



Conceptual split? Parents' and experts' perceptions of play in the 21st century ☆

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ABSTRACT

Two studies examined U.S. mothers' ($N = 1130$) and child development professionals' ($N = 99$) beliefs about the relationship between play and learning. Study 1 investigated relationships among maternal conceptualizations of play, perceived learning value, and frequency of children's play behaviors. *All Play* mothers viewed activities ranging from unstructured, imaginary behaviors to structured, goal-oriented activities as play, *Traditional* mothers viewed unstructured activities as playful and *Uncertain* mothers seemed less clear about what constituted play. While mothers ascribed more learning value to structured activities, amount of value varied in relation to their conceptualizations of play. Frequency in which children play in these activities also varied in relation to mother's "play-learning" beliefs. Study 2 revealed that professionals and mothers differed in their play beliefs. Professionals rated structured activities as nonplay, associating less learning value with these activities compared to unstructured activities. Implications concerning societal trends towards structured learning environments for children are discussed in light of Irving Sigel's work.

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For the free man there should be no element of slavery in learning. Enforced exercise does no harm to the body, but enforced learning will not stay in the mind. So avoid compulsion, and let your children's lessons take the form of play (Plato, The Republic, vii, 536, in Cornford, 1945).

1. Introduction

From ancient philosophy to modern scientific research, play has been viewed as an integral component in learning and child development. Contrary to this belief, play activities that foster intellectual exploration and flexibility appear to have diminished in society. Across early childhood education and home environments, play has shifted from its previous child-initiated basis of "free" or "unstructured play" to a structured, educational thrust for early academic preparation. Play and recess activities in elementary

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schools have been reduced or replaced with structured, didactic lessons (Pellegrini, 2005; Zigler, Singer, & Bishop-Josef, 2004). Parents report a reduction in children's free time at home, often replaced by structured activities with an academic concentration (Kaiser Family Foundation, 2005; Raymond, 2000). As forewarned by Irving Sigel (1987), "hothousing" techniques to foster early childhood learning have led to a focus on structured activities designed to promote academic results rather than thinking and creativity. The emphasis on academic preparation over unstructured play may represent an emerging parental belief of play's reduced effectiveness for early academic learning. As important caregivers in children's daily lives, mothers and early childcare professionals share important roles in influencing children's early play and learning environments.

Play is a multidimensional construct that varies in meaning across time, culture, and contexts (e.g., Cohen, 2006). From make-believe to hopscotch, many diverse behaviors are considered playful, making it notoriously difficult to articulate an all-encompassing definition of play (e.g., Tamis-LeMonda, Uzgiris, & Bornstein, 2002). Furthermore, beliefs about the nature of play vary widely between play theorists, leading to a plethora of definitions. For example, theorists define play by the nature of the activity itself, such as its lack of externally imposed rules (e.g., Rubin, Fein, & Vandenberg, 1983), need for inherent structure (e.g., Fromberg, 2002), or social interactivity (e.g., Bateson, 1955). Still others focus on personal attributes of the child, such as freedom of choice in play engagement, intrinsic motivation driving play, and sustained or enhanced positive affect during the activity (e.g., Lazarus, 1885). As seen in these definitions, a particular belief about play fundamentally limits the activities that are identified as play.

Varying conceptualizations of play have led to research linking specific play activities to diverse developmental benefits. In the domain of cognitive development, spontaneous, everyday play in early childhood often sets the foundation for early mathematical thinking, as children experiment with shape, space, pattern, and number found in their surroundings (e.g., Ginsburg, Cannon, Eisenband, & Pappas, 2005). In addition, research has shown that children use play to disentangle ambiguities they find in the world and to test their incipient hypotheses about how things work (e.g., Schulz & Bonawitz, 2007). For example, when preschoolers are offered a toy to play with that has an ambiguous causal mechanism, the first thing they do, without being told, is figure out how the toy works through exploratory play.

Symbolic play emerges in the second year, and children invoke an imaginative, role-taking component when playing with objects (Tamis-LeMonda et al., 2002). Such play activities range from relying on familiar objects and scenarios, such as using a banana for a telephone, to fantasy-based roles and contexts, such as acting as a fairy princess in another land. Cognitive effects of symbolic play are far reaching, including enhanced abstract thought (Saltz, Dixon, & Johnson, 1977), symbolic representation (DeLoache, 2002), perspective taking (Youngblade & Dunn, 1995), creativity (Russ, Robins, & Christiano, 1999), memory (Newman, 1990), intelligence (Johnson, Ershler, & Lawton, 1982), language (Pellegrini & Galda, 1993), and literacy (e.g., Nicolopoulou, McDowell, & Brockmeyer, 2006). It is also central to the development of self-regulation, in which children learn to manage their own behaviors and emotions (e.g., Berk, Mann, & Ogan, 2006).

Further, play activities provide socioemotional benefits when children play together. Social play helps children learn to subordinate desires to social rules, cooperate with others willingly, and engage in socially appropriate behavior (e.g., Berk et al., 2006). Fantasy or make-believe play has been found to be crucial for building children's social competence, including their ability to self-soothe and cope emotionally (e.g., Connolly & Doyle, 1984).

For many, these seemingly divergent areas of play research have converged into a common 'play-learning' belief: play, in its many forms, represents a natural, age-appropriate method for children to explore and learn about themselves and the world around them (Singer & Singer, 2005). Through play, children acquire knowledge and practice new skills, providing a foundation for more complex cognitive processes and academic success.

Irving Sigel spent much of his professional career advocating that play be incorporated in early educational environments and in home settings (Laosa & Sigel, 1982; Sigel, 1987). According to Sigel, "the child as an active learner has to have opportunities for self-directed activities through play and other exploratory adventures as a means of self-stimulation and healthy development" (Sigel, 1987, p. 214). Sigel and colleagues believed the optimal early learning environment promotes physical and cognitive exploration (alone and with others), and a warm, encouraging atmosphere (Copple, Sigel, & Saunders, 1979). Later research has supported this assertion. For example, Marcon's (2002) longitudinal study found that children in playful learning or 'child-initiated learning' environments showed superior social behaviors, fewer conduct disorders, enhanced academic performance and retention beyond children who experienced didactic instruction and play-learning. Other researchers have documented similar gains in social and academic development of child-initiated learners over didactic learners (Burts, Hart, Charlesworth, & DeWolf, 1993; Lillard & Quest, 2006; Schweinhart & Weikart, 1997).

The findings briefly reviewed here provide evidence for the play-learning belief espoused by Sigel and echoed by other prominent researchers in child development (e.g., Hirsh-Pasek, Golinkoff, Berk, & Singer, 2008; Piaget, 1962; Vygotsky, 1978). Specific forms of play, particularly those that promote child-initiated exploration and curiosity, lead to the acquisition of knowledge and skills necessary for later academic success. As Sigel (1987) noted, highly structured learning environments seem to oppose children's natural learning mechanism, which may account for their reduced effectiveness as found in educational research.

Over two decades ago, Sigel (1987) noted that the United States is embroiled in an ideological conflict in how to best educate preschool children. In opposition to the play-learning belief endorsed by the scientific community, 'hothousing' became a norm within U.S. society. Caregivers attempted to teach children complex cognitive skills (e.g., arithmetic, vocabulary, reading, foreign language) well before their typical developmental onset. According to Sigel (1987), the underlying philosophy of the hothousing belief was that children have a natural proclivity and motivation to learn and thus "children can learn anything if it is properly arranged; that appropriate structuring of the very young child's learning environment with accompanying, properly calibrated materials will enable that child to learn" (p. 212).

Echoing Sigel's early warnings, Zigler et al. (2004) assert that play is now under siege. In educational settings, play and recess activities in kindergarten and elementary schools have been reduced or replaced with structured, didactic lessons as current educational policy promotes rote memorization and learning of factual knowledge at the expense of playful exploration (National Education Association, 2007; Pellegrini, 2005). Such findings suggest a growing emphasis on early academic preparation for children through structured activities, opposing the play-learning approach supported by developmental research (Hirsh-Pasek & Golinkoff, 2003; Zigler, 1987).

While research and theory supports the play-learning belief, little is known about parents' beliefs about play and its role in preparing children for later academic tasks beyond the observed societal trends. According to Sigel and McGillicuddy-De Lisi (2002) and McGillicuddy-De Lisi (1982), parental beliefs about children's learning processes evolve from nomothetic and idiosyncratic cultural experiences. For example, a mother who believes that children learn best through direct instruction would be influenced by a cultural emphasis on didactic instruction style, her own learning experiences as a child, and observation of how her child learns.

Further, beliefs influence how parents interact with their children, which in turn, influence developmental outcomes. Musun-Miller and Blevins-Knabe (1999) found that parents' beliefs about how children learn math were related to parents' engagement in math-related activities with their children. Parents who valued math and believed that they played a key role in developing mathematical understanding engaged in a higher frequency of math-based activities with their children. Similarly, Donahue, Pearl, and Hertzog (1997) found that mothers' beliefs about oral language development predicted maternal behavior on a communication task with their children. In addition, parental beliefs have an indirect relationship with child development. Parental beliefs influence how parents organize children's everyday living contexts, from the objects found in the home environment (e.g., toys), to their daily routines and social interactions (McGillicuddy-De Lisi, 1985; Palacios, Gonzalez, & Moreno, 1992). Thus, parenting behaviors appear to be influenced in quantity or quality when beliefs suggest that their behavior will be beneficial to the child (Sigel & McGillicuddy-De Lisi, 2002).

While parental beliefs appear to play a significant role in children's development, play-learning beliefs remain relatively unexplored in the developmental literature. Given that beliefs evolve in part through cultural and personal experiences, parents and experts may hold different beliefs about the nature of play itself (i.e., what activities are considered play) and its role in academic learning. Thus, the current research provides a preliminary exploration into differences in parent and expert beliefs about the nature and academic value of play. In the first study, maternal play-learning beliefs were explored through two measures: (1) how the adults classify 26 common childhood activities, and (2) how these activities are seen as related to academic learning. In addition, we explored how maternal play-learning beliefs relate to children's frequency of play engagement. In the second study, we examined how professionals in the area of child development differ from mothers in their conceptualizations of play and ascribed learning value.

2. Study 1: Examination of maternal beliefs about the nature and value of play

The first study explored mothers' beliefs about play with four primary objectives. The first objective was to identify how mothers conceptualize play. To our knowledge this is the first study examining mothers' theoretical understanding of play and therefore it is exploratory in nature. We hypothesized that mothers would view many activities as play behavior; however, these activities would differ in their perceived degree of playfulness (hypothesis 1). For example, mothers may rate 'dress-up' as a definitive form of play (high rating) while watching television may be rated as play behavior, but to a lesser degree (moderate rating).

Our second objective was to examine individual variation in mothers' conceptualizations of play. McGillicuddy-De Lisi (1982) noted that parental beliefs develop and evolve, in part, through personal experiences. This suggests that parents' conceptualizations of play would vary from one another, but similar trends may be observed given the influence of cultural values and norms. Thus, it was hypothesized that categories of mothers could be identified on the basis of their conceptualizations of play (hypothesis 2).

The third objective was to examine how maternal conceptualizations of play relate to academic learning (i.e., play-learning beliefs). Top selling toys and electronic media are marketed as having educational benefits (Kaiser Family Foundation, 2005). Such toys have highly visible value since they clearly promote academic learning (e.g., teach ABC's and numbers) and engage children (e.g., flashing lights, interactive buttons). Given the potential saliency of academic value in some play activities (e.g., electronic toys) than others (e.g., dress-up), we hypothesized that mothers' conceptualizations of play would also relate to differences in perceived academic value of certain play behaviors (hypothesis 3).

Lastly, we expected maternal play-learning beliefs to influence the frequency with which children engaged in various play activities (see McGillicuddy-De Lisi, 1985; Palacios et al., 1992). For example, mothers who perceive activities as highly playful as well as having high academic value may encourage their children to engage in those particular activities more than other activities. We therefore hypothesized that mothers who classified activities as highly playful with strong learning value would report that their children engaged in a higher frequency of those activities than in other activities (hypothesis 4).

2.1. Study 1 method

2.1.1. Participants

A cohort of 1130 mothers was recruited in 2004 and evaluated in a large scale internet survey of parental perceptions of children's play behaviors and toy use by a large corporation. Mothers represented diverse geographic backgrounds across the U.S.

(16% Northeast, 29% Midwest/North-Central, 37% South, 18% West) and ranged from 18 to 52 ($M = 32.0$, $SD = 5.71$) years. The cohort was 86% Anglo American, 5% African American, 3% Hispanic, 4% multiple ethnicities, and 2% unidentified background/ethnicity. Mothers reported higher than average educational level (15% high school graduate, 37% some college, 48% bachelor's degree or higher). Participants were typically married (86%) or unmarried and cohabitating (6%). Mothers were housewives (51%) or employed full- or part-time. They reported average national household income (22% less than \$35,000; 51% \$35,000–75,000; 26% greater than \$75,000; 1% no response). The number of children (< 18 years) residing in the household ranged from one child to five or more children ($M = 2.05$, $SD = .95$). Each mother answered survey questions in reference to one of her children, with the referent child restricted to the 0–5 year age range.

2.1.2. Procedure

Participants were recruited through internet advertisements and commercially available mailing lists by an independent survey organization. After accessing the online survey database, participants read a brief description of the survey, requirements for participation, and prize incentive for survey completion. Upon meeting the requirement of one child under the age of five, participants were presented with a short statement that introduced the survey as focused on what it is like to be the mom of a/an [insert child's age from filter question] old [baby/child].

Questions and statements in the survey referred to “baby” for participants with a child less than 12 months while those with children above 12 months read “child.” For mothers with multiple children under 5 years old, the survey randomly selected one of the children as the referent. After completing the questionnaire, participants were thanked for their time and opinions, and told they were entered into a monthly drawing for an electronic gift certificate to an online store.

2.1.3. Measures

A 26-item list was constructed to examine parental beliefs about the nature of play (see item listings in Table 1). Items were generated by a group of experts in child development who were familiar with the play literature and electronic media. The list encompassed activities that satisfied a range of theoretical definitions of play by experts as well as incorporated popular childhood activities consistent with current observations. The list became the basis of three separate scales in which participants (1) identified the frequency with which the referent child engaged in each activity, (2) rated each activity's degree of playfulness, and (3) rated each activity's relation to academic learning. The two latter scales were presented in a randomized order and all items were randomized *within* each scale.

Table 1

Summary of outcomes of rotated (promax) principal components analysis of mother perceptions of play ratings (italicized items used with mothers of infants < 12 mos.)

Play factor	PCA item loadings
<i>Factor I: Free, unstructured play (alpha = .93)</i>	
1. Using child-size play sets (like kitchen sets, work benches, doctor's kits, tools)	.91
2. Going outside to run around or use playground/backyard equipment	.90
3. <i>Throwing or rolling a ball or using other kinds of age-appropriate sports equipment</i>	.85
4. Using play sets (like Little People and Polly Pocket) or figures (like rescue heroes)	.81
5. <i>Using toy vehicles</i>	.81
6. Pretending with baby dolls or stuffed animals	.80
7. Dressing-up or pretending to be a superhero, a doctor, a mom, or anyone else	.78
8. <i>Using everyday objects found around the house as toys (like pots/pans, rubber containers, etc.)</i>	.77
9. <i>Using building blocks or building sets</i>	.76
10. <i>Having play dates or getting together with other children/babies around the same age</i>	.68
11. Coloring, drawing, painting, or doing other arts and crafts, or playing with clay	.68
12. <i>Exploring and discovering things inside or outside your house</i>	.60
13. <i>Participating in organized activities, like Cymboree, Mommy & Me classes, or play groups</i>	.39
14. <i>Crawling, walking, & running around for no particular reason</i>	.35
<i>Factor II: Structured play (alpha = .88)</i>	
Life skills play	
1. <i>Having a book read to them</i>	.80
2. <i>Looking at books or reading on their own</i>	.73
3. <i>Listening to music</i>	.73
4. <i>Going on trips like to the library, museum, or zoo</i>	.74
5. <i>Coming along on a shopping trip</i>	.70
6. <i>Doing chores around the house along side of you or another adult</i>	.60
7. <i>Using flash cards with words and pictures or with simple math concepts</i>	.70
Electronic play	
8. <i>Watching TV programs or videos on their own and singing, dancing, or interacting with the show</i>	.57
9. <i>Watching TV programs or videos with you and singing, dancing, or interacting with the show</i>	.57
10. <i>Using a computer alone or with help</i>	.60
11. <i>Sitting quietly watching TV programs or videos</i>	.71
12. <i>Using electronic products that say words, letters, or numbers when child/baby touches a button, word, or picture</i>	.58

2.1.3.1. Frequency of activity engagement. Mothers were asked to indicate the frequency of her child's engagement in each of the activities ("How often does your [baby/child] do each of the following things? Please select one answer only for each statement"). Mothers with a 1–5 year old child were asked to rate the frequency (1 = less often/never; 2 = once/month; 3 = a few times a month; 4 = about once a week; 5 = 2–4 times a week; 6 = every day/almost every day) of all 26 activities while those with infants less than 12 months were presented with 17 developmentally appropriate activities (indicated by italics in Table 1).

2.1.3.2. Perceptions of play. Participants read the following directions: "Now thinking about each of the activities listed below (whether or not your child does them), please indicate the extent to which you consider each activity a form of play, if at all. Remember, there is no right or wrong answer. We want to know how you think of play." Mothers rated each activity on a Likert scale, ranging from 1 = "This is definitely NOT a form of play," to 7 = "This is definitely a form of play". The measure demonstrated high internal consistency with Cronbach's alpha of .91.

2.1.3.3. Perceptions of academic learning. Mothers were presented with 26 activities and the following directions: "How would you rate each in terms of its ability to set a foundation for academic learning? Please select one answer for each activity" (1 = "this activity definitely does NOT set a foundation for academic learning", to 7 = "this activity definitely sets a foundation for academic learning"). This measure also demonstrated high internal consistency ($\alpha = .93$).

2.2. Study 1 results

Data analyses were carried out in three steps. First, zero order correlations and principal components analyses were used to identify types of play that underlie parental belief structures. These analyses were used for scale reduction purposes and subsequent analyses. Second, cluster analyses identified groups of mothers who demonstrated distinct patterns in their ratings of play activities. Third, multivariate analysis of variance identified group differences in beliefs about play. Wilks' Lambda was used for multivariate tests of significance. Post hoc pairwise comparisons using Dunnett's T3 criteria for unequal variances were used to identify significant differences between groups. Where applicable, Bonferroni's corrections were used.

2.2.1. Identification of play factors and reduction of scales

Exploratory principal component analyses (PCA) were conducted to identify the factors underlying maternal play beliefs. Orthogonal (varimax) and oblique (promax) rotation methods were employed given multiple significant correlations among scale items (see Appendix A for the correlation matrix). Factor solutions had to meet several criteria to constitute evidence of construct validity (Cattell, 1966; Tachachnick & Fidell, 2001): (1) significant factor loadings were .35 or higher and the number of factors were identified by eigenvalues above 1.00; (2) factors demonstrated adequate internal consistency and were defined conceptually by the content of their items; and (3) the retained factor solution accounted for substantial total variance, with each factor contributing a significant proportion to the solution (> 10%).

Two factors of play were derived from the 26 activities, accounting for 51.34% total variance (see Table 1 for PCA item loadings). The first factor, labeled *unstructured play* (factor loading = 8.89, variance explained = 35.57%), consisted of 14 activities that required imaginative or creative processes, often lacking clearly delineated rules or goals (e.g., dressing up, using blocks or building sets). The second factor, *structured play* (factor loading = 3.94, variance explained = 15.78), consisted of 12 activities that had inherent goal-oriented structure, and included life skills and electronic activities. Life skills activities foster skills needed later in life, such as academic-based skills (e.g., using flash cards) and adult-related skills (e.g., doing chores). Electronic activities emphasized an electronic device as the primary focus of attention or interaction (e.g., playing with an electronic toy). Cronbach's alpha coefficients were .88 and .93 for the structured and unstructured factors, respectively. The factors showed a modest correlation of .25, suggesting they represent related, but distinct, constructs. The results suggest that mothers conceptualized play as consisting of unstructured activities and structured activities.

These findings supported hypothesis 1, mothers viewed many activities as play behavior. Mean ratings were calculated for structured (14 items) and unstructured activities (12 items) for each scale (perceptions of play, academic learning value, and frequency scales), resulting in six dependent variables. For mothers with a referent child less than one year of age, mean unstructured play scores were computed from eight activity ratings and structured play scores were computed from nine activity ratings due to the age-appropriate nature of the activities.

2.2.2. Identification of mother groups

To address hypothesis 2, cluster analyses were conducted using unstructured and structured play rating means to identify mothers based on their differing conceptualizations of play. A hierarchical procedure (Ward's method) ascertained the potential number of clusters in the sample. This procedure first considers each participant as a separate cluster and then systematically joins similar participants to form larger clusters, seeking to minimize the variance within each group (Lorr, 1983). Since this procedure is limited to small samples, random samples of 250 mothers were extracted from the data set to identify the potential number of clusters. Results of the hierarchical procedure revealed two to four potential clusters, defined by similarity of cases within each cluster, distance between each cluster, and cluster size.

A nonhierarchical clustering technique, K-means procedure, was used to sort the entire sample of mothers into clusters, maximizing between-cluster differences while maintaining within-group similarity. This procedure requires an a priori specification of the number of clusters present in the sample, so three analyses specifying two, three or four clusters were

conducted using the hierarchical results. The three cluster solution showed the same distinct, meaningful patterns that were first identified in the hierarchical procedure and thus was used for group identification.

Mother groups were defined by conceptually distinct play belief profiles. The first cluster, *Traditional* mothers ($n = 491$, 44% of the sample), made clear distinctions between structured and unstructured play. Unstructured activities, those that are prototypical play behaviors (e.g., dress-up, using child-size play sets) were rated as highly play-like behavior, $M = 6.67$, $SD = .32$. Structured activities, or those that are skill-driven or technology-based, were rated as less playful, $M = 4.47$, $SD = .59$. *All Play* mothers ($n = 509$, 45% of the sample), the second cluster, rated both unstructured and structured activities as highly playful, M s (and SD s) = 6.84 (.30) and 6.05 (.54), and to a greater degree than other groups. All Play mothers appeared to view a wide range of activities as similarly play-like, ranging from dress-up (unstructured play) to interacting with e-toys (structured play). The third cluster, *Uncertain* mothers ($n = 130$, 12% of the sample), were more conservative in their ratings in that means for both unstructured and structured play fell within the middle of the play rating scale and were highly variable. Unstructured activities were rated as moderately playful ($M = 5.12$, $SD = .81$), but structured activities ($M = 4.01$, $SD = .79$) were seen as neither play nor nonplay behavior (suggested by a mean rating of four).

2.2.3. Meaningfulness of cluster membership

Multivariate analysis of variance (MANOVA) was conducted on play rating scores (unstructured play, structured play) to verify the meaningfulness of cluster membership. Cluster membership had a significant effect on play rating, $F(4, 2252) = 909.13$, $p < .01$, $\eta^2 = .62$. Examination of univariate analyses revealed significant differences among all clusters in the play rating of unstructured and structured play activities, $F_s(2, 1127) = 974.77$, and 1146.11, respectively, $ps < .01$. See the right portion of Table 2 for pairwise comparisons of play ratings between groups. *All Play* mothers rated structured and unstructured activities significantly more playful than *Traditional* and *Uncertain* mothers ($ps < .01$). *Uncertain* mothers, on the other hand, rated structured and unstructured activities significantly less playful than the other groups. As hypothesized (hypothesis 2), mothers differed significantly in their conceptualization of play, ranging from mothers who view many activities as playful (*All Play* mothers) to those who make clear distinctions between types of play activities (*Traditional* mothers).

Additionally, three dependent t -tests explored whether mother groups viewed structured and unstructured activities as conceptually distinct types of play. Each mother type showed significant rating distinctions between the two types of play, *All Play* $t(508) = 32.32$, *Traditional* $t(490) = 73.48$, *Uncertain* $t(129) = 11.20$, $ps < .01$. Table 2 presents mean (and SD) maternal belief scores about the nature of play for each mother type identified by the cluster analysis.

2.2.3.1. Mother group differences in the academic value and frequency of play activities. We hypothesized that maternal conceptualizations of play would correspond to differences in perceived academic value and the frequency in which their children engaged in the two forms of play. To test this prediction, a MANOVA was conducted on mothers' academic value and frequency of play scores. Cluster membership had a significant combined effect on the dependent variables, $F(8, 2248) = 57.17$, $p < .01$, $\eta^2 = .17$. Refer to Table 2 for means, standard deviations, univariate main effects, and paired comparisons for academic value and frequency variables.

Examination of univariate analyses revealed that mothers differed significantly in the learning value they associated with unstructured and structured play activities, $F_s(2, 1124) = 137.77$, and 200.07, respectively, $ps < .01$. *All Play* mothers, those who view all types of activities as playful, placed higher academic value in unstructured play than *Traditional* and *Uncertain* mothers, $ps < .01$. *Traditional* mothers, those who make strong distinctions between the two forms of play, identified inherent academic value in unstructured play more so than *Uncertain* mothers, $p < .01$. The same pattern was found in the academic value associated with

Table 2
Mean (SD) play conceptualization scores for each type of mother ($N = 1130$)

Play factors	Main effect for group (η^2) ^a	<i>All Play</i> (Ap) $n = 509$		<i>Traditional</i> (Tr) $n = 491$		<i>Uncertain</i> (Uc) $n = 130$		Significant paired comparisons ^b
		M (SD)	Range	M (SD)	Range	M (SD)	Range	
<i>Unstructured play</i>								
Perceptions of play	.63	6.84 (.30)	5.21–7.00	6.67 (.32)	5.71–7.00	5.12 (.81)	1.14–6.43	Ap > Tr, Uc Uc < Tr
Academic value of play	.20	6.25 (.76)	2.36–7.00	5.63 (.88)	3.14–7.00	5.07 (.78)	3.00–7.00	Ap > Tr, Uc Uc < Tr
Frequency of play	.02	4.35 (1.12)	1.00–6.00	4.09 (1.12)	1.00–5.86	3.89 (1.22)	1.00–5.71	Ap > Tr, Uc
<i>Structured play</i>								
Perceptions of play	.67	6.05 (.54)	5.25–7.00	4.47 (.59)	1.83–5.33	4.01 (.79)	2.00–6.08	Ap > Tr, Uc Uc < Tr
Academic value of play	.26	6.33 (.55)	4.00–7.00	5.68 (.63)	3.83–7.00	5.38 (.73)	3.67–7.00	Ap > Tr, Uc Uc < Tr
Frequency of play	.05	4.44 (.82)	2.11–6.00	4.05 (.85)	1.22–5.89	4.20 (.89)	2.11–6.00	Ap > Tr, Uc Uc > Tr

^a Univariate main effects for maternal groups were significant at the .01 level, after Bonferroni adjustment.

^b Post hoc paired comparison tests significant at the .01 and .05 level, after Bonferroni adjustment, are reported in this column.

structured activities, (*All Play* > *Traditional* > *Uncertain*, $ps < .01$). Thus, hypothesis 3 was also supported: Mothers' ascribed academic learning value varied in relation to their conceptualizations of play.

The frequency of children's reported engagement in the two play forms also varied with mothers' play beliefs. Univariate analyses revealed a significant main effect for unstructured and structured play frequency, $F(2, 1124) = 11.79$ and 27.11 , respectively, $ps < .01$. Children of *All Play* mothers engaged in significantly more unstructured play than children of *Traditional* and *Uncertain* mothers ($ps < .01$), whereas the children of *Traditional* mothers did not differ significantly from *Uncertain* mothers. With respect to structured play, children of *All Play* mothers also engaged in more structured play than children of *Traditional* mothers ($p < .01$) and *Uncertain* mothers ($p < .05$). *Uncertain* mothers, who do not classify unstructured activities as play behavior, reported their children engaged in significantly more structured play than *Traditional* mothers reported ($p < .01$). As predicted (hypothesis 4), frequency of play behavior varied with mother's play beliefs.

2.2.3.2. Exploratory analyses: within-group differences in the academic value and frequency of play activities. Results revealed that mothers make a clear distinction between two prominent play forms, structured and unstructured play. Given these findings, we were curious if mothers would show significantly different distinctions in academic learning value and frequency ratings as well. Interestingly, *All Play* and *Uncertain* mothers ascribed more academic learning value to structured than unstructured play, $t(508) = 3.14$, and $t(129) = 5.26$, $ps < .05$, respectively. Conversely, *Traditional* mothers ascribed similar academic learning value to both structured and unstructured play, $t(490) = 1.41$, *ns*. In terms of children's reported play frequency, the children of *All Play* mothers engaged in somewhat more structured than unstructured play, but the difference did not reach the level of significance, $t(508) = 2.45$, $p < .06$. *Uncertain* mothers reported that their children engaged in significantly more structured play activities than unstructured activities, $t(129) = 4.41$, $p < .01$. Lastly, children of *Traditional* mothers engaged in similar frequencies of structured and unstructured play, $t(490) = 1.12$, *ns*.

2.3. Study 1 discussion

The findings of this study revealed that mothers differ in their beliefs about what play is, which we characterized as structured (goal-oriented activities that often consist of a sequence of events/actions) and as unstructured (highly varied activities that involve imagination/creativity). Mothers' beliefs about the learning value of play also varied with their view of what types of activities constitute play, and ascribed academic learning to play differently.

Prior research has shown that parental beliefs influence parenting teaching practices (e.g., McGillicuddy-De Lisi, 1985). The present findings support the parenting belief–child behavior relationship for the domain of play. Mothers with strong play-learning beliefs (i.e., those who identified activities as highly playful with strong academic learning value) reported that their children engaged in a higher frequency of these play behaviors. For example, *All Play* mothers identified strong academic value in both structured and unstructured play; however, they ascribed slightly more learning value to structured activities. The children of these mothers reportedly engaged in more play behaviors than other children in the sample but engaged in slightly more structured play. *Traditional* mothers, on the other hand, perceived relatively equal levels of academic value across the two play forms and also reported that their children engaged in an equal amount of structured and unstructured play. *Uncertain* mothers, with a weaker play-learning belief, ascribed less academic value to play than other mothers and reported that their children engaged in less play behavior as well. For these mothers, structured behaviors were also seen as academically enriching and they reported that their children engaged in higher frequencies of such behaviors. These findings suggest that mothers might encourage certain forms of activities that they see as fun and academically enriching through the nature of their interactions with their child or by structuring children's play environments.

Mothers share, to some degree, a play-learning belief espoused by play theorists and evidenced by empirical research. Yet, the observed category of structured play does not conform to the kind of play discussed in the theoretical or empirical literature. The mothers valued structured play and ascribed slightly more learning value to this form of play than its unstructured counterpart. Distinctions in maternal and expert play-learning beliefs were explored more deeply in Study 2.

3. Study 2: Comparison of expert and parent perceptions of play

The findings of Study 1 suggest that 21st century mothers perceive both structured and unstructured activities as play. Mothers and play theorists share a common view of many play activities with respect to unstructured play. Unstructured play in the present research represented activities that are consistent with several different play forms found in play research, including free play, fantasy or symbolic play, and social play. It is not clear, however, that mothers and child development professionals share a similar view of structured play. For mothers, structured play represented activities with an inherent goal structure that included (a) electronic toys, television and computer use, and (b) life skills preparatory activities such as shopping trips, museum and library visits, and use of flash cards. The media category represents relatively new types of play, given technological advancements in electronics, and a heightened emphasis on academic learning. Such structured play has not been as extensively explored by play researchers; little is known about experts' conceptualizations of these new 'play' activities and how experts' and mothers' beliefs might converge or diverge from one another. Study 1 findings suggest that mothers ascribe more academic learning value to this play form than to unstructured play. Given these findings, this study is an initial exploration of experts' conceptualization of play and the learning value they associate with types of play enabling a comparison of mothers' and experts' conceptualizations about these and other forms of play activities.

Two hypotheses arose from the play literature. First, we hypothesized that experts would classify unstructured activities as play while structured activities would be seen as less playful in nature in comparison to mothers' ratings (hypothesis 5). Second, we hypothesized experts would ascribe more learning value to unstructured play than mothers did (hypothesis 6).

3.1. Study 2 method

3.1.1. Participants

Ninety-nine U.S. professionals (n males = 26) in the field of child development participated in an internet survey. The sample consisted of professionals from various areas of expertise (72% college professor, 6% early childhood educator, 1% child psychologist, 20% other). Age ranged from 27 to 75, with an average age of 54.78 ($SD = 10.43$) years. The majority of the sample reported 16 years experience in their given profession (14% < 5 years, 20% 6–10 years, 20% 11–15 years, 46% > 16 years) and had 2 or more children (26% no children, 19% one child, 34% 2 children, 17% three children, 4% > four children).

3.1.2. Procedure

Participants were recruited from a list of early childhood professionals via an electronic letter with a formal request for participation. The list was compiled by researchers in areas of psychology, education, the medical field, and counseling. A hyperlink was included in the electronic letter for direct access to the survey. After accessing the online survey database, participants read the following description of the online survey:

Thank you for participating in today's survey. This survey asks about many aspects of children's lives. The survey is being conducted with experts like you, as well as with a nationally representative sample of mothers of children age 0–5. Both groups are being asked the same or similar questions, in an effort to compare mothers' perceptions, beliefs, and attitudes to those of the experts, and identify gaps, if any, between them. We know your time is valuable and we encourage you to go with your first reaction when responding to the different question areas.

3.1.3. Measures

Participants completed two questionnaires that presented the same activities included in Study 1 measures. The scales were presented in a randomized order with all items randomized within each scale. At the end of the survey, participants reported demographic information.

3.1.3.1. Perceptions of play activities. Experts read the same 26-item list used in Study 1. They were presented with the following directions, which mirrored the questions and response format used with Study 1 mothers: "Thinking about each of the activities listed below that children might do, please indicate the extent to which each activity is a form of play, if at all" (1 = "This is definitely NOT a form of play," 7 = "This is definitely a form of play"); $\alpha = .83$.

3.1.3.2. Perceptions of academic learning. Using the same activities, instructions and response scales presented in Study 1, experts rated each activity in terms of its ability to set a foundation for academic learning (1 = "this activity definitely does NOT set a foundation for academic learning", 7 = "this activity definitely sets a foundation for academic learning"); $\alpha = .90$.

3.2. Study 2 results

3.2.1. Scale reduction

In order to compare beliefs of mothers and experts, data from Study 1 were collapsed across maternal belief groups creating one sample of mothers. Principal component analyses were not conducted due to the small sample size. Rather, play activities were classified as structured and unstructured activities as in Study 1, based on the principal component analysis results of maternal data. Structured and unstructured play factors based on the experts' data displayed adequate internal consistency, α 's = .80 and .93, respectively. Data reduction methods were replicated from Study 1: means were computed for structured and unstructured activities for each scale, resulting in four dependent variables for both groups (mean playfulness ratings for structured and for unstructured play; mean academic value of structured and of unstructured play; see Table 3).

3.2.2. Expert versus maternal beliefs on the nature and academic value of play

Two independent samples t -tests were conducted, one comparing mothers' ($n = 1130$) and experts' ($n = 99$) playfulness rating and one comparing their academic learning value ratings. Bonferroni's corrections were employed to reduce the likelihood of Type I error arising from multiple comparisons. Consistent with expectations (hypothesis 5), experts' and mothers' beliefs about play differed. As seen in Table 3, experts rated unstructured activities as less playful than did mothers, $t(141.50) = 3.16, p < .05$. Experts did not rate structured activities as play-like behavior, as indicated by the lower scale value, $t(1227) = 12.44, p < .01$.

Further, experts attributed significantly less academic learning value to structured play than mothers, $t(1227) = 12.10, p < .01$. Contrary to expectations, mothers and experts did not differ in beliefs about the academic learning value of unstructured play, $t(1227) = .584, ns$. Additional analyses examined whether the observed group differences may have been due to the difference in

Table 3
Mean (and SD) experts' and mothers' playfulness and academic value ratings

	Experts			Mothers		
	M	SD	Range	M	SD	Range
<i>Unstructured play</i>						
Playfulness rating	6.42	.43	5.36–7.00	6.57*	.66	1.14–7.00
Academic value	5.90	.95	1.57–7.00	5.85	.91	2.36–7.00
<i>Structured play</i>						
Playfulness rating	3.78	1.02	1.00–6.58	5.13**	1.04	1.83–7.00
Academic value	5.02	.85	2.08–6.92	5.94**	.71	3.67–7.00

* significant between group difference at $p < .05$ level, after Bonferroni adjustment.

** significant between group difference at $p < .01$ level, after Bonferroni adjustment.

age between experts and parents. When age was added as a potential covariate in the comparison of experts and parents, it did not contribute to the explained variance, $F(4, 1223) = .52, ns$.

3.2.3. Exploratory analyses: within-group differences in experts' play beliefs

Two dependent t -tests were conducted to verify experts' distinction between the two forms of play and their academic learning value. Experts rated unstructured activities as being more play-like than structured activities, $t(98) = 26.90, p < .01$. Further, experts identified more academic learning value in unstructured activities, $t(98) = 8.71, p < .01$. When experts were divided into two groups, young versus experienced professionals, their ratings on the dependent variables did not significantly differ from one another. Similarly, when experts were grouped by profession and compared, no significant differences were found.

3.3. Study 2 discussion

These findings suggest that mothers and experts differ in their conceptualizations and values about play. While mothers and experts appear to hold similar beliefs about play and learning, these beliefs reside on conceptually distinct foundations. Unlike mothers, experts appeared narrower in their playfulness ratings of play activities and in their perceived learning value. Furthermore, experts clearly differentiated between the two types of play: Unstructured activities were deemed highly playful, whereas structured activities were seen as less play-like or not playful at all. A seeming antithesis to expert beliefs, mothers perceived both structured and unstructured activities as play behavior, as indicated by the descriptors attached to the higher mean scores.

Why do experts attribute less learning value to structured play activities than do mothers? Many of the highly structured activities promote narrowly construed academic skills. Experts might draw parallels between structured toys and didactic instructional style rather than viewing structured toys as truly playful. In other words, experts may perceive the structured activities as attempting to teach rather than allowing children to play in a way that fosters cognitive development in general and school readiness in particular. Experts may see didactic instruction as less valuable for children in the long-term than unstructured play (Marcon, 1993, 1999, 2002).

How do experts conceptualize play? Play theories and research provide a glimpse into this answer. Yet, the current research does not directly address this question. Rather, the findings suggest that experts do not conceptualize play in the same manner as mothers. This is an interesting point of departure for future research and practical application.

4. General discussion and conclusions

Research examining the role of play in learning and child development converges on the conclusion that play is a natural, age-appropriate activity through which young children learn about themselves and the world around them (Copple et al., 1979; Singer, Golinkoff, & Hirsh-Pasek, 2006). Given the scarcity of research on maternal beliefs about play and guided by research conducted by Sigel (1985, 1987), the current work explored mothers' and professionals' beliefs regarding the nature of play and its relation to academic learning.

Study 1 revealed that mothers view a wide array of activities as play behavior, including structured, goal-oriented activities as well as unstructured, imaginative activities. We found that mothers' beliefs about play were related to differences in the perceived academic learning value of play as well as to the frequency with which children engage in play activities. Sigel (1987) and other colleagues exploring belief-behavior systems (McGillicuddy-De Lisi, 1982; Musun-Miller & Blevins-Knabe, 1999), conceptualize parental beliefs as emerging from both personal and cultural values and experiences and as influences on parenting behaviors and child outcomes. Mothers' play-learning beliefs may influence the way they structure their children's early learning experiences. For example, a mother who believes that structured activities set the best foundation for future academic learning is more likely to create an environment that promotes learning through structured toys and activities. *All Play* and *Uncertain* mothers, for instance, reported a higher level of academic value associated with structured than unstructured play, and had children who seemed to participate in more structured play behaviors.

While individual belief systems may influence an individual's parenting practices, normative beliefs, founded in cultural ideologies, may also influence parenting trends on a societal level. The current data show that mothers define play more broadly than child development professionals. A large proportion of the mothers (89%, *All Play* and *Traditional*) viewed many activities as play behaviors and associated strong to moderate academic learning value with these activities. Such beliefs provide one potential explanation for the perceived reduction and/or replacement of children's free, unstructured play with structured, academically-focused activities (Sigel, 1987; Zigler, Singer, & Bishop-Josef, 2004). Parents who view structured and unstructured activities as playful may be less likely to respond differentially, or perhaps even to differentiate these two play forms, leading to a potential imbalance of play in children's lives. Where an imbalance in structured and unstructured activities may be readily apparent to child development professionals, parents may see their child engaging in consistent or increasing levels of playtime. Furthermore, if such structured play activities serve dual purposes—setting a foundation for academic learning as well as being playful and fun—parents may be more likely to replace unstructured play with structured play. Consequently, a broader conceptualization of play and its perceived academic value may lead to an acceptance of more structure in children's play.

If unstructured play is giving way to structured activities, how might such an imbalance affect young children? Importantly, structured play promotes early knowledge acquisition in an efficient, but narrowly defined way. For example, "educational" toys, such as electronic console books, probe for memorized language using 'fill-in-the-blank' questions. Such activities have the flash of play, but they do not promote learning that their advertisements claim (Parish-Morris, Hirsh-Pasek, Golinkoff, & Collins, 2007). Instead, children learn less about story content than they do from traditional books read in a dialogic style with parents. Sigel (1987) argued that learning works best when it is rooted in playful exchanges that allow for the generalization of new knowledge and skills. Children need to do more than simply memorize to learn.

In addition, the purported decline in unstructured play may adversely impact children's cognitive and socioemotional development more broadly. Various forms of unstructured play lead to problem-solving, emergent literacy, conceptual understanding, creativity, and enhanced social skills (e.g., Bellin & Singer, 2006; Bergen & Mauer, 2000). The emphasis on narrowly defined structured activities in early childhood may result in decreased exposure to activities that naturally foster complex cognitive processing and social-emotional understanding.

The current research sets the stage for future investigations about how parents and experts conceptualize play and how it relates to academic learning. This research was limited to a convenient, internet-based sample. Future research should seek to establish the reliability of these findings in diverse populations as well as examining the construct validity of the play/learning belief with other belief scales that relate to development (e.g., Fogle & Mendez, 2006). Additionally, this study examined mothers' beliefs about play, but did not explore how they conceptualized the determinants of academic success. For instance, a variety of skills associated with unstructured play are necessary for academic success, including social understanding, self-regulation, perspective taking, and divergent thinking (e.g., Christie & Johnsen, 1983; Marcon, 2002). Do parents believe that there is a relationship between such skills and later academic learning? Further, the current findings suggest that experts do not conceptualize play in the same way as mothers. Future research with a larger sample of experts is needed to investigate validity and to enable more complex analyses that might yield important information about experts' conceptualizations of play and how they differ from parents' views. Future research might illuminate why some structured activities were perceived as both playful and infused with learning while others are not. Indeed, recent discussion of the *Tools* preschool curriculum offers a superb example of how a play-learning environment can be both structured and academically rich (Diamond, Barnett, Thomas, & Munro, 2007). Given the relationship between beliefs and children's behavior, might experts report that their own children engage in more unstructured than structured play activities? Finally, future research should examine how cultures vary in their play-learning beliefs, and how such beliefs relate to parenting practices and children's play activities. Longitudinal research may also illuminate how such beliefs may influence later child development and how reciprocal parent-child influences might affect the connections among parent belief, parent and child behavior, child development, and the probable multidirectional relationships among them in the role of play in development.

While the current study provides an initial look at a very complex system, findings suggest that mothers' and professionals' beliefs about play share a common theme—children's play sets a foundation for future academic learning. Given the influential role of educators and parents in children's lives, this is a positive finding. However, mothers' beliefs about the importance of play in academic learning diverged from those of experts. Thus, while a similar play-learning belief is shared between experts and parents, they reside on disparate foundations.

What are the implications of this conceptual disparity for children's development in the 21st century? One of Sigel's accomplishments was emphasizing the translation of research into practice. In the realm of play—perhaps more than in other domains of child development—we are suffering from a crisis in translation. Experts like Sigel rightly worried that our children are being hotheaded and that there was insufficient time for play. His message rings true today in the American Association of Pediatrics's issue of a white paper on the importance of play (Ginsburg & Committee on Communications, & Committee on Psychosocial of Child and Family Health, 2007) and the United Nations' (1989) mandate that play is a basic right for every child. The current research suggests that experts' pleas for more playtime at school and at home might be heard (Pellegrini, 2005), but be misunderstood. The findings of the present study show that 'play' means different things to different people. Once we understand parent beliefs and definitions of play, we, the experts, can appropriately tailor our recommendations and work with curricula, toy designers, and parents to enrich children's lives.

The research presented here drives at the very heart of a long debated topic—the definition of play. The difficulty in defining play goes beyond the theoretical musings of philosophers and researchers. To fully understand what constitutes play, we must go beyond experts to parents' implicit beliefs of play and how these beliefs are fostered not only by the individual, but by culture and

society. In turn, science may then provide a foundation for guiding developmentally appropriate learning activities that optimize children's growth in multiple domains. In the same way that the public is being educated on the dangers of shaking a baby or exposing children to secondary smoke, parents may need to be educated on what constitutes play and its benefits if we are to create a generation of creative and emotionally healthy children who love to learn.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.appdev.2008.04.006.

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