

Research Article

Children's Perceptions of Their Play: Scale Development and Validation

Lynn A. Barnett

Department of Recreation, Sport, and Tourism, University of Illinois at Urbana-Champaign, 104 Huff Hall, 1206 S. Fourth Street, Champaign, IL 61820, USA

Correspondence should be addressed to Lynn A. Barnett; lynnbm@illinois.edu

Received 19 June 2013; Revised 21 September 2013; Accepted 25 September 2013

Academic Editor: Priscilla K. Coleman

Copyright © 2013 Lynn A. Barnett. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

A wealth of research has been conducted on children's play, yet the vast majority has relied on others' accounts to define, describe, and characterize their play. This study presents a successful effort to generate a scale to measure third through fifth grade children's perceptions of their play. Items were generated from children's unrestricted accounts of how they viewed their play, and the reliability (internal consistency, stability), content, and construct (convergent and discriminant) validity of the Children's Perceptions of Their Play (CPTP) scale were all high. Across two independent samples, children defined their play in terms of six factors: opportunities to choose what to do and with whom (Child's Choice), play interactions with friends (Social Play), structured recreation activities in which they chose to participate (Planned Activities), their involvement and absorption in play (Engagement), how physically active they are (Active Play), and freedom from school obligations when they were able to play as they desired (Free Time). No differences between boys and girls, the three grade levels, or children attending public versus private school were found.

1. Introduction

1.1. Recent Theoretical Conceptions of Play. Modern theories of play—those that arose during the mid- to late twentieth century—try to explain the role of play across the various ages and in relation to different aspects of child development. For example, the Psychoanalytic Theory of play relates predominantly to children's emotional development and posits that the function of play is to help the child cope with the negative feelings that arise from unpleasant or traumatic events in the environment [1]. The theory holds that this cathartic function is critical to the developing child because of an immature ability to possess coping mechanisms to mitigate or adapt to the stressor. Erikson's [2] extension of Psychoanalytic Theory to normal personality development suggests that individuals pass through stages wherein their ability to master the demands of reality leads to their resolution of a psychosocial issue paramount at each developmental stage.

Cognitive theories presented a major shift in theorizing about play in directing research toward the development of children's thinking processes and intellectual development.

Piaget's [3] developmental theory suggests that children progress through a series of distinct phases in their thought processes that increasingly approach those of adults. According to his theory, children engage in types of play that mirror their current level of cognitive development, and the role of play is to help them to consolidate and practice recently acquired concepts and skills and to prepare the child for the next spurt in their learning and development. Vygotsky [4] also believed that play has several roles in cognitive development, although he differed from Piaget in maintaining that when children play they reveal potential new abilities before they become actualized in real-life situations. Through their creation of their own "scaffolding" they stretch themselves in such areas as self-control, cooperation with others, memory, language use, and literacy, by using private speech to direct, control, and structure their own play interactions [5]. According to Vygotsky [4], play thus promotes development by serving as a scaffold within the child's zone of proximal development, helping them to attain higher levels of functioning. Bruner [6] focused on how childhood play contributes to problem-solving abilities that are important later in life.

He argued that because in play the means are more important than the ends, when playing, children do not worry about accomplishing goals, which thus allows them to experiment with novel combinations of objects and behaviors that they are not likely to try if under the pressure to achieve a goal. Therefore, play promotes flexible problem solving, which renders it adaptively advantageous in human development and evolution.

What is common to these contemporary theories is the belief that play mirrors development and that, as the child grows and matures, the appearance, function, and implications of play may change. Children face different adaptive pressures at different times in their development [7], and the function of play is seen as a mechanism that can help children to meet these challenges that arise during various stages of childhood. While some of the benefits of play are seen as immediately advantageous to children [1, 3, 4], others are seen as more advantageous when the child reaches adulthood [6].

1.2. Implications from Play Theories: Play and Learning. As research on children's play progressed, much of it addressed implications that could be derived from the theoretical models (e.g., [4, 6, 8]). These implications predominantly focused on how play might be introduced into learning situations, predominantly the school classroom, to encourage and sustain structured educational participation. Studies found, for the notion that when play is incorporated into a learning environment, children respond well and their performance significantly improved [9–11]. For example, in several studies a pretest-posttest design was used where one group of children engaged in problem-solving tasks that were labeled "play" while another group engaged in the same tasks without the play label. Even though the tasks were identical, the designation of them as "play" impacted the children so that their performance significantly improved from the pretest, and was superior to that of the children without the "play" descriptor [12–14]. In a similar study [15], children performing an activity that was labeled "like play" were found to smile more, be more attentive and focused on the task, and were more motivated compared to those doing the same activity with the label "not like play." Because the only manipulation in these studies was the branding of the task or activity as "play," it was suggested that play served as a motivational force for perseverance and learning [16, 17].

1.3. Who Defines Play? Each of the theoretical conceptions of play has led to a wealth of research to describe play at different ages and to empirically test its tenets and implications. However, the great majority of this research has relied on the observations of adults (parents, teachers, and external observers) to determine whether play is occurring, the form it takes on, and its relation to a wide variety and number of correlates and characteristics. This empirical research has virtually defined play from the lens of the adult through *in situ* observations, videotaped play sessions, rating forms, or interviews with someone close to the focal child. For example, one of the few and most widely used rating forms for school-aged children, the Play Observation scale [18, 19],

utilizes a matrix of Piaget's [3] play categories (functional, constructive, and dramatic) with Parten's [20] social play categories (solitary, parallel, and interactive) and asks the observer to note the number of occurrences the child exhibits within each cell during a specified period of time. This scale has been criticized as not being widely applicable to school-aged children or to children playing outdoors [21]. Other Play Observation scales have been developed for school-aged children specifically for use in assessing symbolic play [22] or on the playground during recess [23–27]. In most of these cases, reliability data between observers has been reported, but validity testing has not been conducted according to conventional protocols.

While these methods of data collection may be necessary to capture the play of infants and toddlers whose language has yet to fully develop, it is surprising that the practice is still ubiquitous for elementary school-aged children who are able to articulate their perceptions of their play. Lieberman [28] argued that while play can be readily observable, what separates it from other types of behavior (and offers its unique developmental potential) is that it can only be understood to be play by the individual. Research has shown that even much younger children, those of preschool and kindergarten age, have formed a clear conceptual understanding of what it means to play, to work, and to learn [29–32]. In the few studies that have directly questioned children about their play, comparisons with narratives and perceptions of their mothers [33–35] and teachers [36, 37] have shown there to be substantial differences. Research has tended to define a behavior as play based on what it looks like from an adult perspective, for example, in terms of what materials are being used, where the activity is taking place, or whether children look like they are having fun, rather than focusing on what characteristics the children themselves used to define the activity as play [34–40]. If research is to accurately and authentically describe, explain, and predict the play behavior of children of school age, it must assess behaviors that the child perceives to be play. If it is important to motivate children's learning by providing them with experiences that they believe are play [13, 14, 41], then it is vital that the perspectives of the children be paramount in determining what is play. The first step towards facilitating the successful implementation of a play-based curriculum begins with an understanding of children's perceptions of play [30, 42].

There have been some efforts to have children self-define a situation as play [30, 32, 43, 44]. In one such study [44], 6–12-year-old children discussed free play experiences in focus groups of five children each. Researchers commented on the limitations of this method by noting that there were a number of the children who seemed "nervous and hesitant to contribute" [44, page 419] and that "the views and opinions of the most outspoken or confident children may have dominated the focus group discussions and some children may have been influenced by the opinions expressed by other children in the group" [44, page 419]. The use of focus groups has been used in other studies attempting to have children define play [32, 43] and is therefore subject to the same concerns.

1.4. Rationale and Overview of Methods for the Present Study.

Given the research demonstrating that children define their play in qualitatively different ways than familiar adults do [33–37], it is imperative to obtain the child's perspective. If observational studies are to be conducted, or play programs implemented, they should be based on the perceptions of the children in order to be ecologically valid and effective. One way to avoid the above shortcomings of previous studies would be to ask children to complete a self-report measure about their perceptions of play. The advantages of this approach would be to assure each child confidentiality of responses so that it is unlikely that social desirability biases due to speaking in front of peers or others would be operative, and the freedom from others' evaluations would ensure more candid replies. Children would also be able to think about the questions and move at their own pace. Finally, in adopting a more individually defined approach, there are no preconceived definitions built into the generation or restriction of items to fit preexisting paradigms.

In the present research, play was not defined for the children—the intent was to allow the children to define what play meant to them and to try to capture their perceptions with a self-report measurement instrument. Since there is a wealth of literature documenting the developmental changes in children's play styles, preferences, and interactions (cf. [58]), we restricted our investigation to children in third through fifth grades (middle and late childhood) when they were able to think about and complete questions about their own play, prior to the preadolescent stage. It is likely that younger children and older preadolescent youth think about their play in different ways than the children in this age group (cf. [41, 58]).

We followed prescribed psychometric methods [45, 46] for generating and testing the new Children's Perceptions of Their Play (CPTP) instrument, with the additional requirement that the children themselves participate as fully as possible in drafting its content. Once the CPTP was generated by the third through fifth graders with the help of the researcher and had undergone several drafts, its content validity of the CPTP was tested by examining the correspondence between subject matter experts in their opinions of whether the instrument comprehensively covered the domain of children's views of their play. Once content validity was established, the items of the CPTP were subjected to exploratory factor analysis to search for underlying factors and any items that should be eliminated (loaded on multiple factors or did not load on any factor). The CPTP as a whole, and each of its resultant factors, was then tested for internal consistency and test-retest stability. Based on the nomological network we constructed from children's play theory and the literature, construct validity (convergent validity, discriminant validity) of the CPTP was undertaken. It was determined that perceptions of play for children at this age range should relate to their behaviors—that is, how much they played according to their own wishes and to the enjoyment (positive affect) that they experienced while playing [19, 47–52]. In addition, based upon previous research and in conjunction with these characteristics (high incidence of free play as an indicator of choice, expression of positive affect), it was hypothesized

that children's perceptions of play would be inversely related to the appearance or demonstration of negative affect and of any incidence of depression [53], anxiety [48, 52, 54–56], and/or shyness with peers [56, 57]. The relationships between these variables and each of the CPTP factors, as well as the instrument as a whole, were examined as they are related to these variables.

We provided two different free play settings and tracked the amount of time children spent playing; it was anticipated that if the instrument was high in convergent validity there would be a high positive correlation between their total and individual factor scores on the CPTP and the amount of time they played across sessions. Construct validity was also addressed by asking children to complete a self-report measure of their positive and negative affect, anxiety, depression, and shyness. These relationships were examined with both CPTP total and individual dimension data. In addition, we examined whether there were gender or grade (age) effects that might limit the generalizability of the CPTP and indicate whether adaptations had to be considered for constituent subsets of the sample. The literature on differences in play within this age range consistently reports observations of play for the middle childhood stage without testing for variations between these years [58] and the inclusion of this characteristic was meant to investigate the generalizability of the CPTP across this age range as well as contribute to the descriptive play literature. Additionally, in consideration of the evidence that gender differences in play have consistently been observed for children in this age range [41, 58, 59] we investigated any different CPTP dimensions or interrelationships as a function of gender that might be present.

We employed two independent samples of children within the same grades/age range in the same city. Sample 1 was comprised of children attending public schools, while Sample 2 consisted of those attending private schools. The purpose of including the second sample was to examine the generalizability of the factor structure of the CPTP generated from children in the first sample (public schools) to those enrolled in private schools and to further investigate the extent to which age and/or gender might result in different factors for children who come from more affluent families and might experience different educational strategies, albeit oriented toward the same general educational standards ad those in the public school system. These approaches to establishing the dimensionality, reliability, content validity, and construct validity of the CPTP and testing their generalizability across age, gender, and school type constituted the overarching purpose of this research—the contribution to the literature of a new psychometrically sound instrument that assesses perceptions of play from the child's perspective more generally for those in the middle and late childhood age range.

2. Materials and Methods

2.1. Participants in Sample 1. Sample 1 was comprised of a total of 698 third through fifth grade children representing five public elementary schools in the same school district

in a mid-size midwestern city. The sample was evenly split by gender with 49.28% of the children being male. Children ranged in age from 97 months to 122 months with a mean age of 111.48 months. The children were approximately evenly split in third (32.24%), fourth (33.09%), and fifth (34.67%) grades. For children in third grade 52.00% ($n = 117$) were boys, of the fourth graders 49.35% ($n = 114$) were boys, and of the fifth grade children 46.69% ($n = 113$) were boys. The majority of the children were Caucasian (80.23%), with 7.02% African American, 4.01% Asian American, 2.72% Hispanic nonwhite, 4.15% biracial, and 1.13% declining to provide this information. Preliminary analyses indicated no significant differences when each grade level was compared across the public elementary schools, thus individual school designations were not retained in all subsequent analyses.

2.2. Procedures Employed for Sample 1. As a first step, permission to conduct the study was obtained from the author's university and the school district administration to approach principals and third, fourth, and fifth grade teachers at individual elementary schools, both public and private. Once approval and access were granted at all of these levels, sessions were held to explain to principals (or their designee) and third through fifth grade teachers the purposes and procedures of the study, respond to questions, and request their participation. Teachers were requested to distribute letters to their students to take home to parents. The letters explained the purpose of the study and procedures and their rights and the rights of their child, provided contact information for approving agencies, and included permission forms for consent for the parent and child. Parents were asked to return the consent forms in an enclosed envelope that was returned to the child to be deposited in a box in the classroom to be retrieved by the investigator. A total of 949 packets were distributed, 698 were returned with both signed consent forms, and 21 were received with only one signed form.

2.2.1. Initial Item Generation. From those with both signed permission forms, 46 third, fourth, and fifth grade children volunteered to convene after school to begin the process. The children were told we were interested in learning about what they thought about their play, and they were provided with drawing paper, pencils, and markers. They were asked to tell us about their play by providing whatever words, sentences, or depictions came to mind. They were not asked to record any identifying information on the paper, except whether they were a boy or girl and their grade level. The children's responses were listed by grade and gender and then reviewed by seven graduate students, blind to the purposes of the study, as we wanted to minimize any other perspective than that of the participating children in determining the content. The graduate students worked independently and were instructed to note the subject and frequency of recurring themes and issues, as well as less common ones. The graduate students then convened as a group with the researcher and compared the lists across gender and grades, and no discernible differences could be detected. Although no gender or grade

differences were obvious to the group, this inference was statistically tested on the final version of the instrument. The entries were also checked for redundancy and for alternate forms of wording, and 32 items were then drafted from the "cleaned" list by the group and senior researcher. After a second review to detect items with identical meaning and lack of clarity in wording and terminology that might be confusing to the youngest students, 29 items were deemed to be ready for pilot testing. A sample of 47 additional children (14 third graders, 17 fourth graders, and 16 fifth graders) who had volunteered (and had parental permission) examined the draft of this version of the instrument and provided feedback about any difficulties they had with the instructions, response scale, or the meaning or phrasing of individual words or items. They were told to circle any words or whole items that they found to be confusing or problematic and to write comments on their paper where they wanted to inform us of any difficulties they encountered. We chose this procedure so that children would not be embarrassed in front of their peers to indicate they did not know the meaning of a word or understand an item. On the basis of their feedback, the wording of 3 items was slightly revised, 2 were combined, and 1 was eliminated. This second draft of 27 items was distributed to third, fourth, and fifth grade classes at a different school in the same district and was completed during their study time after obtaining consent. In the absence of any questions or negative comments about readability, comprehension, or instructions for completion, the draft was submitted to and independently reviewed by a subject matter expert (SME) panel (four child development researchers, three third grade, three fourth grade, and three fifth grade teachers, and two elementary school assistant principals). Results of the panel's assessments suggested that one item be revised and two be eliminated for redundancy. After these changes were made, they were sent back to the panel members, who each gave their assent—the instrument was thus deemed to have satisfactory content validity. This final draft consisted of 25 items with response choices of "definitely yes" (scored 4), "probably yes" (scored 3), "probably no" (scored 2), and "definitely no" (scored 1) for all items. The instructions at the top of the page informed the children that "we were interested in learning more about children's play" and that they have to mark the box for each statement to show how much they agreed with it. An example was also provided and immediately followed. Some of the items required reverse coding (as noted on Tables 1 and 2), so that a total CPTP score could be calculated indicating that the child perceived play to be an activity of their own choosing and largely under their own control, and that it was enjoyable, active, and involving, in line with contemporary definitions and theories [15, 31, 34, 35, 37, 39, 41, 58].

2.3. Instruments and Materials Used with Sample 1. All of the measures described below were completed by all of the public elementary school children (Sample 1) with signed consent forms, with the exception of the children who participated in the focus groups convened to generate the item content. Hence, a total of 605 children completed all of the following

TABLE 1: Intercorrelations¹ between items for the children's perceptions of their play scale for Sample 1 (public school) children.

Item	2	3*	4*	5	6	7	8	9*	10	11	12	13	14*	15	16	17	18*	19*	20	21*	22*	23	24	25
(1)	61 ⁴	67 ⁴	51 ⁴	48 ⁴	52 ⁴	00	18 ⁴	57 ⁴	20 ⁴	23 ⁴	25 ⁴	19 ⁴	31 ⁴	17 ⁴	65 ⁴	64 ⁴	33 ⁴	34 ⁴	41 ⁴	21 ⁴	26 ⁴	27 ⁴	38 ⁴	
(2)	—	55 ⁴	48 ⁴	49 ⁴	41 ⁴	04	12 ⁴	42 ⁴	15 ⁴	17 ⁴	20 ⁴	23 ⁴	16 ⁴	12 ⁴	59 ⁴	61 ⁴	52 ⁴	51 ⁴	24 ⁴	28 ⁴	26 ⁴	41 ⁴	49 ⁴	35 ⁴
(3)	—	—	28 ⁴	12 ⁴	28 ⁴	33 ⁴	30 ⁴	21 ⁴	16 ⁴	08 ²	-17 ⁴	-27 ⁴	-00	-09 ³	11 ⁴	25 ⁴	13 ⁴	08 ²	07 ²	22 ⁴	08 ²	23 ⁴	28 ⁴	29 ⁴
(4)	—	63 ⁴	51 ⁴	49 ⁴	46 ⁴	45 ⁴	30 ⁴	07 ²	00	-13 ⁴	01	09 ³	28 ⁴	31 ⁴	24 ⁴	27 ⁴	13 ⁴	11 ⁴	07 ²	40 ⁴	39 ⁴	42 ⁴	42 ⁴	
(5)	—	58 ⁴	55 ⁴	61 ⁴	50 ⁴	39 ⁴	06	01	-04	-08 ²	00	17 ⁴	23 ⁴	14 ⁴	19 ⁴	48 ⁴	06 ²	47 ⁴	31 ⁴	26 ⁴	26 ⁴	40 ⁴	40 ⁴	40 ⁴
(6)	—	—	63 ⁴	60 ⁴	11 ⁴	27 ⁴	-22 ⁴	-31 ⁴	-17 ⁴	11 ⁴	-10 ⁴	14 ⁴	19 ⁴	07 ²	-13 ⁴	22 ⁴	-15 ⁴	33 ⁴	29 ⁴	21 ⁴	21 ⁴	22 ⁴ <td>22⁴</td>	22 ⁴	
(7)	—	56 ⁴	54 ⁴	22 ⁴	03	08 ²	-21 ⁴	17 ⁴	01	18 ⁴	35 ⁴	22 ⁴	42 ⁴	13 ⁴	25 ⁴	23 ⁴	34 ⁴	46 ⁴						
(8)	—	—	46 ⁴	24 ⁴	-16 ⁴	-27 ⁴	-08 ²	22 ⁴	03	23 ⁴	30 ⁴	38 ⁴	41 ⁴	38 ⁴	41 ⁴	32 ⁴	31 ⁴	25 ⁴	35 ⁴	46 ⁴	58 ⁴	58 ⁴	58 ⁴	
(9)	—	—	37 ⁴	26 ⁴	20 ⁴	28 ⁴	-11 ⁴	29 ⁴	07 ²	16 ⁴	03	12 ⁴	25 ⁴	39 ⁴	38 ⁴	20 ⁴	14 ⁴	14 ⁴	15 ⁴	15 ⁴	15 ⁴	15 ⁴	15 ⁴	
(10)	—	—	18 ⁴	34 ⁴	11 ⁴	02	-13 ⁴	08 ²	01	-02	17 ⁴	16 ⁴	25 ⁴	31 ⁴	29 ⁴	17 ⁴	17 ⁴	20 ⁴	20 ⁴					
(11)	—	—	29 ⁴	48 ⁴	07 ²	39 ⁴	13 ⁴	-18 ⁴	-08 ²	-05	21 ⁴	18 ⁴	24 ⁴	18 ⁴	-22 ⁴	-25 ⁴	-30 ⁴	-30 ⁴						
(12)	—	—	34 ⁴	01	41 ⁴	22 ⁴	-16 ⁴	02	-18 ⁴	23 ⁴	17 ⁴	11 ⁴	18 ⁴	31 ⁴	31 ⁴	35 ⁴	35 ⁴							
(13)	—	—	—	19 ⁴	29 ⁴	10 ⁴	-14 ⁴	-07 ²	11 ⁴	-16 ⁴	-11 ⁴	-16 ⁴	-11 ⁴	-17 ⁴	-17 ⁴	20 ⁴	20 ⁴	26 ⁴	26 ⁴					
(14)	—	—	—	-12 ⁴	23 ⁴	18 ⁴	17 ⁴	23 ⁴	17 ⁴	23 ⁴	40 ⁴	22 ⁴	19 ⁴	28 ⁴	28 ⁴									
(15)	—	—	—	-17 ⁴	-09 ³	-12 ⁴	-01	28 ⁴	25 ⁴	21 ⁴	-27 ⁴	-25 ⁴	-21 ⁴	-15 ⁴	-15 ⁴	02	02	02	02	02	02	02	02	02
(16)	—	—	—	44 ⁴	27 ⁴	33 ⁴	37 ⁴	33 ⁴	33 ⁴	33 ⁴	52 ⁴	52 ⁴	52 ⁴	41 ⁴	41 ⁴									
(17)	—	—	—	—	49 ⁴	29 ⁴	22 ⁴	11 ⁴	11 ⁴	11 ⁴	18 ⁴	18 ⁴	18 ⁴	44 ⁴	44 ⁴									
(18)	—	—	—	—	—	51 ⁴	40 ⁴	18 ⁴	12 ⁴	30 ⁴														
(19)	—	—	—	—	—	51 ⁴	22 ⁴	18 ⁴	58 ⁴															
(20)	—	—	—	—	—	56 ⁴	48 ⁴	48 ⁴	49 ⁴															
(21)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
(22)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
(23)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
(24)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	

^{*}Inverted coding, ¹decimals omitted, ²P < .05, ³P < .01, and ⁴P < .001.

TABLE 2: Results of principal component analysis and reliability tests for subscales of children's perceptions of their play scale for Sample 1 subjects.

Item	"Child's Choice" (I)	"Social Play" (II)	"Planned Activities" (III)	"Engagement" (IV)	"Active Play" (V)	"Free Time" (VI)
(1) I would like more time to do things that I want to do.	.8147	.0811	.2103	.1511	.1108	.2492
(2) I wish I had more play time when I can choose what I want to do.	.8320	.1245	.0859	.1284	.1497	.2078
(3) I have to do lots of things I don't like to do.*	.7844	.0317	.2015	.2116	.0102	.1267
(4) It seems like there's people telling me what to do in my play time a lot.*	.7692	.2294	.2249	.1761	.0775	.0563
(5) I don't like when my mom or dad signs me up to do some activity without asking me.	.6740	.1384	.1862	.0133	.0829	.1420
(6) I wish I could stop doing some of my after school activities.	.6589	.1922	.1604	-.1189	.0511	.1714
(7) I would like to spend more time doing things with my friends.	.2799	.6761	.0079	.2401	.0109	.2261
(8) If I had some free time I'd mostly want to spend it with my friends.	.1381	.7658	.1334	.1253	-.2005	.1317
(9) In my free time I enjoy being alone.*	.2683	.8211	.2510	.1101	.2901	.1756
(10) I would like to spend more time doing things with my family.	.0581	.6625	.0849	.0766	.1460	.2103
(11) I would like to sign up to do more fun things after school.	.0893	-.0691	.8603	.1314	-.0254	-.0488
(12) I would like to sign up to do more fun things on the weekends.	.1477	-.1410	.8479	.1195	-.0469	-.0697
(13) I like to have plans made ahead of time to do an activity.	.1381	.0992	.6891	.0254	.0081	-.0450
(14) I feel like I sometimes waste a lot of my free time.*	.1504	.1418	.6617	.3191	-.0763	.1049
(15) I wish my neighborhood had more organized activities for kids my age.	.1892	.2111	.7998	.1303	.1745	.0102
(16) When I play I really get involved in what I'm doing.	.1039	.0769	.0451	.8759	-.0026	.0841
(17) If I had a few free hours I'd know just how I'd like to spend them.	.2145	.1253	-.1841	.7481	.0754	.2051
(18) After school I often get bored and don't know what to do.*	-.0489	-.0658	.1527	.8711	-.2105	.0186
(19) On weekends I often get bored and don't know what to do.*	-.0341	.1291	.2439	.7846	.0693	-.1274
(20) I like to be really active when I play.	.0682	.0756	.1055	.0671	.8219	.0799
(21) When I have some free time I like to watch TV.*	.1511	-.0244	.0219	.0693	.8554	.0561
(22) When I have some free time I mostly like to play video or computer games.*	.0740	.0917	.0847	.1925	.7899	.0244
(23) I enjoy my time off of school.	.1128	.1743	.1548	.0554	.0847	.8499
(24) When I get a day off of school I really look forward to it.	.2906	.1758	.0840	.0682	-.0325	.7782
(25) When I don't have to go to school I just want to play all day.	.2452	.2005	-.2029	.2198	.1764	.8187
Eigenvalue	4.1881	3.8755	3.6470	2.5903	1.9481	1.2993
Unique explained variance (%)	24.76	15.42	14.83	11.19	8.86	7.18
Cumulative explained variance (%)	24.76	40.18	55.01	66.20	75.06	82.24
<i>Reliability</i>						
Internal consistency (coefficient omega)	.9125	.8394	.8529	.8638	.8770	.7963
Test-retest (3 months) stability (N = 592)	.8010	.8327	.7714	.7289	.8207	.7133

* Inverted coding.

Significant item loadings are in bold.

measures. All measures were completed by the children with signed consent forms during classroom time in a group setting; children without consent were given worksheets to complete. The researcher was present (along with the classroom teacher) when all instruments were completed and was available to answer questions or address any problems that arose.

2.3.1. Measures of Play Duration. Within two weeks of completing all measures, the children in each classroom were brought to the gym to participate in the study on three separate occasions, each session lasting for a period of 20 minutes. Each child was wearing a name tag—those whose name was written in black marker had permission to participate in the study while those without permission had their names written in another color. In each of these sessions the gym contained over 105 pieces of potential play materials from Imagination Playground consisting of large blocks of various sizes, noodles, cylinders, cubes, bricks, curves, angles, gears, balls, hinges, cogs, and so forth that can fit together in a large variety of ways to accommodate the child's creativity and play preferences. These "loose parts" are made of foam and specifically designed to be amorphously shaped so that they do not dictate how they are to be combined or guide the child's play in a certain direction. They are relatively new on the market and are not yet available in most retail outlets, so only one of the children had seen them before. On entering the gym, children were told they could play with the materials if they wanted to, they could do anything else in the gym, or they could tell their physical education teacher if they wanted to leave and they could be moved to a "quiet study classroom." None of the children requested to leave the gymnasium. In addition to the gym setting, the children were also observed during three typical recess periods of 20 minutes each, interspersed with the gym observations, by the same team of observers, on the playground behind their school. The playgrounds in all of the schools were very similar, containing swings, slides, climbing apparatus, and basketball hoops. During all recess periods at all schools, an assortment of balls, jump ropes, and sports equipment (Wiffle bats, bases, sports vests, plastic cones, etc.) were available.

Eight senior undergraduate students were each assigned to observe a child whose name was written in black on their nametag (indicating permission was granted); the assignments were changed each session so that each child was observed for two sessions in the gym and two on the playground by different observers. The students were used to having a number of undergraduate students present at recess and in the gym (as aides, volunteers, and on internships) so that the presence of the observing students did not appear out of the ordinary. Each observer wore a Velcro wristband Gymboss Interval Timer that could be started and stopped to record time durations. Observers used the device so that they began the timer (pressing a button) when the focal child began engaging in an activity, allowing it to run continuously as long as the child was engaged (whether with or without the materials or alone or with others). If the child stopped at any point for any reason, the timer was stopped and then restarted

if activity commenced. At the end of the session when the teacher announced time was up and it was time to put the materials away, all observers stopped the timer if it had been running. After the child left the setting, the observer recorded the total time shown next to the child's name and then reset the timer in preparation for a child in the next class. Each child received a total play time score that was a summation across both settings and the four sessions. Given the novelty of the materials placed in the gym and the familiarity of the playground equipment, a separate play duration score was also maintained for each setting.

The total play time scores were compared for each of the 28 possible pairs of observers during recess periods prior to the actual week of testing. During these sessions on the playground, each pair of observers was assigned to independently record the play time of the same child. This method of determining interobserver reliability produced findings that indicated that observers were very consistent in utilizing the timer and applying it to observations of the children. The agreement ratings between pairs of observers were shown to be highly satisfactory (ranging from kappa = +.95 to +.99). The mean scores were calculated and used in the analyses to facilitate ease of interpretation.

2.3.2. Positive Affect. The PANAS-C [60] is a 27-item self-report measure of both positive affect (PA) and negative affect (NA) which lists adjectives of various mood states. Children are asked to rate the extent to which they felt each way in the past few weeks. Answers are rated on a 5-point Likert scale, ranging from 1 ("very slightly or not at all") to 5 ("extremely"). The PANAS-C Positive Affect scale is comprised of 12 items (e.g., "joyful", "active") and has high internal consistency and convergent and divergent validity [60, 61]. Both the PA and NA scales have been normed by gender and with children from third through 12th grades [61]. The Positive Affect Scale was utilized in the present study because this construct is a perpetual part of definitions and theories of children's play (cf. [47, 51, 58]). There is a wealth of literature to demonstrate that PA and NA are orthogonal and that the scales that measure them in the PANAS-C can be used separately [62, 63]. In the present study, internal consistency for the PA was .91.

2.3.3. Anxiety and Depression. The Revised Child Anxiety and Depression Scale (RCADS; [64]) is a 47-item youth self-report questionnaire that contains six subscales. Items are rated on a 4-point Likert scale ranging from 0 ("never") to 3 ("always"). Evidence for the factor structure, reliability, and validity of the RCADS has been found in both school and clinical samples [64, 65]. The Major Depressive Disorder (MDD; e.g., "I feel nothing is much fun anymore") and Total Anxiety (e.g., "I worry that bad things will happen") Scale scores were chosen as criterion measures of depression and anxiety, respectively, in the present study as they showed stronger relationships to the constructs than other extant measures [65]. In the current study, internal consistency reliability for the RCADS MDD was .84 and for Total Anxiety it was .90.

2.3.4. Shyness. Children's shyness was measured using the self-report Children's Shyness Questionnaire (CSQ; [66]) for children aged 9–12 years. The CSQ consists of 24 items that capture the emotional (e.g., "I feel nervous when I am with people") and behavioral (e.g., "I am usually quiet when I am with others") components of shyness that children experience in both familiar and unfamiliar settings. The CSQ has demonstrated strong psychometric properties in previous research [66, 67] and showed good internal consistency in the present study ($\alpha = .89$).

3. Results: Sample 1

3.1. Development of the Instrument: Items and Factors. The analysis of the CPTP occurred in several steps. First, intercorrelations between the individual items were generated for the 25-item scale and inspected to see that none showed being consistently low (unrelated) or high (indicating extreme multicollinearity). As shown in Table 1, none of the individual items met either criterion.

In the next step, the CPTP was subjected to a principal component analysis (PCA) with oblique rotation due to the intercorrelations among the items. The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, $KMO = .91$ (considered "superb" [68]), and all KMO values for individual items were greater than .74, which is well above the acceptable limit of .50 [68]. Bartlett's Test of Sphericity = 17694.31, $P < .001$, indicated that items were sufficiently large to use PCA. An examination of the structure matrix was conducted in order to determine the relationship of each item to the factor; absolute values of .40 or higher were considered significant in interpretation [69]. All items had a significant loading on at least one factor. The matrix revealed a six-factor solution that met the criteria for meaningful extraction: the size of the eigenvalues was each greater than one, and each presented a unique contribution to explained variance [70]. Collectively, the six factors accounted for a total explained variance of 82.24%. The results of the PCA showing the factor loadings for the 25 items, eigenvalues and unique and cumulative explained variance are presented in Table 2.

Inspection of the items comprising each of the factors led to their labeling, presumably reflecting what was in the mind of the children as they thought about and commented on their play (acknowledging these labels came from an adult perspective). The six items comprising the first factor included two which we inverted in wording to reflect children's initial comments about play and to ease their responding. While some of the ideas did reflect the use of their free time and planned activities (two other factors), the relatively lower loadings on these other factors combined with the other items and high interitem correlations suggested that the theme here was the one of choice. Children were emphasizing their desire to make their own choices about what they did and with whom they did it in their free time, and for that reason this factor was labeled "Child's Choice." This first factor had the highest eigenvalue and contributed the largest variance of 24.76% (Table 2).

The items loading highly on the second factor clearly reflected engaging with others in play and was thus termed "Social Play." The vast majority of the children commented about playing with friends which included specific activities or just being together. A lesser but significant number also included play with family members, including both parents and siblings, as well as extended relatives in their responses to this question, as gleaned from their initial comments. Social play was comprised of four items, one of which was inverted in scoring, and uniquely contributed 15.42% to the total variance.

The third factor appeared to reveal children's feelings about their play activities when they were out of school. The five items that loaded highly on this factor were related to having activities planned and play opportunities available when they were not otherwise occupied with school obligations or household chores. One of the five items was reverse scored ("I feel like I sometimes waste a lot of my free time"). This factor, labeled "Planned Activities," contributed 14.83% to cumulative explained variance and seemed to address structured (as opposed to free) play more than the other factors.

"Engagement" was the descriptive label assigned to the fourth factor which consisted of four items. Two of the items used the word "bored" (taken directly from the children's comments, reverse coded) and the other two items indicated the contrasting feeling of being absorbed or engaged in play. It appeared that this is a common dimension that the children of this age thought about in relation to their play, and it contributed 11.19% to the total variance.

Not surprisingly for this age group, the fifth factor encompassed television and video and computer games (these more sedentary activities necessitated inverted coding) and the preference for being vigorous rather than sedentary in play. This factor was labeled "Active Play" and it contained three items that contributed 8.86% to the total variance.

The final factor was comprised of three items that all specifically addressed time off of school—looking forward to it, enjoying it, and wanting to play all day when the opportunity arose. Given the age range of the children, it was not surprising to find that this was a related issue that was paramount in their minds when they thought about play. This "Free Time" factor added about the same amount of variance (7.18%) to the CPTP scale as the "Active Play" factor.

Confirmatory factor analyses (CFA) with maximum likelihood estimation and fit statistics were used to verify that the factor structure provided a good fit to the data. LISREL 8 [71] was utilized to conduct the CFA analysis. Fit statistics guidelines used to confirm the dimensionality of the six-factor solution that were utilized were as follows: a non-significant chi-square ($P > .05$) when sample sizes are ≥ 250 , root mean square error of approximation (RMSEA) values below .05, and a comparative fit index (CFI) value above .90 [57]. In the present study, the CFA indices obtained were $\chi^2 = .89$, $P > .05$, and $CFI = .92$, $RMSEA = .03$, thus demonstrating that there was a good fit to the data [57].

3.2. Reliability: Sample 1. The reliability of the final version of the CPTP was tested in two ways. First, the internal reliability of the scale as well as each of the factors was computed using coefficient ω_t [72, 73], which is the method preferred to using Cronbach's [74] alpha coefficient because the latter has been shown to provide a strong underestimate and to also have little to do with the actual internal structure of a test instrument [75, 76]. The scale as a whole was found to have high internal consistency ($\omega_{25} = .88$), as did each of the component factors (range = .79 to .91; see Table 2). Test-retest reliability was also assessed over a three-month time span and was found to be .78 for the instrument as a whole and to show stability as well for each of the factors (range = .71 to .84; see Table 2). The three-month interval was selected because it spanned an entire school semester, after which the children were excused for several months.

3.3. Content Validity: Sample 1. Content validity refers to whether the instrument adequately samples the domain of content; that is, it addresses the question, "Do the items on the instrument comprehensively represent all of the aspects of children's perceptions of their play?" Content validity is achieved by the consensus of judges—subject matter expert (SME) raters—who respond to the following question for each item: "Is the skill or knowledge measured by this item 'essential,' 'useful but not essential,' or 'not necessary' to the performance of this construct?" [77]. The 15 SMEs each independently responded to this question on the final version of the instrument in relation to the topic under scrutiny—children's perceptions of their play. They independently and unanimously agreed that the CPTP items they received did cover the range of the domain of children's play as might be perceived by a school-aged child. In addition, Lawshe's [77] formula for determining content validity was also applied:

$$\text{CVR} = \frac{(n_e - N/2)}{(N/2)}, \quad (1)$$

where CVR is content validity ratio, n_e is number of SMEs indicating "essential," and N is total number of SMEs.

The mean CVR across items is used as an indicator of the overall content validity of the instrument. Utilizing Wilson et al.'s [78] corrected table of critical values for CVR, the instrument was found to be content valid at the .001 level of significance (CVR = .803).

3.4. Construct Validity: Sample 1

3.4.1. Convergent Validity. Correlations between children's scores on the CPTP and the amount of time they spent playing in the gym and at recess, and the mean total play duration over the four-day observational period, can be seen in Table 3. The correlations were computed for the total CPTP score as well as for each of the CPTP subscales. As can be seen from the table, all correlations were positive and highly statistically significant (all $P < .001$), indicating that as children scored higher on the CPTP they played longer

in the free play settings. These findings were interpreted as supportive of the convergent validity of the CPTP in that the children's natural play behavior, across all three grades and for both boys and girls, corresponded significantly to their scores on the self-report CPTP instrument.

Convergent validity was also assessed by correlating children's scores on the Positive Affect scale of the PANAS-C (self-report) with their responses on the CPTP. The correlations were calculated for the sample and then separately for boys and girls within each of the three grade levels. All of these correlations are reported in Table 3 and as can be seen, they are all positive and highly statistically significant.

3.4.2. Discriminant Validity. Three measures were utilized to test the discriminant validity of the CPTP. It was hypothesized that children's perceptions of their play would be negatively related to anxiety, depression, and shyness. Scores from the measures of these constructs were correlated with children's responses to the CPTP and, as expected, all were negative and statistically significant (Table 3).

3.5. Testing for Gender and Age Effects in Sample 1 Data. We first conducted several single-group confirmatory factor analyses (CFAs) using LISREL 8 [71] to examine whether the factor structures of the CPTP adequately fit the public elementary school children by grade and by gender. The same goodness-of-fit indices and criteria [79] were used to evaluate the fit of the model (χ^2 , NNFI, CFI, IFI, and SRMR). Table 4 presents the results of these single-group CFAs for each of the three age groups and both genders. As can be seen, the six-factor structure fit both the three grade groups and the two gender groups well. Next, we conducted a series of multiple-group CFAs to investigate whether the extent to which the factor structure of the CPTP was invariant across the grade by gender groups [80, 81]. First, the least restrictive model, or the Congeneric model, tested whether the six groups (3 grade \times 2 gender) had the same factor loading pattern. This was done by imposing the same factor loading pattern across groups. Next, a more restrictive model, the Tau-equivalent model, tested whether the groups had the same factor loading pattern and equivalent factor loadings. This was done by also imposing equality constraints on corresponding factor loadings across groups. Finally, the most restrictive model—the Parallel model—tested whether the six groups had the same factor loading pattern, equivalent factor loadings, and equivalent latent factor covariance matrices and error covariance matrices. This was done by additionally imposing equality constraints on latent factor covariance and error covariance matrices across the groups.

Given the nesting nature of the three progressively restrictive models, the chi-square difference test is usually recommended to assess whether the fit of the model worsens significantly from the less restrictive to the more restrictive models [80]. In addition to the chi-square test we also examined changes in the alternative model fit indices of NNFI, CFI, IFI, and SRMR. Little [82] suggested .05, whereas

TABLE 3: Zero-order correlations^{1,2} between CPTP subscale and total scores and construct validity measures for public school children.

Validity measures	Children's perceptions of their play (CPTP) subscales						
	"Child's Choice"	"Social Play"	"Planned Activities"	"Engagement"	"Active Play"	"Free Time"	Total CPTP
Total time playing	93***	89***	79***	94***	89***	92***	92***
Play time in gym	95***	91***	70***	95***	83***	88***	94***
Play time on playground	92***	88***	84***	94***	96***	91***	91***
Positive affect	94***	91***	86***	92***	81***	89***	90***
Depression	-72***	-89***	-61***	-88***	-21***	-77***	-71***
Anxiety	-83***	-88***	-74***	-90***	-39***	-89***	-79***
Shyness	-77***	-83***	-77***	-92***	-66***	-20***	-70***

¹Decimals omitted, ²N = 605, and ***P < .001.

Rahim and Magner [83] proposed .04 as the criterion for changes in these alternative fit indices. Although it is ideal to show support for the Parallel model, in most cases it is deemed sufficient to demonstrate support for the Tau-equivalent model to conclude factor structure invariance [81].

Table 4 presents the results of the multigroup CFAs. The Congeneric model fit the data adequately, indicating the CPTP had the same factor loading pattern for the public elementary school children in grades three through five. The Tau-equivalent model also fit the data reasonably well, and the chi-square difference test comparing the Congeneric model against the Tau-equivalent model was nonsignificant, $\Delta\chi^2 = 2.07$, $P > .05$. As Table 4 shows, changes in the alternative model fit indices were smaller than the recommended cutoffs, allowing us to conclude that the groups of public school third, fourth, and fifth grade boys and girls had overall equivalent factor loadings. Finally, the Parallel model yielded mixed-model fit results, whereas NNFI, CFI, and IFI indicated acceptable fit and SRMR suggested a poorer fit. The chi-square difference test comparing the Tau-equivalent model against the Parallel model was significant, $\Delta\chi^2 = 13.18$, $P < .05$. In addition, change in CFI, IFI, and SRMR exceeded the recommended cutoffs. Thus, constraining latent factor covariance matrices and error covariance matrices to be equal across the grade \times gender groups resulted in a substantially worse model fit. On the basis of these results, we concluded that these groups of children had the same factor loading pattern and equivalent factor loadings on the CPTP.

4. Sample 2: Children Attending Private Schools

4.1. Sample Characteristics. 214 third through fifth grade children enrolled in 3 private elementary schools in the same city and school district as the children in Sample 1 comprised the second sample for whom both parent and child consent forms were obtained (from a population of 240 children in these grades). The second sample tended to have a slightly higher number of girls (53.74%) than boys, and they ranged in age from 95 months to 119 months with a mean age of 110.29 months. The numbers of children in each of the grades were

similar, with slightly more in the upper grades (28.97% were in third grade, 35.05% in fourth grade, and 35.98% in fifth grade). There were slightly more girls in each of the grades than boys (in third grade 51.61%, in fourth grade 53.33%, and in fifth grade 51.95%). The vast majority of the children were Caucasian (85.98%), 2.34% African American, 10.75% Asian American, and .93% were reported as biracial. Children within each grade and gender were combined across the three schools, as preliminary variance analyses indicated no differences between the three private schools at each grade level.

4.2. Procedures. Children for whom consent forms were obtained completed the same final version of the CPTP that the public school children had completed. For all grades, the CPTP was administered in their classroom with the teacher and researcher present; instructions and procedures were identical to those given to the public school children.

4.3. Results. A test of the generalizability of the CPTP entailed a replication of the factor structure of the CPTP with the private school third through fifth grade boys and girls. The approach to investigating this employed the same CFA procedures (LISREL 8; [71]) conducted with the first sample to see if we could obtain the same factor structure and loadings with the CPTP data provided by children in the second sample. The same goodness-of-fit indices were calculated (NNFI, CFI, IFI, and SMSR) and the criteria remained the same for determining the fit of each model we tested. As an initial step, we conducted a CFA analysis to test whether the six-factor solution obtained with the first sample fits the second sample adequately. The results are presented in Table 4, and as can be seen, the six-factor structure also fits the second sample very well. As a second step, we contrasted the factor structure of the two samples, following the CFA procedures previously described, and found that the chi-square difference test contrasting the Parallel model with the Tau-equivalent model was significant, $\Delta\chi^2 = 21.76$, $P < .05$, as were all of the alternative fit indices (see Table 4), indicating the Parallel model was a poor fit. Both the Congeneric model and the Tau-equivalent model fit the Sample 2 data very well,

TABLE 4: Fit indices for CFA models for three grades and both genders on CPTP.

(a) Model fit for CPTP across three grades and two genders when analyzed separately

	Grade 3	Grade 4	Grade 5	Boys	Girls
<i>Sample 1</i>					
<i>Public schools</i>					
χ^2	34.11	42.63	38.97	49.70	58.22
NNFI	.91	.94	.92	.93	.94
CFI	.95	.91	.96	.97	.96
IFI	.93	.95	.92	.96	.98
SRMR	.06	.04	.03	.01	.02
<i>Sample 2</i>					
<i>Private schools</i>					
χ^2	49.72	58.61	50.23	51.49	48.77
NNFI	.90	.97	.99	.96	.95
CFI	.92	.98	.96	.94	.93
IFI	.93	.95	.94	.93	.91
SRMR	.07	.04	.02	.03	.04

(b) Fit indices for multiple-group CFA models across six age groups and two genders

	χ^2	NNFI	CFI	IFI	SRMR
<i>Sample 1</i>					
<i>Public schools</i>					
Congeneric model	128.79	.93	.96	.96	.05
Tau-equivalent model	168.93	.95	.94	.97	.04
Parallel model	427.54	.92	.90	.91	.16
<i>Sample 2</i>					
<i>Private schools</i>					
Congeneric model	141.08	.91	.95	.97	.05
Tau-equivalent model	192.77	.94	.97	.96	.03
Parallel model	506.28	.90	.93	.91	.08

Note. NNFI: nonnormed fit index; CFI: comparative fit index; IFI: incremental fit index; SRMR: standardized root-mean-square residual. The Congeneric model imposes the same number of factors and the same factor loading pattern across groups. The Tau-equivalent model additionally imposes equivalent factor loadings across groups above and beyond the Congeneric model. The Parallel model additionally imposes equivalent factor covariances and measurement errors across groups above and beyond the Tau-equivalent model.

and the chi-square difference test between these two models was not significant, $\Delta\chi^2 = 1.37, P > .05$. In addition, changes in the alternative fit indices were minimal (Table 4). Thus, constraining factor loadings to be equal across the groups did not result in the fit of the model proving to be significantly inferior. These findings strongly suggested that the CPTP factor structure was the same for the second sample as it was for the children in the first sample.

Single-group confirmatory factor analyses (CFAs) were also examined to determine whether the factor structures of the CPTP also adequately fit the private elementary school

children by grade and by gender (see Table 4). The CFAs were again conducted utilizing LISREL 8 [71] and the same goodness-of-fit indices were used. The results indicated that the six-factor structure also fit the three age groups and the two gender groups well, comparable to that obtained with the public school children (Sample 1). In addition, the multiple-group CFAs testing whether the extent to which the factor structure of the CPTP was invariant across the grade by gender groups [80, 81] replicated the findings with the first sample (Table 4). For the multigroup CFAs, the Congeneric and Tau-equivalent models again both fit the data adequately, and the chi-square difference test comparing the Congeneric model against the Tau-equivalent model was nonsignificant, $\Delta\chi^2 = 1.49, P > .05$. These results indicated that the CPTP also had the same factor loading pattern for the private elementary school children in grades three through five as well as for boys and girls across the sample and within grade level. Finally, the chi-square difference test comparing the Tau-equivalent model against the Parallel model was significant, $\Delta\chi^2 = 22.05, P < .05$, and the goodness-of-fit indices all exceeded the recommended cutoffs (Table 4), indicating a worse fit for this model. In sum, these findings demonstrate that the CPTP can be utilized with both public and private school children and that there were no age/grade or gender differences for either sample.

5. Discussion

Current studies of the play of children in elementary school are largely based on evaluations by parents and/or teachers. Research has demonstrated that both teacher and parent definitions and assessments of the play of children in this age range differ from the accounts of the children when asked directly about their own play [33–37, 39]. However, there have been few efforts to assess children’s perceptions of their own play at this age, beyond reporting verbatim excerpts from transcribed interviews [32, 44] or injecting specific contrasts such as the term “work” or specific environments [13, 14, 30–32, 34, 44] to elicit play perceptions.

The findings of this study strongly support the adoption of the Children’s Perceptions of Their Play (CPTP) scale as a reliable and valid measure of how both boys and girls in this age range view their own play. The scale was validated for both children attending public or private elementary school, and the same factor structure was obtained. The two measures of reliability that were obtained indicated that the CPTP as a whole and its component factors are internally consistent and stable over a three-month time period. In addition, all of the analyses yielded findings that were highly supportive of the content and construct (convergent and discriminant) validity of the instrument. The consistent lack of findings detecting gender or grade/age-related differences provided support for the generalizability of the instrument for children with similar sample characteristics. Thus, we can strongly advocate the use of the CPTP scale for research investigating how third through fifth grade children think about their own play, and we further recommend that the subscales can be utilized individually for more specific purposes.

In developing the instrument, the strategy of having the children self-define play for themselves and generate whatever pictures, words, phrases, or symbols that came to mind was an important first step in developing the items. Directions to the children allowing them to use whatever means they wished in presenting their play is consistent with the admonition by play researchers that a variety of methods be provided [41]. In addition, the process of asking that this be done independently by each child addressed criticisms of the studies that have attempted to solicit children's descriptions of play in focus groups and found these group conditions to seriously constrain responses [44].

Children were found to self-define their play by considering six major aspects. These factors, that emerged from factor analysis of the CPTP scale, accounted for a large portion of the variance (77.1%), which is much higher than other studies reporting observations of children at play during this age [41, 58]. Closer inspection of the factors and the items within them revealed what is salient to elementary school children when they think about their play. The first and largest factor to emerge was the degree to which the children perceived they had the choice to do the activity and to be alone or accompanied by companions of their choosing. Free choice has been identified as one of the five defining characteristics of play [49–51], yet its position in relation to the other essential elements has been debated. In one study that examined the importance of these play criteria to children of different ages, it was found that the key ingredient differentiating play and work for fifth grade children [84] was fun, in contrast to free choice which was the critical delineator for those of preschool age [16] and kindergarten through second grade [32]. King [84] surmised from her findings that free choice becomes less important to children as they age, yet the findings of the present study contradict this conclusion. This discrepancy may be due to the fact that the children in the King [84] and Wing [32] studies were asked to contrast play with work, and subsequent research has found that they are not opposites [85–88] and are likely not perceived as such by children. It appeared from the present data that the element of choice is a crucial element in their thinking about play and that its significance is consistent for boys as well as girls in third through fifth grades.

Children also thought about their play in terms of opportunities to interact with friends and family. These findings are consistent with those of Anthamatten et al. [43], who found that family played a critical role in play for the third and fifth grade children they interviewed. Research has clearly shown that as children mature through middle childhood and into adolescence, there is a shift toward a preference for spending more time with friends and less time with family members [89]. While the children in this study did indicate the importance of friends in thinking about play (in contrast to the Anthamatten et al. [43] study with children of the same age), they had not yet shown the desire to spend less time with family. The age of the children in the sample was relatively young (8 to 10 years) in relation to these observed developmental changes, and they were at the age where parents still played a central role in their lives. Research has shown that the increased

importance of peers and the quest for independence from parents primarily occur at later ages [89, 90]. The findings of the Anthamatten et al. [43] study showed the importance of family but not friends to the children they interviewed: the sample sizes in each grade (third and fifth) were relatively small ($n = 9$ and $n = 6$, resp.) and the children were asked to define play in relation to activities that transpired in their classrooms. The presentation of the classroom context might have narrowed the children's focus and encouraged them to point to differences in that particular setting rather to think freely about how they perceived play more generally. This might well explain the discrepancy in findings between the investigations and the absence of their finding of any of the other factors that comprised the CPTP.

Perhaps due to the dramatic increase in children of this age participating in out-of-school activities [91], "Planned Activities" emerged as the third factor in the CPTP. Data has shown substantial increases in participation in structured recreational activities for children of all ages, ethnicities, and income levels [91], and thus recreation programs have become a salient aspect when children think about their play. The items within this subscale all assessed the desire to participate in additional recreation programs in their neighborhood, on school days and on weekends. The correlations between these items and some of the items in the first "Child's Choice" factor strongly suggested that the children wanted these recreational programs to be of their choosing, rather than at the insistence of parents who felt they would be beneficial.

It was not surprising to find that it was important to children to be "engaged" in regarding an activity as play. This quality of being highly involved in whatever play activity they were doing has not been specifically mentioned in the majority of published play criteria, although "manifest joy" reflecting the exuberance children show has been prominent in conceptualizations of play with younger children [28, 92–94]. With the older children in this study this factor appears to reflect a desire for stimulating and absorbing experiences. While virtually every play theorist has ascribed the motivation to play as being intrinsic, relatively few have extended this definitional element to require that the activity itself provides the children with stimulation sufficient to avoid boredom. One noted exception is Ellis' [47] theoretical explanation for play, which defines a play episode as the child's active search for stimulation to raise suboptimal arousal level (boredom, lack of stimulation) to the optimal range. In addition, Csikszentmihalyi's Flow model [87] posits the pleasure and excitement that can come from a play (or other) session as due to the stimulation inherent in an equal match between environmental challenges and the skills of the individual where the uncertainty of the outcome is high. In his model he further notes that boredom—a lack of stimulation—is not a condition that will allow the individual to experience flow.

The final two factors in the CPTP scale contributed equally to the total explained variance and reflect the desire to be active during play and the anticipation of having time away from obligations (school) to be able to play in the way the child wants. The "Active Play" factor was determined by

considering both the child's directly expressed desire to have play be physically energetic. While this perception is likely to be much less typical for older children, it was somewhat surprising to find that a gender by grade interaction did not appear, since descriptions of children's play as they age suggest that, for girls in particular, play becomes much less physical with longer bouts of social interaction and sedentary play sessions shown [58, 95]. This could be due to the constrained age range of the children such that a gender difference was not as overt, or that the recent national push for children to be more active to combat the obesity crisis might have influenced girls at all ages to be more active. In addition, the inverted coding for the items also loading high on this factor refers to preferences for television, computer, and video games, all reflecting relatively inactive activities [96]. Initially this factor was labeled "Sedentary Play" and the "I like to be really active when I play" item was reverse scored. However, the impetus to have the factors sum to a total play perception score was reflected in the altered strategy of inverting the scoring on the inactive items and the relabeling of this factor to "Active Play." The items comprising the final "Free Time" factor all addressed the child's desire to have the time off of school to be able to play and play in the way that was self-determined. The correlation matrix indicated that there were connections between these items and those reflecting the child's choice to be able to do what he or she wanted in play, yet the emergence of these items as a distinct factor suggested that children regarded these to be different. We can speculate that the desire to have time away from school, in particular, combined with the opportunity for freely chosen play (as opposed to child care or doing chores), prescribed that this be a unique factor.

Perhaps one of the more interesting findings is the lack of a factor relating to imaginative, symbolic, or pretense play. While this type of play has been shown to decrease in frequency when children move into their middle childhood years, it nevertheless has received widespread attention and study as indicative of the child's growing cognitive, social, and verbal abilities [3, 41, 58, 97, 98]. The findings in the present study indicate that when children think about their play they predominantly consider the elements of free choice, control over when and how and with whom they engage, and their degree of activity and absorption in the experience. The categorization of play into types or taxonomies appears to be much more the work of scholars and observers than of the playing children themselves.

The findings showing that children's perceptions of their play, and each of its components, relate strongly to the time they devote to free play in both an indoor and outdoor setting contribute to the literature by demonstrating that children translate their thoughts and perceptions into their behavior. This contention has been demonstrated in other settings and with other constructs; however the evidence that play is shaped by the *child's* perceptions is relatively new, as previous research has focused largely on how parental perceptions of play shape children's behavior [99–101]. The positive relationships in the present study between children's perceptions of their play (their CPTP scores) and the amount of free play in which they engaged in two different settings

confirm the link between how children at their age feel about their play and what they do. This correspondence between play indicators (perceptions and behaviors) may well be a finding that wanes as children age, a speculation building on the increased social and verbal play and decreased physical play that has been observed with adolescents, particularly females [41, 58, 102].

Observations of children of this age have noted significant gender differences in their play styles and preferences, with boys' play marked by larger play groups, more competitiveness, role differentiation, rule-governed team play, same-sex playmates, and a greater preference for outdoor activity and larger physical spaces compared to girls' play [41, 58, 103]. While these gender differences in play have been replicated numerous times in previous studies, their source has been subject to debate depending on the different theoretical perspective or interpretations that are applied (cf. [104–108]). Thus, while the lack of a gender difference in all of the findings examining the psychometric properties of the Children's Perceptions of Their Play scale might initially appear to be suspect, the vast majority of this research has relied on adult observations in accord with adult-derived definitions and theories of play. These observers might have presumed that what they were witnessing reflected the child's enactment of his or her views of play yet none of these studies measured the two simultaneous factors (the child's play perspectives and behaviors). While it is likely, as noted above, that this correspondence would be large for toddlers and preschool-aged children, it might be proposed that with increasing age there would be less equivalence. It might also be conjectured that increasing peer influence and the child's growing desire for acceptance and conformity might promote play to look a certain way but in fact be reflective of the child's general thinking or perspectives about his or her play. The data from the present study supports this latter contention in noting the discrepancy between gender comparable perceptions of play and diverging play styles and preferences.

The results of the study also demonstrated that children who are anxious, depressed, or shy have a different perception of their play. For example, children who are shy, depressed, or anxious have been shown to initiate fewer social contacts with available playmates, to show more unoccupied, onlooker or solitary play styles, and to be likelier to suffer peer rejection or victimization in play settings [109–115]. The extant literature has shown that the play behavior of children with these aspects of their temperament play differently, yet there has not been any empirical work to date that demonstrates that they think about their play from a qualitatively different perspective. The current study provides the data upon which to posit this tentative conclusion, although this is an area that is ripe for further in-depth exploration, particularly in lieu of the theoretical and therapeutic implications that might result.

5.1. Limitations of the Study. In reviewing the results, it is important to recognize the relatively homogeneous sample that comprised the study. The sample was largely composed of Caucasian, non-Hispanic children, and it was likely that their parents were more educated than those in surrounding

communities and others in the state. Although the children were representative of the Midwestern community from which they were drawn, it is important to consider the possible influence that ethnicity, culture, parenting style and characteristics, and/or socioeconomic status might exert in children's perceptions of their play (cf. [41, 58]). There is an abundance of literature indicating that all three constructs significantly affect children's play descriptions, preferences, and desired outcomes, although virtually all of this past research has been based on adult perceptions of what constitutes play. While participants in the second sample (private school), which likely came from a more affluent home than those in the first sample (public school) were shown to score equivalently, the CPTP has not been adequately tested with children in the lower socioeconomic range. Therefore, it is still an open question about how demographic and environmental features affect children's own perceptions of their play and one that is worthy of in-depth examination. In addition, future research with more diverse samples should be undertaken, and investigation of how play perceptions change with corresponding developmental progression is an issue worthy of extensive study. For example, prior research has shown demonstrable differences in how African-American [116, 117], Asian-American [118–121], and Latino/Hispanic [122, 123] mothers value and allow for play experiences with their children in this age range [102].

An additional caution is that the sole reliance on using a self-report measure to investigate children's perceptions of their play raises potential questions related to common method variance. The tendency for the child to maintain a consistent approach to responding to items, social desirability, and a possible susceptibility to cues in the setting could be possible causes for artifactual covariance [124] between the CPTP scores and their relation to the validity measures. Future research examining children's perceptions of their play might benefit from the use of alternative data collection strategies, such as the use of multitrait-multimethod designs [125, 126]), projective [30] or "photo-voice" techniques [43], and within- and between-person analytical procedures [127–129]. Data obtained from multiple sources, using multiple methods, might provide a broader understanding of a particular child's perspectives on his or her play.

6. Conclusions

The Children's Perceptions of Their Play scale represents a unique instrument and approach to scholars and practitioners interested in children's play, as it adopts the perspective of the children themselves in regarding how play should be defined and of what it consists to them. While the intent of this research was not meant to negate the observations of play that are routinely conducted in studies of children at play, the findings indicate that the categories routinely used for such observations are not based on the perceptions of children as to what constitutes play, which research has shown to be different from those of adults. The initial generation of the items was based solely on children's thoughts about their play, and subsequent testing produced a final 25-item

scale with high reliability (internal consistency and stability across three months) for the scale as a whole and for each of its six subscales. Testing for content and construct validity (convergent and discriminant validity) was also found to be highly satisfactory. The properties of the scale were confirmed and found to be commendable for both public and private elementary school-aged children, boys as well as girls. Based on these findings, we advocate for the renovation of observational classifications in line with the factors obtained in this study, as they appear to be more ecologically valid in representing how children define and think about their play. In addition, we promote the use of the individual subscales for research more narrowly focused on any of these aspects of play.

Conflict of Interests

The author of this paper does not have any conflict of interests to declare regarding direct financial relation with the commercial identities mentioned in this paper.

References

- [1] S. Freud, *Beyond the Pleasure Principle*, Norton, New York, NY, USA, 1961.
- [2] E. H. Erikson, *Childhood and Society*, Norton, New York, NY, USA, 1950.
- [3] J. Piaget, *Play, Dreams and Imitation*, Norton, New York, NY, USA, 1962.
- [4] L. Vygotsky, *Mind in Society*, Harvard University Press, Cambridge, Mass, USA, 1978.
- [5] E. Bodrova and D. Leong, *Tools of the Mind: The Vygotskian Approach to Early Childhood Education*, Prentice-Hall, Englewood Cliffs, NJ, USA, 1996.
- [6] J. Bruner, "The nature and uses of immaturity," *American Psychologist*, vol. 27, pp. 687–708, 1972.
- [7] D. F. Bjorklund and A. D. Pellegrini, "Child development and evolutionary psychology," *Child Development*, vol. 71, no. 6, pp. 1687–1708, 2000.
- [8] A. Bandura, *Social Learning Theory*, Prentice-Hall, Englewood Cliffs, NJ, USA, 1977.
- [9] C. B. Royeen, "Adaptation of Likert scaling for use with children," *Occupational Therapy Journal of Research*, vol. 5, no. 1, pp. 59–69, 1985.
- [10] J. Sturgess and J. Ziviani, "Development of a self-report play questionnaire for children aged 5 to 7 years: a preliminary report," *Australian Occupational Therapy Journal*, vol. 42, no. 3, pp. 107–117, 1995.
- [11] D. Wood, "Aspects of teaching and learning," in *Children of Social Worlds*, M. Richards and P. Light, Eds., Polity Press, Cambridge, Mass, USA, 1986.
- [12] J. Howard, G. Miles, and J. Griffith, "The effectiveness of practice in playful and formal environmental conditions," in *Proceedings of the British Psychological Society Annual Conference, Psychology of Education Section*, Glasgow, UK, 2004.
- [13] K. McInnes, J. Howard, G. E. Miles, and K. Crowley, "Behavioural differences exhibited by children when practicing a task under formal and playful conditions," *Educational & Child Psychology*, vol. 26, pp. 31–39, 2009.

- [14] L. Thomas, J. Howard, and G. Miles, "The effectiveness of play practice for learning in the early years," *Psychology of Education Review*, vol. 30, pp. 52–58, 2006.
- [15] J. Howard and K. McInnes, "The impact of children's perception of an activity as play rather than not play on emotional well-being," *Child*, vol. 38, pp. 1–6, 2012.
- [16] N. R. King, "Play: the kindergartener's perspective," *Elementary School Journal*, vol. 80, no. 2, pp. 81–87, 1979.
- [17] L. Malaguzzi, "History, ideas and basic philosophy," in *The Hundred Languages of Children—the Reggio Emilia Approach—Advanced Reflections*, C. Edwards, L. Gandini, and G. Forman, Eds., Ablex, London, UK, 1998.
- [18] K. H. Rubin, "Play, peer interaction, and social development," in *Play Interactions: The Contribution of Play Materials and Parental Involvement to Children's Development*, A. W. Gottfried and C. C. Brown, Eds., pp. 163–174, Heath, Lexington, Mass, USA, 1986.
- [19] K. H. Rubin, G. Fein, and B. Vandenberg, "Play," in *Handbook of Child Psychology*, E. Hetherington, Ed., vol. 4 of *Socialization, Personality, and Social Development*, pp. 693–774, John Wiley & Sons, New York, NY, USA, 1983.
- [20] M. B. Parten, "Social play among preschool children," *Journal of Abnormal and Social Psychology*, vol. 28, no. 2, pp. 136–147, 1933.
- [21] A. D. Pellegrini, "Practitioner review: the role of direct observation in the assessment of young children," *Journal of Child Psychology and Psychiatry and Allied Disciplines*, vol. 42, no. 7, pp. 861–869, 2001.
- [22] M. Lowe and A. Costello, *The Symbolic Play Test*, NFER-Nelson, Windsor, UK, 1976.
- [23] M. J. Boulton, "Predicting changes in children's self-perceptions from playground social activities and interactions," *British Journal of Developmental Psychology*, vol. 23, no. 2, pp. 209–226, 2005.
- [24] A. D. Humphries and P. K. Smith, "Rough-and-tumble, friendship and dominance in school children: evidence for continuity and change with age," *Child Development*, vol. 58, pp. 201–212, 1987.
- [25] A. D. Pellegrini, *School Recess and Playground Behaviour: Educational and Developmental Roles*, State University of New York, New York, NY, USA, 1995.
- [26] A. D. Pellegrini, *Observing Children in Their Natural Worlds: A Primer in Observational Methods*, Erlbaum, Hillsdale, NJ, USA, 1996.
- [27] A. D. Pellegrini and P. Blatchford, *The Child at School*, Arnold, London, UK, 2000.
- [28] J. N. Lieberman, *Playfulness: Its Relationship to Imagination and Creativity*, Academic Press, New York, NY, USA, 1977.
- [29] G. G. Fein, "Learning in play: surfaces of thinking and feeling," in *When Children Play*, J. L. Frost and S. Sunderlin, Eds., pp. 45–53, Association for Childhood Education International, Wheaton, Md, USA, 1985.
- [30] J. Howard, "Eliciting young children's perceptions of play, work and learning using the Activity Apperception Story Procedure," *Early Child Development and Care*, vol. 172, pp. 489–502, 2002.
- [31] J. Howard, V. Jenvey, and C. Hill, "Children's categorization of play and learning based on social context," *Early Child Development and Care*, vol. 176, pp. 379–393, 2006.
- [32] L. A. Wing, "Play is not the work of the child: young children's perceptions of work and play," *Early Childhood Research Quarterly*, vol. 10, no. 2, pp. 223–247, 1995.
- [33] K. R. Fisher, K. Hirsh-Pasek, R. M. Golinkoff, and S. G. Gryfe, "Conceptual split? Parents' and experts' perceptions of play in the 21st century," *Journal of Applied Developmental Psychology*, vol. 29, no. 4, pp. 305–316, 2008.
- [34] G. Karrby, "Children's conceptions of their own play," *International Journal of Early Childhood Education*, vol. 21, pp. 49–54, 1989.
- [35] L. Rothlein and A. Brett, "Children's, teachers; and parents' perceptions of play," *Early Childhood Research Quarterly*, vol. 2, no. 1, pp. 45–53, 1987.
- [36] I. Keating, H. Fabian, P. Jordan, D. Mavers, and J. Roberts, "well, I've not done any work today. I don't know why I came to school: Perceptions of play in the reception class," *Educational Studies*, vol. 26, no. 4, pp. 437–454, 2000.
- [37] S. Robson, "Best of all I like choosing time': talking with children about play and work," *Early Child Development and Care*, vol. 92, pp. 37–51, 1993.
- [38] J. Howard, W. Bellin, and V. Rees, "Eliciting children's perceptions of play and exploiting playfulness to maximize learning in the early years classroom," *Child Studies Journal*, pp. 1–9, 2003.
- [39] N. R. King, "Elementary school play: theory and research," in *School Play: A Source Book*, J. H. Block and N. R. King, Eds., pp. 143–165, Garland, New York, NY, USA, 1987.
- [40] M. Takhvar, "Play and theories of play: a review of the literature," *Early Child Development and Care*, vol. 39, pp. 221–244, 1988.
- [41] J. E. Johnson, J. F. Christie, and F. Wardle, *Play, Development, and Early Education*, Allyn and Bacon, Boston, Mass, USA, 2005.
- [42] D. Cegłowski, "Understanding and building upon children's perceptions of play activities in early childhood programs," *Early Childhood Education Journal*, vol. 25, no. 2, pp. 107–112, 1997.
- [43] P. Anthamatten, B. S.-C. Wee, and E. Korris, "Exploring children's perceptions of play using visual methodologies," *Health Education Journal*, vol. 72, no. 3, pp. 309–318, 2012.
- [44] J. Veitch, J. Salmon, and K. Ball, "Children's perceptions of the use of public open spaces for active free-play," *Children's Geographies*, vol. 5, no. 4, pp. 409–422, 2007.
- [45] L. A. Clark and D. Watson, "Constructing validity: basic issues in objective scale development," *Psychological Assessment*, vol. 7, no. 3, pp. 309–319, 1995.
- [46] R. F. DeVellis, *Scale Development: Theory and Applications*, Sage, Thousand Oaks, Calif, USA, 2nd edition, 2003.
- [47] M. J. Ellis, *Why People Play*, Prentice-Hall, Englewood Cliffs, NJ, USA, 1973.
- [48] E. H. Erikson, *Identity: Youth and Crisis*, Norton, New York, NY, USA, 1968.
- [49] C. Garvey, *Play*, Harvard University Press, Cambridge, Mass, USA, 1977.
- [50] V. B. Jenvey and H. L. Jenvey, "Criteria used to categorize children's play: preliminary findings," *Social Behavior and Personality*, vol. 30, no. 8, pp. 733–740, 2002.
- [51] B. Sutton-Smith, *The Ambiguity of Play*, Harvard University Press, Cambridge, Mass, USA, 1997.
- [52] C. E. Schaefer and H. C. Kaduson, *Contemporary Play Therapy: Theory, Research, and Practice*, Guilford, New York, NY, USA, 2007.
- [53] A. Mol Lous, C. A. M. De Wit, E. E. J. De Bruyn, J. M. Riksen-Walraven, and H. Rost, "Depression and play in early childhood: play behavior of depressed and nondepressed 3-to 6-year-olds

- in various play situations," *Journal of Emotional and Behavioral Disorders*, vol. 8, no. 4, pp. 249–260, 2000.
- [54] L. A. Barnett, "Research note: young children's resolution of distress through play," *Journal of Child Psychology and Psychiatry and Allied Disciplines*, vol. 25, no. 3, pp. 477–483, 1984.
- [55] L. A. Barnett and B. Storm, "Play, pleasure, and pain: the reduction of anxiety through play," *Leisure Sciences*, vol. 4, pp. 161–175, 1981.
- [56] R. J. Coplan, "Assessing nonsocial play in early childhood: conceptual and methodological approaches," in *Play Diagnosis and Assessment*, K. Gitlin-Weiner, A. Sandgrund, and C. E. Schaefer, Eds., vol. 3, pp. 563–598, John Wiley & Sons, New York, NY, USA, 2nd edition, 2000.
- [57] R. J. Coplan, C. Wichmann, and D. G. Lagace-Seguin, "Solitary-active play behavior: a marker variable for maladjustment in the preschool?" *Journal of Research in Childhood Education*, vol. 15, pp. 164–172, 2001.
- [58] F. P. Hughes, *Children, Play, and Development*, Sage, Thousand Oaks, Calif, USA, 4th edition, 2010.
- [59] E. E. Maccoby, *The Two Sexes: Growing Up Apart, Coming Together*, Belknap, Cambridge, Mass, USA, 1998.
- [60] J. Laurent, S. J. Catanzaro, K. D. Rudolph et al., "A measure of positive and negative affect for children: scale development and preliminary validation," *Psychological Assessment*, vol. 11, no. 3, pp. 326–338, 1999.
- [61] C. Ebetsutani, K. Okamura, C. Higa-McMillan, and B. F. Chorpita, "A psychometric analysis of the positive and negative affect schedule for children-parent version in a school sample," *Psychological Assessment*, vol. 23, no. 2, pp. 406–416, 2011.
- [62] J. R. Crawford and J. D. Henry, "The Positive and Negative Affect Schedule (PANAS): construct validity, measurement properties and normative data in a large non-clinical sample," *British Journal of Clinical Psychology*, vol. 43, no. 3, pp. 245–265, 2004.
- [63] D. Watson, L. A. Clark, and A. Tellegen, "Development and validation of brief measures of positive and negative affect: the PANAS scales," *Journal of Personality and Social Psychology*, vol. 54, no. 6, pp. 1063–1070, 1988.
- [64] B. F. Chorpita, L. Yim, C. Moffitt, L. A. Umemoto, and S. E. Francis, "Assessment of symptoms of DSM-IV anxiety and depression in children: a revised child anxiety and depression scale," *Behaviour Research and Therapy*, vol. 38, no. 8, pp. 835–855, 2000.
- [65] B. F. Chorpita, C. E. Moffitt, and J. Gray, "Psychometric properties of the revised child anxiety and depression scale in a clinical sample," *Behaviour Research and Therapy*, vol. 43, no. 3, pp. 309–322, 2005.
- [66] W. R. Crozier, "Shyness and self-esteem in middle childhood," *The British Journal of Educational Psychology*, vol. 65, pp. 185–95, 1995.
- [67] L. C. Findlay, R. J. Coplan, and A. Bowker, "Keeping it all inside: shyness, internalizing coping strategies and socio-emotional adjustment in middle childhood," *International Journal of Behavioral Development*, vol. 33, no. 1, pp. 47–54, 2009.
- [68] A. Field, *Discovering Statistics Using SPSS*, Sage, Thousand Oaks, Calif, USA, 3rd edition, 2009.
- [69] R. L. Gorsuch, "Exploratory factor analysis: its role in item analysis," *Journal of Personality Assessment*, vol. 68, no. 3, pp. 532–560, 1997.
- [70] R. L. Worthington and T. A. Whittaker, "Scale development research: a content analysis and recommendations for best practices," *The Counseling Psychologist*, vol. 34, no. 6, pp. 806–838, 2006.
- [71] K. G. Jöreskog and D. Sörbom, *LISREL8: User's Reference Guide*, Scientific Software, Chicago, Ill, USA, 1996.
- [72] R. P. McDonald, *Test Theory: A Unified Treatment*, Erlbaum, Mahwah, NJ, USA, 1999.
- [73] L. L. Stone, R. Otten, L. Ringlever et al., "The parent version of the strengths and difficulties questionnaire," *European Journal of Psychological Assessment*, vol. 29, no. 1, pp. 44–50, 2013.
- [74] L. J. Cronbach, "Coefficient alpha and the internal structure of tests," *Psychometrika*, vol. 16, no. 3, pp. 297–334, 1951.
- [75] W. Revelle and R. E. Zinbarg, "Coefficients alpha, beta, omega, and the glb: comments on sijsma," *Psychometrika*, vol. 74, no. 1, pp. 145–154, 2009.
- [76] K. Sijsma, "On the use, the misuse, and the very limited usefulness of cronbach's alpha," *Psychometrika*, vol. 74, no. 1, pp. 107–120, 2009.
- [77] C. H. Lawshe, "A quantitative approach to content validity," *Personnel Psychology*, vol. 28, pp. 563–575, 1975.
- [78] F. R. Wilson, W. Pan, and D. A. Schumsky, "Recalculation of the critical values for Lawshe's content validity ratio," *Measurement and Evaluation in Counseling and Development*, vol. 45, no. 3, pp. 197–210, 2012.
- [79] L.-T. Hu and P. M. Bentler, "Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives," *Structural Equation Modeling*, vol. 6, no. 1, pp. 1–55, 1999.
- [80] S. P. Reise, K. F. Widaman, and R. H. Pugh, "Confirmatory factor analysis and item response theory: two approaches for exploring measurement invariance," *Psychological Bulletin*, vol. 114, no. 3, pp. 552–566, 1993.
- [81] R. J. Vandenberg and C. E. Lance, "A review and synthesis of the measurement invariance literature: suggestions, practices, and recommendations for organizational research," *Organizational Research Methods*, vol. 3, no. 1, pp. 4–70, 2000.
- [82] T. D. Little, "Mean and covariance structures (MACS) analyses of cross-cultural data: practical and theoretical issues," *Multivariate Behavioral Research*, vol. 32, no. 1, pp. 53–76, 1997.
- [83] M. A. Rahim and N. R. Magner, "Confirmatory factor analysis of the styles of handling interpersonal conflict: first-order factor model and its invariance across Groups," *Journal of Applied Psychology*, vol. 80, no. 1, pp. 122–132, 1995.
- [84] N. R. King, "Work and play in the classroom," *Social Education*, vol. 46, pp. 110–116, 1982.
- [85] D. Abramis, "Play in work: childish hedonism or adult enthusiasm?" *American Behavioral Scientist*, vol. 33, pp. 353–371, 1990.
- [86] J. R. Bowman, "Making work play," in *Meaningful Play, Playful Meanings*, G. A. Fine, Ed., pp. 61–71, Human Kinetics, Champaign, Ill, USA, 1987.
- [87] M. Csikszentmihalyi, "Flow: the psychology of optimal experience," Harper & Row, New York, NY, USA, 1990.
- [88] M. Csikszentmihalyi and J. LeFevre, "Optimal experience in work and leisure," *Journal of Personality and Social Psychology*, vol. 56, no. 5, pp. 815–822, 1989.
- [89] K. H. Rubin, W. Bukowski, and J. G. Parker, "Peer interactions, relations, and groups," in *Handbook of Child Psychology*, W. Damon and R. Lerner, Eds., vol. 3, pp. 571–645, John Wiley & Sons, New York, NY, USA, 6th edition, 2006.
- [90] L. Keijsers and R. D. Laird, "Introduction to special issue. Careful conversations: adolescents managing their parents' access to information," *Journal of Adolescence*, vol. 33, no. 2, pp. 255–259, 2010.

- [91] U.S. Department of Education, National Center for Education Statistics, *Before- and After-School Care, Programs, and Activities of Children in Kindergarten Through Eighth Grade*, U. S. Government Printing Office, Washington, DC, USA, 2006.
- [92] L. A. Barnett, "Playfulness: definition, design, and measurement," *Play and Culture*, vol. 3, pp. 319–336, 1990.
- [93] L. A. Barnett, "The playful child: measurement of a disposition to play," *Play and Culture*, vol. 4, pp. 51–74, 1991.
- [94] L. A. Barnett, "Characterizing playfulness: correlates with individual attributes and personality traits," *Play and Culture*, vol. 4, pp. 371–393, 1991.
- [95] P. Blatchford, E. Baines, and A. Pellegrini, "The social context of school playground games: sex and ethnic differences, and changes over time after entry to junior school," *British Journal of Developmental Psychology*, vol. 21, no. 4, pp. 481–505, 2003.
- [96] L. H. Epstein, J. N. Roemmich, J. L. Robinson et al., "A randomized trial of the effects of reducing television viewing and computer use on body mass index in young children," *Archives of Pediatrics and Adolescent Medicine*, vol. 162, no. 3, pp. 239–245, 2008.
- [97] K. Sawyer, *Pretend Play as Improvisation: Conversation in the Preschool Classroom*, Erlbaum, Mahwah, NJ, USA, 1997.
- [98] J. Singer, Ed., *The Child's World of Make-Believe: Experimental Studies of Imaginative Play*, Academic Press, New York, NY, USA, 1973.
- [99] J. S. Eccles, C. Freedman-Doan, P. Frome, J. Jacobs, and K. S. Yoon, "Gender-role socialization in the family: a longitudinal approach," in *The Developmental Social Psychology of Gender*, T. Eckes and H. M. Trautner, Eds., pp. 333–360, Lawrence Erlbaum, Mahwah, NJ, USA, 2000.
- [100] J. E. Jacobs and J. S. Eccles, "The impact of mothers' gender-role stereotypic beliefs on mothers' and children's ability perceptions," *Journal of Personality and Social Psychology*, vol. 63, no. 6, pp. 932–944, 1992.
- [101] J. E. Jacobs, M. K. Vernon, and J. S. Eccles, "Activity choices in middle childhood: the roles of gender, self-beliefs, and parents' influence," in *Organized Activities as Contexts of Development*, J. L. Mahoney, R. W. Larson, and J. S. Eccles, Eds., pp. 235–254, Lawrence Erlbaum, Mahwah, NJ, USA, 2005.
- [102] R. W. Larson and S. Verma, "How children and adolescents spend time across the world: work, play, and developmental opportunities," *Psychological Bulletin*, vol. 125, no. 6, pp. 701–736, 1999.
- [103] E. E. Maccoby, "Gender and relationships: a developmental account," *American Psychologist*, vol. 45, no. 4, pp. 513–520, 1990.
- [104] K. Bussey and A. Bandura, "Social cognitive theory of gender development and differentiation," *Psychological Review*, vol. 106, no. 4, pp. 676–713, 1999.
- [105] M. Hines, *Brain Gender*, Oxford University Press, New York, NY, USA, 2004.
- [106] C. L. Martin, D. N. Ruble, and J. Szkrybalo, "Cognitive theories of early gender development," *Psychological Bulletin*, vol. 128, no. 6, pp. 903–933, 2002.
- [107] C. F. Miller, H. M. Trautner, and D. N. Ruble, "The role of gender stereotypes in children's preferences and behavior," in *Child Psychology: A Handbook of Contemporary Issues*, L. Balter and C. Tamis-LeMonda, Eds., pp. 293–323, Psychology Press, New York, NY, USA, 2nd edition, 2006.
- [108] L. Sax, *Why Gender Matters*, Broadway Books, New York, NY, USA, 2005.
- [109] R. J. Coplan, K. Prakash, K. O'Neil, and M. Armer, "Do you 'want' to play? Distinguishing between conflicted shyness and social disinterest in early childhood," *Developmental Psychology*, vol. 40, no. 2, pp. 244–258, 2004.
- [110] X. Feng, D. S. Shaw, and J. S. Silk, "Developmental trajectories of anxiety symptoms among boys across early and middle childhood," *Journal of Abnormal Psychology*, vol. 117, no. 1, pp. 32–47, 2008.
- [111] H. Gazelle and K. D. Rudolph, "Moving toward and away from the world: social approach and avoidance trajectories in anxious solitary youth," *Child Development*, vol. 75, no. 3, pp. 829–849, 2004.
- [112] S. C. Bratton, D. Ray, T. Rhine, and L. Jones, "The efficacy of play therapy with children: a meta-analytic review of treatment outcomes," *Professional Psychology*, vol. 36, no. 4, pp. 376–390, 2005.
- [113] M. Brendgen, V. Lamarche, B. Wanner, and F. Vitaro, "Links between friendship relations and early adolescents' trajectories of depressed mood," *Developmental Psychology*, vol. 46, no. 2, pp. 491–501, 2010.
- [114] R. J. Coplan, K. A. Arbeau, and M. Armer, "Don't fret, be supportive! Maternal characteristics linking child shyness to psychosocial and school adjustment in kindergarten," *Journal of Abnormal Child Psychology*, vol. 36, no. 3, pp. 359–371, 2008.
- [115] G. W. Ladd, B. Kochenderfer-Ladd, N. D. Eggum, K. P. Kochel, and E. McConnell, "Characterizing and comparing the friendships of anxious-solidary and unsociable preadolescents," *Child Development*, vol. 82, no. 5, pp. 1434–1453, 2011.
- [116] J. Hale, *Unbank the Fire: Visions for the Education of African American Children*, Johns Hopkins University Press, Baltimore, Md, USA, 1994.
- [117] J. E. Hale-Benson, *Black Children: Their Roots, Culture and Learning Styles*, Johns Hopkins University Press, Baltimore, Md, USA, 1986.
- [118] I. Chieh, "Child-rearing attitudes of Chinese, Chinese-American and Anglo-American mothers," *International Journal of Psychology*, vol. 22, no. 4, pp. 409–419, 2000.
- [119] L. J. Shapiro, K. Ho, and A. Fernald, "Mother-toddler play in the United States and Japan: contrasts in content and approach," in *Proceedings of the Biennial Meeting of the Society for Research in Child Development*, Washington, DC, USA, 1997.
- [120] H. Stevenson, H. Azuma, and H. Hakuta, Eds., *Child Development and Education in Japan*, John Wiley & Sons, New York, NY, USA, 1986.
- [121] G. T. Power, H. Kobayashi-Winata, and L. M. Kelly, "Childrearing patterns in Japan and the United States," *International Journal of Behavioral Development*, vol. 15, no. 2, pp. 185–205, 2001.
- [122] C. Howes, A. W. Guerra, and E. Zucker, "Cultural communities and parenting in Mexican-Heritage families," *Parenting*, vol. 7, no. 3, pp. 235–270, 2007.
- [123] J. A. Farver, Y. K. Kim, and Y. Lee, "Cultural differences in Korean- and Anglo-American preschoolers' social interaction and play behaviors," *Child Development*, vol. 66, no. 4, pp. 1088–1099, 1995.
- [124] L. J. Williams and S. E. Anderson, "An alternative approach to method effects by using latent-variable models: applications in organizational behavior research," *Journal of Applied Psychology*, vol. 79, no. 3, pp. 323–331, 1994.
- [125] B. J. Avolio, F. J. Yammarino, and B. M. Bass, "Identifying common methods variance with data collected from a single

- source: an resolved sticky issue," *Journal of Management*, vol. 17, pp. 571–587, 1991.
- [126] V. Höfeling, K. Schermelleh-Engel, and H. Moosbrugger, "Analyzing multitrait-multimethod data: a comparison of three approaches," *Methodology*, vol. 5, no. 3, pp. 99–111, 2009.
- [127] W. T. Bartko and J. S. Eccles, "Adolescent participation in structured and unstructured activities: a person-oriented analysis," *Journal of Youth and Adolescence*, vol. 32, no. 4, pp. 233–241, 2003.
- [128] Y. Shoda, W. Mischel, and J. C. Wright, "Intraindividual stability in the organization and patterning of behavior: incorporating psychological situations into the idiographic analysis of personality," *Journal of Personality and Social Psychology*, vol. 67, no. 4, pp. 674–687, 1994.
- [129] N. Zarrett, K. Fay, Y. Li, J. Carrano, E. Phelps, and R. M. Lerner, "More than child's play: variable- and pattern-centered approaches for examining effects of sports participation on youth development," *Developmental Psychology*, vol. 45, no. 2, pp. 368–382, 2009.

