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Parent Knowledge of Child's Level of Play: Implications for Early Childhood and Preschool Assessment

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This research is a product of the graduate program in School Psychology at Eastern Illinois University. Find out more about the program.

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Parent Knowledge of Child’s Level of Play: Implications for Early Childhood and Preschool Assessment

BY

Jessie Shuemaker

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

Specialist in School Psychology

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY
CHARLESTON, ILLINOIS

2014

I HEREBY RECOMMEND THIS THESIS BE ACCEPTED AS FULFILLING THIS PART OF THE GRADUATE DEGREE CITED ABOVE
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Abstract

The purpose of the study was to examine how accurately parents were able to report on their own child’s play skills. Additionally, the study sought to examine if the addition of a parent interview used in conjunction with an observational play-based assessment would warrant a more comprehensive and accurate picture of a child’s skills. A Spearman Rank Order Correlation was conducted to examine the relationship between a parent interview developed specifically for this study and an observational play-based assessment. Kappa Coefficients were also conducted to determine the level of agreement between the interviews and observations. Results suggested a weak positive relationship between the interviews and observations. Additionally, results suggested fair to poor levels of agreement.
Parent Knowledge of Child’s Level of Play: Implications for Early Childhood and Preschool Assessment

Play In Early Childhood Evaluation System (PIECES), developed by Kelly-Vance and Ryalls (2012), is the most widely researched approach to play assessment and is based upon Linder’s Transdisciplinary Play-based Assessment (TPBA) as well as extensive research on child development. The PIECES model has recently been renamed the Play Assessment/Intervention System (PLAIS) which emphasizes linking assessment to intervention planning. The purpose of this study was to determine how accurately parents report on their own child’s play acts or abilities. To do this, the current study modified the PLAIS into a parent interview so that information obtained from the PLAIS observation and interview formats could be compared to determine level of agreement and relationship.

Play as a form of assessment began in the early 20th century as a way for practitioners to gather information about a child’s emotional functioning (Athanasiou, 2007). More recently, play-based assessment has become an increasingly popular alternative of assessing developmental functioning and special education needs in young children and has been used to evaluate social-emotional behavior, intelligence and cognition, speech and language, and fine and gross motor skills (Anastasi & Urbina, 1997). To understand how play is used to assess children’s development Casby’s four stage framework for play development is discussed in the following section.

Play and Development

Play tends to follow a set pattern of development in typically developing infants and toddlers. Jean Piaget, a developmental psychologist, extensively researched play and
cognitive development of children. He focused on changes from sensorimotor play to representational play (Kelly-Vance & Ryalls, 2008). Casby (2003) proposed a four stage framework for play development that was heavily influenced by Piaget’s original theory and theories proposed by others following Piaget. These four stages are sensorimotor-exploratory, relational-nonfunctional, functional-conventional, and symbolic, which are each explained in further detail below.

**Sensorimotor-exploratory.** Sensorimotor-exploratory play can first be observed in children around the ages of 2 to 4 months and extends up until 10 to 12 months (Casby, 2003). It is during this stage that infants first begin to examine and manipulate objects around them. Examples of sensorimotor-exploratory play include grasping, holding, mouthing, licking, banging, and rubbing single objects (Casby, 2003).

**Relational-nonfunctional.** As development progresses, sensorimotor-exploratory play acts are replaced by more advanced relational-nonfunctional play acts. This stage emerges around 5 to 10 months and continues until 12 months of age (Casby, 2003). Relational-nonfunctional play involves the child acting on more than one single object at a time and might include stacking, bumping, touching, nesting, and pushing objects together (Casby 2003).

**Functional-conventional.** The next stage of play development is functional-conventional play. During this stage children begin to manipulate and use objects as they are intended to be used such as stirring a spoon in a bowl and pushing a toy car on the ground (Casby, 2003). There is often referred to as presymbolic play because the child demonstrates an understanding of the functional use of the object (McCune, 1995).
Symbolic. Functional-conventional play develops into symbolic play when the child begins using mental symbols to represent circumstances or objects that might not be present. This stage is the most complex form of play (Casby, 2003) and is when pretend or make believe play first emerges. During this stage a child may pretend to sleep at a time other than naptime or bedtime, a child may pretend to write a check or feed a baby, or may use an object to represent something else (i.e., pretend a pen is an airplane; Casby, 2003).

In summary, play typically progresses through these four different stages from simple manipulations to more complex make believe actions. As these different play acts develop, a link to various areas of child development, such as cognition, social-emotional regulation, and language can be seen. For this reason, play-based assessment can be used to evaluate current areas of child development. Each of these areas and their relationship to play will be explored further in the following sections.

Play and Cognitive Development

The relationship between play and cognitive development has been studied extensively. Play has been linked to increases in problem solving and divergent thinking, perspective taking, and improvement in decentration and reversibility (Athanasiou, 2007). Many of the studies referenced here regarding the link between play and cognitive development are dated. The dated studies may be a testament to this area of research being well established, resulting in a decline in recent years.

The significance of symbolic play on cognitive development was demonstrated in a study conducted by Golomb and Cornelius (1977). In this study children either received symbolic play training (to increase their use of symbolic play or their ability to transform
a play object temporarily in make-believe) or a constructive (control) play group that included more traditional play activities such as assembling puzzles and drawing tasks.

Pre and post training conservation tasks were used to assess differences between the two groups. Results indicated that children in the symbolic play training group showed significant improvement on conservation tasks compared to children in the constructive play training group (Golomb & Cornelius, 1977).

Another study that provides support to the evaluation of cognitive development through play was conducted by Dansky and Silverman (1973). In this study, the effects of play on associative fluency (or the tendency to produce multiple ideas in response to questions or situations) using the Alternate Uses Task were examined. Children were divided into one of three play conditions: a play condition where children were allowed to play with a variety of materials (e.g., paper towel, screwdriver, wooden board) freely, an imitation condition where children were allowed to imitate behaviors with the same objects as the play group, and a neutral or control condition where children were given 4 coloring pages and a box of crayons (Dansky & Silverman, 1973). Results indicated that children in the play condition provided a higher number of nonstandard responses than the imitation and control groups which were reflective of the child's activities with the objects during the play session. Therefore, the authors concluded that playful activity increased the number of alternative uses children were able to provide for objects that were part of the play session.

In a follow up study, Dansky and Silverman (1975) used different objects during the Alternate Uses Task than those used during the play session to determine if playful activity would also increase the number of alternate uses children would be able to
Results were similar to the first study in that children in the play condition produced a higher number of standard and nonstandard uses than the imitation and neutral conditions leading the authors to conclude that play stimulates or increases a child’s ability to generate associations to various objects, not just objects the child has encountered during play but other novel objects as well (Dansky & Silverman, 1975).

Dansky and Silverman (1980) proposed that several cognitive processes involved in make believe play (i.e. free association and symbolic thinking) are similar to the processes involved in divergent thinking (Tsao, 2002). Therefore, because play has been linked to the development of these different cognitive skills, play can be used to evaluate cognitive development in children.

**Play and Social-emotional Development**

Play has also been linked to increases in social skills and emotional regulation in preschoolers. In regards to social development, Athanasiou (2007) proposes that play contributes to advances in social skills due to pretend play (which allows children to practice playing different roles and develop concepts for those roles); due to social interaction during play (which allows children to practice communication and empathy; Mendez & Fogle, 2002); and due to conflict during play (which allows children to practice negotiating).

Connolly and Doyle (1984) conducted a study to examine the relationship between social fantasy play and social competencies in preschool children in a free play environment. Results indicated that the children who were observed engaging in social fantasy play more frequently were rated as more socially competent and more popular
with their peers (Connolly & Doyle, 1984). These results lead the authors to conclude that “spontaneous engagement in this form of play is a beneficial aspect of the young child’s repertoire” because it promotes social competence (Connolly & Doyle, 1984).

In regards to emotional development, play has been linked to increases in self-regulation in preschoolers. Caplan and Caplan (1973) proposed that make believe play may assist young children in coping with demands of daily life by manipulating reality in a make believe play world. Furthermore, they suggest that pretend play allows children to “express feelings and explore possible solutions to problems in a relatively safe atmosphere” (Athanasiou, 2007). Hoffmann and Russ (2012) conducted a study to further examine the relationship between pretend play and emotional regulation. Results indicated that children who demonstrated higher levels of emotional regulation were more comfortable engaging in play and also demonstrated higher levels of imagination and organization during play. Also, children who showed more affect expression during play narratives and those who demonstrated a wider range of emotions were rated by their parents as having higher levels of emotional regulation (Hoffmann & Russ, 2012). Athanasiou (2007) suggested that because children are in a high state of arousal during play, play may provide a good environment for children to practice emotional regulation. Furthermore, children may learn to regulate their emotions during play because learning to control one’s emotions ensures that children will have play partners.

**Play and Language Development**

Research has also demonstrated that play influences language development as well as emergent literacy skills. Roskos and Christie (2001) conducted a critical analysis of the research and found that many of the studies provide evidence that play facilitates
literacy by “providing settings that promote literacy activity, skills, and strategies; serving as a language experience that can build connections between oral and written modes of expression; and providing opportunities to teach and learn literacy.”

Studies by McCune (1995) and Ogura (1991) have also shown that the development of play and language follow parallel courses and most specifically that play likely facilitates and builds a foundation for language (Tsao, 2002). Language development and social development also overlap considerably in regards to play. Social play requires the ability to communicate and express ideas with others. According to Athanasiou (2007), “as play becomes more social, it provides opportunities to practice and refine language skills.” Therefore, not only can play be linked to cognitive development, but it plays a role in language development as well.

The research referenced above has demonstrated the link between play and children’s cognitive, social-emotional, and language development. In particular, play appears to be a facilitator of development and play actions are indicative of the child’s abilities in these different areas. Play-based assessment, therefore, can be used to analyze infant and toddler development in these areas. This type of assessment has many advantages over traditional intelligence testing with young children.

**Advantages of Play-based Assessment**

Young children spend a vast amount of time playing and as such, play-based assessment is the most natural form of assessment to use with preschool aged children. Play-based assessment has grown out of a need for an assessment that is more conducive to infants and toddlers than traditional assessments. Observations can easily be conducted while the child plays alone or with others. According to Nagle (2007),
preschool assessment should be “comprehensive and include information across the developmental areas of motor skills, temperament, language, cognition, and social/emotional development.” Play-based assessment does just this, evaluating the child’s current level of functioning in these areas in order to determine if there are areas that require intervention (Kelly-Vance & Ryalls, 2008).

**Play is easily observed in young children.** Many standardized traditional psychological assessments (i.e., intelligence and achievement testing) are not standardized for children under the age of three (Dykeman, 2008). Play-based assessment is an advantageous alternative to traditional assessment because play can be observed in children of all ages. However, the methods that have been developed for play-based assessment are typically designed for infants and children up to five or six years of age (Linder, 1993).

**Play is developmentally appropriate.** Another advantage of play-based assessments is that the evaluation is better matched to the development of infants and toddlers. For instance, it is difficult to assess preschool children reliably and validly using traditional assessments because they are undergoing a period of rapid developmental change. In addition, young children’s behavior is not conducive to standardized assessments because it is difficult for them to sit and focus for an extended period of time. These limitations make traditional assessment difficult with young children. According to Nagle (2007),

“Preschoolers typically have short attention spans, high levels of activity, high distractibility, low tolerance for frustration, and are likely to fatigue easily. They approach the test session with a different motivational style than older children
and tend not to place importance on answering questions correctly, persisting on

test items, pleasing the examiner, or responding to social reinforcement.”

Furthermore, traditional assessments are usually conducted in an environment that is

unfamiliar to the child and with an unfamiliar examiner. Since development takes place

both at home and in school, assessments occurring outside of these natural environments

have the potential to yield inaccurate results (Bordignon & Lam, 2004). Children may

not perform up to their potential or they may refuse to perform at all. Play-based

assessment offers an advantageous alternative because the assessment may take place in a

familiar environment (e.g., the child’s home) or an unfamiliar environment, as long as the

environment includes toys and materials familiar to the child and therefore inviting

(Linder, 1993). Therefore because of this flexibility, play-based assessments allow for

ecological sensitivity.

**Linking data to intervention.** Another advantage of using play-based assessment

is that data from the assessment can be directly linked to intervention. Traditional

standardized tests are useful for early intervention or special education eligibility

requirements but do not provide direct information about appropriate interventions

(Kelly-Vance & Ryalls, 2008). Traditional intelligence tests can provide an estimate of

the child’s level of cognitive functioning but this does not provide any indication of what
to do to improve the child’s functioning. Play-based assessment can be used to examine

various areas of functioning, not just cognitive level. Deficits in specific skill areas can

be assessed using play-based assessment and this information can then be used to design

an intervention that will best address the deficit the child is experiencing.
Play-based Assessment Disadvantages

Play-based assessment is not without some disadvantages. Research on the reliability and validity of these assessments has only recently begun to emerge. The flexibility allowed by play-based assessment unfortunately makes the reliability and validity of the available models somewhat difficult to investigate (Athanasiou, 2007). The assessments currently available do not yield standard scores that reflect a child’s current level of cognitive functioning which are often necessary for obtaining intervention services (e.g., intellectual disability requires an IQ score within specific ranges to qualify for educational eligibility; Campbell & James, 2007). Play-based assessments yield primarily qualitative information which is insufficient to meet eligibility determination requirements in many states (Athanasiou, 2007).

Play-based assessment is also subject to the disadvantages of observation. For example, ensuring that a sufficient amount of observation time is collected for a child’s full range of abilities to be displayed. It is also possible that during an observation session the child may not perform the target behaviors at all. Thus, more than one observation session may be necessary to obtain a full report of the child’s capabilities. Target behaviors to be observed must be operationally defined so that all observers identify the same activities. Even if target behaviors are well defined, observers may drift from these definitions, decreasing interrater reliability (Merrell, 2008). Observations also run the risk of observer reactivity. This phenomenon occurs when the subject’s behavior is influenced or changed by the simple presence of the observer (Merrell, 2008). Bias is also a possible issue in observation techniques. Speculations have been made about cultural and family socioeconomic status differences in play
confounding assessment results. However, emerging research has shown that play-based assessment is unaffected by culture, language, SES, or type of child care setting (Kelly-Vance & Ryalls, 2012).

Play-based assessment has many advantages as it is the most natural form of assessment to use with infants and toddlers. However, it is not without some limitations, specifically disadvantages associated with observation techniques in general. Despite its disadvantages, play-based assessment still has many advantages over traditional intelligence assessment techniques which can be difficult to use with children this age.

**Challenges with Traditional Assessments**

As mentioned above, evaluating young children using traditional assessments are not ideal due to behavioral incompatibility and the increased likelihood of inaccurate results. In addition, adhering to test standardization, the standardization population, and evaluating children with developmental disabilities are challenges with traditional assessments that are more fully explored below.

**Standardization.** Traditional assessments adhere to strict standardization, which makes evaluating young children challenging. For instance, it is not permissible to vary the instructions on how an item is presented. Traditional assessments also place demands on the child (i.e., ask the child direct questions and expect responses to those questions) which is not developmentally conducive to obtaining accurate information from young children. Administrators are not allowed to reinforce (e.g., praise) correct answers or assist the child, which can make it difficult to assess a young child’s full range of abilities (Appl, 2000). Play-based assessment allows for flexibility that revolves around the child’s capabilities. For example, adjustments can be made in the selection of toys to
meet the needs of children with motor disabilities (Linder, 1993). According to Athanasiou (2007), “children with sensory impairments and limited cognitive skills have similar opportunities as typically developing children to display their skills in various developmental domains during play.”

**Standardization sample.** When using traditional assessments, young children with developmental delays often do not fit into the standardization sample due to basal levels that are too high or standardization samples that do not represent delayed infants and toddlers (Finello, 2011). Bagnato and Neisworth (1994) surveyed school psychologists’ assessment techniques used with infants and toddlers. Approximately 60% of those surveyed reported using standardized tests, most commonly the Stanford-Binet IV (Bagnato & Neisworth, 1994). Those who reported using standardized tests also reported that nearly 43% of children assessed were rendered untestable when using these assessments (Bagnato & Neisworth, 1994). In other words, almost half of the children were unable to perform tasks required of the test either because of a delay, disability or because the child refused to comply.

**Children with developmental delay.** Children with disabilities such as severe emotional disturbances and autism are often deemed untestable when using traditional assessments, but Linder (1993) suggested that in reality the examiner has failed to evaluate the child with a more developmentally appropriate assessment. Bracken (1987) urged that caution should be used when selecting a test for children less than four years of age with noticeable delays. Linder (1993), Bagnato and Neisworth (1994), and others suggested using alternative techniques such as play-based assessment when conducting
infant and toddler evaluations in general because every child is testable regardless of disabilities when using play-based assessment.

The general nature of infant and toddler behavior as well as limitations in test development often make it difficult to obtain a reliable measure of intellectual functioning in children this age. These types of assessments also do not generally provide any type of information that can be directly linked to intervention strategies. However, they can be used, with caution, for diagnostic purposes when a general intelligence score is needed for classification purposes. Another type of assessment often used in conjunction with traditional assessments is rating scales. As with any type of assessment, rating scales also have advantages and limitations.

**Advantages and Challenges with Rating Scales**

Third party reports can be an easy way to obtain valuable information about different aspects of a child. These ratings are typically standardized and used to obtain information prior to implementing an intervention, for progress monitoring, and for outcome evaluations (Merrell, 2008). Third party rating scales are generally completed by persons who are familiar with the child such as parents and teachers and can be used to assess adaptive behavior, internalizing or externalizing behaviors, and social functioning. Rating scales typically consist of a “list of items that describe the child across a variety of domains” and the respondent is asked to rate where the child stands on each particular item (Campbell & James 2007).

Another advantage of rating scales is the ease with which they can be conducted and that they typically require less time to administer than other forms of assessment.
(Merrell, 2008). They can also provide information on low frequency behaviors that may not be seen during an observation session.

Despite these advantages, third party rating scales and self-report assessments still have some disadvantages. Rating scales are less direct than observations as they are measures of perceptions rather than direct measure of the behavior itself (Merrell, 2008). Such scales are subject to over report and under report on part of the responder. For instance, a parent may over report their child's abilities. It may also be hard to remove bias from third party rating scales. A teacher who is having a difficult time with a child or who might even dislike the child may be overly critical when rating particular items, giving the child a poorer score than might be seen from a teacher who feels more neutral toward the child. In these situations, if third party rating scales are used in isolation, problems in need of intervention may be overlooked while other aspects that are not actually problems may be identified as such.

A Combined Approach

While some authors advocate for the discontinuation of traditional intelligence testing in early assessment (Bagnato & Neisworth, 1994), others suggest that these tests still be used but with caution and only in collaboration with other assessment techniques (Bracken, 1994). It is important to note that no assessment technique should ever be used in isolation for diagnosis purposes. Play-based assessment can be combined with traditional cognitive assessments as well as parent and teacher reports, interviews, and medical and developmental histories. However, play-based assessment can be used for developing interventions that may enable a child with developmental delay to develop skills at a more age appropriate level. Play-based assessment can provide valid and
useful information for intervention in infants and toddlers that might not be provided from a traditional intelligence test.

**Play-based Assessment Models**

Two of the most prominent play-based assessment models are Linder's (1993) TPBA and Kelly-Vance and Ryalls's (2012) PLAIS, which will be discussed in further detail. Literature on various play scales first began to emerge in the early 1980's (Linder, 1993). From this literature and further research, Linder developed the TPBA model for children functioning between infancy and 6 years of age. TPBA is conducted by a team of individuals consisting of the parents and other relevant professionals with knowledge of child development. TPBA is flexible and the "content of assessment, the team members involved, the structure of the play session, and the questions asked and answered" vary depending on the particular child being assessed (Linder, 1993). Prior to the observation, the team works with the parents to determine their concerns and gather information on the child's current functioning (Kelly-Vance & Ryalls, 2008). This information is then used to guide the observation and further data collection. TPBA can be conducted in any setting as long as the toy set provided is large and varied so as to elicit a wide range of behaviors (Kelly-Vance & Ryalls, 2008). The team observes the child during play for an hour and a half. During the observation, the child interacts with parents, a peer, and a play facilitator. A detailed coding system is used to describe strengths and areas of improvement for cognitive, social-emotional, communication and language, and sensorimotor development (Kelly-Vance & Ryalls, 2008).

Kelly-Vance and Ryalls' (2012) PLAIS is the most widely researched approach to play assessment and is based upon Linder's TPBA model as well as extensive research on
child development. Similar to Linder’s TPBA, PLAIS can also be conducted in any setting with a large and varied toy selection. PLAIS also uses a coding system that provides a description of the child’s skill level and allows the child to be compared to typically developing peers. Unlike TPBA, PLAIS generally requires the child play without adult facilitation though parents can be present and are free to praise the child (Kelly-Vance & Ryalls, 2008).

Though other domains can be assessed using PLAIS, it primarily focuses on cognitive development and therefore does not require a multidisciplinary team of observers. This information is used to determine if the child is developing typically or if there are areas that require intervention.

**Empirical Support for PLAIS**

Little research has looked at the reliability and validity of any one single play-based assessment system, though the PLAIS assessment has been researched the most (Kelly-Vance & Ryalls, 2008). That being said, the PLAIS assessment was developed based upon empirical research regarding different aspects of play assessment. Kelly-Vance and Ryalls (2008) began adapting Linder’s TPBA coding guidelines to “include information drawn from extensive basic research on play.” Studies have shown that individuals with knowledge of observational techniques can be trained to accurately and reliably use the PLAIS coding guidelines in as little as half a day (Kelly-Vance, Gill et al., 1999; Kelly-Vance et al. 2000). Kelly-Vance and Ryalls (2012) have found the PLAIS system to be easy to train, with interobserver reliability estimates of 90% and higher. Stability levels across two separate observations were found to be relatively moderate with a reliability estimate of $r = .482$ in typically developing children and a
reliability estimate of $r = .575$ in children with exceptionalities (Kelly-Vance & Ryalls, 2012).

Kelly-Vance and Ryalls (2008) also sought to develop play assessment procedures that were practical for practitioners and families as well as valid and reliable. Kelly-Vance and Ryalls (2008) investigated the research on proper toy selection (Cherney et al., 2003), facilitation versus nonfacilitation during play assessment (King, McCaslin, Kelly-Vance & Ryalls, 2003), familiarity of the observation setting (Drobny, 2003), and the impact of the presence of a peer during play observation (Fredenberg, 2004; Mendez, 2005). Use with special populations has also been examined (Gill-Glover, McCaslin, Kelly-Vance, & Ryalls, 2001; Johnson, 2005; Kelly-Vance, Needleman et al., 1999).

Those trained in play-based assessment techniques can easily use this form of assessment to obtain information about a child’s level of functioning. The PLAIS assessment is the most widely researched and therefore will be used for this study. Play-based assessments may incorporate rating scales or interviews into the overall assessment. However, as of yet, the PLAIS does not incorporate a parent report piece directly related to the child’s play activities. Research has shown that parents are quite knowledgeable of the general nature in which play develops throughout childhood and thus, it is reasonable to assume parents would be able to report on their own child’s current play acts to some degree of accuracy.

**Parents’ Knowledge of Play and Development**

Little research has been conducted on parents’ knowledge of play. A handful of studies have examined mother’s knowledge of development related to play. In general,
research has shown that mothers are quite knowledgeable about the order in which children develop certain abilities, but are less knowledgeable about precisely when those abilities emerge (Hart, n.d.). Tamis-LeMonda, Damast, and Bornstein (1994) developed a 24 item play scale of play actions that typically emerge within the first year of life. These actions ranged from concrete exploration to sophisticated symbolic play. Mothers were asked to rank the 24 items in order of difficulty, with 1 being the easiest and 24 being the most difficult (Tamis-LeMonda et al., 1994). All participants in the study were first time mothers whose children were currently 21 months of age. Results indicated that mothers’ modal ranks for each activity correlated with the empirical ranking .90 and mean rankings correlated .87 indicating that overall, the mothers were “highly sensitive to the ordinal nature of play” (Tamis-LeMonda et al., 1994).

Tamis-LeMonda, Damast, and Bornstein (1996a) then observed the play interactions between the mothers and their children one week after the mothers completed the surveys. The purpose of this part of the study was to examine if mothers who knew more about play development in general played at a higher level with their children than those who were less familiar with the developmental nature of play (Tamis-LeMonda et al., 1996a). The authors recorded the mothers playing with their children and coded the play acts into one of three levels for the mothers and one of four levels for the children. Mother and child play levels were exploratory, nonsymbolic, and symbolic. The children’s play level also included a code of off-task for when the child was not engaged in exploratory, nonsymbolic, or symbolic play activities for more than 2 seconds. The authors first examined the results of the base rates of the different levels of play for both mothers and children.
Overall, mothers prompted more symbolic play than exploratory or nonsymbolic play and there were no differences in rates of exploratory and nonsymbolic play prompts (Tamis-LeMonda et al., 1996a). Children were engaged in exploratory play more often than any other level of play. Children were also engaged in symbolic play or off-task more frequently than they were engaged in nonsymbolic play but no differences were found between the rates at which children were off task or engaged in symbolic play (Tamis-LeMonda et al., 1996a). In other words, children were engaged in exploratory play most often while symbolic play and off-task behaviors both being the second highest frequency. Nonsymbolic play was seen the least.

In another study, Tamis-LeMonda, Chen, and Bornstein (1998) assessed the short term stability of mothers’ knowledge of play. The authors speculated that mothers would be more knowledgeable of developmental milestones that matched their own child’s current level of development, rather than past developmental milestones their children have already met (Tamis-LeMonda et al., 1998). Participants in this study were mothers of children ranging in age from 6 to 58 months. These mothers were given an 11 item play scale. Items on the scale were randomly paired together and the mothers were asked to indicate which of the 2 items were more difficult for a developing child. Two weeks later the mothers were subjected to the same procedure to assess short-term stability (Tamis-LeMonda et al., 1998). Results indicated that on average, mothers correctly identified the easier level of play 40 out of 55 possible pairings during the first trial and 43 out of 55 pairings during the second trial. In general, mothers appeared to be able to judge which item was easier between the two play items and their ability to judge which item was easier was consistent over time. Although mothers were knowledgeable of
which play items were easier and this knowledge remained stable over a two week period, these results do not indicate whether mothers are aware of the ages at which these different play levels typically emerge.

In an unpublished research study, Hart, Kelly-Vance, and Ryalls sought to examine the relationship between parent knowledge and perceptions of play in general and the child’s level of play. The authors hypothesized that parents who were more knowledgeable about play in general would have children who played at higher levels. Participants in this study were 34 children ranging in age from 18 to 59 months and their parents. Children were observed during play for 30 minutes and play acts were coded using the Exploratory/Pretend Play subdomain of the PLAIS model. Parents were given the Parent Play Questionnaire (PPQ) and the Parent Knowledge of Play Development Task (PKPDT). The PPQ is an open ended questionnaire in which parents respond to questions about their perceptions of play such as how they would define play and what they do to encourage play in their child (Hart et al., n.d.). The PKPDT was developed based upon the procedures used by Tamis-LeMonda et al. (1994) study discussed above. Items on the PKPDT were selected form the Exploratory/Pretend Play subdomain of the PLAIS. Items were presented to parents in a random order and parents were asked to place the cards in order of easiest to most difficult for a child to perform (Hart et al., n.d.).

Results indicated that overall parents were quite knowledgeable of the ordinal nature of play and which items would be harder for a child to perform. Accuracy scores of the PKPDT ranged from 78 to 96% with an average score of 91% (Hart et al., n.d.). The average play score for the children was 8.5 out of a possible score of 13 with 22
children displaying non-age appropriate play. There was a positive correlation between
parent knowledge scores and child's play level for parents of 18-24 month old children
(Hart et al., n.d.). However, there were no other significant correlations between parent
knowledge scores and child's level of play for children ranging from 25-59 months. The
authors attribute the lack of significant findings in part to the small sample size.

While the studies discussed above have all demonstrated that parents appear to be
quite knowledgeable of the general developmental nature of play, no studies examined
how much parents know about their own child's level of play specifically. Existing
parent report questionnaires or interviews that touch on play include the Developmental
Assessment of Young Children (DAYC; Voress & Maddox, 1998), the Parent Child Play
Scale (Dunst, 1986), the Ages and Stages Questionnaire (Bricker & Squires, 1999), and
the Play History Interview (Takata, 1969). Some of these scales focus on temperament or
peer relationships during play. Some even focus on more academic tasks such as
counting. Perhaps the closest existing reports related to parent knowledge of their own
child's level of play are the DAYC and the Play History Interview.

The DAYC is a structured interview form, which also incorporates observation
and direct assessment when needed, that assesses cognition, communication, social-
emotional skills, adaptive skills, and physical/motor skills (Voress & Maddox, 1998).
The assessment can be conducted as an interview with the child's parent or guardian or in
a direct assessment during which the examiner tries to elicit certain behaviors from the
child such as "child matches simple shapes such as circle, square, and triangle." The
PLAIS, unlike the DAYC, does not attempt to elicit behaviors from the child but instead
focuses on what the child does naturally in a play situation. The Play History Interview is
a parent interview that examines past and present play experiences of the child which assesses sensorimotor skills, symbolic and simple constructive play, dramatic/complex constructive play, and pregame, games, and recreational activities (Takata, 1969). The Play History Interview is rather outdated and has not had any significant research to determine how exactly the data obtained from the interview can be practically applied. Additionally, some form of observation is encouraged in conjunction with the Play History Interview. The DAYC and the Play History Interview do not examine the same factors as the PLAIS which looks specifically at play behaviors only. The DAYC and the Play History Interview examine other factors and therefore, it is important to convert the PLAIS into an interview format and examine the usefulness of such an assessment.

The Current Study

The current study sought to assess parent’s knowledge of their own child’s play activities and analyze how parent knowledge related to information obtained from direct observations of play. Play generally follows four hierarchical stages of development in which actions go from simple manipulations to more complex actions involving make believe play (Casby, 2003). Throughout this process, play facilitates development in other areas including cognition (Athanasiou, 2007; Golomb & Cornelius, 1997; Dansky & Silverman, 1973; Dansky & Silverman, 1975), social-emotional regulation (Athanasiou, 2007; Connolly & Doyle, 1984; Caplan & Caplan, 1973; Hoffman & Russ, 2012), and language (McCune, 1995; Ogura, 1991; Roskos & Christie, 2001). Play-based assessment, therefore, can be used to obtain information about the child’s current developmental functioning. The most widely researched and empirically supported play-
based assessment model is the PLAIS (Kelly-Vance & Ryalls, 2008; Kelly-Vance & Ryalls, 2012; Kelly-Vance, Gill et al., 1999; Kelly-Vance et al., 2000).

It is likely that parents will be able to accurately report their own child’s play activities, especially considering research has shown that parents tend to be quite knowledgeable about the developmental nature of play in general (Hart, n.d.; Tamis-LeMonda et al., 1994; Tamis-LeMonda et al., 1996a; Tamis-LeMonda et al., 1998). However, it was unknown whether the observational information gleaned from the PLAIS would be similar to interview information obtained from a parent interview. Information obtained from a parent interview may be more time efficient. On the other hand, observing the child’s play behavior directly may be a more accurate assessment of the child’s development, because the information is obtained directly. The PLAIS currently is an observation assessment only. However, adding a structured parent interview consisting of the same items used to code children’s play during the observation may provide a better picture of the child’s overall ability.

Research Questions

The first research question examined whether there was a relationship between children’s play information obtained using the PLAIS interview and the PLAIS observation. Based upon the research demonstrating that parents are knowledgeable about the developmental nature of play, it was hypothesized that the overall relationship between parent knowledge obtained via interview and direct observation of children’s play would be strong.

The second research question examined the level of agreement between the information obtained from the PLAIS interview and the PLAIS observation. It was
hypothesized that when comparing the level of agreement on the three main play domains (i.e., Exploratory Play, Simple Pretend Play, and Complex Pretend Play) assessed by the PLAIS, the interview and observation results would have a high level of agreement. On the other hand, it was hypothesized that when comparing the level of agreement across all 17 categories of play, the interview and observation results would have less agreement. Less agreement was expected because there were more variables which increased the chances of disagreement.

This information was then used to explore the implications of whether collecting PLAIS interview data in addition to PLAIS observation data provided additional information regarding the child’s play abilities. Given the advantages and disadvantages of both observations and parent report measures previously discussed (Merrell, 2008; Dykeman, 2008; Linder, 1993; Nagle, 2007; Athanasiou, 2007; Kelly-Vance & Ryalls, 2008; Kelly-Vance & Ryalls, 2012; Campbell & Jones, 2007), it is likely that neither measure is necessarily better than the other but perhaps they work best when used together. It was hypothesized that play-based observation used in combination with a structured parent interview consisting of the same items would provide the most comprehensive level of information about the child’s current level of development. In other words, when play-based data is collected via interview and observation, additional information will be obtained either from the observation or interview format that provides a broader picture of the child’s play-based abilities.

**Method**

**Participants**

Participants in this study included 30 children and their parents or guardians. A total of 11 participants were recruited from a preschool in Central Illinois and 19
participants were recruited from outside of the preschool setting. Recruitment initially took place at the preschool setting, but due to low participant response, additional participants were recruited. The child participants ranged in age from 15 to 59 months. There were 17 male and 13 female children. None of the children had any diagnosed disabilities. The parent participants included 26 mothers, 3 fathers, and 1 grandmother for a total of 3 males and 27 females. In regards to ethnicity, 29 parents were Caucasian and 1 was Asian. Two parents highest educational degree earned was a high school diploma or GED, 1 had some college experience, 5 had earned a 2 year degree, 10 had earned a 4 year degree, and 12 had earned a master’s degree. In regards to average yearly family income, 1 participant indicated less than $10,000, 2 indicated making between $70,000 and $89,999, 13 indicated making $90,000 or more, and 14 preferred not to say (see Tables 1 and 2 for demographic information).

Participants were recruited at the daycare through fliers sent home with the children and through contact during drop off and pick up times. The additional participants were recruited through directed contact either by phone or email. Previous research has not assessed the accuracy of a structured parent interview compared to an observation using the PLAIS and thus previous effect sizes were not available to perform a power analysis and determine an appropriate number of participants. However, previous studies (Hart et al., nd; Tamis-LeMonda et al., 1994) that have examined related topics have included about 30 to 40 participants and these studies were used to set a minimum number of participants for this study.

The child participants in this study were children ranging in age from 15 to 59 months. This range was selected because the PLAIS is designed to be used with children
ranging in age from 6 months to 5 years (60 months). In addition, children in this age range are likely to attend daycare or preschool, which is where recruitment and observations initially took place. Since this was the first study to examine the relationship between the PLAIS observation and the PLAIS interview, children identified with severe developmental delay or disability were excluded.

Observational data was collected by video recording. Observations at the preschool took place during free play time and were recorded by either the primary investigator or the research assistants. The author of this study was the primary investigator. Research assistants included two school psychology graduate students who helped videotape, interview parents, and code video observations. Observational data collected outside of the preschool setting were also videotaped. Video recordings were completed by the child’s parent within the child’s home and also took place during free play time. After collecting observational videos, parents shared them with the primary investigator.

Setting

As mentioned previously the study took place either in a preschool setting or a home setting. In the preschool setting videotaping took place during free play in the preschool classroom at a local preschool in a small Midwestern town. Child participants recruited from outside of the preschool were recorded during free play in their homes. It is common to find children participating in free play in either the preschool/daycare setting or the home setting. Free play is a time when children are free to self-select various play activities and there is little (if any) adult instruction. The free play settings at the preschool included 2-3 child size tables and chairs as well as 4-6 different centers.
Centers contained a variety of toys including but not limited to: Housekeeping (i.e., kitchen set with plastic dishes and toy food, baby dolls, small table and chairs); Dress up (with accessories, dress up clothes); Building (various sizes of blocks, counting blocks, tool sets, toy vehicles, miniature houses with play people, plastic farm animals with barn); Art (easels, paper, crayons, markers, scissors, glue); Book corner (stuffed animals, books, puzzles, counting blocks). The free play setting for the children recorded at home varied slightly within each home but typically included a wide selection of toys including dolls and doll accessories, play food and kitchen items, stuffed animals, toy vehicles, and blocks.

Measures/ Materials

Demographic questionnaire. Parents were asked to complete a short demographic questionnaire that provided information about their age, racial/ethnic background, highest educational degree received, income, family structure, and relationship to the child (e.g. father, mother, etc.; Appendix B).

PLAIS observation. Each child participant was recorded for a total of 30 minutes during free play time at the preschool or in his/her home. The PLAIS was used to collect data from child participants to determine the child’s current level of play (see Appendices C, D, E). The PLAIS is comprised of the Play Assessment and Recording Coding (PARC; see Appendix C) form, the Play Descriptions and Codes (PDAC; see Appendix D) form, and the Play Summary and Progress Monitoring (PSAP; see Appendix E) form.

The PARC allows the examiner to record a description of the child’s play acts and then code the acts at a later time. On the PARC form the observer identifies the highest
category of play exhibited by the child as well as the highest domain of play that the
category falls into (Domains and categories of play are described in detail below). The
PDAC form contains a list with descriptions of all of the coding options (Kelly-Vance &
Ryalls, 2012).

The coding system used for PLAIS is comprised of an overall exploratory/pretend
play category that is divided into supplemental subdomains made up of specific types of
behaviors (Kelly-Vance & Ryalls, 2008). The PLAIS is divided into 3 main domains of
play and a nonplay behavior category. The PDAC form is set up so that the coding for
different play acts is arranged in the order you would typically see them emerge as the
child develops (i.e., hierarchical). The first domain is Exploratory Play (EP) which
includes 9 different categories of play. Mouthing (MO) is the simple process of putting a
toy in the mouth. Basic Manipulations (BM) involves the child inspecting the toy either
visually or by physically handling the item. Single Functional (SF) play occurs when the
child performs a single action with the toy. This might include pushing buttons or rolling
a ball. Nonmatching Combination (NC) occurs when the child matches toys together in
random combinations. Similarity-Based Combination (SC) involves the child matching
or combining objects based on some physical similarity. Similarly, Functional
Combination (FC) occurs when the child combines objects based on similar uses.
Matching Combination (MC) occurs when the child performs two or more actions with
the same object or if the child matches the object with its label. A Complex Exploration
(CE) act occurs if the child demonstrates multi-step acts involving any of the previously
discussed functional or combination play acts. For example, if the child puts all animals
into a barn this would be considered Complex Exploration. Finally in the Exploratory
Play category, Approximate Pretend Play (AP) is any act that resembles pretend play but does not exhibit all of the criteria to be credited as full pretend play. An example would include the child putting a toy phone to the ear but not talking or making sounds into the phone (Kelly-Vance & Ryalls, 2012).

The second domain of coding is Simple Pretend Play (SSP) which is comprised of single step play acts. The Simple Pretend Play domain contains 7 different play act categories. The first category is Self-Directed Play Act (SD) which involves the child acting on him/herself such as pretending to feed himself/herself from an empty spoon. Object-Direct Play Acts (ObD) involve the child acting on or with inanimate objects such as pretending to pour tea from a plastic tea pot. Other-Directed Play Act (OtD) occurs when the child acts on another person or a lifelike object such as a doll. Substitution Play Act (Sub) involves the child using one object to represent or stand in for another such as using a block to represent a cup. Repetitive Combinations (RC) are repeating the same behavior with the same toy but directed toward two or more different people or objects. For example, the child may put an empty cup to a doll’s mouth to simulate drinking and then put the cup to his/her own mouth. Variable Combinations (VC) are similar to Repetitive Combinations except that the child enacts the same play behavior with different toys and directs the acts toward a single person or object. For example, the child might pretend to feed a doll a sandwich and then a cookie. Finally, Agentive Play (AGP) is the highest level of Simple Pretend Play. Agentive Play Acts involve the child attributing an action to an animate or life like toy such as making a doll drive a toy car (Kelly-Vance & Ryalls, 2012).
The highest domain of play coded by the PLAIS is Complex Pretend Play (CPP). There is only one category of play within Complex Pretend Play. This category is Multiple Step Play Act (MP). This category is identified when any multi-step pretend play sequence is observed that includes a combination of at least two acts from the Simple Pretend Play domain. For example, the child might use a card to represent a sandwich and a ball to represent a cookie while pretending to feed a doll these items. This would be a combination of Substitution and Variable Combinations (Kelly-Vance & Ryalls, 2012).

The PARC form allows the observer to determine the highest category of play exhibited by the child as well as the highest domain of play that act falls into. The domain and highest category of play within that domain are considered to be the best indicator for the child’s current level of developmental functioning. Additional coding options are also available for nonplay behaviors and social skills. These two categories were not used for this study.

High interrater reliability has also been supported as well as moderate test-retest reliability for both typically and exceptionally developing children (Kelly-Vance & Ryalls, 2005). Correlations with other standardized measures have been researched with high correlations being found with the Bayley Scales of Infant Development (Kelly-Vance, Needleman et al, 1999) in particular.

**PLAIS structured interview.** The PLAIS Structured Interview (Appendix F) was developed by the primary investigator for the purposes of this study. It was adapted from the PDAC form by modifying each observational play act code on the PDAC into a question about whether or not that play act is demonstrated by the child. For example,
during the PLAIS structured interview, parents are asked questions regarding their child’s play (e.g., “Does your child put toys in his/her mouth? (e.g., sucks blocks?”). Parents then report if their child does or does not perform this action. Parents can also indicate that they have not observed a particular play act or their child has not had an opportunity to engage in a particular play act.

All interviews begin with the first item under the Simple Pretend Play section (i.e., Self-Directed Play) regardless of the child’s age. If necessary, questions under the Exploratory Play section are asked if it is suspected that the original start item (i.e., item 1. Under Simple Pretend Play) is too high for the child’s level of development. These procedures were developed considering Kelly-Vance and Ryalls’ (2012) Play Development Scale (Appendix G). For instance, Self-Directed Play, the first play act in Simple Pretend Play, emerges around 12 to 16 months of age and Complex Pretend Play emerges around 24-36 months. Thus, it was expected that the target population for this study, 15 to 59 months, would have surpassed most of the items under the Exploratory Play section and it would be inappropriate to ask these items unless the parent reported that the child did not exhibit play that met the first item in the Simple Pretend Play section. The PLAIS interview codes are arranged hierarchically and thus it would be inappropriate to ask a parent, of a typically developing 3 year old, a question about a play skill the child has likely mastered and no longer demonstrates, such as “Does your child put toys in his/her mouth?”

Procedure

The primary researcher obtained IRB approval before collecting data. In addition, the researcher obtained written permission from the preschool site director prior to
contacting parents. The researcher obtained permission to collect data at the preschool by contacting the director via telephone to explain the purpose and procedures of the study. Written permission was obtained from the director prior to data collection. Flyers were sent home with children attending the preschool (Appendix A). The flyers contained information about the study as well as contact information for the researcher. Parents were also recruited during drop off and pick up times at the daycare. Further details of the study were explained to interested parents and written consent was obtained.

Due to low participant response from the preschool setting, additional participants were recruited. These participants were recruited by direct contact from the primary investigator and a similar flyer detailing the study was also provided to potential non-preschool participants. Further details of the study were explained to interested parents and written consent was obtained. (Appendix H). Assent was not obtained from the child participants (from either the preschool or non-preschool group) because the children selected for this study, ages 15 to 59 months, are likely too young to understand what research is and what they are giving assent for. Therefore collecting true assent was not possible. In addition, the examiner did not have direct contact with the children from either the preschool or non-preschool groups.

Observations of child participants at the preschool took place in the preschool setting during free play. Observations were conducted by the primary investigator, and two research assistants. Each child participating in the study was observed for one 30 minute observation using the PLAIS observation and coding system. If a 30 minute observation could not be conducted in one sitting (e.g., free play activity ends early that day), a second observation was conducted. Multiple observations totaled 30 minutes.
Observations of the child participants recruited outside of the preschool took place within the child’s home and video recordings were collected by the parents. These parents were instructed to record their children during free play for a total of 30 minutes; they were told to keep their interactions with their children to a minimum; they were told to not direct their child’s play; and they were also provided a list of suggested play items (e.g., kitchen items, play food, dolls with accessories, stuffed animals, dress up clothes, etc.) (see Appendix I for instructions provided to parents). Observational data was reviewed and coded at a later time.

Parents from both groups of participants were asked to complete the PLAIS Structured Interview and a short demographic questionnaire. All interviews and questionnaires were conducted over the phone, which took no more than 15 minutes. Parents from the preschool group were administered the interview and questionnaire no more than 2 weeks after their child had been observed at the preschool. Parents from the non-preschool group were administered the interview and questionnaire no more than 2 weeks prior to the parents conducting the play recording. For the non-preschool group, parents were interviewed prior to videotaping their child during free play in case videotaping their child enhanced their knowledge of their child’s play abilities. In other words, it is possible that after videotaping their child during free play parents might have been more aware of their child’s play skills.

**Measures of Reliability**

The researcher was the primary observer for this study. Two research assistants aided with data collection by conducting recordings at the preschool, coding video recordings, and administering the PLAIS Structured Interview over the phone. The
researcher trained the research assistants (two graduate students) on how to code play-based assessments using the PLAIS observation. The research assistants were first provided the observational codes and definitions used by the PLAIS observation and were asked to review the codes and definitions carefully. Then, the research assistants were required to practice using the PLAIS observation codes by coding practice videos of children engaging in free play. Once the primary investigator and the research assistants obtained a minimum of 80% inter-observer reliability, the research assistants were considered trained to conduct observations. The research assistants obtained 90% inter-observer reliability before coding PLAIS observations.

The primary researcher and one of the research assistants coded each of the PLAIS observations to assess inter-observer Agreement (IOA). IOA was calculated by dividing the number of agreements by the number of agreements plus disagreements. This number was then multiplied by 100 for total IOA. The average IOA across all video observations was 90%.

Training for administering the PLAIS structured interview involved teaching the research assistant how to score parent responses to interview questions (i.e., the three possible responses) as well as how to drop back to previous items, if necessary. The primary researcher and the research assistants practiced the interview together. A measure of IOA was not obtained for the PLAIS structured interviews.

**Data Design/Analysis**

It was predicted that data collected using the PLAIS observation and the PLAIS interview would be related. This hypothesis was analyzed for level of agreement and relationship between the results of the PLAIS observation and the PLAIS interview. The
17 items on both the PLAIS observation and the PLAIS interview were coded 1 through 17 in hierarchical order. The highest subdomain reached was considered the subdomain score. The domains (i.e., Exploratory Play, Simple Pretend, and Complex Pretend Play) were coded 1 through 3 in hierarchical order. The highest domain reached was considered the domain score. Spearman’s Rank Order Correlation was used to examine the overall relationship between the observations and the interviews. It was hypothesized that a strong relationship would be found between the two. Spearman’s Rank Order Correlation, often referred to as Spearman’s rho, is a “common measure of the relationship between two ordinal variables, or variables that have been converted to ranks” (Lehman, 1991). Ordinal variables or rankings are those in which it is assumed there are unequal values between the rankings.

It was predicted that the PLAIS observation and the PLAIS interview would have high agreement regarding highest developmental domain. However, it was predicted that the highest category of play within the identified domain would not be as high in agreement. In other words, when analyzing the 3 main domains agreement should be higher than when assessing all 17 separate play acts. However, it was still hypothesized that a moderate level of agreement would be seen when assessing all 17 separate play acts. To examine the level of agreement between the observations and the interviews, a Kappa Coefficient was used. Kappa Coefficients can be used to assess the level of agreement on the overall highest domain of play achieved by the child or the level of agreement for the highest specific play act category the child reaches. A Kappa Coefficient is defined by McGrath (2010) as “a reliability statistic when two judges are
classifying targets into categories on a nominal variable. It is most commonly used to estimate interrater reliability.”

Results

The Relation between PLAIS Interview and Observation

A Spearman’s Rank Order Correlation was performed to examine the relation between the parent interview score (as obtained by the Play Assessment/Intervention System structured interview) and the observation codes (as obtained by the Play Assessment/Intervention System observation). Overall, including all 30 participants, there was a positive correlation between the highest domain (out of 3 possible domains) indicated via the parent interview and the highest domain coded from the observations, though the relation was weak, $r_s(28) = .25, p = .19$. The same procedure was conducted to examine the relation between the highest subdomain indicated by parent interview and the highest subdomain (out of 17 possible subdomains) coded from the observations. Again, there was a weak positive correlation between the subdomain scores, $r_s(28) = .23, p = .23$. A correlation ranging from .01 - .25 is considered weak (Santrock, 2005).

Preschool participants. In order to examine the possibility of skewed results due to the differences in observation location (preschool vs. in home), Spearman’s Rank Order Correlations were performed to examine the relation between the PLAIS interview and the PLAIS observations with the data from the 11 preschool participants alone and again with only the 19 participants recruited from outside of the preschool. When examining only preschool participant data, there was no relation found between the domain scores, $r_s(9) = 0.00, p = 1.00$ and a very weak negative correlation was found between the subdomain scores, $r_s(9) = -0.03, p = .93$. 
Non-preschool participants. When looking only at data from participants recruited outside of the preschool, there was a moderately positive correlation between the interview and observation domain scores, $r_s(17) = 0.49$, $p = 0.03$. This correlation was statistically significant at the 0.05 level. A moderately positive correlation was also found in regards to the subdomain scores when looking at only the data obtained from the participants outside of the preschool setting, $r_s(17) = 0.48$, $p = 0.04$. Again, this correlation was statistically significant at the 0.05 level. According to Santrock (2003), correlations ranging from 0.26 - 0.50 are considered moderate.

Agreement between PLAIS Interview and Observation

A Kappa Coefficient was used to examine the level of agreement between the interview and observation codes at both the domain and subdomain level. A fair level of agreement was found between the domain scores from the parent interview and the observation codes ($K = 0.28$, $p = .04$). According to Altman (1991), a Kappa Coefficient ranging from 0.21 to 0.40 is considered fair. A poor level of agreement was found between the subdomain scores from the parent interview and the observation codes ($K = 0.13$, $p = 0.06$). According to Altman (1991), a Kappa Coefficient of 0.20 or less is considered poor. In other words, parent interview scores were only somewhat closely aligned, 28% agreement, with the observation score at the domain level and had very little alignment, 13% agreement, at the subdomain level.

Preschool participants. Again, the data were divided by participant group to examine differences between the participants recruited from the preschool setting and those recruited from outside of the preschool setting. When examining data from only the 11 preschool participants, poor agreement was found among the domain scores ($K = 0.43$).
0.19, p = 0.28) and subdomain scores (K = 0.05, p = 0.55). In other words, parent interview scores had very little alignment with the observations at the domain, 19% agreement, and subdomain, 5% agreement, levels.

**Non-preschool participants.** When examining data from only the 19 participants recruited outside of the preschool setting, a fair level of agreement was found among the domain scores (K = 0.34, p = 0.08); however, a poor level of agreement was found among the subdomain scores (K = 0.18, p = 0.05). In other words, parent interview scores were only somewhat closely aligned, 34% agreement, with the observation scores at the domain level and had very little alignment, 18% agreement, at the subdomain level.

**Discussion**

The purpose of this study was to assess parent’s knowledge of their own child’s play activities and analyze how parent knowledge related to information obtained from direct observations of play. This was done by analyzing and comparing the results of a structured interview, developed specifically for the purpose of this study, and the results of the play-based observation system the interview was modeled after. Studies have shown parents are well aware of the nature in which play skills unfold during childhood. However, little appears to be understood about whether parents can correctly identify their own child’s play skills. This study sought to provide research on this topic and to contribute to this gap in the research literature.

**The Relation between the PLAIS Interview and Observation**

Regarding research question 1, Is there a relationship between children’s play information obtained from the PLAIS interview and the PLAIS observation?, data from the PLAIS interview and the PLAIS observation were analyzed to determine if there was...
a relationship at the domain level (i.e., Exploratory Play, Simple Pretend Play, and Complex Pretend Play) and the subdomain level (i.e., 17 play subdomains). Weak correlations were found at both the domain and subdomain levels between the parent interviews and the observation codes when examining the data from all 30 participants (both preschool and non-preschool participants). These findings suggest that children obtaining high interview scores did not necessarily have high observation scores. For example, if the parent interview indicated the child’s highest subdomain play skill was an agentive play act, the highest skill under the simple pretend play domain, there was only a small likelihood that the observation also endorsed the child’s highest play skill as an agentive play act or a play skill close to this one in rank. There was also as a small likelihood that the observation also endorsed the highest domain as simple pretend play. The results fit with the hypothesis in regards to a positive correlation being found, however, they do not fit in regards to the expected strength.

A larger correlation was found when examining only the data collected from the participants recruited from outside of the preschool setting, though the correlation differences were not statistically significant between the settings. The correlations between the PLAIS interview scores and the PLAIS observation codes were moderately positive and statistically significant at the domain and subdomain levels for the non-preschool participants. Though the correlations were moderate at best, it should be noted that they were in the expected positive direction indicating that as scores on one measure increased, scores on the other measure also increased. It is possible that a larger sample size would have yielded strong correlations. Additionally, the participants from the non-preschool group had higher levels of education overall. All participants from the non-
preschool group held at least a 2 year degree. Approximately 58% of the non-preschool parents held a master’s degree and 37% held a bachelor’s degree. Highest educational degree earned for participants from the non-preschool group ranged from a high school diploma or GED to a master’s degree. Only 9% of the preschool parents held a master’s degree and 27% held a bachelor’s. This could possibly account for the stronger relation in the non-preschool group. It is possible that with a higher level of education, the parent would be more knowledgeable about play.

**Agreement between the PLAIS Interview and Observation**

The second research question, What is the level of agreement between the PLAIS interview and the PLAIS observation?, examined the level of agreement between the interview and observation scores to determine how similar the assessment information was when gathered through interview and observation. Data was again analyzed at the domain and subdomain levels. It was anticipated, at the domain level, that parents would rank their child within the same play domain as the observation results. In other words, it was expected that there would be high agreement between parent interview rankings and observation codes. It was further anticipated that, at the subdomain level, there would be less agreement between parent interview rankings and observation codes because there were so many subdomains (e.g., 17). Nonetheless, agreement was expected to be somewhat high, but not as high as the domain level. Although the results were not as hypothesized, the anticipated pattern of higher agreement at the domain level compared to the subdomain level was upheld. When all 30 participants were analyzed together, the domain scores yielded only a fair level of agreement between the parent interviews and the observations and at the subdomain level a poor level of agreement was found.
indicating very little agreement between subdomain interview scores and observation codes.

One possible explanation for these results may relate to the method in which the data was obtained. The interview is measuring, in a sense, the parent’s perception of their child’s play skills (Merrell, 2008). On the other hand, the observation is a direct measure of the skills the child demonstrates within the set amount of time for the observation. It is possible, therefore that the parent’s perception of his/her child’s skills is an over or underestimate of what the child is truly capable of. In other words, parents may not be as knowledgeable or accurate in reporting of their children’s play skills, as actually observing the child’s play skills first hand.

Similarly, only a fair level of agreement was found in regards to the domain scores when examining the data from only the participants recruited from outside of the preschool setting. All other levels of agreement were found to be in the poor range. It is interesting to note, when disagreements between the interviews and observations occurred at the domain level, 9 of the 13 total disagreements were the result of a lower score on the observation. At the subdomain level, 15 of the 20 disagreements were again the result of a lower score on the observation. In other words, when examining the level of agreement among all participants, the majority of disagreements were from parents overestimating their child’s play skills. Some of the higher scores on the parent interview could be due in part to the shyness exhibited by a few of the children. However, this would not account for all of the cases. The possibility that the differences in the amount of time the parents reported playing with their children may have influenced the accuracy of the parent interview scores was explored. The data was analyzed again to look at the
level of agreement between the interviews and observations based upon the amount of
time the parents reported playing with their children per week. Moderate levels of
agreement were found at the domain level for the groups that reported spending 11 to 15
hours (K = .56, p = .08), 16 to 20 hours (K = -.50, p = .13), 26 to 30 hours (K = .56, p = .08), and 31 to 35 hours (K = .50, p = .10). However, as the amount of time spent playing
increased, the level of agreement did not necessarily increase. In fact, the levels for all 4
of these groups are fairly consistent with one another. Therefore, the overestimations
may best be accounted for by the parents wanting to think the best of their children and
therefore rating their child’s skills higher than they truly were. This is a phenomenon
known as the halo effect in which the rater’s scores are biased by their personal feelings
about the individual being rated (Merrell, 2008).

Implications

To this author’s knowledge, no similar study exists with which to compare the
results of the present study. However, this study does contribute some valuable
information to the apparent gap in the research literature regarding parent knowledge of
their child’s level of play and the usefulness of including a parent report to an
observational play-based assessment. Several research studies have shown that parents
tend to be quite knowledgeable about the developmental nature of play in general (Hart,
n.d.; Tamis-LeMonda et al., 1994; Tamis-LeMonda et al., 1996a; Tamis-LeMonda et al.,
1998).

Based upon the results of this study, it is possible that parents may overestimate
their child’s abilities and the PLAIS observation provides a more accurate account of the
child’s true play skills. High Inter-Observer Agreement suggests that the observers were
reliable with each other when coding specific play skills demonstrated by children, though this does not necessarily convey any meaning to what skills the child is truly demonstrating at home and which method provides a more accurate measure of the child's play level.

Another factor to consider is the nature of the interview method of data collection in general. One limitation to interview methods, as mentioned previously, is the possibility of over and under report on part of the respondent (Merrell, 2008). This type of data collection procedure is subject to bias on part of the reporter. Raters may let their personal feelings about the subject sway their ratings, either in a negative or positive manner, and thus depict an inaccurate picture of the subject. As noted above, this is known as the halo effect.

Additionally, no level of IOA was obtained for the interviews in the present study. Though the research assistants were trained on how to conduct the interview, future research may wish to obtain a minimum level of IOA among all raters before collecting interview data. It may also be beneficial to obtain a level of IOA for all interviews. In other words, interviews could be audio recorded or two researchers could sit in on the interview so that both people could code the interview and a measure of IOA could be obtained.

On the other hand, these results might also suggest that children do not always demonstrate their highest level of skills during an observational assessment. It was possible that the parents see more play behaviors at home than what the child was able to demonstrate during the 30 minutes of observation. If this was the case, these results would not indicate that parents are any less knowledgeable about their child's play skills.
Therefore, the consideration of parent input could prove valuable to the overall assessment results. It is perhaps best to assume that both the observation and the parent interview both provide valuable information to an assessment as opposed to using only one in isolation. Using the observation provides a depiction of the skills the child demonstrates within the observation setting. Adding the parent interview provides information regarding what the parent presumably sees within the home. In cases where observation and interview results do not match well, the examiner could use the interview as an opportunity to ask additional questions which could help explain the mismatch. Together, these two pieces of information could potentially provide the most comprehensive and accurate picture of the child’s abilities.

**Limitations**

There were some limitations to the study that are important to note. To begin with, the present study lacked diversity in the participant population (see Tables 1 and 2 for child and parent demographic information). In regards to racial or ethnic background, 97% of the participants were Caucasian. Additionally, 50% reported an annual household income of $70,000 or higher. It should be noted however, that 47% of the participants preferred not to disclose their income. The participants were also primarily recruited from the Midwest and results may not generalize to other populations.

Another possible limitation to the study is the setting in which the study took place and the change in participant recruitment. In regards to the preschool setting, a positive aspect was that it was familiar to the children. However, there was little control over what items the children played with and if and how they interacted with adults during the observations. Children had access to items in the play setting that did not
were

with the nature of the PLAIS as an observation of non-facilitated free play. Studies by Mendez (2005) and Fredenberg (2004) have demonstrated that the presence of a same-age peer during play does not improve the child’s level of play. Additionally, the rooms were set up in such a way that it was necessary for the examiner and the research assistants to stay within close proximity of the child being recorded in order to clearly record what the child was playing with and to pick up anything the child might say. Some children became visibly shy at the sight of the camera which likely impacted their play. On the other hand, some children were excited about the camera and tried to interact with the examiner and research assistants which could also have impacted the way in which they played.

Children recorded within their home environment were also within a familiar setting. However, there was more control over the items the children had the opportunity to play with. Parents of these children were given a list of suggested toy items to use during the observation which suggested the exclusion of electronic items. These children therefore, typically did not have access to electronic devices that did not warrant a code. Additionally, children recorded in the home were either the only child playing or were playing with one sibling. Despite these differences, the PLAIS is designed to be used in any play setting, including a preschool/daycare setting, at home, or even in a lab or research setting (Kelly-Vance & Ryalls, 2008).
Another limitation to consider is the timing of the interviews. Participants from the preschool setting were interviewed after their child had been observed. Interviews were conducted within two weeks after the observation. Even though conducted within a short period of time after the observation, it is possible the children had developed higher level play skills within that period of time. Again, it is interesting to note that when the parent rating did not match the observation coding, the majority of the time the observation coding was lower than the parent rating. Interviews with the participants from outside of the preschool setting were conducted prior to the parent recording their child during free play. These interviews were generally conducted in closer proximity as well, less than two weeks prior to the parent recording their child.

**Future Research**

Considering the apparent lack of research in the area of parent knowledge of their child’s level of play, it is important for more research to be conducted in this area. The limitations of the present study provide some considerations for future research. The present study lacked diversity in the participant population. Future studies may wish to include a larger sample size with a more diverse population. It is also suggested that the procedures of future studies include more control over the setting. This would include limiting the non-toy items children have access to within the play setting such as having no computers or iPads available to the children during the observation sessions. Interactions with adults should also be better controlled. In the present study, children within the preschool setting interacted with the adults in the room during the observations which could have potentially led to an influence in the way the children played.
In regards to the interviews, future studies may wish to conduct the interviews in closer proximity to the observations. Children develop at such a rapid rate; data would likely be most accurate if collected from parents on the same day or within a few days of the observations. Additionally, the interview questions may need to be revised. Participants in this study did not indicate a lack of understanding of the questions, however, some participants did note that the examples were hard to apply to their male children, in particular the examples that mentioned dolls or other toy items more stereotypically thought of as “girl” toys. The examples may need to be broadened and revised. Finally, future studies may wish to add additional information to the interview. Additional data from the parent regarding the frequency of play skills and to what degree the play act is a new skill for the child or one the child has already mastered could prove beneficial.

Overall, the present study results yielded moderate to no correlations at both the domain and subdomain levels as well as fair to poor levels of agreement at the domain level and poor levels of agreement at the subdomain level. Though the correlations were not strong, they were still in the expected positive direction. The low levels of agreement were typically due to higher ratings on the interview than on the observation which may suggest that parents generally overestimated their children’s abilities. Limitations to the present study provide some useful considerations for future research. Additionally, this study provides a foundation of important information which future studies should build upon. Future research should continue to examine this important topic and fill the gap in the research literature.
References


doi:10.1002/pits.20566


doi:10.1037/a0026299


### Table 1

**Child Demographic Data**

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<thead>
<tr>
<th>Age in Months</th>
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<th>Percent</th>
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<td>15 - 20</td>
<td>3</td>
<td>10%</td>
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<tr>
<td>21 - 25</td>
<td>6</td>
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</tr>
<tr>
<td>26 - 30</td>
<td>2</td>
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<tr>
<td>31 - 35</td>
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<tr>
<td>36 - 40</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>41 - 45</td>
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<td>0%</td>
</tr>
<tr>
<td>46 - 50</td>
<td>2</td>
<td>7%</td>
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<tr>
<td>51 - 55</td>
<td>4</td>
<td>13%</td>
</tr>
<tr>
<td>56 - 59</td>
<td>7</td>
<td>23%</td>
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</table>

**Gender**

- Male: 17 (57%)
- Female: 13 (43%)

**Hours Spent at Daycare/PreK Per Week**

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<thead>
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<th>Hours</th>
<th>N</th>
<th>Percent</th>
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<td>&lt; 5</td>
<td>4</td>
<td>13%</td>
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<tr>
<td>5 - 10</td>
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<tr>
<td>11 - 15</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>16 - 20</td>
<td>4</td>
<td>13%</td>
</tr>
<tr>
<td>21 - 25</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>26 - 30</td>
<td>1</td>
<td>3%</td>
</tr>
<tr>
<td>30 - 35</td>
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<td>36 - 40</td>
<td>10</td>
<td>33%</td>
</tr>
<tr>
<td>&gt; 40</td>
<td>5</td>
<td>17%</td>
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**Disability**

- No: 30 (100%)
Table 2

*Parent Demographic Data*

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<th>Relationship to Child</th>
<th>N</th>
<th>Percent</th>
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<tr>
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<td>87%</td>
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<tr>
<td>Father</td>
<td>3</td>
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<tr>
<td>Grandmother</td>
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<table>
<thead>
<tr>
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<td>Male</td>
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<td>10%</td>
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<tr>
<td>Female</td>
<td>27</td>
<td>90%</td>
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<table>
<thead>
<tr>
<th>Number of Children in Household</th>
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</tr>
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<tr>
<td>One</td>
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<td>37%</td>
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<tr>
<td>Two</td>
<td>18</td>
<td>60%</td>
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<tr>
<td>Three</td>
<td>1</td>
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<th>Marital Status</th>
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<td>Married</td>
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<tr>
<td>Single</td>
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<td>Divorced</td>
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<td>Asian</td>
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<td>H.S./ GED</td>
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<tr>
<td>Some College</td>
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</tr>
<tr>
<td>2 Year Degree</td>
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<td>4 Year Degree</td>
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<tr>
<td>Master's Degree</td>
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<td>Prefer Not to Say</td>
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<tr>
<td>$70,000 - $89,999</td>
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</tr>
<tr>
<td>&gt; $90,000</td>
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<td>43%</td>
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<table>
<thead>
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<th>Play With Child</th>
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<td>Yes</td>
<td>30</td>
<td>100%</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Est. Hours Playing Per Week</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 5</td>
<td>1</td>
<td>3%</td>
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<tr>
<td>5 – 10</td>
<td>9</td>
<td>30%</td>
</tr>
<tr>
<td>11 – 15</td>
<td>4</td>
<td>13%</td>
</tr>
<tr>
<td>16 – 20</td>
<td>3</td>
<td>10%</td>
</tr>
<tr>
<td>21 – 25</td>
<td>2</td>
<td>7%</td>
</tr>
<tr>
<td>26 – 30</td>
<td>4</td>
<td>13%</td>
</tr>
<tr>
<td>31 – 35</td>
<td>7</td>
<td>23%</td>
</tr>
</tbody>
</table>
Appendix A

Dear Parents,

I am a School Psychology Graduate student at Eastern Illinois University. I am currently working on my Graduate Thesis and am seeking participants to assist with my study.

My study examines the usefulness of a short parent interview I have adopted from a play-based observation called the Play Assessment/Intervention System. Play is an important aspect of child development and some early childhood evaluations include play-based observations as a way to assess young children’s development.

Minimal participation is required for this study. If you agree to participate and agree to have your child participate, I will meet with you to complete a brief (5-10 minutes) interview about the typical actions your child performs during play. Your child will be observed in his/her preschool or daycare setting. Typically, preschool or daycare settings have a time during the day when children can play freely without specific adult instruction. Observations will take place during this time (i.e., free play) and therefore, your child’s typical preschool or daycare routine will not be any different from a typical day.

If you have any questions or are interested in the study, please feel free to contact:

Jessie Shuemaker (primary researcher)
E-mail: jrshuemaker@eiu.edu
Telephone: (217) 821-1987

Or

Dr. Margaret Floress (Thesis Chair/Supervisor of this study)
E-mail: mfloress@eiu.edu
Telephone: (217) 581-3523

Thank you so much for your consideration,

Jessie Shuemaker
School Psychology Graduate Student
Eastern Illinois University
Appendix B

Parent Demographic Questionnaire

Your Name: ____________________  Child’s Name: ____________________

Relationship to Child (example: mother, father, legal guardian, etc.): ____________________

Child’s Date of Birth: __________  Child’s Gender: Male  Female

Your Age: __________  Your Gender: Male  Female

Number of Children You Parent/Legal Guardian: __________

Marital Status:                    Prefer Not To Say
Married
Single
Divorced/Separated
Widow/Widower

Racial Background:               Prefer Not To Say
American Indian/Alaska Native
Asian
Black/African American
Caucasian/White
Hispanic
Native Hawaiian/Other Pacific Islander
Other

Highest Educational Degree Earned:        Prefer Not To Say
High School/GED
Some College
Two Year College Degree/Associates
Four Year College Degree/Bachelors
Master’s Degree
Doctoral Degree

Average Household Yearly Income:        Prefer Not To Say
Under $10,000
$10,000 – $29,999
$30,000 – $49,999
$50,000 – $69,999
$70,000 – $89,999
Over $90,000
Approximately how many hours per week does your child spend at daycare and/or preschool?

- Less than 5 hours
- 5 – 10 hours
- 11 – 15 hours
- 16 – 20 hours
- 21 – 25 hours
- 26 – 30 hours
- 30 – 35 hours
- 36 – 40 hours
- More than 40 hours

Do you play with your child?:  

- Yes
- No

If yes, approximately how many hours a week do you play with your child?

- Less than 5 hours
- 5 – 10 hours
- 11 – 15 hours
- 16 – 20 hours
- 21 – 25 hours
- 26 – 30 hours
- 31 – 35 hours
- 36 – 40 hours
- More than 40 hours

If yes, please describe how you play with your child such as what types of activities you do:

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Does your child have a diagnosed disability?:  

- Yes
- No

If yes, please state disability: ____________________________________________
# Play Assessment and Recording Coding Form (PARC)

<table>
<thead>
<tr>
<th>Name:</th>
<th>PLAY CODES</th>
<th>SOC/BEHAV CODES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description of Play</strong></td>
<td><strong>Type of Play</strong></td>
<td><strong>Initiation</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td># of Plays</td>
</tr>
</tbody>
</table>

*Note: Fill in the appropriate codes for the type of play, initiation, cooperation, and convivio as observed during the observation.*
Appendix D

PLAY DESCRIPTIONS AND CODES (PDAC)
Lisa Kelly-Vance and Brigette O. Ryalls
University of Nebraska-Omaha

1) EXPLORATORY PLAY (EP)
   • Moutthing (Mo) – puts toy in mouth (e.g., sucks block)
   • Basic Manipulation (BM) – visually inspects or handles toy (e.g., turns object in
     hand or visually examines it, hangs object)
   • Single Functional Action (SF) – performs one action with an object (e.g., shakes
     rattle, rolls ball, opens doors, presses buttons, turns wheel on car)
   • Nonmatching Combination (NC) – random combinations of objects and functions
     (e.g., puts toy dish on car)
   • Similarity-based Combinations (SC) – combining objects based on physical
     similarity (e.g., stack toy plates, put blocks of same color or size together)
   • Functional Combinations (FC) – combining objects based on similarities in how
     objects are used (e.g., put toy lid on teapot, put fork with plate)
   • Matching Combinations (MC) – performs two or more actions with object;
     combines object and label (e.g., puts ball in shape sorter and then puts ball in bucket;
     uses word to label an object)
   • Complex Exploration (CE) – multi-step exploratory play involving any of the prior
     types of play (e.g., moving objects in and out of containers, puts all animals in barn,
     combines cup and saucer)
   • Approximate Pretend Play (AP) – the child may be engaging in pretend play but
     there is not enough evidence to give them full credit for pretend play (e.g., puts phone
     to ear but doesn’t talk or make sounds, touches comb to head of doll but does not
     make combing gesture)

2) SIMPLE PRETEND PLAY – SINGLE STEP PLAY ACTS (SSP)
   • Self-Directed Play Act (SD) – child acts on himself or herself (e.g., child eats from
     an empty spoon, combs his/her hair, washes hands)
   • Object-Directed Play Act (ObD) – child acts on or with inanimate objects (e.g.,
     child pours from a pitcher to a cup, arranges bed clothes)
   • Other-Directed Play Act (OtD) – child acts on another person or lifelike object with
     a toy (e.g., child feeds a doll, grooms a dog; wash mom with toy sponge, rock doll)
   • Substitution Play Act (Sub) – using one object to stand in place for another (e.g.,
     using a toothbrush as a paintbrush or pretending a block is a telephone)
   • Repetitive Combinations (RC) – the same play behavior with the same toy is
     directed toward two or more different objects/people (e.g., child puts an empty cup to
     a doll’s mouth, then to the mouth of experimenter and self)
   • Variable Combinations (VC) – the same play behavior is seen with different toys on
     one object/person (e.g., child pretends to eat a sandwich, then a cookie, then a carrot)
   • Active Play Act (AP) – action is attributed to animate or lifelike toy (e.g., child
     makes a doll drive a car, makes a doll shovel sand, makes toy dog bite or bark)
3) **COMPLEX PRETEND PLAY (CPP)**

**Multiple Step Play Act (MP):** Multi-step pretend play sequences involve any combination of 2 or more Simple Pretend Play Acts.

4) **NONPLAY BEHAVIORS (NP)** – behaviors seen in the absence of any play with a toy

- **Unoccupied (Un):** stationary child exhibits behavior with lack of goal or focus
- **Transition (Tr):** child moves from one activity to another or prepares for, sets out, or tidies up an activity
- **Conversation (Co):** child actively listens or communicates verbally in the absence of play
- **Aggression (Ag):** child expresses displeasure, anger, or disapproval through physical means in the absence of play
- **Rough and Tumble (RT):** child is engaged in playful physical activity without toys
- **Wandering (Wa):** child walks around without playing; may be looking at toys

**ADDITIONAL CODING OPTIONS**

**SOCIAL SKILLS**

**Play Partners**

*Number:* How many children and adults are involved in the play?
*Children:* Record the number of additional children in the play.
*Adult:* Record the number of adults in the play.

**Play Initiation and Response**

*Initiator:* Child initiates play with another child or adult
*Other Initiator:* Another child initiates the play with the target child.
*Follower:* Child follows play of another child or adult
*Other Follower:* Another child accepts the play initiation of the target child

**Talking During Play** (This can be a conversation with an adult or another child or the target child could be talking to him/herself)

**BEHAVIORS—that interferes with or impede play**
# PLAY SUMMARY AND PROGRESS MONITORING (PSAP)

**Name:**

<table>
<thead>
<tr>
<th>PLAY Summary: Record number/30 minutes</th>
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<td>Matching Combinations</td>
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<tr>
<td>Complex Exploration</td>
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<tr>
<td>Approximate Pretend Play</td>
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<tr>
<td>Self-Directed Play Act</td>
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<tr>
<td>Other-Directed play Act</td>
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<td>Substitute play Act</td>
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<td>Repetitive Combinations</td>
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<td>Variable Combinations</td>
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<td>Aggressive Play Act</td>
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**Frequency**

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**Need**

- Comments: (including Supplemental Skills)

## SOCIAL Summary

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Appendix E
Appendix F

Play Assessment/Intervention System Parent Structured Interview Form

Instructions:

Interviews will start on item 1 of the Simple Pretend Play Scale. If the parent answers “No” or “Not Observed” on this item, reverse to item 9 of the Exploratory Play Scale. A basal of 3 consecutive answers of “Yes” must be reached before moving back to item 2 of the Simple Pretend Play scale. Once the parent has answered “No” or “Not Observed” to 4 consecutive items, the interview may be discontinued. Read and explain the rating options to the parent. Make sure the parent understands the difference between the ratings. Once parent understands, read item 1 of the Simple Pretend Play scale to the parent and circle his/her response. Continue reading the items and circling responses until the ceiling has been met. Follow basal and ceiling rules stated above.

Rating Options

**Yes:** The child performs this type of action during play. Parent has seen the child perform this type of action and knows child does perform this type of action.

**No:** The child does not perform this type of action during play. Parent knows the child does not perform this action. Child may not be old enough to perform action.

**Not observed:** Parent is not certain if the child performs this type of action because he/she has not observed it, has not had the opportunity to witness such an action, or child may not have had an opportunity to demonstrate the action.

**Exploratory Play**

1. Does your child put toys in his/her mouth? For example, child sucks on blocks or puts plastic keys in his/her mouth.  
   Yes  No  Not Observed

2. Does your child inspect toys visually and/or inspects toys by physically handling the toys? Child may turn toys over in hands or bang toys against the floor, against wall, or against other objects.  
   Yes  No  Not Observed
3. Does your child perform one simple action with a toy? For example, child rolls balls or if child has a pop up toy, he/she presses a button on it.

4. Does your child group toys together randomly or groups toys not based on any identifiable similarities? This might include the child stacking items that have no common features such as a toy car and a block or the child grouping items like a block, a ball, and a race car into a pile.

5. Does your child group toys together based on similarities in how the toys look? For example, when stacking blocks does your child put all blocks of the same size or all blocks of the same color together or does your child group all toy animals together?

6. Does your child group toys together based on similar uses or functions of the toys? When playing with kitchen items does your child put a fork with a plate or if playing with dolls does your child put a pacifier with a baby bottle?

7. Does your child perform more than one action on the same toy or appropriately name the toy verbally? For example, is your child able to name certain toys such as calling a ball a “ball” or does child perform actions like putting a ball into a shape sorter and then putting the same ball into a bucket?

8. Does your child group objects together multiple times either based upon similarities or randomly? For example, might move blocks and balls in and out of a container, put all animals into a barn, or put tea cups with saucers.
9. Does your child demonstrate an understanding that certain objects are associated with specific actions but does not fully perform the action? For example, child puts a toy phone to his/her ear but does not make any noise or say any words into the receiver or child puts a brush to a doll’s head but does not run the brush through the doll’s hair.

Simple Pretend Play

1. Does your child perform pretend play actions on him/herself? For example, child pretends to wash his/her hands or drink from a cup.

2. Does your child play with inanimate objects? For example, pretends to pour water from a pitcher into a cup or arranges a doll’s bedding.

3. Does your child play with another person or lifelike object while using a toy? For example, when playing with a doll child puts a spoon to the doll’s mouth to feed it or brushes a stuffed dog’s hair with a brush.

4. Does your child use an object to represent or stand in for a different object? For example, child uses a toothbrush as a paintbrush or pretends a block is a telephone.

5. Does your child perform the same behavior with the same toy two or more times but directs the play toward two or more different objects or people? For example, puts a cup to a doll’s mouth and then puts cup to own mouth or brushes a doll’s hair and then brushes a stuffed dog’s hair.

6. Does your child perform the same behavior more than once with different toys but directs action at only one object or person. For example, child pretends to eat a plastic cookie and then a plastic carrot.
7. Does your child give actions to lifelike toys? For example, child makes a doll drive a car or makes a dog bark.

Complex Pretend Play

1. Does your child perform two or more of the previous play actions discussed above at the same time? For example, child pretends a card is a sandwich and a block is a cup. Child then pretends to feed these items to a doll. OR child or pretends a box is a racecar and has a stuffed dog drive the car around.
## Appendix G

### PLAY DEVELOPMENT SCALE

**EXPLORATORY/pretend**

1. Mouthing (e.g., sucks block) [up to 9 months]
2. Simple manipulation (e.g., holds object and visually examines it, bangs object) [to 12 months]
3. Unitary functional activity (i.e., performs one action with an object) (e.g., shakes rattle, rolls ball, opens doors, presses buttons, turns wheel on car) [9-12 months]
4. Inappropriate combinatorial (i.e., random combinations of objects and functions) (e.g., puts toy dish on car) [9-12 months; 13+ months]
5. Combinations based on perception – stack toy plates
6. Combinations based on function – put toy lid on teapot
7. Appropriate combinatorial/Complex exploration (i.e., performs two or more actions with object; combines object and label) (e.g., moving objects in and out of containers, puts all animals in barn, combines cup and saucer) [12+ months; 15+ months]
8. Transitional play (i.e., approximation of pretend play without confirmatory evidence; e.g., puts phone to ear but doesn’t talk or make sounds, touches comb to head of doll but does not make combing gesture)
9. Self-directed acts (e.g., child eats from an empty spoon, combs his/her hair, washes hands) [12-16 months]
10. Agentive animate – wash mom with toy sponge
11. Object-directed acts (child acts on or with inanimate objects) (e.g., child pours from a pitcher to a cup, arranges bedclothes) [12-18 months]
12. Agentive inanimate – rock doll
13. Passive other-directed acts (acting on another person or lifelike object with a toy) (e.g., child feeds a doll, grooms a dog)
14. Single-scheme combination (i.e., the same play behavior with the same toy is directed toward two or more different objects/people or same play behavior with different toys on one object/person) (e.g., child puts an empty cup to a doll’s mouth, then to the mouth of experimenter and self or child pretends to eat a sandwich, then a cookie, then a carrot) [by 19 months]
15. Sequenced self – stir in toy cup and eat from toy spoon
16. Sequenced agentive animate – pour into toy cup from toy teapot and feed mom
17. Sequenced agentive inanimate – cover doll with blanket and pat to sleep
18. Active other-directed acts (action is attributed to animate or lifelike objects) (e.g., child makes a doll drive a car, makes a doll shovel sand, makes toy bite or bark) months
19. Self-substitution – use block as sponge and wash own face
20. Agentive animate substitution – put toy plate on mom’s head as hat
21. Agentive inanimate substitution – use spoon as brush and brush doll’s hair
22. Multischeme combinations (i.e., two different play behaviors appear in a logical order) (e.g., child pours juice into a cup and gives a doll a drink from the cup) [24-36 months]
23. Sequenced vicarious – make stuffed bear walk to toy car and drive away
24. Sequenced self substitution – stir in toy pot with comb as spoon and eat from comb
25. Sequenced agentic animate substitution – wash mom with block and wipe her mouth with toy sponge
26. Sequenced agentic inanimate substitution – wash doll with block as sponge and dry with towel
27. Vicarious substitution – make toy person drive away in nesting cup as car
28. Sequenced vicarious substitution – put toy bib on doll as coat and make her walk
29. Self-removed – make one doll kiss another doll
30. Emotive – make doll fall down and cry
31. Multischeme combinations: short sequences (i.e., three different play behaviors appear in a logical order) (e.g., child pours juice into a cup and gives a doll a drink from the cup and wipes the doll’s mouth) [24-36 months]
32. Events (i.e., four play behaviors are combined in a logical order) (e.g., child stirs the pot, feeds a doll, takes off the doll’s clothes and puts it to bed)
33. Events (i.e., five play behaviors are combined in a logical order) (e.g., child stirs the pot, feeds a doll, takes off the doll’s clothes and puts it to bed)
34. Episodes (i.e., six or more play behaviors are combined in a logical order) (e.g., child combs a doll’s hair, looks for a mirror, keeps it in front of the doll’s face. Child puts clothes on the doll, makes it sit down at a table, makes tea and offers some to the doll)
35.

SUPPLEMENTAL PLAY SKILLS

STRATEGIC BEHAVIOR AND PROBLEM-SOLVING SKILLS
1. Searches for object after seeing it disappear [6-9 months]
2. Repeats behavior in order to repeat an initially accidental consequence [6-9 months]
3. Performs a behavior in order to produce an anticipated result [9-12 months]
4. Attempts to use an adult to achieve a goal (with or without success) [12-15 months]
5. Makes a single attempt to activate mechanical toy or achieve goal, unsuccessfully [12-15 months]
6. Uses nonsystematic trial-and-error problem-solving without systematically changing behavior [12-15 months]
7. Uses an object or toy to obtain an object [18-21 months]
8. Uses systematic trial-and-error problem-solving (e.g., alters behavior in an attempt to solve problems) [18-21 months]
9. Successfully operates a mechanical toy on first attempt and attempts thereafter (e.g., gumball machine, Disney pop-up toy) [18-21 months]
10. 11. Solves problems by logically relating one experience to another (child states that present situation is like a previously experienced situation) [27-30 months]
12. Uses blocks to build complex structure (minimum of nine pieces or a structure that can easily be identified) [36-48 months]

*Look at using divergent number of strategies or steps or changes in behavior.
DISCRIMINATION/CLASSIFICATION SKILLS
1. Inappropriate combinations of objects (e.g., put toy dish on cat) [15-18 months]
2. Combines two objects based on perceptual similarities (i.e., color, shape, or size) [15-18 months]
3. Combines two objects based on thematic relationship (e.g., carrot and bunny, spatula and pan) [15-18 months]
4. Combines three or more objects based on perceptual similarities (i.e., color, shape, or size) (e.g., stacks toy plates) [15-18 months]
5. Can identify objects and parts that go together [15-18 months]
6. Completes one or more pieces of nested puzzle [24-27 months]
7. Nests four or more containers [24-27 months]
8. Places circle into a puzzle or shape sorter on first attempt [24-36 months]
9. Places square into a puzzle or shape sorter on first attempt [24-36 months]
10. Places triangle into a puzzle or shape sorter on first attempt [24-36 months]
11. Combines objects that have the same function (e.g., spoon and fork) [30-33 months]
12. Sorts three or more objects by one criterion (e.g., shape or color) [36-48 months]
13. Sorts objects by size (i.e., small, medium, large) [48-60 months]
14. Sorts a group of objects by more than one criterion simultaneously (e.g., shape and color) [48-60 months]
15. Classifies objects (e.g., vehicles, animals, etc.) [48-60 months]
16. Accurately identifies 3 or more colors by name [48-60 months]
17. Identifies their own left and right hands or feet [48-60 months]
18. Puts together complex puzzle (i.e., non-nested) [48-60 months]
19. Identifies nonmembers of a group [60-72 months]

QUANTIFICATION SKILLS
1. Counts to five (i.e., "one", "two", "three", "four", "five") [24-36 months]
2. Accurately uses or comprehends "one" (e.g., "hand me one" "I need one block.") [24-36 months]
3. Counts up to three objects, pointing at each object in turn [24-36 months]
4. Counts up to five objects, pointing at each object in turn [36-48 months]
5. Counts up to ten objects, pointing at each object in turn without omitting any [48-60 months]
6. Accurately uses or comprehends "more" [48-60 months]
7. Accurately uses or comprehends "same" [48-60 months]
8. Accurately uses or comprehends "less" [48-60 months]
9. Recognizes and labels numbers 0 through 9 [48-60 months]
10. Accurately uses or comprehends "zero" or "none" [48-60 months]

DRAWING SKILLS
1. Scribbles [2-24 months]
2. Copies or imitates vertical stroke [24-30 months]
3. Copies or imitates horizontal lines [24-30 months]
4. Copies or imitates circular strokes [24-30 months]
5. Copies or imitates drawing of a face [27-30 months]
6. Copies or imitates cross [30-36 months]
7. Draws lines and arcs spontaneously [30-36 months]
8. Draws unrecognizable forms and/or shapes (not just lines/arc) spontaneously [30-36 months]
9. Draws circle spontaneously [36-48 months]
10. Draws simple face of a person including a minimum of head, eyes, and mouth [36-48 months]
11. Draws identifiable objects without model spontaneously [48-60 months]
12. Draws stick figure [48-60 months]
13. Draws person with trunk and arms [48-60 months]
14. Copies or imitates square [48-60 months]
15. Copies or imitates triangle [48-60 months]
16. Copies or imitates diamond [48-60 months]
17. Copies or imitates V strokes and diagonal lines [48-60 months]
18. Copies or imitates own name (large, irregular letters are acceptable) [48-60 months]
19. Copies or imitates numbers (large, irregular print is acceptable) [48-60 months]
20. Copies or imitates rectangle [60-72 months]
21. Copies or imitates letters [60-72 months]

SEQUENCING ABILITIES
1. Accurately uses and/or comprehends “big” [36-42 months]
2. Accurately uses and/or comprehends “little” [36-42 months]
3. Correctly answers questions about what is going to happen next [36-48 months]
4. Accurately uses and/or comprehends “tall” [36-52 months]
5. Accurately uses and/or comprehends “short” [36-52 months]
6. Accurately uses and/or comprehends superlatives (e.g., tallest) [36-52 months]
7. Puts 3 objects of graduated sizes in order [48-60 months]
8. Accurately uses and/or comprehends “first” [60-72 months]
9. Accurately uses and/or comprehends “middle” [60-72 months]
10. Accurately uses and/or comprehends “last” [60-72 months]
11. Places 4 or more objects of graduated sizes in order
Appendix H

CONSENT TO PARTICIPATE IN RESEARCH

Parent Knowledge of Child’s Level of Play: Implications for Early Childhood and Preschool Assessment

You are invited to participate in a research study to fulfill the requirements of a master’s thesis, conducted by Jessie Shuemaker, a School Psychology graduate student at Eastern Illinois University, and supervised by Dr. Floress, a professor in the School psychology program at Eastern. Your participation in this study is entirely voluntary and you may withdraw you and your child’s participation at any time. Please ask questions about anything you do not understand, before deciding whether or not to participate.

PURPOSE OF THE STUDY

The purpose of this study is to examine the usefulness of a structured parent interview in the assessment of the developmental level of play in children. This interview was derived from a widely used observational play-based assessment.

PROCEDURES

If you volunteer your child to participate in this study your child will be asked to:

- Be observed either live or video recorded during 30 minutes of free play at his/her daycare/preschool

If you volunteer to participate in this study, you will be asked to:

- Complete a brief 10-15 minute interview regarding your child’s play activities

POTENTIAL RISKS AND DISCOMFORTS

Since your child is unlikely to know they are being observed and their routine will be consistent with a typical day at preschool, there are no foreseeable risks to your child associated with this study. There are no foreseeable risks to you, as a result of answering questions regarding your child’s play, associated with this research study.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Potential benefits to society include the addition of further information to the research on best practices in early childhood and preschool assessment.

CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law. Participants will be assigned ID numbers. Confidentiality will be maintained by: securing the data in a locked cabinet in Dr. Floress’s office in the Physical Science Building or in a locked cabinet in my home, not allowing anyone besides myself, Dr. Floress, and a trained research assistant to view the data and by destroying or erasing the data after one year.
PARTICIPATION AND WITHDRAWAL

Participation in this research study is voluntary. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind or loss of benefits or services to which you are otherwise entitled. There is no penalty if you withdraw from the study and you will not lose any benefits to which you are otherwise entitled.

IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about this research, please contact:

Jessie Shuemaker (primary researcher)
E-mail: jrsheemaker@eiu.edu
Telephone: (217) 821-1987

Or

Dr. Margaret Floress (Thesis Chair/Supervisor of this study)
E-mail: mfloress@eiu.edu
Telephone: (217) 581-3523

RIGHTS OF RESEARCH SUBJECTS

If you have any questions or concerns about the treatment of human participants in this study, you may call or write:

Institutional Review Board
Eastern Illinois University
600 Lincoln Ave.
Charleston, IL 61920
Telephone: (217) 581-8576
E-mail: eiuirb@www.eiu.edu

You will be given the opportunity to discuss any questions about your rights as a research subject with a member of the IRB. The IRB is an independent committee composed of members of the University community, as well as lay members of the community not connected with EIU. The IRB has reviewed and approved this study.

I voluntarily agree to participate in this study. I understand that I am free to withdraw my consent and discontinue my participation at any time. I have been given a copy of this form.

Printed Name of Participant

Signature of Participant Date

Signature of Investigator Date
Appendix I

Instructions for Recording Free Play

- Free play is play that is not facilitated by an adult – children play freely with toys of their choosing
  - You can interact with your child if you need, but keep it minimal:
    - Use encouraging phrases like “good job!” and “nice playing!”
  - The main idea is to not instruct child on what to play with or how to play with the toys

- Suggested toys:
  - Kitchen items
  - Play food
  - Dolls with accessories – bottle, blanket, comb/brush, etc.
  - Stuffed animals
  - Dress up
  - Shape sorters
  - Blocks
  - Toy vehicles
  - Play phone
  - Tool set
  - Barn with farm animals
  - Toy animals

- You can use whatever similar toy items you have to this list.

- Gather toys and put them in an area with room for the child to play (probably wherever he/she typically plays already)

- Record 30 minutes of free play
  - If you cannot get 30 consecutive minutes, two 15 minute recordings will be fine.