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Overview of Play

Its Uses and Importance in Early Intervention/Early Childhood Special Education

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Play is a natural activity of early childhood, which has great relevance to the fields of early intervention, early childhood special education, and early childhood education. Within these fields, ongoing tensions persist in how play is described and used. These tensions compromise activities of assessment, intervention, and curriculum development and their connections to research and practice. This article presents a review about the importance of play in early intervention, early childhood special education and early childhood education and how play is regarded and used within these contexts. In an attempt to clarify the literature on play in early intervention and early childhood special education, particular emphasis is placed on distinguishing 2 divergent uses of play: (*a*) play as a developmental domain and (*b*) play as an activity base in the service of other goals. Recommendations, implications, and future directions are discussed with respect to practitioners, policymakers, and researchers. **Key words:** *children's play, developmental domain, play assessment, play intervention, play curriculum*

THERE is considerable attention in contemporary research, policy, and practice to the importance of children's play in their development and learning; however, this attention is confounded in practice. There are ongoing tensions between ensuring time for children to play versus increased time focused on academic activities.

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On the one hand, researchers, policymakers, and practitioners generally agree that play facilitates school readiness, literacy development, and self-regulation. This perspective is supported by research demonstrating connections of play to reading (Zigler, Singer, & Bishop-Joseph, 2004); to literacy skills (Banerjee & Horn, 2005; Roskos & Christie, 2001); to self-regulation (Diamond, Barnett, Thomas, & Munro, 2007; Matthews, 2008); to social interaction skills (Odom, McConnell, & Chandler, 1993); and to development in general (Elkind, 2001). On the other hand, there is a competing emphasis in preschool and kindergarten on strengthening the preacademic components of literacy and mathematics skills. The report from the *Alliance for Childhood* (Miller & Almon, 2009) noted that an emphasis on preacademic skills is associated with an increasing use of prescriptive curricula linked to state standards, especially in the kindergarten years; as a result, little time is left for young children to play. The report

criticized practices that reduced time for recess and free time for young children, with concomitant increases in time for academic activities.

The focus of curricula on preacademic skills is especially concerning because of the importance of play for young children from theoretical, research, and policy perspectives. Many theoreticians conceptualized children's play as central to their cognitive and emotional development (eg, Axline, 1964; Piaget, 1962; Vygotsky, 1978; see also Rubin, Fein, & Vandenberg, 1983). Countless researchers described developments in children's play—what children do with toys and other objects—from infancy through the preschool years (eg, Belsky & Most, 1981; Bloom, 1993; Bloom & Tinker, 2001; Fenson, Kagan, Kearsley, & Zelazo, 1976; Fenson & Ramsay, 1980; Garvey, 1977; Lifter & Bloom, 1989; Lowe, 1975; McCune, 1995; Nicolich, 1977; Smilansky, 1968; Ungerer & Sigman, 1981; Watson & Fischer, 1977). Finally, professional organizations such as the National Association for the Education of Young Children, which guide practitioners in their work with young children, emphasized the importance of play for learning in their position statements (National Association for the Education of Young Children [NAEYC], 2009).

Although the foregoing issues—time for play versus attention to preacademic subjects—are especially relevant for young children in general, 2 additional concerns are introduced when considering the importance of play for young children who are developing with delays, or who are at risk for delays. First, children served through early intervention and early childhood special education (EI/ECSE) usually have delays in play. As a result, they may benefit from interventions in play to facilitate the development of more advanced play skills. Second, a variety of assessments, interventions, and curricula use play activities for implementing a wide variety of developmental goals (eg, language, social, and motor goals) because of the natural context that play provides. Delays in play, however, may compromise assessment and intervention planning for these children. Such delays may not be taken into account when formulating goals in other domains.

The purpose of this review is an attempt to clarify the literature in EI/ECSE and early childhood education in terms of how play is used in these contexts and how it is described. Particular emphasis is placed on distinguishing 2 divergent uses of play. First, play can be considered a developmental domain in its own right. Conversely, play can be regarded as an activity base in the service of the 5 domains indicated by federal law: physical development; cognitive development; communication development; social and emotional development; and adaptive development (IDEIA 2004, Section 300.25). The review is organized around the topics of description, assessment, intervention, and curricula to demonstrate how these dichotomous perspectives of play affect programming in EI/ECSE. This organization also reveals a central concern for play in EI/ECSE: the considerable variability seen in the implementation of the foregoing activities.

The first section of the review provides an overview of the theoretical, research, and policy background that underlies what is known about developments in children's play. The second and largest section centers on play in EI/ECSE in terms of description, assessment, intervention, and curriculum, which illustrates the 2 perspectives. The final section discusses implications of this review and offers recommendations for the use of play in EI/ECSE.

OVERVIEW OF PLAY: THEORY, RESEARCH, AND POLICY

Theoretical perspectives on play

Most contemporary studies on children's play relate directly or indirectly to the perspectives and terms put forth by Piaget (1962), Montessori (1967), and Vygotsky (in Rubin et al., 1983). Piaget described play as a *"happy display of known actions"* (Piaget, 1962, p. 93), derived from his concept of play as assimilation, whereby children incorporate

new experiences onto existing frameworks of understanding. Similarly, Axline (1947) described play as "the child's natural medium of self-expression," which is an opportunity for the child to "play out his feelings and problems" (p. 8). Through this process, the child experiences "himself as a capable, responsible person" and comes to develop "self-respect . . . a sense of dignity . . . and increasing self-understanding" (Axline, 1964, p. 67). Alternatively, Montessori regarded play as *"the child's work"* (1967, p. 180), which parallels Piaget's concept of accommodation. Similar to Montessori, Vygotsky regarded play as *"an adaptive mechanism promoting cognitive growth"* (in Rubin et al., 1983, p. 709).

Piaget (1962) proposed a developmental sequence in play activities, but in global terms. Children begin with "practice games," also described as "sensorimotor play" or "manipulative play." "Symbolic play," also known as "pretend play," develops toward the end of the second year and continues through the preschool period. The final stage, "games with rules," generally emerges toward the end of the preschool period and continues through the stage of concrete operations. Smilansky (1968) provided specifications and analyses of "sociodramatic play," which typically develops during the preschool period. This term introduces a social component whereby children engage with peers by adopting dramatic roles to play out everyday themes, and later, fantasy themes. These theoretical perspectives provided the foundation for the importance of play in early childhood education.

Although the historical terms identified above describe play and qualitative differences in play, they are general and global. Terms such as "manipulative play" and "symbolic play" represent large and diverse kinds of play activities, which lack the specificity needed in using play in EI/ECSE for assessment and intervention purposes. The general and global quality of these categories will be revealed in the following overview of empirical studies, in which more specific developments in play were identified.

Research studies on developments in play

A brief overview of relevant research is presented here to support the claim of play as a developmental domain. This overview begins with a definition of play, followed by a summary of developments in play for young children. It concludes with studies that support relationships between developments in play and developments in other domains.

Definition of play

Researchers and clinicians have used various definitions and terms to describe play. The definition of play for this review refers to play with objects during early childhood (ie, late infancy through the preschool years). In general, researchers who described developments in children's play focused on what children do with available objects (ie, toys). They did not focus on the social interactions that may occur with peers or caregivers in the context of play. Although very important, developments in social engagement can confound an understanding of developments in play with objects. Accordingly, terms such as "cooperative play" (Parten, 1932) and "turn-taking," which include social components in their descriptions of play, are excluded from this review. In addition, rough-and-tumble play (eg, play often seen on the playground) and games with rules (eg, games children play customarily beyond the preschool years) are not included.

Lifter and Bloom (1998) provided a definition of play that sets the scope for the present paper:

> Play is the expression of intentional states—the representations in consciousness constructed from what children know about and are learning from ongoing events—and consists of spontaneous, naturally occurring activities with objects that engage attention and interest. Play may or may not involve caregivers or peers, may or may not involve a display of affect, and may or may not involve pretense (p. 164).

This definition considers play, first, as a demonstration of what children know, and

second, a demonstration of what they are currently thinking about. Through play, children actively construct new knowledge about objects, people, and events by integrating new experiences with what they already know. This definition sets the stage for play as a domain. If play is an expression of what children know, then an evaluation of children's play behaviors can be used for an assessment of knowledge. If play is an activity for learning, then interventions in play can be used to help children learn.

Developments in play

Developments in children's play with objects were identified in longitudinal and cross-sectional descriptive studies primarily during the 1970s, 1980s, and 1990s (eg, Belsky & Most, 1981; Bloom, 1993; Bloom & Tinker, 2001; Fenson et al., 1976; Fenson & Ramsay, 1980; Garvey, 1977; Lifter & Bloom, 1989; Lowe, 1975; McCune, 1995; Nicolich, 1977; Smilansky, 1968; Watson & Fischer, 1977). These studies were conducted predominantly within the cognitive-developmental tradition. They expanded upon the global categories put forth by Piaget and provided considerable detail on developments in play.

The results revealed the presence of qualitatively different play activities from infancy through the preschool period. Children's early play begins with indiscriminate actions on objects—picking up and dropping, banging, and/or mouthing all objects. Infants also take configurations of objects apart to take hold of objects. In late infancy, children begin to put configurations of objects back together again, and move objects from place to place (eg, in and out of containers).

As early toddlers, children begin to construct relationships that exploit the unique physical properties of objects (eg, stacking cups and blocks). They begin to relate objects to themselves in a pretend manner (eg, "drinking" from a cup). Eventually, they extend pretend activities to dolls and caregivers, while still exploiting the conventional properties of objects and people in the relationships they construct (eg, extending spoon to caregiver's mouth). They also learn to link activities into chains of events that demonstrate increasing levels of planning (eg, feeding a doll, washing a doll, and then putting it to bed). As preschoolers, children typically attribute animacy to doll figures (eg, moving figures to load goods into truck), and they engage in sociodramatic and fantasy play.

These foregoing studies provided evidence of developmental sequences in children's play, leading to the description and organization of play into taxonomies (see Barton, 2010; Garfinkle, 2004; and Lifter, 1996, 2008 for reviews). These taxonomies revealed more detailed subcategories of play compared to the global descriptors of manipulative and symbolic play. Identifying progress in play and setting goals in play require greater specificity. For example, "manipulative play" can be subdivided into the following qualitatively different play activities: indiscriminative actions on objects (eg, mouthing all objects); actions of taking configurations of objects apart to take hold of objects (eg, taking a set of nesting cups apart); actions of creating simple configurations of objects (eg, putting the nesting cups back together; dropping beads into a nesting cup); and actions in which children begin to exploit the unique physical properties of objects in the relationships they construct (eg, stacking the nesting cups; putting a bead on a string). (See Lifter, 2000, for descriptions of detailed sequences of categories of play).

Similarly, symbolic play can be subdivided into qualitatively different play activities: actions which relate objects to the self in a pretend manner (eg, pretending to drink from an empty cup); actions which relate pretend activities to dolls and caregivers (eg, giving doll a drink from a cup); actions displaying the unique conventional properties of objects and people (eg, putting pretend food items into a pot to cook); and actions linking the same or different schemes together into chains of events that demonstrate increasing levels of planning (eg, first cooking food and then feeding it to a doll). Symbolic play also includes actions in which children attribute animacy to doll figures (eg, walks a truck driver figure to load cargo into a truck). Barton (2010) and

Vig (2007) noted that studies differ on what constitutes symbolic play, which complicates comparability across studies.

Developments in play in relation to other domains

Play can be considered a distinct domain because of its systematic relationships to other developmental domains, such as the language, cognitive, and social domains. Researchers have demonstrated these relationships in children with and without disabilities (see Vig, 2007 for a review).

Relationships between play and language

Correlations have been found between play and language development. Children with disabilities who showed higher levels of communication skills demonstrated more pretend and symbolic play than children who showed lower levels of communication skills (Pizzo & Bruce, 2010). Barton and Wolery (2010) found that as preschool children progressed through an intervention to develop their play skills, their vocalizations also increased. This effect occurred even though vocalizations were not prompted or reinforced throughout the play intervention. Finally, longitudinal studies by Lifter and Bloom (1989) demonstrated that similar transitions in play and language emerge at the same time. For example, the emergence of constructing relationships between objects in play coincided with the emergence of first words. In addition, the vocabulary spurt occurred when children were learning specific relations between objects in play, such as using a toy spoon to feed a doll. Furthermore, they found that these developments occurred simultaneously despite the variability in chronological ages at which the children reached these developmental points. These findings of similar developmental trajectories between play and language were also supported by other studies (eg, McCune-Nicolich, 1981; McCune, 1995), which indicated that language and symbolic play milestones reflected similar developments in mental representation.

Relationships between play and cognition

The developmental progression demonstrated by Lifter and Bloom (1989) also suggests that play and cognition develop with a systematic relationship. Specifically, as children learn more about objects (eg, object permanence) they demonstrate more sophisticated play skills. Play development has also been compared to the development of other cognitive skills, such as self-regulation, metacognition, and problem-solving (Whitebread, Coltman, Jameson, & Lander, 2009). Specifically, symbolic or pretend play was found to be related to planning, creativity, and symbolic representation.

Relationships between play and social/emotional development

Studies also have supported a correlation between play and social development. In fact, a child's attachment style has been correlated with symbolic play skills. Specifically, preschool boys with autism spectrum disorders who had organized attachments to their parents demonstrated higher scores on symbolic play measures than those who had disorganized attachments (Marcu, Oppenheim, Koren-Karie, Dolev, & Yirmiya, 2009).

Furthermore, research has also suggested an inverse relationship between play and social interaction. Pierce-Jordan and Lifter (2005) observed the naturally occurring play of children with and without pervasive developmental disorder (PDD) in preschool programs. The Developmental Play Assessment (DPA: Lifter, 2000) was used to determine each child's level of emerging play (ie, the play activities in the developmental sequence that the child is in the process of learning) and each child's level of mastered play. Regardless of diagnosis, children who were engaged in developmentally difficult, or emerging, play activities were less likely to be engaged in social interaction. The inverse was also found; when children were engaged in social interaction, they were less likely to be engaged in challenging play behaviors and more likely to

be engaged in play activities they had mastered.

In Head Start preschool classrooms, Craig-Unkefer and Kaiser (2003) demonstrated that involvement in a plan-play-report intervention increased social-communicative behaviors (eg, peer-directed verbalizations such as descriptive statements and requests), length and complexity of verbalizations, and play of preschool children with delayed expressive language, as evidenced by scores on the Preschool Language Scale-3 (PLS-3: Zimmerman, Steiner, & Pond, 1992). The participants also generalized these skills in their interactions with new peers.

Summary

The foregoing descriptive studies provide support of developments in play per se. Researchers identified and specified developmental sequences; they revealed a progression in children's development of knowledge of objects and events, which occurs in and through children's play activities. Several studies provided evidence of systematic relationships between developments in play and developments in other domains. Such studies support our claim: play is a developmental domain that can be described in considerable detail. Attention to this claim contributes to an analysis of how play is used in EI/ECSE.

Policy statements on the importance of play

The importance of play is central to policy statements put forth by the National Association for the Education of Young Children (NAEYC, 2009). In their 2009 Position Statement on Developmentally Appropriate Practice, NAEYC stated in their "Key Messages of the Position Statement:"

> . . . Play promotes key abilities that enable children to learn successfully. In *high-level dramatic play* . . . the collaborative planning of roles and scenarios and the impulse control required to stay within the play's constraints develop children's self-regulation, symbolic thinking, memory, and language—capacities critical to later learning, social competence, and school success.
>
> . . . It is vital for early childhood settings to provide opportunities for *sustained high-level play* and for teachers to actively support children's progress toward such play.
>
> . . . Besides *embedding significant learning in play*, routines, and interest areas, strong programs also provide carefully planned curriculum that focuses children's attention on a particular concept or topic (p.2). (Italics added).

Again, such policy statements emphasize the importance of play for young children and their translation to practice. Such descriptions (eg, "sustained high-level play"), however, may not be useful for personnel who serve children in EI/ECSE. Increased specificity in terminology is required, in addition to information about developments in play that lead up to "high-level play." Indeed, the research on developments in children's play expanded upon the global categories put forth by Piaget (1962); researchers provided evidence of how play develops before children are able to engage in the "high-level dramatic play" and "sustained high-level play" described above in the NAEYC's Position Statement (2009). Knowledge about play from theory, research, and policy must be extended to children served through EI/ECSE. Bridging this gap requires an integration of what is known about developments in play and how play is described and used in EI/ECSE, which is the central purpose of this article.

PLAY IN EI/ECSE: DESCRIPTION, ASSESSMENT, INTERVENTION, AND CURRICULA

The following is an overview of how play is used in EI/ECSE, and how these uses are organized in various activities. Studies that regard play as a domain are distinguished from studies in which play is used as an activity base in support of other developmental domains.

Play in EI/ECSE: descriptive studies

Many researchers have described play in children with various delays and disabilities,

concluding that they tend to exhibit delays in play as well as in other domains. Researchers who examined play activities in children with Down syndrome demonstrated that level of play is more highly correlated with measures of mental age than with chronological age (Hill & McCune-Nicolich, 1981). Other studies of children with Down syndrome revealed similar results, while also demonstrating less exploratory behavior during play than typically developing children and a tendency to elaborate on the same play themes repeatedly (Cunningham, Glenn, Wilkinson, & Sloper, 1985). The play of children of mothers who have abused substances has been characterized in terms of continued persistence of immature play strategies and delayed development of more complex play (Beckwith et al., 1994). Similarly, children with visual impairments demonstrate limited exploration, more solitary play, and less symbolic play (Tröster & Brambring, 1994).

A number of descriptive studies found delays in the play of children with autism spectrum disorders (eg, Hobson, Lee, & Hobson, 2009; Libby, Powell, Messer, & Jordan, 1998; McDonough, Stahmer, Schreibman, & Thompson, 1997). These studies revealed delays in developing pretend/symbolic play; less frequent spontaneous play; high frequency of repetitive play; limited imitation skills; and limited cooperative play and turn-taking behavior. In addition, children with autism displayed more sensorimotor play and less symbolic play compared to typically developing children, but engaged in the same amount of functional and relational play.

Overall, these findings demonstrate, first, that play can be described, and second, that delays in play are revealed in ways similar to other delays these children experience. They uphold the perspective of considering play as a domain for assessment, intervention, and curriculum activities.

Play in EI/ECSE: assessment

Various assessment instruments used in EI/ECSE are presented in Table 1. These assessments are organized in terms of those that focus on (1) play as an activity base; (2) play as a domain; and (3) assessment of some other play-related domain (eg, social play), in addition to the children's age ranges and the kinds of play activities examined. Citations for reliability and validity of these assessments are included where possible.

Use of play as an activity base in assessment

Given children's delays in play, there is considerable attention to play assessment in the fields of EI and ECSE. Fewell and Glick (1993), Linder (1993, 2008), and Vig (2007) described the need to provide alternatives to traditional, standardized assessments based on contrived and elicited behaviors. This focus is consistent with the predominant use of play in EI/ECSE: play-based assessment, which is the use of naturally occurring play behaviors to measure developments in the 5 domains specified in federal law (IDEIA 2004, Section 300.25). To assess young children in the context of their everyday activities, rather than with contrived tasks in artificial situations, is a major contribution to EI/ECSE assessment. Within the context of naturally occurring play activities, a child's abilities across domains are revealed and can be evaluated. For example, with the Transdisciplinary Play-Based Assessment, Second Edition (TPBA-2, Linder, 2008), evaluators gain information about a child's sensorimotor, emotional and social, communication and language, and cognitive functioning by observing how they play with a familiar adult and how they behave in a play environment.

Assessment of play as a developmental domain

There is considerable attention to the assessment of play as something that can be measured. A list of instruments is presented in the second part of Table 1.

Three instruments focus on developments in play that cover the toddler to preschool period: the *Westby Symbolic Playscale* (Westby, 2000; 1980); the *Play in Early Childhood*

Table 1. Summary of Play Assessment Instruments

Assessment	Reliability Reported	Validity Reported	Age Range	Type of Play
Use of play as an activity base in assessment				
Transdisciplinary Play-Based Assessment (TPA; Linder, 1990, 2008)	Friedli (1995)	Friedli (1995) Myers, McBride, and Peterson (1996)	0-72 months	Use of a play environment to observe all domains of development
Assessment of play as a developmental domain				
Assessing Play and Exploratory Behaviors of Infants and Toddlers (Wagner & Frost, 1986)	Wagner and Frost (1986)	Wagner and Frost (1986)	0-36 months	Symbolic play
Child Initiated Pretend Play Assessment (ChIPPA; Stagnitti & Unsworth, 2004)	Stagnitti and Unsworth (2004)	Swindells and Stagnitti (2006) Uren and Stagnitti (2009) McAloney and Stagnitti (2009)	36-84 months	Conventional-imaginative play Symbolic play Pretend play
Developmental Play Assessment (DPA; Lifter, 2000)	Lifter, Ellis, Cannon, Anderson (2005)		8-60 months	15 categories
Play Assessment Scale (Fewell, 1986)	Stone and Yoder (2001)	Finn and Fewell (1994)	2-36 months	Manipulation of toys in a sensory, functional, or symbolic manner Focused on more cognitive aspects of play
Play in Early Childhood Evaluation System (Kelly-Vance and Ryalls, 2005)	Kelly-Vance and Ryalls (2005)		19-46 months	13 exploratory and pretend play behaviors
Symbolic Play Test (Lowe & Costello, 1988)	Gitlin-Weiner, Sandgrund, and Schaefer (2000)	Gitlin-Weiner, Sandgrund, and Schaefer (2000) Power and Radcliffe (1989) Cunningham, Glenn, Wilkinson, and Sloper (1985)	12-36 months	Functional-Conventional play Symbolic play

(*continues*)

Table 1. Summary of Play Assessment Instruments (*Continued*)

Assessment	Reliability Reported	Validity Reported	Age Range	Type of Play
Test of Pretend Play (ToPP; Lewis & Boucher, 1997)		Clift, Stagnitti and DeMello (1998)	36 months and above (verbal assessment) Up to 8 years (nonverbal)	Symbolic play (1. substituting object for another object/ person; 2. attributing imagined property to object/person; 3. making reference to absent object/person/substance) Pretend play
Transdisciplinary Play-Based Assessment (Linder, 1990; 2008)	Friedli (1995)	Swindells and Stagnitti (2006) Uren and Stagnitti (2009) McAloney and Stagnitti (2009)	0-72 months	Interpersonal Exploratory/Sensorimotor Functional-relational Constructive Dramatic Games with rules Physical activity/rough and tumble
Westby Symbolic Play Scale (Westby, 2000)			9-60 months	Considers cultural and environmental factors that affect type and themes of symbolic play
Assessment of social play				
Parten-Smilansky Play Scale (Rubin, Watson, & Jambor, 1978)			36-72 months	Solitary, associative, parallel and coordinated play
Penn Interactive Peer Play Scale (Fantuzzo & Hampton, 2000)	Gitlin-Weiner, Sandgrund and Schaefer (2000) Fantuzzo et al. (1995)	Coolahan, Fantuzzo, Mendez and McDermott (1998) Gresham and Elliot (1990) Hampton and Fantuzzo (2003) Fantuzzo, Coolahan, Mendez, McDermott, and Sutton-Smith (1998) Fantuzzo et al (1995) Fantuzzo, Mendez, and Tighe, 1988	Preschool children	Three subscales: 1. Play Interaction Scale (social play strengths) 2. Play Disruptive Scale (aggressive and antisocial behaviors) 3. Play Disconnection Scale (withdrawn behaviors and nonparticipation in peer play)
Preschool Play Behavior Scale (PPBS; Coplan & Rubin, 1998)	Coplan and Rubin (1998)	Coplan and Rubin (1998)		

Evaluation System (Kelly-Vance & Ryalls, 2005); and the *Developmental Play Assessment* (*DPA*: Lifter, 2000). Of these instruments, the *DPA* provides a considerable amount of differentiation in play development; a child's play is evaluated against progress in 15 categories. Similarly, the *Play in Early Childhood Evaluation System* instrument evaluates a child's play in terms of 13 core categories. The *Westby Symbolic Playscale* evaluates a child's play in terms of broader categories.

Other instruments are available, but restrict their age range of interest to less than 8 to 60 months (eg, *Assessing Play and Exploratory Behaviors of Infants and Toddlers*: Wagner & Frost, 1986; *Symbolic Play Test*: Lowe & Costello, 1988, described in Power & Radcliffe, 2000; *Play Assessment Scale*: Fewell, 1986; see also Rutherford & Rogers, 2003).

Some instruments focus on pretend/symbolic play alone (eg, *Child Initiated Pretend Play Assessment*: Stagnitti & Unsworth, 2004; *Pretend Play Scale*, as cited in Blanc, Adrien, Roux, & Barthélémy, 2005; *Test of Pretend Play*: Lewis & Boucher, 1997).

Assessment of social play

Play assessment instruments that focus on the social components of play activities are presented in the third part of Table 1. These instruments are used to examine how well a child interacts with other children in the context of play activities. They include the *Penn Interactive Peer Play Scale* (eg, Fantuzzo & Hampton, 2000); the *Preschool Play Behavior Scale* (Coplan & Rubin, 1998); and the *Parten-Smilansky Play Scale* (see Rubin, Watson, & Jambor, 1978). Although very useful, such assessments confound an evaluation of play as a domain with an evaluation of social development.

In summary, although many play assessment instruments are available, distinctions between their uses and purposes should be taken into account. These instruments also vary in terms of the age range of interest and the levels of specificity for developments in play against which children are evaluated. Still additional instruments focus on social development in play, which may confound developments in play. These distinctions should be considered when selecting a play assessment for use in EI/ECSE.

Play in EI/ECSE: intervention

Play also is used widely for intervention purposes. Table 2 provides examples of studies that used play as an activity base in support of goals in other domains, and Table 3 focuses on interventions in play as a domain. The information provided is illustrative and not exhaustive.

Use of play as an activity base in support of other domains

The *Division for Early Childhood (DEC) Recommended Practices* (Sandall, Hemmeter, McLean, & Smith, 2005) for child-focused interventions (Wolery, 2005) highlights the importance of implementing goals in natural contexts, of which play activities are of primary importance. Play activities have been used to implement goals in a variety of developmental domains. The studies presented in Table 2 are organized in terms of the participating children, the goals of the intervention (by domain), and the kind of play activities used to implement the intervention.

Language goals implemented in a play context

Play provides an environment in which children frequently use language (Hart & Risley, 1975; Lifter & Bloom, 1998). Much research has centered on the free-play design in which language interventions are implemented during play with preschoolers and toddlers in a natural context (Rytter, 2008; Hart & Risley, 1975; Hemmeter, Ault, Collins, & Meyer, 1996; Girolametto, Pearce, & Weitzman, 1997).

Girolametto et al. (1997) found that toddlers' communication improved during a "free play interaction," an intervention program aimed to enhance parent

Table 2. Use of Play as an Activity Base in Support of Interventions in Various Domains

Study	Children	Goals	Play Activities Used
Girolametto, Pearce, and Weitzman (1997)	25 children with expressive vocabulary delays (aged 23-33 months)	Language (ie, phonological skills)	Free play with mother at home
Hemmeter et al, (1996)	4 students with mental retardation (aged 5-8 years)	Language (ie, spontaneous language)	Play activities with teacher in school
Craig-Unkefer and Kaiser (2003)	6 students with language and social delays (aged 3 years)	Social (ie, descriptive statements, requests, and language complexity and diversity)	Parallel, associative, and cooperative play with peers and adult interventionalist in school
Delano and Snell (2006)	3 students with autism (aged 6-9 years)	Social (ie, seeking attention, initiating comments, initiating requests, and making contingent responses)	Social story reading, comprehension check, and unprompted play with peer in school
Koegel et al, (2005)	2 children with autism (aged 8-9 years)	Social (ie, synchronous reciprocal interactions)	Contextually supported play activities (ie, games that were enjoyable for both children and involved cooperation, such as board games) and noncontextually supported play activities (ie, chosen by the children based on usual activities, such as playing with dolls) with a peer in preschool
Kohler et al, (2001)	4 preschoolers with autism/PDD and 35 typically developing peers (aged 4-5 years)	Social (ie, social exchanges, overtures, and interactions with teachers and/or peers)	Free play with peers (eg, gross motor play, table games, blocks, books, art) in preschool
Chiarello and Palisano (1998)	38 children with motor delays (aged 6-34 months)	Motor (ie, gross and fine motor skills, standing, range of motion, weight-bearing)	Free play with mother at home
Heathcock and Galloway (2009)	26 preterm infants (aged 2-4 months)	Motor (ie, contacting toys with feet and hands)	Physically interactive toy play with a caregiver at home

Note. Sample of studies.

Table 3. Intervention Studies to support Developments in Play as a Domain

Study	Children	Play Targets	Derivation of Play Targets
DiCarlo and Reid (2004)	5 children with disabilities (aged 26-30 months)	Pretend play	Staff report and prebaseline play observations suggesting pretend play frequencies below peers (for baseline/inclusion)
Goldstein and Cisar (1992)	3 children with autism and 6 typically developing children (aged 3-5 years)	Sociodramatic play	Not reported
Kasari, Freeman, Paparella (2006)	58 children with autism (aged 3-4 years)	Functional play Symbolic play Single scheme sequences Sociodramatic play Physical combinations Conventional combinations Thematic fantasy play	Structured Play Assessment (Ungerer & Sigman, 1981) and caregiver-child play interaction (for targets)
Lifter et al, (1993)	3 preschoolers with autism	Child-as Agent, Doll-as-Agent	Developmental Play Assessment (DPA; Lifter, 2000)
Lifter et al. (2005)	3 preschoolers with autism	Pretend self, Specific Physical, Child-as-Agent, Specific Conventional,	Developmental Play Assessment (DPA; Lifter, 2000)
MacDonald, Clark, Garrigan, and Vangala (2005)	2 boys with pervasive developmental delays/autism (aged 4-7 years)	Pretend play	Not reported
Rogers et al. (1986)	26 children with autism, pervasive developmental disorders, or other diagnoses (mean age 48 months)	Symbolic play	Play Observation Scale (Rogers et al., 1986) (to determine developmental level and target)
Sherratt (2002)	5 children with autism and learning difficulties (aged 5-6 years)	Symbolic play (ie, object substitution, attribution, reappearance/ disappearance)	Test of Pretend Play (ToPP; Lewis & Boucher, 1997) Symbolic Play Test (SPT; Lowe & Costello, 1988) (to determine developmental level)

(*continues*)

Table 3. Intervention Studies to support Developments in Play as a Domain[a] (*Continued*)

Study	Children	Play Targets	Derivation of Play Targets
Stahmer (1995)	7 children with autism (aged 4-7 years)	Symbolic play	Peabody Picture Vocabulary Test—Revised (PPVT) Expressive One-Word Picture Vocabulary Test—Revised (EOWPVT) MacArthur Communicative Development Inventory (CDI) (for inclusion, because of correlation between language and play skills)
Thorp et al. (1995)	3 boys with autism (aged 7-9 years)	Sociodramatic play	Play History Interview (Rogers et al., 1986) (for baseline)

[a]The studies reported here represent a sample of play intervention studies, given that the literature is large and increasing. Please see Barton & Wolery (2008) and Rogers (2005) for reviews.

communication with their toddlers with language delays. Hemmeter et al. (1996) found an increase in preschoolers' communication when teachers applied a language intervention within "play activities." These findings support the use of play as a language-learning context. Despite the success of these interventions, however, concerns center on the kind of play used given that language development is correlated positively with the acquisition of more sophisticated play behaviors (Lifter & Bloom, 1998; Neeley, Neeley, Justen, & Tipton-Sumner, 2001).

Social goals implemented in a play context

Several studies have examined the use of play to promote social skills and increase appropriate social interactions in children at-risk for, and exhibiting delays in, this domain (Craig-Unkefer & Kaiser, 2003; Delano & Snell, 2006; Koegel, Werner, Vismara, & Koegel, 2005; Kohler, Anthony, Steigher, & Hoyson, 2001). Research generally involves using different play contexts (ie, activity centers, group play) and different play activities (eg, socio-dramatic play) as the setting in which social interventions take place. Craig-Unkefer and Kaiser (2003) examined the effects of a play intervention on preschoolers with social delays. The researchers used role-play (eg, playing doctor), dramatic play (eg, playing dress-up), and manipulative play activities (ie, construction, airport, camping) to successfully increase social-communicative interactions, measured by children's descriptive statements (eg, peer-directed comments and acknowledgement responses) and request utterances (eg, information requests, yes-no questions, and clarification requests).

Using play to increase social behaviors is integral to EI/ECSE research because play contexts easily generalize to naturalistic, least-restrictive environments in which social interventions may be implemented. Further research is necessary to determine whether the quality of play used in the interventions is developmentally appropriate for the participating children.

Motor goals implemented in a play context

Physical therapists use play activities to address many motor goals (Ritter & Cobb, 2010). Research supports the use of movement training, positioning, and conditioning within the context of play activities. For example, Chiarello and Palisano (1998) instructed mothers on the use of physical therapy strategies, especially for positioning and locomotion, using play activities. Heathcock and Galloway (2009) used toys to stimulate foot movements in infants who were born prematurely. Similarly, Heathcock, Lobo, and Galloway (2010) used toys to stimulate reaching in preterm infants.

In summary, the strengths of using play to support developments in other domains revolve around the use of play as a natural activity. As can be seen in Table 2, a variety of different goals were targeted, and very different kinds of play activities were used to support these goals. A potential limitation when using play to support developments in other domains is that the requirements of the play context may compromise the success of learning the target goals (ie, the use of activities beyond the child's level of understanding). Because research has demonstrated that play develops according to its own developmental sequence, attention to a child's progress in play should be considered to increase the likelihood that the child will understand the play requirements of the intervention.

Intervention studies to support developments in play

Many researchers and practitioners have focused on ways to facilitate and support children learning new play skills. Researchers have shown that teaching play to children with autism and PDD can lead to significant increases in play skills, as well as skills in other domains (Ingersoll & Schreibman, 2006; Kasari, Freeman, Paparella, 2006; Lifter, Ellis, Cannon, & Anderson, 2005; Lifter, Sulzer-Azaroff, Anderson, & Cowdery, 1993; Stahmer, 1995; Wong, Kasari, Freeman, & Paparella, 2007). Other studies focused on increasing pretend play skills, spontaneous imitation skills, verbalization, and cooperative play (MacDonald, Sacramone, Mansfield, Wiltz, & Ahearn, 2009). The finding that children with PDD were able to complete targeted play activities only when given direct play instruction supports the early teaching of play skills to children with developmental delays (Lifter et al., 2005).

Not all children with autism will respond positively to the same types of interventions, suggesting the need for individualized intervention programs. For example, Ingersoll and Schreibman (2006) demonstrated that although successful in improving the play skills of some children, not all children benefited from the Reciprocal Imitation Training method. Wong et al. (2007) suggested that because of the links demonstrated in descriptive studies between play skills and these areas, practitioners should take the "mental age," "receptive language age," and "chronological age" of children with autism into consideration when designing skills interventions (p. 104). More research in this area should be conducted so practitioners can choose the evidence-based intervention that best suits a child's level of development in play.

A sample of these studies is presented in Table 3. Several studies used a play assessment instrument to evaluate a child's progress in play to identify target play goals (eg, Kasari et al., 2006; Lifter et al., 1993, 2005; Rogers et al., 1986; Sherratt, 2002). Of these studies, Kasari et al. (2006) and Lifter et al., (1993, 2005) used assessments that evaluated children against highly differentiated categories of play that spanned a large age range. The Rogers et al. (1986) and Sherratt (2002) studies focused on symbolic play. Still other studies focused on broad categories of play, including symbolic play (Rogers et al. 1986; Stahmer, 1995), and also on sociodramatic play (Goldstein & Cisar, 1992; Thorp, Stahmer, & Schreibman, 1995). In several cases, it is not clear how these target activities were identified, except through observing children's delays or deficits in these areas of play.

In summary, the strengths of these intervention studies include teaching children play activities, given their delays in play. In some cases, the research also provided evidence for the intervention success at follow-up. Nevertheless, limitations include the inconsistencies in methods to assess a child's progress in play to identify goals in play. Please see Barton and Wolery (2008) and Rogers (2005) for reviews of intervention studies in play.

Play in EI/ECSE: curricula centered on play for young children

Play is an optimal learning medium for young children, resulting in its frequent use as the basis of many curricula in EI/ECSE and in early childhood education. As with assessment and intervention activities, curricula either regard play as a general activity base or as a domain per se. Indeed these divergent perspectives and uses of play are implicit in the NAEYC's 2009 *Position Statement on Developmentally Appropriate Practice*, presented earlier, contributing to the confusion on uses of play. One segment appears to focus on play to embed opportunities for learning:

> . . . Besides *embedding significant learning in play*, routines, and interest areas, strong programs also provide carefully planned curriculum that focuses children's attention on a particular concept or topic (italics added).

Another segment appears to attend to play per se:

> . . . It is vital for early childhood settings to provide opportunities for ***sustained high-level play*** and for teachers to actively support children's progress toward such play (italics added).

The distinction between play as an activity base and play as a domain for learning contributes to clarifying the different meanings between the foregoing statements.

Curriculum as a natural activity base

Curricula that regard play as a natural activity base are classified as (*a*) curriculum-generated play and (*b*) play-generated or play-based curricula (Johnson, Christie, & Yawkey, 1999; Linder, 2008; Widerstrom, 2005). With curriculum-generated play, teachers arrange play experiences to teach concepts and skills from areas such as literacy, mathematics, and sciences. For example, children can practice early numeracy skills such as counting or single-digit addition while playing at a supermarket play center. In contrast, with play-generated curriculum, teachers organize learning experiences around themes and interests that children demonstrate in their play. For example, they may design a curricular unit across subjects around students' interest in farm animals. These kinds of curricula maintain the use of play to support a variety of learning goals.

Curriculum centered on learning to play

Curricula also are available that focus on learning to play (Widerstrom, 2005; Linder, 2008). With play-focused curricula, certain learning goals are developed around learning to play, such as learning sequences of play. The ultimate objective of a play-focused curriculum is to help children develop more complex levels of play through their involvement in different play stations, including block, sand, and water centers. Accordingly, these kinds of curricula focus on learning to play.

Concerns exist with this approach in terms of how a child's progress in play is determined so that the child benefits from the selected play activities. If play is regarded as a developmental domain, then it is important to link a child's progress in play to the goals determined for intervention per se, or targeted with a curriculum centered on learning to play.

DISCUSSION AND RECOMMENDATIONS FOR PLAY IN EI/ECSE

Contemporary attention to play in general centers on the importance of play in policy and practice, in addition to the threats imposed by increased attention to learning standards rather than play. Research and practice in EI/ECSE, however, centers on (*a*) identifying delays in play for children served through EI/ECSE, (*b*) supporting developments in play

for children with delays, and (*c*) using the natural context of play activities for intervention purposes. Despite the current emphasis on promoting the systematic, evidence-based use-of-play for a variety of purposes in EI/ECSE, contrasting efforts remain problematic because of the continued use of global descriptions of play, inattention to identifying developmental progress, and confounding interventions in play per se with the use of play as an activity base with other domains.

This review attempted to contribute clarity to the literature on play in EI/ECSE, given the confusions about how play is described and used. The distinctions offered here are discussed later in the contexts of play as a domain and of differentiated descriptions of play.

Play as a developmental domain

This perspective—play as a developmental domain—influences the 2 major uses of play: (1) play as a domain to be developed and (2) play as a natural context for supporting goals in other domains. Developments in play correlate with developments in other domains (eg, language, cognition) and vary systematically with these domains (eg, social domain). Therefore, it can be argued that play is a domain in its own right, and assessments and interventions for play should be established. Because play is a domain to be developed for young children with delays and disabilities, systematic attention to children's progress in play is needed for (*a*) determining goals for intervention and (*b*) using play in the service of other domains.

As was revealed in the descriptive studies of their play, children with delays and disabilities often have trouble learning, which includes learning to play. They have difficulties engaging with objects and events in ways that help them move their knowledge forward in play. These difficulties have implications for interventions.

An assessment of developmental progress in play should be considered for interventions in play, as well as the use of play in the service of other domains. Such an assessment would help identify categories of play activities that are at the leading edge of a child's development, in addition to categories the child knows well and categories that are too difficult for a child at that time. Examples of intervention studies in which target activities were linked to assessment are presented in Table 3.

Assessment of progress in play also could contribute to the use of play in support of other domains. For example, using the *DPA,* Pierce-Jordan and Lifter (2005) provided evidence of an inverse relationship between complexity of play, assessed on a child-by-child basis, and complexity of social coordination. Complex social coordination occurred more often in play activities that were familiar to the children as opposed to play activities they were in the process of learning. The results indicated that play activities to support complex social coordination should be activities that the child knows well (ie, play activities evaluated as "mastered").

Research also supports developments in language and play as occurring simultaneously (eg, Lifter & Bloom, 1989; McCune, 1995). Such results suggest that goals of an intervention in language should be implemented in the context of play activities the child is in the process of learning (ie, play activities evaluated as "emerging").

The importance of play as a natural activity cannot be overstated. Its use to support the implementation of goals in other domains is extremely important in EI/ECSE. If play is regarded as a developmental domain, which is suggested here, then attention to a child's progress in play can be used to enhance, and not compete with, goals in other domains. Obviously, studies are needed to support this approach, but the implications of play as a domain provide support for it.

Differentiated categories of developments in play

Ongoing tensions between time for play versus an increased focus on preacademic activities have raised several concerns regarding the use of play in EI/ECSE; the descriptions centered on fairly complex levels of play

such as high-level (dramatic) play, imaginary play, and sociodramatic play. Although these terms refer to more advanced levels of play, it is not clear what they mean and how they overlap with one another. More importantly, they do not account for developments that precede these levels, and the importance of these earlier levels to developments in play for children with delays and disabilities. Many children who are served through EI/ECSE do not progress to these high levels of play. Consequently, a comprehensive understanding of play should include detailed information about how play typically develops in young children and eventually results in these more advanced levels of play.

Furthermore, practitioners and policy makers in EI/ECSE should be wary of using global descriptors of play categories, such as using "manipulative or functional play" to describe any instances of children making connections between objects, and such as using "symbolic play" to refer to any play activities with elements of pretense. The descriptive studies provided a high level of detail and specificity with respect to categories of play that develop sequentially throughout infancy and early childhood. These more finely differentiated descriptions of categories of play are needed to inform programming efforts in EI/ECSE, and thus to work effectively with young children with delays and disabilities. Several play assessment instruments, presented in Table 1, are available that provide differentiated categories of developments in play, which allow for a more precise determination of a child's progress in play.

Although research studies have provided more detailed descriptions for work in EI/ECSE, which resulted in the development of assessment instruments, the descriptions are variable. Future research is needed to disambiguate these descriptions (eg, Barton, 2010).

This article emphasized the importance of knowing why and how play is being used to serve children with delays and disabilities. In using play in EI/ECSE, the distinction between interventions in play per se and using play in the service of other domains is helpful; they are for different purposes and require different approaches. Both uses require the perspective of play as a developmental domain, which requires attention to developmental progress in play. It also is important to take into account the research base that describes developments in play in more detail than the global descriptors. These distinctions, and with particular attention to the child's progress in play, will enhance the use of play for fun and for learning. They argue for the importance and value of maintaining time for play in EI/ECSE curricula.

REFERENCES

Axline, V. (1947). *Play therapy.* New York, NY: Ballantine Books.

Axline, V. (1964). *Dibs: In search of self.* New York, NY: Ballantine Books.

Banerjee, R., & Horn, E. (2005). Use of socio-dramatic play to develop literacy skills in early childhood settings. In E. Horn, & H. Jones (Eds.), *YEC monograph No. 7, supporting early literacy development in young children* (pp. 101–112). Longmont, CO: Sopris-West.

Barton, E. E. (2010). Development of a taxonomy of pretend play for children with disabilities. *Infants & Young Children, 23*(4), 247–261.

Barton, E. E., & Wolery, M. (2008). Teaching pretend play to children with disabilities: A review of the literature. *Topics in Early Childhood Special Education, 28*(2), 109–125.

Barton, E. E., & Wolery, M. (2010). Training teachers to promote pretend play in young children with disabilities. *Exceptional Children,* 77(1), 85–106.

Beckwith, L., Rodning, C., Norris, D., Phillipsen, L., Khandabi, P., & Howard, J. (1994). Spontaneous play in two-year-olds born to substance-abusing mothers. *Infant Mental Health Journal, 15*, 189–201.

Belsky, J., & Most, R. K. (1981). From exploration to play: A cross-sectional study of infant free-play behavior. *Developmental Psychology, 17*, 630–639.

Blanc, R., Adrien, J.-L., Roux, S., & Barthélémy, C. (2005). Dysregulation of pretend play and communication development in children with autism. *Autism, 9*(3), 229–245.

Bloom, L. (1993). *The transition from infancy to language: Acquiring the power of expression.* New York, NY: Cambridge University Press.

Bloom, L., & Tinker, E. (2001). The intentionality model and language acquisition: Engagement, effort, and the essential tension in development. *Monographs of the Society for Research in Child Development, 80*(1, Serial No. 609).

Chiarello, L., & Palisano, R. (1998). Investigation of the effects of a model of physical therapy on mother-child interactions and the motor behaviors of children with motor delay. *Physical Therapy, 78*(2), 180–194.

Clift, S., Stagnitti, K., & DeMello, L. (1998). A validation study of the Test of Pretend Play (ToPP) using correlational and classificational analyses. *Child Language Teaching & Therapy 14*(2), 199–209.

Coolahan, K., Fantuzzo, J., Mendez, J., & McDermott, P. (2000). Preschool peer interactions and readiness to learn: Relationships between classroom peer play and learning behaviors and conduct. *Journal of Educational Psychology, 92*(3), 458–465.

Coplan, R. J., & Rubin, K. H. (1998). Exploring and assessing nonsocial play in the preschool: The development of the preschool play behavior scale. *Social Development, 7*, 72–91.

Craig-Unkefer, L., & Kaiser, A. P. (2003). Increasing peer-directed social-communication skills of children enrolled in head start. *Journal of Early Intervention, 25*(40), 229–247.

Cunningham, C. C., Glenn, S. M., Wilkinson, P., & Sloper, P. (1985). Mental ability, symbolic play and receptive expressive language of young children with Down syndrome. *Journal of Child Psychology and Psychiatry, 26*(2), 255–265.

Delano, M., & Snell, M. (2006). The effects of social stories on the social engagement of children with autism. *Journal of Positive Behavior Interventions, 8*(1), 29–42.

Diamond, A., Barnett, W., Thomas, J., & Munro, S. (2007). Preschool program improves cognitive control. *Science, 318*, 1387–1388.

DiCarlo, C. F., & Reid, D. H. (2004). Increasing pretend toy play of toddlers with disabilities in an inclusive setting. *Journal of Applied Behavior Analysis, 37*(2), 197–207.

Elkind, D. (2001). *The hurried child*. Reading, MA: Addison-Wesley.

Fantuzzo, J. W., Coolahan, K., Mendez, J., McDermott, P., & Sutton-Smith, B. (1998). Contextually-relevant validation of peer play constructs with African American Head Start children: Penn interactive peer play scale. *Early Childhood Research Quarterly, 12*(3), 411–431.

Fantuzzo, J. W., & Hampton, V. R. (2000). Penn interactive peer play scale: A parent and teacher rating system for young children. In K. Gitlin-Weiner, A. Sandgrund, & C. E. Schaefer (Eds.), *Play diagnosis and assessment* (2nd ed.). New York, NY: Wiley.

Fantuzzo, J., Mendez, J., & Tighe, E. (1998). Parental assessment of peer play: Development and validation of the parent version of the Penn interactive peer play scale. *Early Childhood Research Quarterly, 13*(4), 659–676.

Fantuzzo, J. W., Sutton-Smith, B., Coolahan, K., Manz, P., Canning, S., & Debnam, D. (1995). Assessment of preschool play interaction behaviors in young low-income children: Penn interactive peer play scale. *Early Childhood Research Quarterly, 10*(1), 105–120.

Fenson, L., Kagan, J., Kearsley, R. B., & Zelazo, P. R. (1976). The developmental progression of manipulative play in the first two years. *Child Development, 47*, 232–235.

Fenson, L., & Ramsay, D. (1980). Decentralization and integration of the child's play in the second year. *Child Development, 51*, 171–178.

Fewell, R. R. (1986). *Play assessment scale* (5th rev.). Seattle, WA: University of Washington.

Fewell, R., & Glick, M. (1993). Observing play: An application process for learning and assessment. *Infants & Young Children, 5*(4), 35–43.

Finn, D. M., & Fewell, R. R. (1994). The use of play assessment to examine the development of communication skills in children who are deaf-blind. *Journal of Visual Impairment & Blindness, 88*(4), 349.

Friedli, C. R. (1995). Transdisciplinary play-based assessment: A study of reliability and validity. *Dissertation Abstracts International Section A: Humanities and Social Sciences, 55*(11), 3405.

Garfinkle, A. N. (2004). Assessing play skills. In M. McLean, M. Wolery, & D. Bailey (Eds.), *Assessing infants and preschoolers with special needs* (3rd ed., pp. 451–486). Upper Saddle River, NJ: Pearson.

Garvey, C. (1977). *Play*. Cambridge, MA: Harvard University Press.

Girolametto, L., Pearce, P., & Weitzman, E. (1997). Interactive focused stimulation for toddlers with expressive vocabulary delays. *Journal of Speech and Hearing Research, 39*, 1274–1283.

Gitlin-Weiner, K., Sandgrund, A., & Schaefer, C. E. (2000). *Play diagnosis & assessment* (2nd ed.). New York, NY: John Wiley & Sons, Inc.

Goldstein, H., & Cisar, C. L. (1992). Promoting interaction during sociodramatic play: Teaching scripts to typical preschoolers and classmates with disabilities. *Journal of Applied Behavior Analysis*, *25*(2), 265–280.

Gresham, F. M., & Elliott, S. N. (1990). *Social skills rating system manual*. Circle Pines, MN: American Guidance Service.

Hampton, V. R., & Fantuzzo, J. W. (2003). The validity of the Penn interactive peer play scale with urban, low-income kindergarten children. *School Psychology Review, 32*(1), 77–91.

Hart, B., & Risley, T. (1975). Incidental teaching of language in the pre-school. *Journal of Applied Behavior Analysis, 8*, 411–420.

Heathcock, J. C., & Galloway, J. C. (2009). Exploring objects with feet advances movement in infants born

preterm: A randomized control trial. *Physical Therapy, 89*(10), 1027–1038.

Heathcock, J. C., Lobo, M., & Galloway, J. C. (2008). Movement training advances the emergence of reaching in infants born at less than 33 weeks of gestational age: A randomized controlled trial. *Physical Therapy*, *88*(3), 310–322.

Hemmeter, M. L., Ault, M., Collins, B., & Meyer, S. (1996). The effects of teacher implemented language instruction within free time activities. *Education and Training in Mental Retardation and Developmental Disabilities, 31*, 203–212.

Hill, P. M., & McCune-Nicolich, L. (1981). Pretend play and patterns of cognition in Down's syndrome children. *Child Development, 52*, 611–617.

Hobson, R. P., Lee, A., & Hobson, J. A. (2009). Qualities of symbolic play among children with autism: A social-developmental perspective. *Journal of Autism and Developmental Disorders, 39*(1), 12–22.

Individuals with Disabilities Education Improvement Act (IDEIA). (2004). Public Law 108-446 (Section 300.25).

Ingersoll, B., & Schreibman, L. (2006). Teaching reciprocal imitation skills to young children with autism using a naturalistic behavioral approach: Effects on language, pretend play, and joint attention. *Journal of Autism and Developmental Disorders, 36*, 487–505.

Johnson, J. E., Christie, J. F., & Yawkey, T. D. (1999). *Play and early childhood development* (2nd ed.). New York, NY: Longman.

Kasari, C., Freeman, S., & Paparella, T. (2006). Joint attention and symbolic play in young children with autism: A randomized controlled intervention study. *Journal of Child Psychology and Psychiatry, 47*(6), 611–620.

Kelly-Vance, L., & Ryalls, B. O. (2005). A systematic, reliable approach to play assessment in preschoolers. *School Psychology International, 26*, 398–412.

Koegel, R. L., Werner, G. A., Vismara, L. A., & Koegel, L. K. (2005). The effectiveness of contextually supported play date interactions between children with autism and typically developing peers. *Research and Practice for Persons with Severe Disabilities, 30*(2), 93–102.

Kohler, F. W., Anthony, L. J., Steighner, S. A., & Hoyson, M. (2001). Teaching social interaction skills in the integrated preschool: An examination of naturalistic tactics. *Topics in Early Childhood Special Education*, *21*(2), 93–103.

Lewis, V., & Boucher, J. (1997). *Test of pretend play: Manual*. London, England: Psychological Corp.

Libby, S., Powell, S., Messer, D., & Jordan, R. (1998). Spontaneous play in children with autism: A reappraisal. *Journal of Autism and Developmental Disorders, 28*(6), 487–498.

Lifter, K. (1996). Assessing play skills. In M. McLean, D. Bailey, Jr., & M. Wolery (Eds.), *Assessing infants and preschoolers with special needs* (2nd ed., pp. 435–461). Englewood Cliffs, NJ: Merrill.

Lifter, K. (2000). Linking assessment to intervention for children with developmental disabilities or at-risk for developmental delay: The developmental play assessment (DPA) instrument. In K. Gitlin-Weiner, A. Sandgrund, & C. E. Schaefer (Eds.), *Play diagnosis and assessment* (2nd ed., pp. 228–261). New York, NY: Wiley.

Lifter, K. (2008). Developmental play assessment and teaching. In J. Luiselli, D.C. Russo, & W.P. Christian (Eds.), *Effective practices for children with autism: Educational and behavior support interventions that work* (pp. 299–324). New York, NY: Oxford University Press.

Lifter, K., & Bloom, L. (1989). Object knowledge and the emergence of language. *Infant Behavior and Development, 12*, 395–423.

Lifter, K., & Bloom, L. (1998). Intentionality and the role of play in the transition to language. In A. Wetherby, S. Warren, & J. Reichle (Eds.), *Transitions in prelinguistic communication* (Vol. 7, pp. 161–196). Baltimore, MD: Brookes.

Lifter, K., Ellis, J., Cannon, B., & Anderson, S. R. (2005). Developmental specificity in targeting and teaching play activities to children with pervasive developmental disorders. *Journal of Early Intervention, 27*(4), 247–267.

Lifter, K., Sulzer-Azaroff, B., Anderson, S., & Cowdery, G. (1993). Teaching play activities to preschool children with disabilities: The importance of developmental considerations. *Journal of Early Intervention, 17*(2), 139–159.

Linder, T. W. (1990). *Transdisciplinary play-based assessment*. Baltimore: Brookes.

Linder, T. W. (1993). *Transdisciplinary play-based assessment: A functional approach to working with young children* (2nd ed.). Baltimore, MD: Brookes.

Linder, T. W. (2008). *Transdisciplinary play-based assessment 2*. Baltimore, MD: Paul H. Brookes Publishing Co.

Lowe, M. (1975). Trends in the development of representational play in infants from one to three years: An observational study. *Journal of Child Psychology and Psychiatry, 16*, 33–47.

Lowe, M., & Costello, A. J. (1988). *Symbolic Play Test* (2nd ed.). Windsor, Berkshire, England: NFER-Nelson.

MacDonald, R., Sacramone, S., Mansfield, R., Wiltz, K., & Ahearn, W. H. (2009). Using video modeling to teach reciprocal pretend play to children with autism. *Journal of Applied Behavior Analysis, 42*(1), 43–55.

MacDonald, R., Clark, M., Garrigan, E., & Vangala, M. (2005). Using video modeling to teach pretend play to children with autism. *Behavioral Interventions, 20*(4), 225–238.

Marcu, I., Oppenheim, D., Koren-Karie, N., Dolev, S., & Yirmiya, N. (2009). Attachment and symbolic play in

preschoolers with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 39*(9), 1321–1328.

Matthews, S. B. (2008). The relationship among self-regulation, sociodramatic play, and preschoolers' readiness for kindergarten. *Dissertation Abstracts International Section A: Humanities and Social Sciences, 69*(12-A), 4632.

McAloney, K., & Stagnitti, K. (2009). Pretend play and social play: The concurrent validity of the child-initiated pretend play assessment. *International Journal of Play Therapy, 18*, (2), 99–113.

McCune, L. (1995). A normative study of representational play at the transition to language. *Developmental Psychology, 31*(2), 198–206.

McCune-Nicolich, L. (1981). Toward symbolic functioning: Structure of early pretend games and potential parallels with language. *Child Development, 52*, 785–797.

McDonough, L., Stahmer, A., Schreibman, L., & Thompson, S. J. (1997). Deficits, delays and distractions: An evaluation of symbolic play and memory in children with autism. *Development and Psychopathology, 9*, 17–41.

Myers, C. L., McBride, S. L., & Peterson, C. A. (1996). Transdisciplinary, play-based assessment in early childhood special education: An examination of social validity. *Topics in Early Childhood Special Education, 16*(1), 102–126.

Miller, E., & Almon, J. (2009). *Crisis in the kindergarten: Why children need to play in school*. College Park, MD: Alliance for Childhood.

Montessori, M. (1967). *The absorbent mind*. New York, NY: Holt, Rinehart & Winston.

National Association for the Education of Young Children (NAEYC). (2009). *Position statement: Developmentally appropriate practice in early childhood programs serving children from birth through age 8*. Retrieved from http://www.naeyc.org/positionstatements/dap

Neeley, P. M., Neeley, R. A., Justen, J. E., & Tipton-Sumner, C. (2001). Scripted play as a language intervention strategy for preschoolers with developmental disabilities. *Early Childhood Education Journal, 28*, (*4*), 243–246.

Nicolich, L. (1977). Beyond sensorimotor intelligence: Assessment of symbolic maturity through analysis of pretend play. *Merrill-Palmer Quarterly, 23*, 89–99.

Odom, S. L., McConnell, S. R., & Chandler, L. K. (1993). Acceptability and feasibility of classroom-based social interaction interventions for young children with disabilities. *Exceptional Children, 60*, 226–236.

Parten, M. (1932). Social participation among preschool children. *Journal of Abnormal and Social Psychology, 27*, 243–269.

Piaget, J. (1962). *Play, dreams, and imitation in childhood.* New York, NY: Norton.

Pierce-Jordan, S., & Lifter, K. (2005). Interaction of social and play behaviors in preschoolers with and without pervasive developmental disorder. *Topics in Early Childhood Special Education, 25*(1), 34–47.

Pizzo, L., & Bruce, S. M. (2010). Language and play in students with multiple disabilities and visual impairments or deaf-blindness. *Journal of Visual Impairment & Blindness, 104*(5), 287–297.

Power, T. J., & Radcliffe, J. (1989). The relationship of play behavior to cognitive ability in developmentally disabled preschoolers. *Journal of Autism and Developmental Disorders, 19*(1), 97–107.

Power, T. J., & Radcliffe, J. (2000). Assessing the cognitive ability of infants and toddlers through play: The symbolic play test. In K. Gitlin-Weiner, A. Sandgrund, & C. E. Schaefer (Eds.), *Play diagnosis and assessment* (2nd ed., pp. 228–261). New York, NY: Wiley.

Ritter, B., & Cobb, A. (2010). *Play as an assessment and treatment strategy in the early intervention population*. Unpublished manuscript, Northeastern University, Boston, MA.

Rogers, S. J. (2005). Play interventions for young children with autism spectrum disorders. In L. A. Reddy, T. M. Files-Hall, & C. E. Schaefer (Eds.), *Empirically based play interventions for children* (pp. 215–239). Washington, DC: American Psychological Association.

Rogers, S. J., Herbison, J. M., Lewis, H. C., Pantone, J., & Reis, K. (1986). An approach for enhancing the symbolic, communicative, and interpersonal functions of young children with autism or severe emotional handicaps. *Journal of Early Intervention, 10*(2), 135–148.

Roskos, K., & Christie, J. (2001). Examining the play-literacy interface: A critical review and future directions. *Journal of Early Childhood Literacy, 1*(1), 59–89.

Rubin, K., Fein, G., & Vandenberg, B. (1983). Play. In E. M. Hetherington (Ed.), *Handbook of child psychology: Socialization, personality, social development: Socialization, personality, social development* (Vol. 4, pp. 694–759). New York, NY: Wiley.

Rubin, K. H., Watson, K. S., & Jambor, T. W. (1978). Free play behaviors in preschool and kindergarten children. *Child Development, 49*, 534–536.

Rutherford, M. D., & Rogers, S. J. (2003). The cognitive underpinnings of pretend play. *Journal of Autism and Developmental Disorders, 33*(3), 289–302.

Rytter, K. M. (2008). Improving pre-literacy experiences of toddlers with disabilities. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 68*(7-B), 4868.

Sandall, S., Hemmeter, M. L., McLean, M. E., & Smith, B. J. (Eds.). (2005). *DEC recommended practices: A comprehensive guide for practical application in early intervention/early childhood special education.* (pp. 71–106). Longmont, CO: Sopris West.

Sherratt, D. (2002). Devoloping pretend play in children with autism: A case study. *The International Journal of Research & Practice*, *6*(2), 169–179.

Smilansky, S. (1968). *The effects of sociodramatic play on disadvantaged preschool children.* New York, NY: Wiley.

Stagnitti, K., & Unsworth, C. (2004). The test-retest reliability of the child-initiated pretend play assessment. *American Journal of Occupational Therapy, 58*(1), 93–99.

Stahmer, A. C. (1995). Teaching symbolic play skills to children with autism using pivotal response training. *Journal of Autism and Developmental Disorders, 25*, 123–141.

Stone, K., & Yoder, L. (2001). Predicting spoken language level in children with autism spectrum disorders. *Special Issue: Early Interventions,* 341–361.

Swindells, D., & Stagnitti, K. (2006). Pretend play and parents' view of social competence: The construct validity of the child-initiated pretend play assessment. *Australian Occupational Therapy Journal, 53*(4), 314–324.

Thorp, D. M., Stahmer, A. C., & Schreibman, L. (1995). Effects of sociodramatic play training on children with autism. *Journal of Autism and Developmental Disorders*, *25*(3), 265–282.

Tröster, H., & Brambring, M. (1994). The play behaviour and play materials in blind and sighted infants and preschoolers. *Journal of Visual Impairment and Blindness, 88*, 421–432.

Uren, N., & Stagnitti, K. (2009). Pretend play, social competence, and involvement in children aged 5-7 years: The concurrent validity of the Child-Initiated Pretend Play Assessment. *Australian Occupational Therapy Journal, 56*, 33–40.

Ungerer, J. A., & Sigman, M. (1981). Symbolic play and language comprehension in autistic children. *American Academy of Child Psychiatry*, *20*, 318–337.

Vig, S. (2007). Young children's object play: A window on development. *Journal of Developmental and Physical Disabilities, 19*, 201–215.

Vygotsky, L. S. (1978). *Mind in society: the development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Wagner, B. S., & Frost, J. L. (1986). Assessing play and exploratory behaviors of infants and toddlers. *Journal of Research in Childhood Education, 1*, 27–36.

Watson, M. W., & Fischer, K. W. (1977). A developmental sequence of agent use in late infancy. *Child Development, 48*, 828–836.

Westby, C. (1980). Assessment of cognitive and language abilities through play. *Language Speech and Hearing Sciences in the Schools, 11*, 154–158.

Westby, C. (2000). A scale for assessing children's play. In K. Gitlin-Weiner, A. Sandgrund & C. E. Schaefer (Eds.), *Play diagnosis and assessment* (2nd ed., pp. 15–57). Hoboken, NJ: John Wiley & Sons.

Whitebread, D., Coltman, P., Jameson, H., & Lander, R. (2009). Play, cognition and self-regulation: What exactly are children learning when they learn through play? *Educational and Child Psychology*, *26*(2), 40–52.

Widerstrom, A. H. (2005). *Achieving learning goals through play: Teaching young children with special needs* (2nd ed.). Baltimore, MA: Paul H. Brookes Publishing Co.

Wolery, M. W. (2005). DEC recommended practices: Child-focused practices. In S. Sandall, M. L. Hemmeter, M. E. McLean, & B. J. Smith (Eds.). *DEC recommended practices: A comprehensive guide for practical application in early intervention/early childhood special education* (pp. 71–106). Longmont, CO: Sopris West.

Wong, C. S., Kasari, C., Freeman, S., & Paparella, T. (2007). The acquisition and generalization of joint attention and symbolic play skills in young children with autism. *Research and Practice for Persons with Severe Disabilities, 32*,101–109.

Zigler, E., Singer, D., & Bishop-Josef, S. (Eds.). (2004). *Children's play: The roots of reading.* Washington, DC: Zero to Three Press.

Zimmerman, I. L., Steiner, V. G., & Pond, R. E. (1992). *PLS-3: Preschool Language Scale-3*. San Antonio, TX: The Psychological Corporation.