Play in the Sandpit
A University and a Child-Care Center Collaborate in Facilitated-Action Research

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Sand play commonly occupies children at preschools, child-development centers, and school and park playgrounds. The authors review the research on sand play and present a small study on outdoor sand play conducted at a university-based, child-development center using a method they call *facilitated-action research*. This study had four primary purposes: to detail who played in the sand area by age and gender; to identify any children who did not play in sand at all; to record what kinds of play sand encouraged; and to determine the effects of adding new play materials to the sand area. The authors conclude with some suggestions for further research.

The symbolism of the sandbox is evident in the titles of two books, although neither of them is about sand play. *Sandbox Society* by Sally Lubeck (1985) is an ethnographic study that compares activities and interactions in a preschool serving white middle-income children and in a Head Start center serving low-income, African American children. *Lessons from the Sandbox* by Alan Gregerman (2000) takes lessons from children's play and applies them to the corporate world. Why the sandbox? Sand play evokes iconic images of a social setting where children interact while exploring, pretending, and experimenting with one of the world's most common play materials. In this article, we will review a small research study designed to answer questions day-care center staff posed about play in the sandpit. Though limited in its scope, the study presents a novel example of research to answer questions about children's play. We hope our report will spark interest in further research on play with sand—a versatile, widely available, open-ended material.

The use of sand in children's programs has a long history, starting with a series of sand gardens developed in Berlin in the 1880s. These play areas, con-

sisting of piles of sand encased in wooden borders, inspired the construction of America's first supervised playgrounds: ten sand gardens in poor areas of Boston in 1887 (Frost 2010; Frost and Woods 1998). G. Stanley Hall, the father of child study in America, eloquently described the value of sand play for developing a child's imagination and learning (1891). He described a sand pile used by two boys for nine summers in which they built elaborate farms, towns, roads, tunnels, hills, and mines. Hall quoted one of their parents on the value of the summer play: "The sand-pile had been of about as much educational value as all the eight months of school" (Hall 1888, 231). According to Maria Montessori, "There is only one substance that the modern child is allowed to handle quite freely, and that is sand. Letting children play with sand has now become universal" (1967, 168).

Why play with sand? Sand is a material with a particular particle size, technically between 2 millimeters (1/12 inches.) and .06 millimeters (1/400 inches). A granular material, it can be mounded, poured, and measured when dry. When it is wet, the surface tension of water causes the grains to stick together (Welland 2009), allowing the sand to be molded, shaped, and carved into a pretend world. Sand is accessible all over the world, and in contrast to other granular materials, it does not readily decompose. The tactile qualities of sand fit well with the sensory emphasis of preschool education recommended by Friedrich Froebel, Montessori, and Jean Piaget (Piaget 1971). Educators value sand play for its cognitive and social benefits (Hill 1977; Milnes n.d.). Piaget's play levels—functional (e.g., jumping in the sand or filling up containers and dumping out the contents); constructive (e.g., building sand castles and roads); and dramatic (e.g., making and pretending to eat sand birthday cakes)—identify the degree of what he calls "mental complexity" (Piaget 1962, 108) of children's play with sand. In sand play, children learn important concepts. For example, they learn science and math principles relating to mass and capacity when they pour and measure sand (Papic, Mulligan, and Bobis 2009). Sand play can enhance the environmental experiences of children when they use recycled plastic containers as sand scoops and play with natural materials such as stones, twigs, bark, and leaves in the sandbox (Boyle 2006).

Many educators and playground designers recommend outdoor sandboxes and sandpits because they encourage various types of play with an open-ended material in a social setting (Crowther and Wellhousen 2004; Frost and Woods 1998; Frost et al. 2004; Hendricks 2001; Isenberg and Jalongo 1997; Moore and Wong 1997; Rivkin 1995; White 2008). Herrington and Lesmeister (2006)

present the seven *c*'s of optimal design for landscaping child-care centers, and they suggest that sand areas fulfill several of them: sand play gives children an opportunity to explore change (sand can be changed by mixing with water and shaping, and it can be moved from one place to another); chance (open-endedness or flexibility); and challenge (opportunity to practice fine motor skills as well as role play). They also note that children will spend more time in sand areas where they are allowed to mix sand and water than in areas where they are not allowed to play with the two materials.

Curricular ideas for using indoor sand tables and outdoor sandboxes have been designed to support children's development (Carother and Wellhousen 2004; Ganovetter and James 1989; Work 2002). Sand tables allow children to pour, measure, and experiment with sieves and funnels (McIntyre 1982; Kieff and Casbergue 2000) and make miniature scenes (Elder 1973). Burnard and others (2006) cite that sand play encourages as-if or possibility thinking when children solve problems with sand, bottles, funnels, and sieves.

Sometimes sand play is encouraged for children who are overly tidy (Hakkarainen (1999) or have emotional issues. Sand trays with small figures to arrange and rearrange assist in play therapy to help children work through emotional problems (Mitchell and Friedman 1994). Such play can be used at different levels by professional therapists (Hunter 1998), school counselors (Carmichael 1994), and even classroom teachers with a little training in therapeutic techniques (Wheat 1995).

Two classic studies conducted in nursery schools by Parten (1933) and Green (1933) provided early glimpses into how sand play differed from other types of play. Parten (1933) observed that children played in the sandbox more frequently than they engaged in any other activity. However, she found that sand did not promote much social play; sand play was predominantly a parallel play activity. Sometimes the children worked cooperatively on building or cooking projects; but unless the project required social assistance, the children often divided up the sand for individual use. Parents reported that disputes over boundaries were common. Green (1933) found that sand play led to more quarreling than play in other areas.

More recent cross-cultural research has examined the popularity and use of sand, both indoors and outdoors, by gender and cultural background. Child (1983), in observing the use of play materials on a play bus, found that children, especially Asian children, played with sand more than with any other materials. However, an ethnographic study (Barron 2009) of an English preschool found

that many Pakistani preschoolers avoided both hand painting and outdoor sand play, perhaps because these somewhat messy activities were unfamiliar to them. A report on Malaysian education noted that "girls are more likely to engage in dough, family play, art, and music whereas boys are more likely to be involved in manipulative activities such as Legos, blocks, sand play, and carpentry or gross motor play, such as trolleys, bikes, and climbing" (Ahmed 2009, 71), activities associated with the development of mathematics and science concepts. Eickelkamp (2007) compared two types of sand play with storytelling among Aboriginal children in Australia. In a naturalistic setting, she observed that Aboriginal girls, but not boys, used sand as a medium for storytelling; whereas in an artificial sand-tray situation, the boys used sand play in their storytelling more dramatically than the girls.

The sand area has provided a setting for studies on teacher-child interactions (Ebbeck 1984), social behavior (Broadhead 2001, 2009), gender differences in play choices (Ligh 2000), and the amount of physical activity sand promotes (Cosco, Moore, and Islam 2010). Ebbeck found that teachers interacted more with boys than with girls in the sand area, perhaps because boys are more unruly. Ligh's study found the sand area to be gender neutral. In a dissertation on play, language, and social interactions of preschoolers at an indoor sand table, Strasser (1995) noted both representational and nonrepresentational forms of play. The sand table promoted the use of language, proved adaptable to various play styles, and encouraged more appropriate behavior than some other parts of the children's play area. A teacher analyzing a video tape of a child engaged in sand play with two other children identified twenty-four different observable behaviors, many of which could be interpreted as cognitive or social learning (Bennett, Wood, and Rogers 1997). A behavior-mapping study on two preschool playgrounds reported that sand promoted about one-fifth of the activity on a playground with a large sand area but that very little of it was moderate to vigorous physical activity (MVPA). The authors noted that "by nature, sand is sedentary" (Cosco, Moore, and Islam 2010, 517) and that sand as a surfacing material inhibits most MVPA, "likely because it makes running difficult" (518).

Research on outdoor sand play has also examined the effects of available material on how children played in the sand. A study comparing two playgrounds found that provision of movable materials in the sand area on one playground led to the construction of roads, tunnels, bridges, and other features and that the proximity of sand to other play areas and the provision of loose parts "encourages children to combine functional play with dramatic play and construction activities" (Barbour 1999, 95). Monighan-Nourot and others (1987) examined

the nature of play episodes in two outdoor sand areas, a small sand table and a large sandpit. They found that the sand table, located near play kitchen appliances, prompted pretend play, primarily cooking episodes and birthday parties. The sandpit, however, promoted primarily construction play and active motor play, and the "teacher's expectations for focused, cohesive, self-directed play were often unfulfilled in this area" (101). After noting that children did not do much digging in this sandpit, the teachers developed "a play curriculum specifically for the sand area" (124). Wardle recommended giving children control of their own experience on the playground by providing choices of moveable materials, and he suggested providing for sand play: "shovels, rakes, pails, miniature farm animals, and cars and trucks." He also recommended "sticks, yarn, fabric, and small pieces of wood" (Wardle 1990, 32).

Our own research was a collaboration between university researchers and child-care center staff. Olga Jarrett, as faculty research liaison with the child-development centers, offered to conduct research on what the center staff wanted to know. We call this *facilitated-action research* (Jarrett, French-Lee, and Kimbro, 2010), because the research questions were proposed by child-care practitioners and facilitated by a university professor and graduate research assistants. Staff posed several questions: Who plays in the sand, and are there special characteristics of children who never play in the sand? Are there ways to make the sand play more creative and constructive and less functional and repetitive? The research was emergent because the staff was curious about the study and raised questions during the conduct of the project.

The resulting small study had four primary purposes: (1) to detail who played in the sand area by age and gender, (2) to identify any children who did not play in the sand, (3) to record what kinds of play sand encouraged, and (4) to determine the effects of adding new play materials to the sand area. We also explored the use of digital interval photography for such research. We did not study the use of an indoor sand table. The use of sand for therapy was likewise outside the purpose of this study.

Method

Piloting data collection

During the spring before the study began, we piloted several methods of data collection. First, we used a video camera on a tripod with an observer keeping time. Second, we used a hand-held video camera with a second observer. Finally,

we tried using an interval-shoot digital camera with the observer moving the camera to include all the children in the sandpit and coding the images later as we looked at the camera's pictures.

We made some tentative observations from the trial data collections.

- The same children tended to choose the sand area repeatedly, and others rarely or never entered the sandpit.
- When the sandpit was crowded or age groups were mixed, aggressive and unruly behavior (e.g., sand throwing) occasionally occurred. The primary play of sand in the sandpit involved repetitive filling and dumping.
- More sand play occurred outside the sandpit than in it. Part of the fun seemed to be in moving the sand elsewhere. Often children used the sandpit more as a "sand quarry" removing sand from the pit for distribution elsewhere.
- Most of the constructive play (road and building construction) and pretend play (birthday cakes and parties) occurred around the sandpit where the sand tended to be damper.
- Sand was most popular after the arrival of a new load of sand in the sandpit, perhaps because the new sand tended to contain interesting creatures, including small toads and grubs.

Observations made during the pilot phase raised more questions and helped focus the research.

Subjects and context

The research was conducted at the Georgia Center of Distinction, a university-sponsored, child-care facility accredited by the National Center for the Education of Young Children (NAEYC). Toddlers, three-year-olds, and four-year-olds played on the playground for approximately forty-five minutes in the mornings and for another forty-five minutes in the afternoons. The play area is a semicircle with a radius of approximately fifty feet. It contains a tricycle path, climbing frame with circular slide, house facades with a wide slide, and a sandpit with a gazebo roof. The sandpit is a former wading pool with a concrete bottom and rim. It is twelve feet in diameter, but the sand extends to approximately one fourth of the playground area because the children have spread the sand widely outside the sandpit. Children regularly move so much

sand that the sand in the sandpit has to be replenished four or five times a year. We use the term *sand area* to describe the sandpit and the area around it where sand play typically takes place. The sand area generally contained plastic shovels, pails, funnels, small hand rakes, and plastic molds. The sand in the sandpit remained generally dry because of the roof; however, in the summer, the teachers sometimes dampened the sand. The dampness of the sand around the pit, that is, beyond the roof, was related to the weather.

The research focused on the twenty four-year-olds and eighteen three-year-olds. The two classes were generally on the playground together from approximately 10:30 to 11:15 in the morning and from 5:00 to 5:45 in the afternoon. We conducted the research during the morning play periods. Sometimes, one group went outside followed by the other group. On other days, the two groups went outside at the same time. Occasionally, only one group was on the playground at a time.

Procedure

We used a Pentax Optio550 digital camera capable of interval shots to record children's sand play. We tested the interval-shoot camera for two to three weeks to determine where to position it to best see the sand area, how much area beyond the sandpit to include in the photographs, and what variables could be coded from the pictures. Data collection began in mid-November. We set the camera to photograph every twenty seconds for ninety-nine photographs, or for a total of thirty-three minutes. If the children went inside before the camera had taken ninety-nine photos, we turned the camera off. Sometimes the children were still playing at the end of the ninety-nine pictures, and the photographer reset the camera. The number of images taken on a given day ranged from sixty-six to one hundred nineteen. The photographer moved to different locations around the sandpit to best record the children. Photographs were taken even if no children were in the sandpit. When children were in the sandpit, the photographer included them, but he or she also included children near the pit who were engaged in sand play. Data collection began on November 13 and ended on December 1. The weather during this time period was fairly mild requiring children to wear light jackets, often with hoods.

Experimentation with sand play materials

To answer the questions the director and teachers had raised, we took pictures on six different days under three sets of conditions. On the first two days, the

children used the sand toys that were usually available to them. For the next four sessions, they were given additional playthings, either cars, trucks, and earthmoving equipment, or more buckets, shovels, molds, and tubs. The playthings were of the sizes that a family might typically take to the beach. Which playthings were added on which day was determined randomly: the children received more buckets and shovels on two days (generally doubling the number available) and approximately six to eight cars and trucks on two days. The extra toys were in the sandpit when the children arrived on the playground. The specific order was determined by the flip of a coin.

Coding of the pictures

After the pictures were downloaded, coauthor Stacey French-Lee, who was also the child-care center director, labeled each picture, writing the name and age of each child in the caption frame. She then looked at the pictures in sequence, reciting the number of boys and girls and the number of three-year-olds and four-year-olds while another researcher recorded the numbers on a tally sheet. Together they tried to determine whether any of the children in the picture were actually playing with the sand and whether any of the children were engaged in functional, constructive, or pretend play. One of the researchers then added up the tallies and calculated the mean numbers of boys and girls and three- and four-year-olds in each play session and the time intervals in which at least one child was engaged in sand play. We attempted to determine when children were engaged in functional, constructive, or pretend play, but the many ambiguous situations made it impossible to consistently tally play by type.

Results

To determine who played in the sand area, we recorded the numbers of boys and girls, as well as three- and four-year-olds. These numbers appear in table 1. To identify the types of play children employed, we noted incidents of functional, constructive, and pretend play. Most of the play appeared to be functional, but more constructive and pretend play primarily occurred when the cars and trucks were added to the sand area. As we mentioned, there were too many ambiguous situations to tally the types of play. To determine the effects of adding new playthings to the area, tallies by age and gender were made separately according to the playthings available.

At least one child was in the sand area in 97.8 percent of the photographs, but that does not mean a child was actually playing with sand all that time. Sometimes, children sat in the area or ran through it without using sand. Table 1 shows the mean number of children in each picture and the percentages of children observed by gender and by age. On November 25, no three-year-olds were on the playground when the sand observations were made. Their absence was not planned, and the center director made note of it when she later coded the pictures.

General observations

The photographs offer us a chance to make some general observations. The sand area was in almost constant use, and all but four of the children in the two classes used the sandpit at least once. The four children who never played in the sand area were three girls and a boy, two children from each class. Generally the sand area was dominated by girls and by four-year-olds. In the initial general materials condition, we recorded at least one child actually playing with the sand in 64 percent of the photographs. In the other photos, the children in the sandpit were chasing, sitting, or socializing but not actually using sand. The low seat around the perimeter of the sandpit provided a particularly popular place

	Children per picture	Percentage of boys	girls	Percentage of 3-yr-olds	4-yr-olds
Typical play materials					
11/13	2.53	37.8	62.2	21.1	78.9
11/17	4.27	30.0	70.0	31.2	68.8
Mean	3.40	33.9	66.1	26.2	73.8
Trucks and cars added to typical play materials					
11/19	4.58	79.8	20.2	69.3	30.7
12/1	2.74	61.0	39.0	67.7	32.7
Mean	3.66	70.4	29.6	68.5	31.7
More buckets and shovels added to typical play materials					
11/20	7.52	41.8	58.2	34.0	66.0
11/25	2.08	2.0	98.0	absent	100.0
Mean	4.80	21.9	78.1		

Table 1. Distribution of Children in Sand Area by Gender, Age, and Play Materials

for children to sit and socialize. Also, children found great fun in standing on the seat and jumping off together into the sand. Some children sat in the sand and talked with one another, ignoring the sand completely.

Adding materials increased the popularity of the sand area, especially among the boys and the three-year-olds. With the addition of more buckets and shovels, there was at least one child playing with the sand in 75 percent of the photographs. The addition of cars and trucks increased the number of photos in which at least one child actually played with sand to 87.6 percent. Compared to the pilot study, we found that even more sand play occurred outside the sandpit; gradually sand from the sandpit "quarry" had filled a large area of the playground. When playing with cars and trucks, the children often took the toys outside the sandpit where the sand had been dampened by recent rains. Regardless of the types of playthings, fewer children played in the sand area on the second day of observation.

Most of the actual play with sand involved scooping and dumping. Toy trucks and cars sparked most of the pretend play. The children used sand to construct only when they played with the vehicles and built mountains and roads. Road construction and car and truck trips also involved pretend play. The only other pretend play involved a few birthday cakes—observed in only three photos. All other play we could identify we considered functional play (e.g., filling, dumping, and jumping). We could identify few instances of misbehavior in the photos, and our observations while collecting data confirmed that there was almost no sand throwing or hitting.

Discussion

According to our research, the sandpit (and surroundings) was a popular area of the playground. We found it in almost constant use. In contrast to the findings of an early study (Green 1933), we did not observe much misbehavior in the sand area. We did not find the sand area as gender neutral as found by Ligh (2000). Ligh found that 48 percent of the sand play episodes involved boys, and 52 percent involved girls. Our results showed that girls consistently dominated the sandpit (over 72 percent of the children in the photos) unless the sandpit playthings included trucks and cars. The large size of the sandpit meant that many children played there at the same time. Large numbers of children in the sandpit may have encouraged interaction but discouraged more sophisticated ways of playing with the sand, especially if children interfered with one another's space.

Implications

The play materials available to the children have important effects on the kind of play that occurred. The initial sand play we observed with the playthings typically present in the sandpit promoted digging and pouring, while these common playthings did not encourage pretend play or constructive play. Surprisingly, we recorded less pretend play than during the pilot phase. The addition of more materials increased play with sand and seemed to increase the mental complexity (Piaget 1962, 108) of the play. The addition of cars and trucks changed the configuration of the sand area, shifting most of the play outside the sandpit where the sand was damper, which encouraged more boys and more three-year-olds to engage in play. A decrease in the number of children playing in the sand and with sand on the second day these materials were available might have been the result of a decrease in interest in the materials on the second day or it might represent normal day-to-day variability. Also, the configuration of children on the playground on those days may also have had an effect. After observing free play with new materials, the teacher might intervene to promote additional ways of playing with the materials. Teachers might also add damp sand. Adding water to the entire sandpit in November could have made sitting in the sand unpleasant for some children. A large tub of damp sand for "mining," however, might have increased construction play.

We suggest that teachers plan for outdoor play the way they plan for activities in the classroom. The addition of more loose parts as recommended by Barbour (1999) and Wardle (1990) could increase constructive and pretend play which can be coordinated with classroom themes. Examples of additional playthings suggested by Wardle (1990) include figures of farm animals, sticks, pieces of wood, fabric, and yarn. Other possibilities might be small branches, street signs, and a greater variety of sand molds. Many important physical, cognitive, and social skills can be learned in the sand area, including fine motor and large motor skills, measurement, cooperative building, sharing, and pretending. After allowing free play and exploration, teachers might encourage children's learning by varying materials or making suggestions about how to build in the sand. They can also observe the children and assess what they are learning.

The playground is a good place for teachers to observe differences between children. We looked, too, at the children who avoided the sandpit. Of the three girls who did not engage in sand play, one was a special-needs child, one wore a patch over one eye and glasses, and the other was very shy. The boy who never went in the sand area had a reputation for avoiding play that might get him dirty and art activities that were "messy." As with the teacher of the overly tidy child

(Hakkarainen 1999), teachers who are aware of children's choices can encourage them to try new things and scaffold their experience so they are successful, as long as they remain sensitive to family and cultural issues (Barron 2009).

Data collection procedures

The digital camera with automatic interval-shoot capability proved useful. We found it easier to code from the still pictures than from video tape as researchers had done in the pilot program. It was easier to identify the children in the static photographs later and to code the numbers of boys and girls and three- and four-year-olds. It was also usually clearer whether at least one child was playing with sand. However, with this methodology, we had to limit the study to activities that were easy to code. We sometimes could not be certain whether children were socializing and whether they were actually playing with sand. If a second person is available to collect data, we recommend that one control the camera while the other takes notes. A digital interval-shoot camera could be used, however, even without outside data collectors if the camera were set for a wide-angle and placed beyond the reach of children. We believe such interval photography has promise as a research tool.

The efficacy of facilitated-action research

As a child-development facility located on a university campus, the center featured in our study welcomes researchers. However, the other studies conducted at the center have involved researchers who received permission to use the center to answer their own research questions. The research described in this article represents a true collaboration between researchers (including graduate research assistants) and practitioners, combining the research skills of academics with the practical expertise of the center director and teachers. There were several advantages to this research. Research questions were chosen by the practitioners, making them very relevant to day-to-day practice. The center director helped with the data analysis, playing an invaluable role. Teachers were very interested in the study and cooperated fully. Findings had immediate, direct application to how the teachers observed the children in the sand area and to the materials they provided. This study helped answer questions the staff posed, informing their decisions about good practice. It also enabled them to speak from their own experience when sharing their findings with center visitors and when training new staff. We believe that the facilitated-action research model could be used effectively in other child-development centers,

especially those with formal or informal links to universities. It could also be used by schools, park systems, and museums that have burning questions but no researchers on their staff.

However, such research is more fluid than more formal research studies. In our study, research questions were not posed at the outset of the study but evolved out of the pilot phase and the practice sessions with the digital camera. The application of our findings to other settings, therefore, must be considered more suggestive than definitive. However, our findings could prompt other child-development centers, as well as schools and parks, to examine the use of materials in their sand areas.

Suggestions for further research

Curriculum recommendations on sand play are all positive, suggesting that children can learn cognitively and socially while playing with sand, but the research on what actually occurs during sand play remains inconclusive. Is interest in sand play culturally specific? Do boys and girls differ? Does sand play promote parallel or social play? Does it lead to cooperative or antisocial behavior? Given the richness of sand as an open-ended play medium and its near universal availability, we need more research on how sand play might stimulate higher levels of constructive, pretend, and social play among both boys and girls. Our study was small and limited. We need research involving larger samples and more diverse programs to corroborate our work and to answer broader questions. However, there is much that teachers and programs can learn from small studies, both about the play behavior of individual children and about the effects of interventions. While conducting this research, we observed the children in a new way, while they were on the playground and through our picture coding, which leads us to the following questions for further study.

How does the consistency of the sand affect the mental complexity of play? Dry sand lends itself only to filling, dumping, and sifting. Play with damp sand allowed children to make hills and design road systems. Because the sandpit in this study had a roof, the sand underneath seldom became damp. What would happen if the sand were deliberately dampened? Would more construction play occur?

In our research, we did not note which group reached the playground first. How does the order in which the various classes enter the playground affect who dominates the sand area? For example, if the four-year-olds are in the sand area when the three-year-olds come outside, do fewer three-year-olds engage in sand

play? Future research could vary the timings of entrance onto the playground and look at the effect of age, sex, or other variables on sand play.

How does the proximity of the teacher affect the number of children in the sandpit and the willingness of shy children to play in the sand? From our observations, we suspect that more children came to the sandpit when a teacher was near. However, in angling the camera to capture all the children in our shoots, we did not necessarily capture the teacher's location when she was nearby.

Our study suggests that materials can affect the way three- and four-year-old boys and girls play in the sand area. It also shows that a digital camera with interval-shoot capability is a useful tool in play research, especially when accompanied by notes. Collaboration between university researchers and child-development center staff—facilitated-action research—appears to be a useful way to find answers to practical program issues regarding curriculum, adult involvement, timing, and materials, both for groups and for individual children.

We hope this study encourages others to explore the value of sand as a play material. Sand has myriad uses. Children use it to fill containers, to form cakes for pretend birthday parties, and to force water wheels to turn. They jump into it. They make castles, roads, tunnels, caves, and mountains with it. They add cars, twigs, stones, and figures to it to create miniature worlds. Sand attracts a single child and groups of children. When children play in the sandpit, they learn about sharing and kindness to others. Sand play has the potential to affect children's social development, their imagination, their coordination, and their confidence. Sand play may affect the way they approach learning, that is, how persistent they are and how much problem solving they do.

The positive effects of sand play are enhanced when teachers and playground supervisors are aware of what occurs during sand play. We hope this study motivates others to study what happens in the sandpit. A medium with so much potential for fun and learning is not only worth using. It is worth careful examination.

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