = large effect (Cohen, 1988). *ns* = not significant; PANAS-C = Positive and Negative Affect Schedule for Children.

significantly over time for either group and no interaction with group assignment was observed,  $F(1, 38) = 1.37, p = .25$ , and calculation of effect size showed a small effect,  $\eta_p^2 = .04$ .

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 with the control group,  $F(1, 38) = 5.28, p = .03$ , as hypothesized, with a medium effect size,  $\eta_p^2 = .12$ . The same was found for the variety of affect variable,  $F(1, 38) = 4.56, p = .04$ ,  $\eta_p^2 = .10$ . A more specific examination looking at changes in positive affect and negative affect separately showed a significant change in positive affect expression,  $F(1, 38) = 9.87, p = .003$ , with a large effect size,  $\eta_p^2 = .21$ , whereas there was no effect of the intervention over time on the expression of negative affect,  $F(1, 38) = .01, p = .91$ .

### Changes in Creativity

**Divergent thinking.** Using repeated-measures ANOVAs for the divergent thinking variables, significant interaction effects were found for both variables, as hypothesized: fluency,  $F(1, 38) = 10.58, p = .002$ , and originality,  $F(1, 38) = 6.98, p = .01$ . For both variables, the effect sizes were large,  $\eta_p^2 = .22$  for fluency, and  $\eta_p^2 = .16$  for originality. However, an examination of means for each group at baseline and outcome indicated that the magnitude of this interaction effect is due not only to an increase in divergent thinking scores for the intervention group but also to a significant decrease in divergent thinking scores for the control group.

**Storytelling.** Repeated-measures ANOVA did not reveal any significant effects of the play intervention over time for performance on the storytelling task,  $F(1, 38) = 1.29, p = .26$ , with a small effect size,  $\eta_p^2 = .03$ . The hypothesis that storytelling performance would improve for the intervention group at outcome compared with 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 2 weeks as measured by the PANAS-C: positive affect,  $F(1, 38) = 1.32, p = .26$ ,  $\eta_p^2 = .03$ ; negative affect,  $F(1, 38) = 2.27, p = .14$ ,  $\eta_p^2 = .06$ . Additionally, the self-reported measure of school satisfaction did not significantly change over time, and no interaction was found between groups,  $F(1, 38) = 0.91, p = .35$ ,  $\eta_p^2 = .02$ . Hypotheses regarding increases in positive affect and school satisfaction, and a decrease in negative affect for the intervention group were not supported.

### Intervention Effect on Target Participants

For the purposes of including peer mentors and keeping all baseline play scores confidential, both above-average and below-average players received the group intervention; however, a main interest of this study was the effects of the play intervention specifically on those children who had shown difficulty engaging in pretend play at baseline.

Repeated-measures ANOVA revealed that the play intervention had a significant effect on the play skills of the target group for organization,  $F(1, 18) = 5.23, p = .03$ ,  $\eta_p^2 = .23$ ; imagination,  $F(1, 18) = 6.94, p = .02$ ,  $\eta_p^2 = .28$ , and frequency of affect,  $F(1, 18) = 4.20, p = .05$ ,  $\eta_p^2 = .19$ . Organization in play significantly increased for the experimental group from pretest ( $M = 1.60, SD = .52$ ) to posttest ( $M = 2.80, SD = 1.55$ ),  $t(9) = -3.34, p = .01$ , while remaining the same for the control group from pretest ( $M = 1.30, SD = .67$ ) to posttest ( $M = 1.50, SD = .53$ ),  $t(9) = -.80, p = .44$ . Similarly, imagination in play significantly increased in the experimental group from pretest ( $M = 1.50, SD = .53$ ) to posttest ( $M = 2.80, SD = 1.23$ ),  $t(9) = -3.55, p = .006$ , whereas it remained the same for the control group from pretest ( $M = 1.40, SD = .70$ ) to posttest ( $M = 1.60, SD = .27$ ),  $t(9) = -1.00, p =$

.34. Finally, frequency of affect in play also significantly increased for the experimental condition from pretest ( $M = 1.40$ ,  $SD = 1.90$ ) to posttest ( $M = 6.70$ ,  $SD = 6.80$ ),  $t(9) = -2.68$ ,  $p = .03$ , whereas it remained the same for the control group from pretest ( $M = 2.40$ ,  $SD = 4.94$ ) to posttest ( $M = 2.30$ ,  $SD = 3.59$ ),  $t(9) = .06$ ,  $p = .96$ . No significant impact of the intervention was found for comfort,  $F(1, 18) = 1.20$ ,  $p = .29$ ,  $\eta_p^2 = .06$ , nor variety of affect,  $F(1, 18) = 2.51$ ,  $p = .13$ ,  $\eta_p^2 = .12$ . With the exception of variety of affect, these results were similar to those found for the overall sample.

For the divergent thinking variables, repeated-measures ANOVAs also revealed that the play intervention had a significant effect for the divergent thinking score of fluency,  $F(1, 18) = 5.09$ ,  $p = .04$ . Though there was a significant interaction term, paired-samples  $t$  tests were not significant for the experimental group from pretest ( $M = 13.7$ ,  $SD = 4.47$ ) to posttest ( $M = 16.3$ ,  $SD = 6.73$ ),  $t(9) = -1.83$ ,  $p = .10$ , nor for the control group from pretest ( $M = 14.0$ ,  $SD = 6.60$ ) to posttest ( $M = 12.00$ ,  $SD = 5.89$ ),  $t(9) = 1.40$ ,  $p = .20$ . Although a significant change in divergent thinking was not observed for the entire sample, there was some impact of the intervention on the targeted below-average players.

Repeated-measures ANOVAs revealed that the play intervention did not have significant effects for originality in divergent thinking, the overall storytelling score, or self-reported positive affect.

### Correlations Among Play, Creativity, and Affect Variables

As in past studies, a significant pattern of correlations emerged between pretend play and divergent thinking; organization, imagination, comfort, and positive affect significantly positively correlated with fluency in divergent thinking. In addition, organization and imagination in play significantly positively correlated with originality in divergent thinking. All pretend play variables except for negative affect also correlated with overall storytelling ability. Pretend play variables did not relate to Positive Affect or Negative Affect on the PANAS-C (see Table 3).

Exploratory analyses revealed other significant correlations among the creativity variables and well-being variables. Notably, fluency and originality in divergent thinking related to the overall storytelling score,  $r(40) = .46$ ,  $p = .003$ , and  $r(40) = .36$ ,  $p = .03$ , respectively. Storytelling was also significantly positively corre-

lated with self-reported Negative Affect on the PANAS-C,  $r(40) = .39$ ,  $p = .01$ . Divergent thinking was not correlated with the PANAS-C.

## Discussion

### Effects of the Play Intervention on Play Skills

The intervention had a significant effect on improving children's pretend play skills compared with the control group, as hypothesized. Children enrolled in the pretend play intervention showed significantly improved organization, imagination, and affect expression in their play postintervention compared with the control group. Furthermore, when the targeted, below-average players were examined, they also showed significant improvement in organization, imagination, and affect expression compared with the below-average players in the control group. Comfort in play did not change from pretest to posttest, which is consistent with individual play intervention results (Hoffmann et al., 2012; Moore & Russ, 2008; Russ et al., 2004), and suggests that the improvements in other play scores cannot be attributed to a mere reduction in performance anxiety or familiarity with the APS task. These findings support the theory that children's pretend play skills can be improved through brief intervention (Dansky, 1999; Russ, 1993), and that children's play skills can be developed in school (Dansky, 1980; Freyberg, 1973; Saltz & Johnson, 1974; Smilansky, 1968; Udwin, 1983). Results from this 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.

This study is the first to adapt this specific pretend play intervention protocol to a group format. These significant improvements in play skills are similar to those reported using the individual play intervention manual (Hoffmann et al., 2012; Russ et al., 2004). The changes in organization, imagination, and frequency of affect expression reported by Russ et al. (2004) for their affect group were replicated in the present study. In addition, although Hoffmann et al. (2012) reported significant changes in organization and imagination for the below-average players following a four-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.

There are several possible benefits of the group play format. The group play likely increased the breadth of skills the children

Table 3  
Correlations Among Pretend Play and All Other Variables

Measure and variable	Organization	Imagination	Comfort	Frequency of affect	Variety of affect	Positive affect	Negative affect
Divergent thinking							
Fluency	.54*** (.42**)	.57*** (.43**)	.39* (.34*)	.34* (.25)	.20 (.17)	.41** (.35*)	.18 (.08)
Originality	.45** (.36*)	.49** (.38*)	.28 (.22)	.21 (.13)	.11 (.07)	.29 (.22)	.08 (.01)
Storytelling	.62*** (.60***)	.58*** (.56***)	.45** (.43**)	.40* (.37*)	.44** (.43**)	.42** (.40*)	.26 (.23)
PANAS-C							
Positive affect	.11 (.24)	.17 (.34*)	.28 (.35*)	.04 (.11)	.11 (.14)	.04 (.10)	.03 (.08)
Negative affect	.22 (.26)	.19 (.24)	.10 (.11)	.12 (.14)	.20 (.21)	.02 (.03)	.18 (.20)

Note.  $N = 40$ . Numbers in parentheses are partial correlations controlling for grade. PANAS-C = Positive and Negative Affect Schedule for Children.  
\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .



witnessed, allowing them to learn from each other and be exposed to a larger number of diverse ideas than in a one-on-one style intervention. Moreover, this effect was likely augmented by the incorporation of the above-average players. The play group also creates social pressure to maintain the organization of the story; this pushes participants to find creative ways to incorporate their ideas into the plot without losing the cohesiveness of the story for the group.

### Effects of the Play Intervention on Divergent Thinking

Changes in children's divergent thinking were also observed post intervention, though not as predicted. When the below-average players were examined, the results did show that divergent thinking improved at outcome for those enrolled in the intervention compared with children in the control. Given the well-established relationship between pretend play and divergent thinking, there is a theoretical basis to predict that the children who improved their pretend play skills would also show improvement on the divergent thinking task. Good pretend play requires many of the same cognitive and affective processes as divergent thinking, including idea generation, flexible thinking, and access to variety of emotions (Russ, 2004, 2014b). The results found with the below-average players supports the theory that significant improvement in pretend play skills can also produce significant improvement in divergent thinking.

When using the whole sample, the intervention group showed a slight, but not significant, increase in divergent thinking postintervention, whereas the control group showed a significant decrease in divergent thinking. This effect was found for both fluency and originality. This is a similar finding to those reported for the individual play intervention (Hoffmann et al., 2012), in which no significant changes in divergent thinking were detected. 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.

Past play intervention studies have show improvements in divergent thinking; thus, it is possible that something about this particular play intervention was unable to produce the same results. For example, the group format may have required less individual practice at generating ideas than individual interventions. A second alternative is that although children are experiencing improvements in their pretend play skills, they are not translating these skills to other areas, such as divergent thinking. This theory has been proposed by Russ and Dillon (2011) to interpret recent findings that pretend play skills have been increasing over the last two decades, whereas other research has shown a significant decrease in creativity (Kim, 2011). Although pretend play and divergent thinking are significantly correlated, improvement in pretend play may not necessarily facilitate improvement in divergent thinking.

The significant decrease in divergent thinking scores found for the control group may mean that the control group did not exert as much effort on the divergent thinking task at outcome because there had been little or no reward or reinforcement for thinking creatively at pretest nor during control intervention sessions. Puzzles, coloring sheets, and beads were all presented as creative tasks

to the children but did not include any imagination, risk taking, or emotional content. A nonemotional stance taken during the divergent thinking task would likely decrease one's performance (Russ, 2004). This result may speak to the potential negative effects of rote tasks and academic drilling on creativity in school.

### Storytelling and Well-Being

The pretend play intervention did not have an effect on children's storytelling, nor on their reported positive and negative affect and school satisfaction. These outcome variables may have been too far removed from the intervention procedures to be affected by such a brief intervention. For storytelling, it may also have been that the measure used was not sensitive enough to detect changes in children's storytelling skills. Alternatively, because the pictures for the story were supplied, they may not have left enough room for children to display their true individual differences in creative ability.

Unlike in past studies, relationships among play and state affect were not found with the present sample, with the exception of comfort in play with state positive affect and variety of affect expression in play with state negative affect; it therefore makes sense that a change in pretend play ability would not transfer to a reported change in state affect for this group. There are many personal and situational variables that impact one's subjective well-being beyond pretend play skills; a shift in play ability alone likely does not account for enough of the variance in one's daily emotional experience to reliably impact scores on the PANAS-C, at least not immediately.

### Relationships Among Variables at Baseline

Relationships among baseline scores of play, creativity, and well-being were explored. Pretend play related to divergent thinking and storytelling, replicating past studies using the APS (Cordiano, Russ, & Short, 2008; Hoffmann & Russ, 2012). Of particular interest is the finding that positive affect in play related to divergent thinking and storytelling, whereas negative affect in play did not relate. This pattern of correlations fits with much creativity theory and research regarding the enhancing effects of access to positive affect on creative thought (Isen, Daubman, & Nowicki, 1987; Russ, 1993). The lack of correlations among negative affect and creativity may also be because of 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). Play and creativity studies have noted similar sex differences (e.g., Lieberman, 1977; Singer & Rummo, 1973). In studies using the APS, negative affect and divergent thinking have been found to correlate when using a coed sample (e.g., Russ & Schafer, 2006), but not for all female samples (e.g., Hoffmann & Russ, 2012). Russ (1982) has suggested that girls are not as free as boys to express aggression and negative affect in play, and therefore girls do not learn to use aggressive themes 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. This finding differs from that reported by Moore and Russ (2008), in which children with more

negative affect expression in their play reported less negative affect on the PANAS-C. These results may also be because of the all-female sample. Females may not be translating the negative affect in their play into creative problem solving or coping in the same way as male children. Alternatively, Fiorelli and Russ (2012) found that positive affect in play related to positive affect 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 require more time to take effect.

Divergent thinking and storytelling, two different forms of creativity, were associated. Children who have higher divergent thinking scores also created stories that were rated as more creative. This is suggestive of some common abilities across creative tasks. This is a replication of findings reported by Hoffmann and Russ (2012), using a different sample of children, speaking to the robustness of the finding (Russ, 2014a).

This study did not include a measure of IQ or verbal intelligence, which, in theory may inform some of the relationships among play, divergent thinking, and storytelling. Verbal intelligence was not included in this study because past studies have shown no correlation with the APS (e.g., Hoffmann & Russ, 2012; Russ et al., 1999), nor with the storytelling task (Hoffmann & Russ, 2012). Divergent thinking fluency and IQ have been shown to relate in some studies (e.g., Runco & Albert, 1986); however, a recent meta-analysis suggests that the relationship between creativity test scores and IQ may be negligible (Kim, 2005). Moreover, several studies have shown that divergent thinking ability is predictive of creative achievement above and beyond that explained by IQ (Harrington, Block, & Block, 1983; Kim, 2008).

### Development of the Play Intervention

This study advances the research program of Russ and colleagues (2004, 2010) develop feasible, school-based, pretend play interventions that help build children's play skills. This study is the first to adapt Russ's intervention to a group format and the first to include a teacher as cofacilitator. This play intervention was purposefully designed to be brief, using minimal and easily accessible toys to increase the likelihood that most schools would be able to implement it without taxing their resources.

One limitation of the current study is the small sample size and therefore low power for detecting group differences, especially when looking at the below-average subset of the sample. For the sample as a whole, power calculations, with projected medium effect sizes,  $\alpha = .05$ , and a sample of size of  $N = 40$ , gives a power of .60. Retrospective power calculations done in SPSS also produced estimates in the .60s and .70s. More power could be achieved with a larger sample, now that feasibility of this intervention has been established. Russ and colleagues (2004, 2010) have developed detailed manuals for both the individual and group play interventions; these manuals will allow for training of multiple researchers at multiple sites in a standardized way, providing the possibility for a larger study in the near future.

A replication of this study with a larger sample may also allow for more detailed analyses of the below- and above-average players. For example, this study did not examine whether the amount of praise given to above-average and below-average players was equivalent, because videotapes were coded for facilitator behavior toward the group as a whole rather than individual participants; in

a replication study, this could be an avenue for further exploration. Additionally, there is room to investigate whether the play intervention may be most effective for below-average players who have room to grow, or for those children already comfortable with play who are interested in improving their skills. The current results suggest the former, but additional research is needed in this area to understand the types of child populations for whom play interventions are appropriate.

A limitation to generalizability may be the demographics of this sample: largely middle- to upper-class girls. However, past play interventions have typically been tested on children from disadvantaged backgrounds (e.g., Russ et al., 2004; Smilansky, 1968), who have more room for improvement in their play abilities, so in actuality, the effect of improved play in this advantaged sample may speak to the general power of play interventions.

Overall, this group intervention improved the play skills of its participants, but these skills largely did not transfer to measurable changes in creativity skills, nor relate to state affect or school satisfaction. The enhancement of children's play ability itself is a positive first step and moves research in this area forward. It may be that play truly does not facilitate development but emerges in parallel with other skills, or that effects take longer to show an impact. There were also many other possible areas of change that have been studied in the past but were not measured here, such as cognitive ability, attention, and behavior in the classroom. Moreover, this current sample was quite advantaged and well-adjusted to begin with; thus, showing improvement was difficult. This study did find effects for play and creativity for the targeted below-average players and demonstrated that the integration of quality playtime into the school day is feasible. This has important implications for applying similar play interventions in schools struggling with time and resources, for the children who may need the extra support most.

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