

Dramatic Play Affordances of Outdoor Settings for First- and Second-Grade Children with and without Disabilities

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Abstract

Dramatic play is crucial to further children's development, including children with disabilities. This study observed dramatic play behaviors among first- and second-grade children with and without disabilities to determine which play settings encouraged children to engage in quality dramatic play. Fifty-three 6-to-8-year-olds with and without disabilities were observed during lunch recess on an inclusive playground. Results suggest that a well-designed inclusive playground reduces barriers for children with disabilities, creating an environment where children with disabilities can engage in similar play behaviors with their typically developing peers.

Keywords: dramatic play, inclusive playground, elementary school-age children's play, children with disabilities

Introduction

Unstructured play is a major facilitator for healthy development in children (Isenberg & Quisenberry, 2002). Dramatic play is a specific form of play where children accept and assign roles to pretend to be someone or something else through the transformation of objects, actions, or situations (Petraikos & Howe, 1996). It is their "ability to combine elements to produce a structure, to combine the old in new ways that is the basis of creativity" (Vygotsky, 2004, p. 12). Children's creativity, the development of this creativity and its significance to the child's development and maturation is one of the most important areas of child psychology and child development. These creative processes in children can be identified through their play episodes (Vygotsky, 2004). Children continue to learn and develop through dramatic play (Barton & Wolery, 2008), and playgrounds provide a setting for unstructured dramatic play where children can "flex their young muscles and try on new identities to see which one fits best" (Vaira, 2009, p. 33).

Children with disabilities are no different than their peers in their need to engage in dramatic play, and the benefits of play are universal for all children (Kranowitz, 2005; Solish, Perry, & Minnes, 2010). Dramatic play is an important predictor of social abilities in children with disabilities later in life (Barton & Wolery, 2008; Sigman & Ruskin, 1999). However, children with disabilities have fewer opportunities for and, therefore, typically engage in less dramatic play than children without disabilities (Barton & Wolery, 2008; Charman & Baron-Cohen, 1997; Ungerer & Sigman, 1981).

Researchers have systematically examined children's play. These examinations were often motivated by the theoretical stances of Piaget (1962) and Vygotsky (1967), both of whom saw play as serving an important role in preschoolers' social development. As such, much of the subsequent research on children's play has been confined to the preschool years. Therefore, research on the play of elementary school-aged children has been neglected (Pellegrini & Perlmutter, 1989). Yet, the period of elementary school is a critical period in children's development (Fromberg & Bergen, 2006). As the development and social needs of children with disabilities run parallel with other children, play at this time of life is also critical for elementary school-aged children with disabilities. Dramatic play for children with disabilities is perhaps even more important at this age since they often lack opportunities for peer interactions (Overton & Rausch, 2002). Therefore, the purpose of this study was to determine what playground design practices support increased congruent dramatic play behavior among first- and second-grade children with and without disabilities, and how the specific behavioral settings afforded dramatic play among the children with disabilities.

Dramatic Play Enhances Children's Development

Children learn and develop through dramatic play. Dramatic play is imaginative behavior involving a transformation of objects, actions, and self-identity (Petraikos & Howe, 1996). John Dewey posited that when objects stand for other things during a child's play episode, their play is transformed from a physical exuberance into an activity that involves a mental factor (Dewey, 1910). Dewey's concept of

experience is founded in the interaction between people and the world (Hohr, 2013). He was not an advocate for complete free play. Instead, he argued that teachers should guide children's play in socially positive ways (Beatty, 2017), since often a child's play is an echo of what he or she saw, heard, and experienced previously (Vygotsky, 2004). He believed through teacher-guided play that children would learn the kind of voluntary self-control needed in a democratic society (Beatty, 2017). However, a child's play episodes are not just a reproduction of what that child had experienced. Rather, the child will combine their experiences and use them to construct a new reality in their play episodes (Vygotsky, 2004).

Dewey (1910) argued that play and work overlapped. He emphasized the importance of play and work as physical activities and pondered the relationship between playfulness and seriousness/work as a state of mind. Dewey believed that "playfulness is a more important consideration than play" (p. 162), where playfulness is "an attitude of mind" (p. 162) and play is "a passing outward manifestation of this attitude" (p. 162). The type of playfulness to which Dewey refers is dramatic play, where objects acquire meaning through becoming "vehicles of suggestion" (p. 162) and what is suggested overrides the original object. The classic example of this is where a "child plays horse with a broom and cars with chairs" (p. 162). Dewey is aware of the suspicion that such activities are viewed as no more than child's play when children lose themselves in "an imaginary world alongside the world of actual things" (p. 162). He provides an educational rationale for activities in which the child seems wholly reflected in their play—that work should be an attitude of the mind, an orientation towards activity. The psychological equivalent of characterizing these activities as work would be to characterize the attitude of work as seriousness. Dewey suggests that the "harmony of mental playfulness and seriousness describes the artistic ideal" (p. 220). Children's play is itself a harmonization of seriousness and playfulness (Dewey, 1910; Skillbeck, 2017).

Dramatic play is crucial for children's development as it provides children with the necessary skills to access their environment and engage with their peers (Barton & Wolery, 2008). The ability to use symbols to represent objects and events is considered a marker for children's development (Piaget, 1962; Vygotsky, 1967). Dramatic play provides children with a nonthreatening, child-centered environment where children teach, learn, and experience real-life roles (Drucker, Franklin & Wilford, 1999, p. 11); learning without being directly taught. During dramatic play episodes, children begin to master functioning within conceptual constructs, which is beneficial as children are concurrently learning in school through abstract thinking rather than direct experience (Smilansky, 1968). Through their interactions with each other, they exercise and enhance their social understandings and skills of working with others and standing up for themselves (Drucker et al., 1999). To engage in dramatic play within a group requires high levels of cognitive abilities to be able to develop and sustain the play episodes: communication, coordination, negotiation, planning, goal seeking, and problem solving (Bergen, 2002; Copple & Bredekamp, 2009). Children who engage in higher levels of dramatic play also tend to perform better on imagination and creativity tests, have better problem-solving skills, more positive social interactions, and better social skills (Brown, Sutterby, &

Thornton, 2013). Additionally, dramatic play strengthens and creates new synaptic connections as children combine cognitive, motor, emotional, and linguistic skills, and engage multiple areas of the brain furthering their development (Bergen, 2002).

Influential theorists Lev Vygotsky and Jean Piaget also understood play to be a vital part of child development. Vygotsky proposed that dramatic play was much more than a reflection of children's current level of development, but was rather a "zone of proximal development," or a mode of accelerating development through learning (Bodrova, 2008; Hakkarainen & Bredikyte, 2019). Vygotsky described how play scenarios create the child's zone of proximal development:

In play the child is always behaving beyond his age, above his usual everyday behavior; in play he is, as it were, a head above himself. Play contains in a concentrated form, as in the focus of a magnifying glass, all developmental tendencies; it is as if the child tries to jump above his usual level. The relationship of play to development should be compared to the relationship between instruction and development. The relationship of play to development should be compared with that of teaching—learning to development. Changes of needs and consciousness of a more general kind lie behind the play. Play is the resource of development and it creates the zone of proximal development. Action in the imaginary field, in the imagined situation, building of voluntary intention, the construction of life plan, motives of willing—all this emerges in play (Vygotsky, 1980, pp. 74-75).

Piaget indicated that dramatic play helps children to practice their new skills acquired in non-play situations (Rubin & Coplan, 1998). He argued that changes during the dramatic play stage of children's development follow an inverted bell curve (Piaget, 1962). According to Piaget, dramatic play begins to develop at age two, increasing over the next three or four years (Fein, 1981) as children begin to mentally form representations of objects (Rathus, 2013), and declining once a child reaches the age of seven (Fein, 1981). Scholars have since questioned whether dramatic play concludes at seven or if it depends on the child (Oke & Middle, 2016); others argue that dramatic play does not disappear but just takes place in a different context (Scarlett, Al-Solaim, Naudeau, Saloni-Pasternak, & Ponte, 2005). Dramatic play fully emerges during the preschool years and thus is often associated with this time period (Scarlett et al., 2005), which has contributed to less study of dramatic play during elementary school years.

Playground Features That Afford Dramatic Play

Studies show specific playground features afford children the possibility to engage in dramatic play. Dramatic play is influenced by facilitators such as loose moveable parts (Drown & Christensen, 2014; Refshauge, Stigsdotter, Lamm, & Thorleifsdottir, 2013; Woolley, 2008), platforms/stages (Drown & Christensen, 2014; Maxwell, Mitchell, & Evans, 2008; Refshauge et al., 2013), and settings that are flexible and adaptable (Mason, 1982). Moveable parts (props) are materials that children can move and manipulate in the way they desire (Wilson, 2007) and range from natural materials (Refshauge et al., 2013; Zahra & Moore, 2013), to construction materials

(Wilson, 2007), to manufactured materials (McClintic & Petty, 2015). Props afford children opportunities to interact with the environment (Refshauge et al., 2013), as well as offer educational benefits and creative stimulation for children (Zahra & Moore, 2013). Moveable props encourage children's imagination to transform (McClintic & Petty, 2015), alter, interact with, and better understand their environment (Woolley & Lowe, 2013; Zahra & Moore, 2013), and when strategically placed throughout the playground, afford the most dramatic play while still allowing children to move freely (Wilson, 2007).

Dramatic play in children is more likely to occur outdoors than indoors (Shim, Herwig, Shelley, 2001). Playing outside on playgrounds provides children with greater freedom to run, shout, and manipulate the environment (White & Stoecklin, 1998). Nature is non-prescriptive, which can allow for dramatic play away from the predetermined themes of a structured playground (Chancellor, 2007). Natural environments also afford dramatic play by providing many small, quiet spaces away from large groups of children and equipment-based activities (Groves & McNish, 2011).

Refshauge and colleagues (2013) found that dramatic play occurred in partially enclosed structures and sand areas. These findings support those of other researchers who suggest that structures that form implied ceilings and walls are behavior settings that impact dramatic play (Drown & Christensen, 2014). Moore & Wong (1997) found that less-constructed structures that can be manipulated, such as a sandbox, also afforded dramatic play. Mason (1982) argued that playground equipment should be manipulative, or flexible and adaptable. Playground features that can be broken down and remodeled are effective in encouraging dramatic play in children (Brett, Moore, & Provenzo; 1993, Oke & Middle, 2016). Perhaps, to help facilitate dramatic play, both large-motor and small, quiet-space settings (Moore, 2009), as well as structures that form implied ceilings and walls are needed (Drown & Christensen, 2014; Moore & Wong, 1997).

Play for Children with Disabilities

Disability (physical, cognitive, or sensory) will often pose some type of a barrier for children to engage in play (Movahedazarhouligh, 2018), mainly due to a combination of social and physical/environmental barriers.

Children with disabilities will often demonstrate some type of social interaction difficulties or communication challenges in developing, maintaining, and understanding relationships with their peers (American Psychiatric Association, 2013). While children with disabilities are no different than their peers in their need for peer interaction (Locke, Shih, Kretzmann, & Kasari, 2016), "children with intellectual disability and specific language impairments participate in less conversation and social interactions with peers on the playground" (Stanton-Chapman & Schmidt, 2016, p. 91). Children with disabilities also may have a limited range of interests, which are often considered abnormal by their typically developing peers (Movahedazarhouligh, 2018). They play less often and demonstrate fewer varied pretend play behaviors than children with typical development (Kasari, Chang, & Patterson, 2013). Taub and Greer (2000) found

that typically developing children assume that children with disabilities are not capable of engaging in play. Because of this misconception, children with disabilities are usually given the role of spectator, rather than an active role in games. Taub and Greer (2000) noted, "instead of a child with a disability being viewed as just another child, the child's disability can become the master status or salient social identity" (p. 396). Children with disabilities will also engage in play episodes with their peers when grouped together with peers who demonstrate similar social skills (Wong, 2013). But, creating opportunities to play with a more socially competent peer allows for more structured play opportunities, which can allow the children with disabilities to improve their social interaction skills (Petursdottir, McComas, McMaster, & Horner, 2007).

The design and arrangement of behavior settings on the playground can have a positive impact on the play skills and facilitate interactions between children with and without disabilities (Chandler et al., 1992; Ginsburg, 2007). Children with disabilities will commonly engage in play episodes with their peers when well-chosen props are available, and when the play area is relatively small (Wong, 2013). Yet, when given the same materials and settings, children with disabilities often engage in less complex behaviors than children without disabilities (Barton, 2015). While all children do not need to access play spaces in the same way, they are all fundamentally entitled to the same play experiences (Yantzi, Young, & Mckeever, 2010).

Kemp, Kishida, Carter, and Sweller (2013) found that children with disabilities, in an inclusive childcare, were more engaged in free play when it was child-directed rather than adult-directed. However, Wong & Kasari (2012) found that children with disabilities may prefer to play alone without adult-facilitated play, thus isolating themselves from peers and social activities. Perhaps some adult facilitation, depending on the situation, is needed to support dramatic play among children with disabilities. By grouping children with disabilities together, adult facilitators may be able to provide the children with the assistance they need to engage during play episodes (Chandler, Fowler, & Lubeck, 1992). Children with disabilities do not look for extra attention; they only desire the same opportunities as their typically developing peers, the ability to play with their peers and friends, feel the camaraderie of and connection of a group and community, experience the pride of physical and social achievements, and to reach their full potential (PlayCore, 2016).

Ensuring that children with disabilities are able to take advantage of and fully benefit from these opportunities remains a challenge and is not often considered when playgrounds are designed (Stanton-Chapman & Schmidt, 2016). Choosing appropriate play materials and locations, effective groupings of children, possible adult-facilitated play, and the use of small, quiet spaces are some examples of social and physical behavioral settings that could result in higher levels of dramatic play and social interaction between children with and without disabilities. It is thus plausible to intentionally design for higher levels of dramatic play and social interactions between children with and without disabilities. The purpose of this study was to determine what playground design practices support increased

congruent dramatic play behavior between first- and second-grade children with and without disabilities.

A Framework for the Study of Playgrounds

To study the interaction between human behavior and designed playgrounds, we used two theories from environmental and ecological psychology: Gibson's (1977) Theory of Affordances and Barker's (1968) Behavior Settings. Affordances are the physical opportunities and dangers that environments offer the user while the user is acting in a specific environment (Gibson, 1977). Providing affordances for certain behaviors in an environment does not guarantee they will be utilized. Yet without designing the physical environment to support the desired behaviors, it will be unlikely for them to occur (Lang, 1987). Gibson's Theory of Affordances allows for a closer examination of playgrounds by identifying clusters of elements that support desired play outcomes (Fjørtoft, 2000), and can assist the playground designer in creating better spaces for children to play (Moore & Cosco, 2007).

Barker's (1968) Behavior Settings are subsections of geographical areas where behavior and the physical environment are linked in time and space (Barker, 1968). Through directly observing and recording children's activities, Barker realized that some behavioral settings or activities have specific and identifiable features that afford certain behavioral actions. Knowledge of behavior settings could be used as a basis for designing places that would better suit people's behaviors (Lynch & Hack, 1984). In this study, behavior settings provide a medium for identifying the potential affordances of different types of areas within a playground (Moore & Cosco, 2007). Linking setting, type, and peer interactions is essential for both understanding the impact of design on a child's social inclusion on a playground and guiding design interventions (Cosco & Moore, 2009). Understanding a playground according to its behavior settings and how the playground affords distinct behavioral possibilities for children's play would help professionals design playgrounds that effectively include all children (Drown & Christensen, 2014).

Methods

Setting

The setting for this research was the Edith Bowen Laboratory School at Utah State University in Logan, Utah. The Edith Bowen Laboratory School (EBLS) has been an exemplary model of elementary school "best practice" for over eight decades. Their mission is to ensure high levels of learning for all elementary students, by providing a positive and engaging learning environment using effective evidence-based practice; to mentor pre-service teachers through instruction and classroom-based experiences; and to review, conduct, implement, and disseminate educational research. It is a K-5 public charter school committed to providing a learning environment that allows and encourages children to explore connections between their learning and the world around them. In 2018, EBLS constructed a playground designed using PlayCore Inc.'s Seven Principles of Inclusive Design (PlayCore, 2016), which are best practices for the design of outdoor playgrounds for children with disabilities (Figures 1 and 2). The EBLS playground serves as a National Demonstration Site for PlayCore, Inc. One aspect of these design principles are

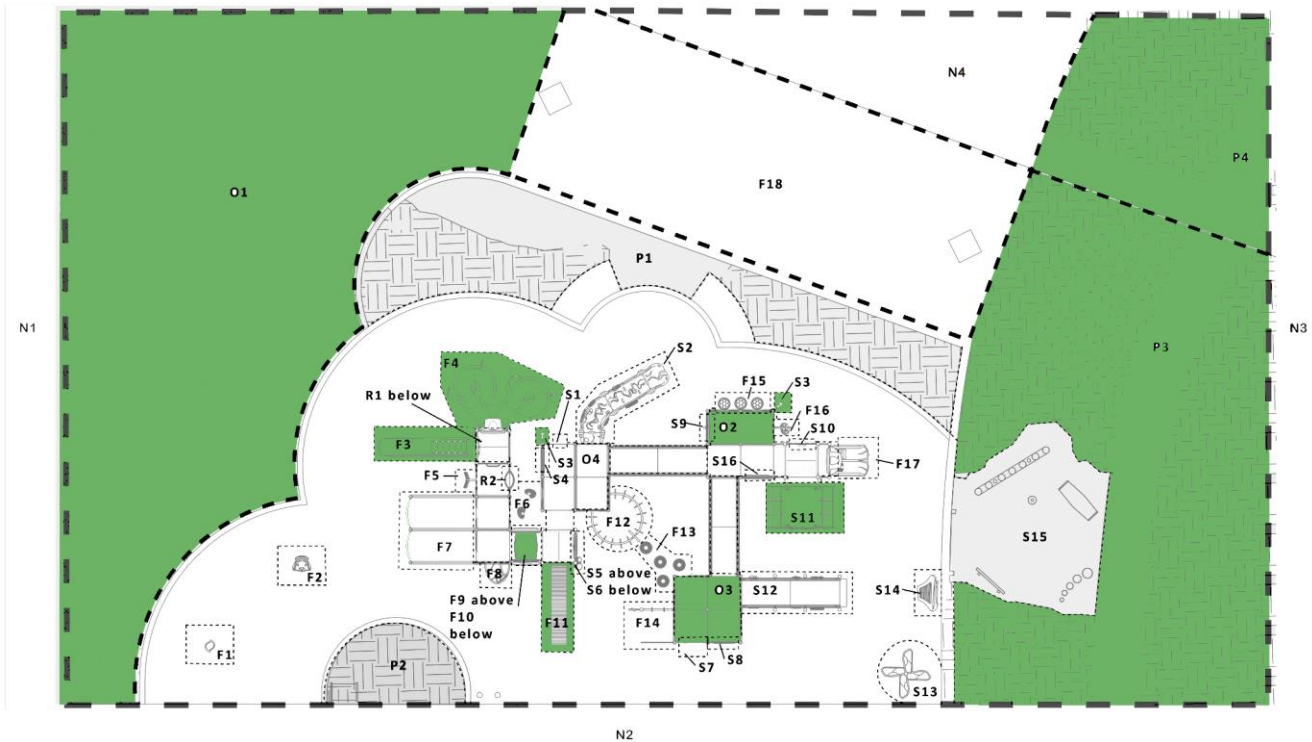
settings that afford inclusive opportunities for dramatic play.

Figure 1. Edith Bowen Laboratory School playground looking east



Figure 2 is the masterplan of the playground with the settings designed specifically for dramatic play highlighted in green. These settings were designed for dramatic play, and this use was confirmed by this study.

Figure 2. Behavior settings map



Note. Settings highlighted in green were settings designed specifically for dramatic play.

Behavior Settings Map Key

Sensory Play (S)		Functional Play (F)	
1	Telescope	1	Tilted Whirlwind Seat
2	Sensory Climber Up & Down	2	Sensory Wave Seat
3	Talk Tube	3	Zip Slide
4	Frog Slide Puzzle	4	Spiral Slide
5	Kinetic Spinner	5	Stego Climber
6	Bongos	6	Sprout Climber
7	Gizmo Panel	7	Ropes Course
8	Sensory Wave Panel	8	Erratic Climber
9	Sun Blossom Double	9	Arch Bridge
10	Thunder Ring	10	Straight Crawl Tube
11	Sensory Wave Rock N Raft	11	Roller Slide
12	Sensory Wave Ramp	12	Loop Ladder
13	Shadow Play Area	13	X-pod Step
14	Cantata Chimes	14	Gymnastics Area
15	Music Area	15	Hex Pod Step
16	Music Panel	16	Spiral Climber
		17	Rumble & Roller Zip Slide
		18	Basketball Court
Rest/Activity Areas (R)		Open Areas (O)	
1	Decorated Table and Benches	1	Open Grassy Hill
2	Seat Panel	2-4	Play Structure Surface

Plantings (P)		Other	
1	Landscape Divider	N1	Area west of the playground
2	Tree Planter	N2	Area south of the playground
3	Nature Play South	N3	Area east of the playground
4	Nature Play North	N4	Area north of the playground
		ARD	Around the playground, multiple settings used

Dramatic Play Settings

O1	Open Grassy Hills
O2	Play Structure Surface
O4	Play Structure Surface
P3	Nature Play Area
P4	Nature Play Area
S11	Sensory Wave Rock N' Raft
S3	Talk Tube
F4	Spiral Slide
F3	Zip Slide
F10	Straight Crawl Tube
F11	Roller Slide

Participants

This study included 53 children in the first and second grades, ranging in age from six to eight years, eight of whom had disabilities and 45 who did not have disabilities. The children with disabilities were each observed more than once, comprising a total of 50.2% of all observations. The identification of a child's disability status was made in collaboration with the EBLS's Special Education Program Coordinator and was based on whether a child had an Individualized Educational Plan (IEP) and the disability designation category taken from the plan. Children with three IEP designations participated in this study: Specific Learning Impairment (SLI) (37% of observations), Speech/Language Impairment (SLD) (4.8%), and Developmental Delay (DD) (8.4%). Working with the school, and with the consent of the parents, the observer obtained the class pictures of the children with disabilities to identify these children on the playground. These participants do not include all of the students with an IEP, as not all parents of children with an IEP gave consent for their child to participate in the study.

The remaining 49.8% of observations were of 45 children who did not have a disability, which represented a random sample of the 81 children without disabilities enrolled in the first and second grades. Please note that approximately 15% of the total student body of EBLS have an IEP. Therefore, the researchers must assume that 5 of the 81 children presumed to not have disabilities in this study did indeed have an IEP/disability of which the researchers were unaware and thus may have been included in the observed sample of children without disabilities. To ensure age consistency, we collected data for children aged six to eight years (first and second grades) during their specified lunch recess. The only personal data collected for each student observed was gender, grade level, and IEP designation, if known.

Types of Dramatic Play

We used a modification of the Smilansky Scale similar to that used by Elias and Berk (2002) to categorize children's dramatic play. The scale uses five behaviors and persistence of a play episode to indicate the presence and maturity of dramatic play, listed below in increasing levels of social and cognitive skill development (Drown & Christensen, 2014; Smilansky & Shefatya, 1990).

1. **Imitative role-play.** A child engages in self-referenced role-play using imitative vocalizations or actions; he/she becomes a character other than himself/herself in another context.
2. **Make-believe with objects.** A child uses verbal declaration, movements, and/or a substitute object (not a replica of the actual object) to represent a real object in a play episode.
3. **Make-believe with actions and situations.** A child uses verbal declarations to substitute for action or to describe a situation to further the play episode.
4. **Interaction.** There are at least two children collaborating to develop or maintain a play scene. This is other-referenced role-play, in which a child commands, explains, offers play props, or gestures to peer(s) with the intent that the peer(s) will listen and use his/her suggestions to build the play episode.
5. **Verbal communication.** There is verbal dialogue between play partners within a play scene. Either a child speaks as a role-played character or speaks for an auxiliary character represented by an object.
6. **Persistence of play episode.** A child remains in an imaginary framework to support continuance of a play episode. The child may undertake multiple roles but follows a definite theme. There is some elaboration or repetition. Interruption may take place as long as the child returns to the original theme.

Observation Procedures

We observed three children each day during their lunch recess for eight weeks during the fall of 2019.¹ To minimize the observer effect, an acclimation phase prior to the start of actual observations allowed the children to become accustomed to the presence of the observer. Playground aides were also present during data collection to supervise the children.

The children with disabilities whose parents gave consent for them to participate in the study were randomly assigned to the observers the week before observations. During each observation day, each observer observed two children with a disability and one without a disability, or two children without a disability and one with a disability. This procedure continued throughout the data collection period and was performed so that half (50.17%) of the observations were of children who had a disability.

¹ All data collection was approved by Utah State University's Institutional Review Board #9641.

Three children were observed each day in a continuous, 20-second interval system during seven-minute sample periods. The seven-minute sample period was chosen to allow for the successive observation of three children per day during their 25-minute lunch recess. Individual data points reflect 20-second intervals during which the selected child's behaviors were observed, followed by another 20-second interval during which the observations were recorded on a data collection sheet. The data collection sheet, which included a behavior settings map, was used to simultaneously record the location of the participants on the playground and the type of dramatic play that they exhibited, if applicable (Figure 3).

The observation process went as follows. At the beginning of the interval for Child One, the researcher noted on the data collection sheet the child's gender, the weather, the type of play, whether the play type was dramatic play, the specific type of dramatic play, the mode of play, the number of children with whom he/she interacted, and the corresponding location on the playground (behavior setting). This process continued until the seven-minute interval had ended or the child went inside. The process was then repeated, beginning again with another child. This procedure continued until the recess period concluded or three children had been observed. The results were recorded as they were observed on the playground, with each behavior being interpreted as defined above.

Data analysis was conducted using primarily descriptive and non-parametric tests to analyze categorical data (behavior settings) yielded through observations. Each 20-second observation was used as the unit of analysis. The individual statistical tests are documented in the following results where applicable.

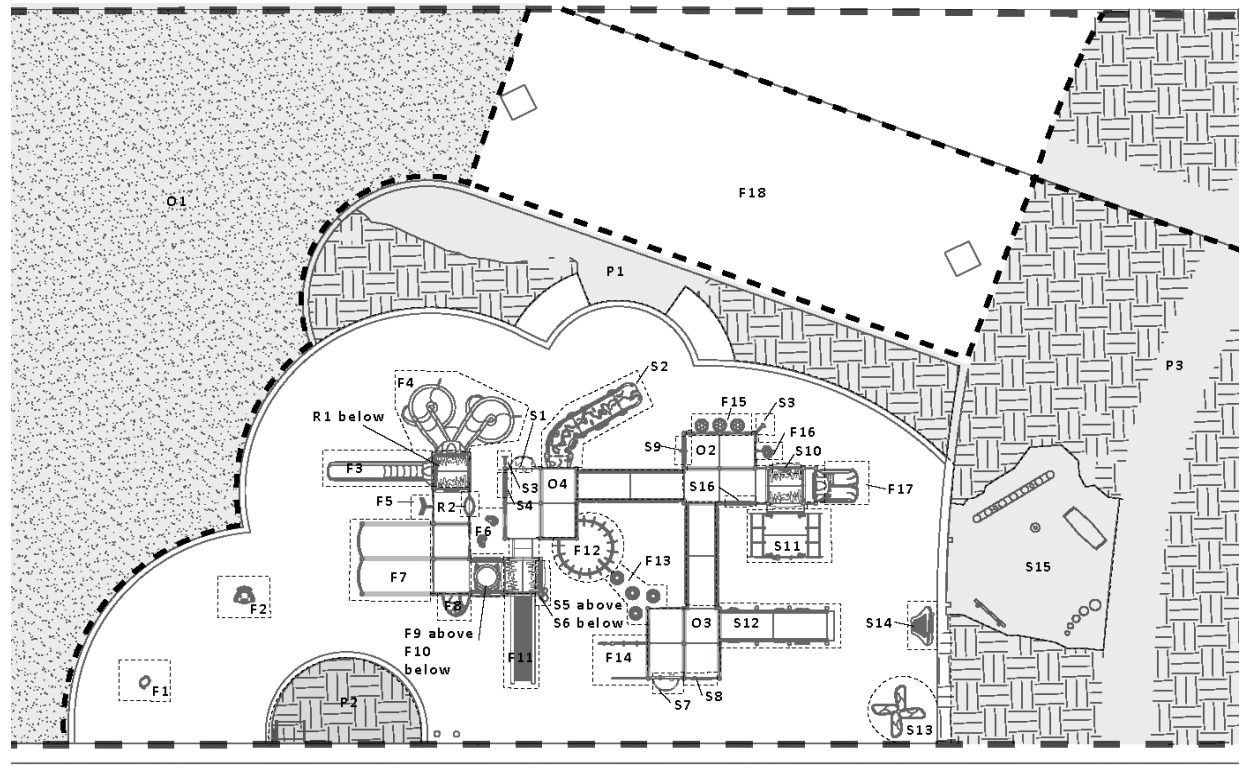
Interobserver Reliability Analysis

Three trained observers conducted the data collection for this study. A Kruskal-Wallis statistical test was conducted to evaluate the differences among the three observers regarding the observed types of dramatic play, to assess interobserver reliability. The results of the interobserver reliability analysis showed that there were virtually no differences in dramatic play scores between Observer 3 ($Mdn = 701.83$), Observer 2 ($Mdn = 738.45$), and Observer 1 ($Mdn = 699.56$). No other interrater reliability statistics are available for this study as the observers did not collect data simultaneously for the same child during the study.

Figure 3. Data collection sheet

Observer: _____ Weather: _____

	Type of Play	Imitative Role Play	MB with objects	MB with actions and situations	Interaction	Verbal Communication	Persistence of play episode	Mode of Play	# of children	Setting	Types of play 1. Non-play 2. Passing Through 3. Functional 4. Constructive 5. Dramatic/Fantasy 6. Games with Rules	Modes of play 1. Unoccupied 2. Solitary 3. Onlooker 4. Parallel 5. Associative 6. Cooperative
Child 1 - M or F?											Notes:	
20 seconds												
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Results

The children were observed 1,437 times during the study. The distribution of the participants’ type of play across play settings when observed is shown in Figure 4. The children without disabilities engaged in dramatic play in about one-third of play episodes observed; whereas the children with disabilities engaged in dramatic play in about one-quarter of all play episodes observed.

Type of Dramatic Play and Setting

We used a crosstabulation to display the distribution of the two variables, playground settings and dramatic play. A summary of the data for each type of dramatic play are presented below in Tables 1 through 6. Figure 5 illustrates the location of the type of dramatic play on the playground. Images of common settings for dramatic play are found in Figure 6.

We used another crosstabulation to display the distribution of playground settings and specific type of dramatic play. Make-believe with actions and situations was the most common form of dramatic play, accounting for 10.6% of all dramatic play.

Figure 4. Distribution of dramatic play types across all settings

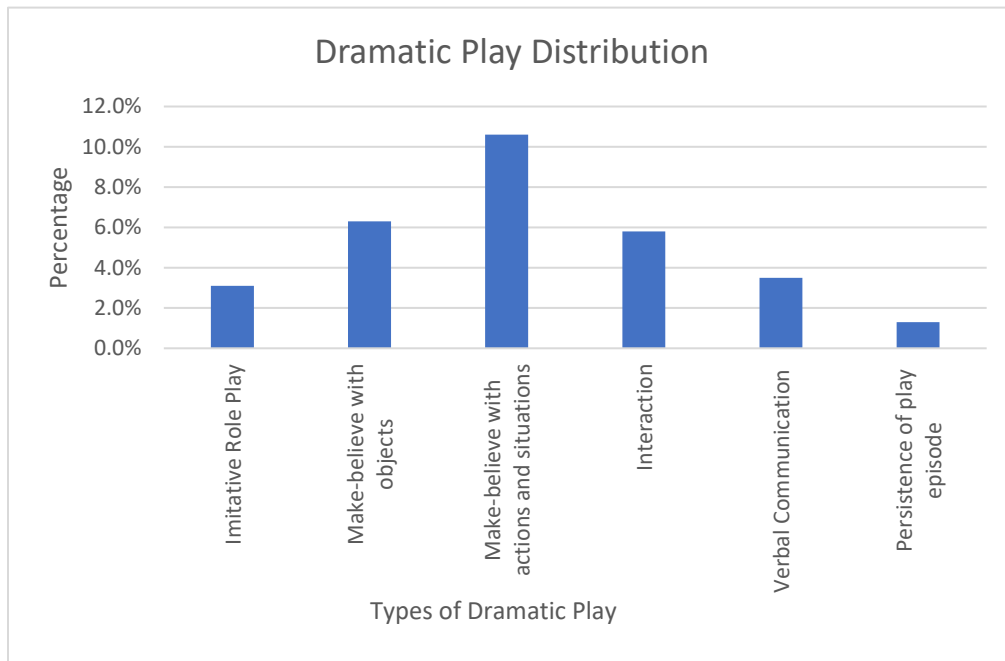
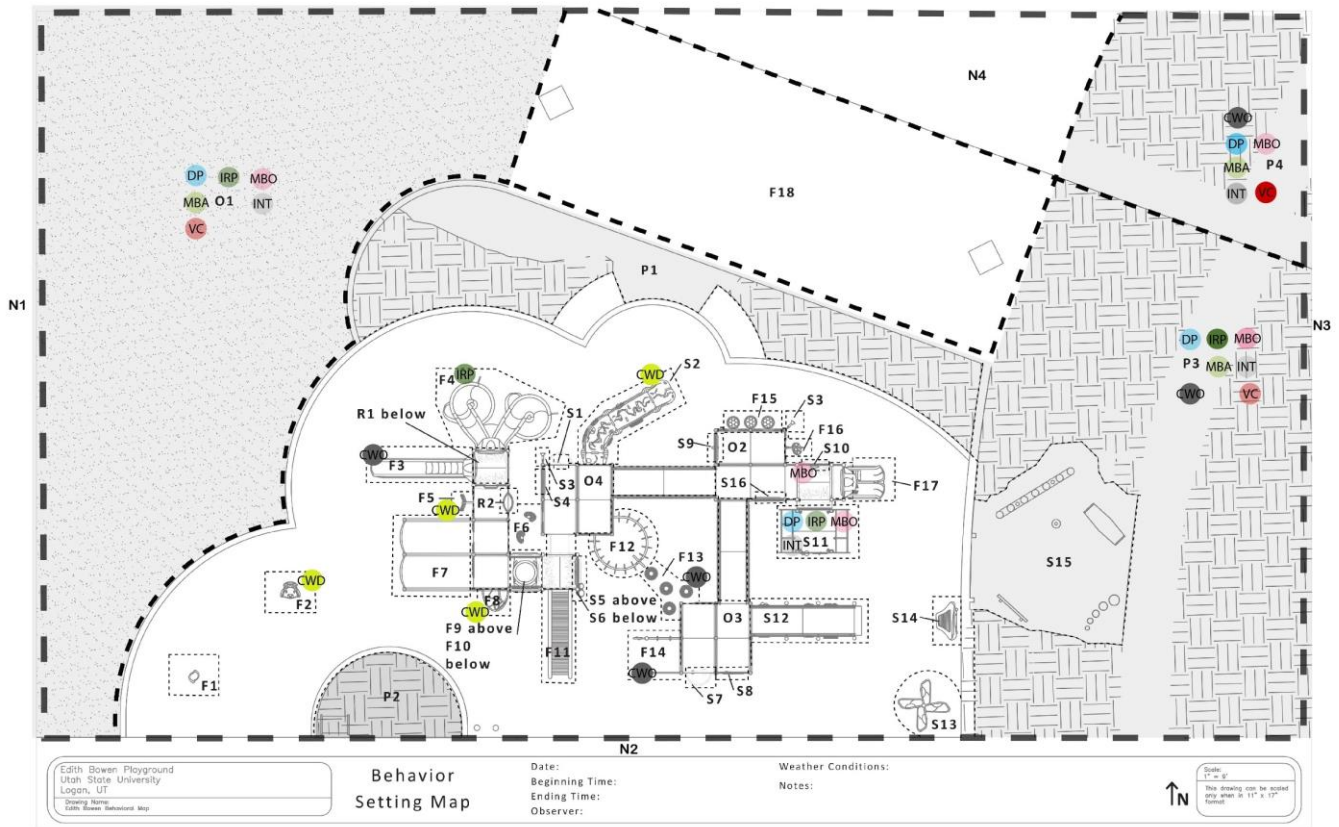


Figure 5. Location of dramatic play types across all settings



Legend:

- DP Dramatic Play
- IRP Imitative role-play
- MBO Make-Believe with objects
- MBA Make Believe with actions and situations
- INT Interaction
- VC Verbal Communication
- PPE Persistence of play episode
- CWO Children without disabilities
- CWD Children with disabilities

As the colors (excluding the colors for the children with and without disabilities) become darker, the higher the percentage of dramatic play was in that category (i.e. the color in the circle with DP in setting P3 is darker than the one in S11, this setting (P3) accounted for more dramatic play than S11).

Figure 6. Images of the settings that afforded the most dramatic play



Zip Slide



Sensory Wave Rock N' Raft



Spiral Slide



Open Grassy Hill



Nature Play Area

Table 1. Specific settings with the most dramatic play

Setting Code	Setting Name	Percent of Dramatic Play
P4	Nature Play North	20.2%
P3	Nature Play South	17.0%
O1	Open Area, Grassy Hill	13.6%
S11	Sensory Wave Rock N Raft	10.2%
ARD	Around playground	5.7%
S10	Thunder Ring	3.9%
N1	Area west of playground - open grassy area, mound, and trees	3.2%
N3	Area east of playground - concrete area, next to building, with tables and small planted areas	3.2%
F7	Ropes Course	2.7%
N2	Area south of playground - concrete area with four-square and concrete dividers, next to building	2.7%
F3	Zip Slide	2.5%
F4	Spiral Slide	2.5%
N4	Area north of playground - concrete slab with statues and an open grassy area surrounding	2.0%
	All Other Settings	10.6%
Total		100.0%

Table 2. Specific settings that afforded the most imitative role-play

Setting Code	Setting Name	Percent of Imitative Role-Play
P3	Nature Play South	31.8%
F4	Spiral Slide	22.7%
S11	Sensory Wave Rock N Raft	11.4%
O1	Open Area, Grassy Hill	9.1%
ARD	Around Playground	6.8%
P4	Nature Play North	6.8%
S15	Music Area	4.5%
F16	Spiral Climber	2.3%
N4	Area North of Playground	2.3%
P1	Landscape Divider	2.3%
Total		100.0%

Table 3. Specific settings that afforded the most make-believe with objects

Setting Code	Setting Name	Percent of Make-Believe with Objects
P3	Nature Play South	22.0%
O1	Open Area, Grassy Hill	17.6%
P4	Nature Play North	16.5%
S10	Thunder Ring	12.1%
S11	Sensory Wave Rock N Raft	12.1%
N3	Area East of Playground	8.8%
N2	Area South of Playground	3.3%
N4	Area North of Playground	3.3%
F11	Roller Slide	1.1%
N1	Area West of Playground	1.1%
P1	Landscape Divider	1.1%
S13	Shadow Play Area	1.1%
Total		100.0%

Table 4. Specific settings that afforded the most make-believe with actions and situations

Setting Code	Setting Name	Percent of Make-Believe with Actions and Situations
P3	Nature Play South	15.7%
O1	Open Area, Grassy Hill	13.7%
P4	Nature Play North	13.1%
ARD	Around Playground	9.2%
S11	Sensory Wave Rock N Raft	7.2%
F3	Zip Slide	6.5%
F7	Ropes Course	6.5%
N1	Area West of Playground	5.9%
S10	Straight Crawl Tube	3.3%
N2	Area South of Playground	2.6%
F18	Basketball Court	2.0%
N3	Area East of Playground	2.0%
	All Other Settings	12.3%
Total		100%

Table 5. Specific settings that afforded the most interaction

Setting Code	Setting Name	Percent of Interaction
P4	Nature Play North	31.3%
P3	Nature Play South	15.7%
S11	Sensory Wave Rock N Raft	13.3%
O1	Open Area, Grassy Hill	12.0%
N1	Area West of Playground	4.8%
N3	Area East of Playground	3.6%
ARD	Around Playground	2.4%
F12	Loop Ladder	2.4%
F17	Rumble & Roller Zip Slide	2.4%
N2	Area South of Playground	2.4%
N4	Area North of Playground	2.4%
P2	Tree Planter	2.4%
F18	Basketball Court	1.2%
O2	Play Structure Surface	1.2%
S10	Thunder Ring	1.2%
S12	Sensory Wave Ramp	1.2%
Total		100.0%

Table 6. Specific settings that afforded the most verbal communication

Setting Code	Setting Name	Percent of Verbal Communication
P4	Nature Play North	49.0%
O1	Open Area, Grassy Hill	11.8%
P3	Nature Play South	9.8%
N2	Area South of Playground	5.9%
F1	Tilted Whirlwind Seat	3.9%
F7	Ropes Course	3.9%
F10	Straight Crawl Tube	2.0%
F11	Roller Slide	2.0%
F3	Zip Slide	2.0%
N4	Area North of Playground	2.0%
P2	Tree Planter	2.0%
S11	Sensory Wave Rock N Raft	2.0%
S15	Music Area	2.0%
S3	Talk Tube	2.0%
Total		100.0%

Playground Setting and Type of Dramatic Play

We conducted a two-way chi-square analysis to evaluate whether play settings were correlated with dramatic play type. The two variables were type of dramatic play, and the 49 play settings on the playground. Type of dramatic play and play setting were found to be related: Pearson $\chi^2 = 250, 1437 = 595.899, p < .001$. We conducted a follow-up examination of the results to identify the settings in which the observed types of dramatic play occurred at at least two times the rate we would expect if each type of dramatic play were equally likely in each play setting.

As noted in Table 2 above, the settings that afforded the most imitative role-play were the Naturally Planted Beds, Spiral Slide, Sensory Wave Rock N Raft, and the Open Grassy Hill, accounting for 75% of all imitative role-play. Specifically, the chi-square analysis results indicate that imitative role-play was 9.09 times more likely to occur at the Spiral Slide (F4), 2.69 times more likely at the Natural Planted Area (P3), 2.63 times more likely at the Sensory Wave Rock N Raft (S11), and 2.2 times more likely at the Musical Play Area (S15).

Make-believe with objects was 6.87 times more likely to occur at the Thunder Ring (S10), 2.75 times more likely at the Sensory Wave Rock N Raft (S11), and 2.28 times more likely at the open concrete area with tables, east of the playground (N3).

Results indicate that make-believe with actions and situations was 5.5 times more likely to occur at the Zip Slide (F3), 2.57 times more likely at the open grass area with a mound and trees (N1), 2.54 times more likely at the Ropes Course (F7), 2.5

times more likely at the Loop Ladder (F12) and the Hex Pod Step (F15), and 2.1 times more likely at the Sensory Wave Rock N Raft (S11).

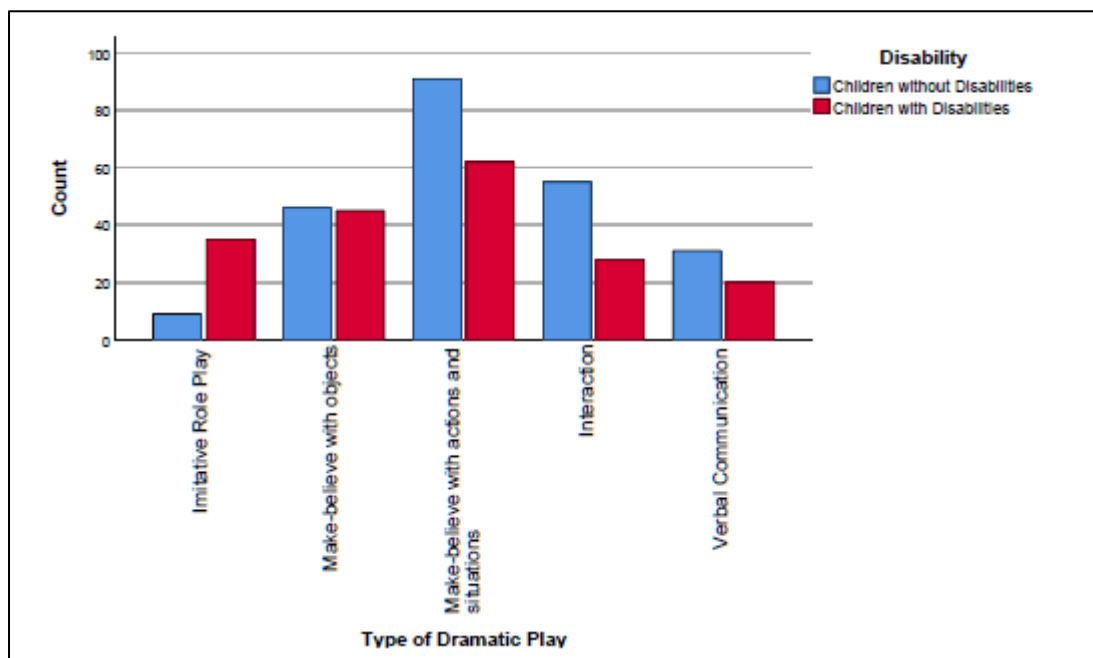
Interaction was 3.05 times more likely to occur at the Sensory Wave Rock N Raft (S11), and 2.76 times more likely at the Natural Planted Area (P4).

Results indicate that verbal communication was 10 times more likely to occur at the Talk Tube (S3), and 4.31 times more likely at the Natural Planted Area (P4).

Children with and without Disabilities and Types of Dramatic Play

We performed a chi-square two-way test to determine whether there was a difference in dramatic play types among children with and without disabilities (Figure 7). The two variables were children (with or without disabilities) and type of dramatic play. There was a difference between dramatic play types among children with and without disabilities: Pearson $\chi^2(5,1418) = 36.005, p < .001$. Children without disabilities typically engaged in higher levels of dramatic play than children with disabilities.

Figure 7. Type of dramatic play distribution among children with and without disabilities



Children with and without Disabilities and Dramatic Play Follow-up Tests

We conducted a 49 x 2 ANOVA test to evaluate the effects of the settings and disabilities (the independent variables) on the types of dramatic play (the dependent variable). The results for the ANOVA indicated a significant interaction. The main effect for setting and disability yielded an F ratio of $F(18, 368) = 2.159, p < .001$, indicating a significant difference between dramatic play types and whether or not the child had a disability.

We also conducted an ANOVA test to evaluate the effects of disabilities on the types of dramatic play. Results yielded an F ratio of $F(1, 422) = 17.388, p < .001$. Another ANOVA test was conducted to evaluate the effects of behavior settings on the types of dramatic play. Results yielded an F ratio of $F(34, 422) = 3.230, p < .001$, indicating a difference between type of dramatic play for children with and without disabilities.

Figure 8. Settings that children with disabilities are more likely to use, from left to right: Sensory Wave Seat, Erratic Climber, Stego Climber



We performed follow-up tests by comparing mean type of dramatic play, with 1 being the lowest level of dramatic play (imitative role-play) and 6 the highest level of dramatic play (persistence of play episode). The results indicate that the mean type of dramatic play for all children (with and without disabilities) was 3.01 (make-believe with actions and situations). The mean type of dramatic play for children with disabilities was 2.765 (make-believe with objects), whereas the mean type of dramatic play for children without disabilities was 3.446 (make-believe with actions and situations).

Discussion

This study compared the dramatic play affordances of behavior settings among children with and without disabilities in the first and second grades. Our study confirms Barton's (2015) findings that when given the same materials and settings, children with disabilities often engage in less complex and fewer play behaviors than the children without disabilities. There were small differences in the amount, complexity, and types of dramatic play children with disabilities engaged compared to the children without disabilities. The children with disabilities engaged in slightly lower, less complex levels of dramatic play than their typically developing peers. The average type of dramatic play in which the children without disabilities engaged was make-believe with actions and situations (the third stage of development, statistically 3.01 out of 5 stages of development); the average type of dramatic play in which the children with disabilities engaged was make-believe with objects

(the second stage of development, statistically 2.765 out of 5 stages of development). Also, the children without disabilities engaged in dramatic play in about one-third of play episodes observed, whereas the children with disabilities engaged in dramatic play in about one-quarter of all play episodes observed.

Children engaged in dramatic play more frequently in settings that allowed them the opportunity to manipulate the materials in their environment as desired, similar to the findings of Droege and Howes (1991) and as cited in Petrakos and Howe (1996). Children's dramatic play tended to take place in settings where children had stage-like areas and open-ended/enclosed settings, similar to the findings of Maxwell and colleagues (2008), which claimed that enclosed spaces, nodes and connector spaces, and stage-like places afforded dramatic play.

Children need a wide variety of equipment so they can choose how and where their play will occur. This study found that first- and second-grade children with and without disabilities primarily used the Nature Play areas, Open Grassy Hill area, Sensory Wave Rock N Raft, and Ropes Course for several of their dramatic play episodes. These behavior settings were flexible in the behaviors afforded and allowed for the children to manipulate their environment. A flexible play environment adds more affordances for dramatic play than play equipment and settings. The Ropes Course, for example, was flexible and allowed children to be imaginative and manipulate it to a point. The ropes are connected but are also movable, which allowed the children to be creative.

The Nature Play North and South areas are flexible and offer children several opportunities to promote their play through using leaves, rocks, flowers, and the like, as these are loose, movable props. Children incorporated wood chips, gravel, sand, and plant material into their play to create enclosed spaces with loose "walls." It appears that loose parts provide an opportunity for children to think, be creative, and further the exploration of their environment. The placement and design of these settings make an impact on dramatic play.

Enclosed Settings

A common aspect of the spaces where multiple children interacted and engaged in dramatic play was a sense of enclosure. Enclosed settings, such as the Sensory Wave Rock N Raft, provided children with a space where they could play without being disrupted, thereby allowing them to engage in uninterrupted dramatic play. While the girls anecdotally preferred to play "house" and the boys preferred a version of pirates or cops and robbers, both used the Sensory Wave Rock N Raft as a scaffold to support their play—as a house for the girls or a boat for the boys. The Sensory Wave Rock N Raft functioned as an enclosed, inclusive motion playground feature that multiple children could use in a variety of play scenarios. The frequency of dramatic play in areas with enclosed settings corresponds with previous research in young children's play behaviors (Brown & Burger, 1984; Maxwell et al., 2008).

When dramatic play occurred on the playground, it took place in specific settings: in places that were enclosed, stage-like places, node or connector places, and nature play areas. These areas seemed to allow for group interaction, which afforded

children the opportunity for dramatic play. It appears that children's dramatic play benefits from play settings that are not strongly themed, in order to better allow for flexibility regarding the dramatic play opportunities. For example, the Sensory Wave Rock N Raft does not have a direct theme, so it can be used as a boat, a house, or anything else the children want it to be for their play episode.

There were play settings, such as the two Play Structure platforms (O2 and O4), that were open areas that did not support dramatic play in this study. These open areas on the play structure were surrounded by other play settings that afforded play opportunities. Though these settings were infrequently used, when they were used, it was often as a platform on which to observe other children playing (non-play) or as a bridge to pass through during their play episode, such as in a game of tag. The children may have used these settings for dramatic play but only passing through them, not stopping there to conduct their play episode. It appears that open areas also afford children the opportunity to watch their peers or pass through to other settings in their play episodes. The first and second-grade children who were engaged in non-play on the Play Structure Surfaces (open-ended areas) were children with disabilities. While children without disabilities may have assumed that the children with disabilities were not capable of engaging in the play scenarios, they were, in fact, merely observing.

Type of Dramatic Play Related to Settings

This study determined that certain settings are more likely to facilitate higher levels of dramatic play. Settings that offer children the opportunity to engage in social interactions with other children, facilitated by available materials, were the settings that afforded dramatic play. This indicates that the more socially developed the child is, the more he or she can engage with other children in groups. It is also an indication of verbal fluency and may indicate topics children are learning in the classroom. Social interaction and dramatic play episodes are built on themes that shift according to the child's interest and are facilitated through specific settings and materials provided by adults. Such features of the play environment afford and facilitate play forms, roles, and interactions.

During imitative role-play episodes, the child assumes a pretend role and signals the transformation with a verbal declaration. In this study, the settings that were more likely to afford imitative role-play were the Spiral Slide, the Nature Play North and South areas, the Sensory Wave Rock N Raft, and the Musical Play Area, as these settings allowed the children to pretend to be something or someone else from their personal experiences. Vygotsky (1998) states that children use settings in a way that is imitative of their personal lives. This reflects the child's developing ability to separate sensory and motor functions, or episodes that are repetitive or driven by the physical form and function of play settings.

In make-believe with objects play episodes, children are more concerned with the meaning associated with the object instead of its physical properties. When children engage in make-believe with objects, the object becomes the focus of the play episode, which allows the children to act in a form of abstract thought so they can separate the object from its original meaning. Many children within the study

displayed a dependency on physical objects to stimulate their play. The Nature Play Area and the Open Grassy Hill were more likely to afford make-believe with objects because these settings had open spaces, loose and moveable objects, or objects that could be used in many different ways.

Make-believe with actions and situations is a more mature form of dramatic play. It requires that children have knowledge of how to creatively use a setting in their play episode. The Nature Play Area and the Open Grassy Hill afforded make-believe with actions and situations, as these settings were open-ended and could be physically or mentally manipulated. In this study, the children took on and sustained specific roles by consistently engaging in actions, speech, and interactions with peers and themes that were often similar to topics studied in the classroom or experiences in their personal lives. These settings offered children the ability to engage in actions and interactions with their peers.

During group interactions, a child directs another child's actions or words within the context of the play episode. The complexity of the play episodes was reflective of the children's highly collaborative interactions during play episodes. The settings where children could plan and negotiate roles, events, and sequences were the settings that were more likely to inspire interaction. The Nature Play Areas allowed the children to facilitate group interactions. During these interactions, the children often used the plants as facilitators in their play episode to direct their play.

The setting that was more likely to afford verbal communication was the Nature Play area. Children are more likely to engage in verbal communication in settings that allow children to freely communicate with one another. When it comes to verbal communication, children need to share knowledge of similar conceptual ideas and the situation being played. In this study, play episodes in which children took on roles and carried them out cooperatively indicated that the children's skills were developing. The Talk Tube did not afford as much dramatic play as expected. This could have been because the Talk Tubes were on the back side of the playground, attached to poles (not moveable) and possibly hidden from view during the children's play episodes. However, the Talk Tube was specifically designed as a dramatic play accessory that helps to build imagination and would provide children with a motivating, reciprocal, ground-level opportunity to promote interaction between users and dramatic play. By placing them on opposite sides of the playground, children were given the opportunity to use the Talk Tubes in their play episodes, but did not take advantage.

Play of Children with and without Disabilities

There were small differences in the dramatic play types among children with and without disabilities, as expected. It was hypothesized that a well-designed inclusive playground would move outdoor play environments beyond minimum accessibility requirements, recognize everyone's right to fully participate and contribute to meaningful play, and reap the lifelong developmental, physical, and social benefits of inclusion for children of all ages and abilities who engage in play.

The children with disabilities participated in all types of play on the playground, suggesting they are integrated into the environment, even if interactions are not at the exact same level as the children without disabilities. Children with disabilities engaged in dramatic play but tended to use more direct and disruptive strategies to enter play scenarios, whereas children without disabilities used more indirect strategies. The dramatic play patterns of children with disabilities slightly differed from those children without disabilities, with children with disabilities engaging in dramatic play 24.6 percent of the time, compared to 30.7 percent of the time for children without disabilities, which is consistent with previous research. Further, children with disabilities displayed less complex dramatic play than children without disabilities, a difference which may persist throughout their lives. The small differences between children with and without disabilities may have been larger in a non-inclusive playground, as the inclusive playground offered them additional opportunities to engage in dramatic play episodes with children without disabilities. This indication supports Jarrold, Boucher, and Smith's (1996) findings.

It is important to recognize that this study focused on an inclusively designed playground that allowed both children with and without disabilities to play. A well-designed inclusive playground reduces barriers for children with disabilities, creating an environment where children with disabilities can engage in similar play behaviors with their typically developing peers. This playground afforded children of all abilities to play together more independently, and because of this, the children felt nurtured, encouraged, respected, and active during play, both physically and socially, thus creating a sense of community among all the children. As a result, the small differences observed between the play of children with and without disabilities may have been larger in an unsupportive environment.

The mean type of dramatic play among children with disabilities was make-believe with objects; for children without disabilities the mean type of dramatic play was make-believe with actions and situations. Again, this is a small difference, but one that suggests children with disabilities' social competence may be slightly delayed, thus impairing their ability to generate ideas for dramatic play. The children without disabilities began engaging in dramatic play without discussing roles in advance, and they maintained the play scenario through short play dialogues. Overall, the children with disabilities used similar settings as those children without disabilities. However, the children without disabilities were more likely to use the nature play areas (less structure), whereas the children with disabilities were more likely to use the spiral slide (more structure).

Creating settings with slightly more structure may reduce the barriers for better interaction between children with and without disabilities. Perhaps a higher level of social and cognitive development and competency for children with disabilities and greater education and awareness of various challenges that children with disabilities face are needed for better interactions to occur (Pellegrini, 1990). Possibly grouping children with similar social skills together on a playground with natural props, areas that are quiet but large enough to accommodate several children, and slightly themed settings would help facilitate dramatic play between children with and without disabilities.

Implications

Future Research

Future studies should compare inclusive playgrounds and typical playgrounds to determine if the differences between children with and without disabilities are indeed smaller on the inclusive playground. By reducing barriers for children with disabilities, a well-designed inclusive playground may create an environment where children with disabilities can engage in similar play behaviors with their typically developing peers. Further study should also consider changes in children's play types in the later stages of elementary school.

For Design

This study suggests that specific playground behavior settings afford children the opportunity to engage in the most dramatic play. These settings include the Natural Play Areas, Open Grassy Area, Sensory Wave Rock N Raft, Thunder Ring, the Ropes Course, the Zip Slide, and the Spirial Slide. All of these settings are open-ended areas that can be used by children as they please. To create developmentally appropriate outdoor playground settings for dramatic play, play professionals should provide several options for children that will push their development forward, including comfortable, flexible settings that are or can be enclosed, have natural play props, include a stage-like area, and areas that are small and quiet but large enough for several children.

Conclusion

This study demonstrated that an inclusive playground that incorporated diverse behavior settings and elements afforded a variety of dramatic play opportunities for all children. The play behaviors of children with and without disabilities in first and second grade were found to be consistent with previous research suggesting that children with disabilities play at lower cognitive and social levels than do children without disabilities. They do, however, use similar settings for play. Slightly more structured or themed settings may reduce barriers and allow for better interaction between children with and without disabilities. This study shows that dramatic play is a significant component of first and second graders' play. Settings with characteristics of loose parts, stage-like areas, natural props, enclosed areas, small and quiet areas, slightly themed elements, and open-ended settings afford more dramatic play. A well-designed inclusive playground reduces barriers for children with disabilities, thereby creating an environment where children with disabilities can engage in similar play behaviors with their typically developing peers.

Play is every child's right. Providing all children with opportunities to participate in inclusive, equitable play experiences will enhance quality of life for the children, their families, and our greater society.

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