Shaped by Play:
The Formative Role of Play and Playgrounds

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The Formative Role of Play and Playgrounds

Julie Vaisarova, B.A.
Ph.D. student, Institute of Child Development, University of Minnesota

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WE ARE ALL **SHAPED BY PLAY**

If you know kids, you know the importance of play. Most people know play is important for physical and mental development. And you intuitively understand its power to shape our children's futures.

But, we believe play has the potential to begin building a foundation of life-long leadership skills such as persistence, empathy and leadership. This study will confirm your instincts, hopefully reveal some new insights, and lay the ground work for deeper understanding of how play impacts leadership skill development.

To build better playgrounds and to encourage more of them, we wanted to understand how play leads to the development of successful adults. So, we commissioned this meta-study, "Shaped by Play: The Formative Role of Play and Playgrounds" in partnership with the University of Minnesota Institute of Child Development to advance the conversation.

This study aggregates and analyzes key findings from some of the most influential studies on children and play. Our purpose is to recognize the importance and power of play and encourage you to think about and create positive play experiences for children in your community.

We hope this study reminds you of why you went into your profession—and of the opportunity you have to shape children's lives. On—and off—the playground.

To learn more about the formative role of play, visit **shapedbyplay.com.**

INTRODUCTION

It is a beautiful summer day on the playground. Five-year-old Stacy sits on the swings, happily pumping her legs and singing. Suddenly, her friend Lisa runs over and calls, "Let's play princesses!" Stacy instantly puts on the breaks and jumps off the swing.

"I'm Rapunzel," she announces. "Do you want to be Snow White?"

"I'm Snow White!" Lisa agrees. "Quick, let's get to the castle before the dragon comes!" She takes off running toward the playground structure, with Stacy following close behind.

To the casual observer, Stacy's behavior may appear to have no purpose beyond in-the-moment fun. In reality, however, Stacy is practicing a variety of skills that will lay a foundation for her development into a healthy, well-functioning adult. As she pumps her legs, jumps off the swing, and runs across the playground, Stacy is exercising her body and becoming aware of its range of movement. As she and Lisa co-construct an imaginary story, she practices negotiating and taking another person's perspective. As the girls continue their game, Stacy will practice creating alternatives to reality while also regulating her behavior to ensure that she maintains the rules of the pretend scenario.

Even from this brief example, it is clear that playgrounds can provide opportunities for children to practice a range of skills that ultimately play a role in key adult competencies such as the ability to collaborate with others, successfully take on leadership roles, persevere in the face of distractions, and generate creative ideas. This report will delve into the experience of children like Stacy, summarize evidence suggesting that play helps children practice important social, cognitive, and physical skills, and consider how playgrounds may function as an important context for the development of the whole child.

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WHAT IS PLAY?

When asked this question, virtually any adult can come up with a list of examples. From rowdy games of tag to make-believe stories about princes and dragons, adults typically agree on which behaviors they intuitively identify as play.[1] Outlining a formal definition of playful behavior, however, proves to be more complex.

Play can be defined in terms of distinct *types* of play behavior (physical play, pretend play, etc.) or in terms of broad characteristics that make a behavior more or less "playful".[2] Although these characteristics differ somewhat from one researcher's definition to the next, several key features emerge across definitions.[2,3,4,5,6] Not all of these characteristics must be present for behavior to be considered playful, but the more of them appear the more playful the behavior becomes[3]:

1. Play is voluntary and intrinsically motivated: children play because they want to, not because of an externally imposed goal or demand
2. Play is pleasurable: children enjoy engaging in play
3. Play is process-oriented: the process of playing is more important than the end goal, and the activity does not serve an immediate practical purpose
4. Play is actively engaged: children are mentally and/or physically immersed in the activity
5. Play is non-literal: it involves make-believe

THE CURRENT STATUS OF PLAY

Play, in its varied forms, is an integral part of childhood in virtually every community from the Yucatan peninsula to New Delhi.[7] Researchers have spent decades striving to understand playful behavior, and although questions remain it has become clear that play is closely linked to children's development in cognitive, social, and physical domains. At this stage, most of the research on play is correlational and therefore cannot definitively unravel whether play produces—or is a product of—developmental change. However, the evidence for associations between play and positive outcomes is so strong that the National Association for the Education of Young Children[8] considers it a key component of developmentally appropriate teaching practice, the American Academy of Pediatrics[9] has issued guidelines to help pediatricians encourage play, and the UN High Commission on Human Rights[10] declared play a fundamental right of all children.

Despite its potentially important role in children's development, play has been threatened by a series of recent societal shifts. A growing focus on academic achievement and standardized testing has led schools and parents to reduce time for play: schools are limiting recess time for elementary students[11] and the use of play in preschool classrooms,[12] while parents are replacing unstructured play time with organized activities.[9] Together with the increasing availability of passive entertainment (e.g., television) and a lack of safe play spaces[9]—especially in disadvantaged neighborhoods—these factors have led to a significant reduction in play. Although precise estimates are difficult to come by, one study has suggested that children's play time decreased by 25 percent between the years of 1981 and 1997, and these levels remained stable through the year 2003.[13,14] In this climate, considering the role of play in children's lives, and how it might be promoted through quality play spaces, is more important than ever.

CHILDREN'S PLAY SPACES

As the broad definition of playful behavior implies, children can play virtually anywhere—on the sidewalk, on the bus, or waiting in line at the grocery store. Certain spaces, however, appear repeatedly as the focus of research on children's play:

- Children can play at home, either indoors or—if such an area is available and safe—in an outdoor yard.[15,16]
- Children can play at school. Preschool classes may incorporate play into their curricula, or at least provide space and materials for play.[17, 18] Older children have an opportunity to play during recess, although these opportunities are becoming more limited.[11]
- Children can play in community recreational spaces—parks and playgrounds.[19]

This report will examine children's play on playgrounds—a unique context that spans both school and community settings. Compared to the home or classroom, playgrounds can facilitate interaction with a more diverse group of peers and give children the opportunity to continually build new relationships.

They also provide more opportunities to integrate physical activity with other forms of play. On playgrounds, children have the space and freedom to run around wildly while playing monsters and aliens, or clamber around the play equipment while pretending to be monkeys at the zoo. Well-designed playgrounds thus have the potential to support the health and development of the whole child—their physical health, as well as the social and cognitive skills that are so important for successful functioning in the "adult world."

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SOCIAL PLAY

Social play can be defined as any playful activity that involves interacting with another child or adult.[2] Although social play may best be thought of as a characteristic of play that occurs in combination with other activities (e.g., pretense or physical play) it is highlighted here because the social aspects of children's play may have special significance for development.

Developmental Timeline

Children's earliest play interactions typically involve adults, who lead and structure the activity.[3,15] As children develop more mature social skills, they also begin to engage in increasingly frequent and complex play with their peers. In toddlerhood, this often takes the form of parallel play—children playing alongside one another without interacting.[20] On a playground, one might see two young children playing together in the sandbox but carrying on independent monologues—one talking about making a cake, and the other about making a big hill. Gradually, however, children start to communicate about their play activities, and by around age 3 they can engage in organized play with a shared goal (e.g., working together to build a sandcastle).[20,21]

Play with Adults

From playing peek-a-boo with infants to initiating simple pretend games with toddlers, adults are usually children's first play partners.[3,15] Adults contribute to these interactions by scaffolding children's play—supporting their emerging skills and helping them engage in activities that are just slightly beyond their ability level. For instance, an adult might give a child a boost as she climbs a ladder and then hold her hand as she slides down the slide, gradually helping less and less as the child masters the activity. Similarly, through prompting and questions, adults can help children engage in longer, more complex pretend scenarios than they could sustain on their own.[22, 23] When playing princesses, an adult may prompt a child to choose part of the play structure as a "castle" ("If we're princesses, we need a castle. Where is our castle?"); elaborate on the child's suggestions ("Oh, is that a dragon? Do you think it's a nice dragon?"); and suggest new directions for play ("What do you think princesses do when it's dinnertime?")

Adult-child play also provides a context for many developmentally beneficial interactions. In play, adults have an opportunity to converse with children, exposing them to the structure of language and to new vocabulary. These types of verbal interactions are associated with children's language development, and are thought to support the successful acquisition of literacy skills.[24,25] Play also provides opportunities for adults and children to discuss thoughts and emotions—whether explaining the importance of taking turns on the slide or discussing the thoughts of an imagined character. Conversations about thoughts and feelings have been found to predict children's later understanding of others' mental states,[26] which in turn has implications for their perspective taking abilities. Perhaps most importantly, however, there is evidence that the quality of adult-child play is associated with the quality of children's social interaction with their peers.[27] Although this link is likely to operate in both directions —with more socially skilled children also eliciting higher-quality play from adults— it suggests that child-adult play may help to lay a foundation for children's social skills.

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Play with Peers

In contrast to adult-child play, peer play involves participants who are at a similar level of skill and authority. This makes peer play more demanding than adult-child play—whether children are deciding who gets the next turn on the swings or who gets to be the king in a pretend game, they must take into account each other's opinions and actively negotiate the rules of play.[28] Engaging in such negotiations and resolving the conflicts that inevitably arise along the way provides children with valuable opportunities to practice imagining another's perspective, communicating about their feelings, exercising self-control, dealing with frustration, and ultimately working together to create an experience that is enjoyable for all.[28,29]

Research on children's peer play in school settings suggests that the ability to play successfully with peers may have consequences for both social and cognitive development. In a series of studies led by researchers at the University of Pennsylvania, preschoolers who displayed more positive peer play

behaviors also tended to be better-regulated and less disruptive in the classroom.[30,31] Furthermore, at the end of the school year, these children showed fewer problem behaviors, better literacy and math skills, and greater social engagement.[30,31] Other research has found that the frequency of peer play in kindergarten predicts gains in academic skills over the course of first grade.[32] While these studies do not provide conclusive evidence of a cause-and-effect relationship between peer play and other skills, they do indicate that peer social play is closely intertwined with children's social and cognitive development.

Social Play on Playgrounds

Playgrounds—whether in schools or communities—provide opportunities for diverse groups of children to interact. At school, the playground is a place to play with children from other classes and grade levels. In the community, playgrounds are places where children encounter an ever-changing group of peers and constantly use their developing social skills to build relationships. At the same time, playgrounds also pose unique challenges that test children's social abilities. For example, certain playground equipment (such as swings and slides) can only be used by a few children at a time. To successfully take turns and play on this equipment, children must exercise their developing perspective-taking, negotiation, and self-regulation skills.[28]

Formal research on children's playground activity is sparse, but recent studies suggest that a substantial portion of children's play on playgrounds (estimates range from 34 to 59 percent)[33,34] involves interacting with other children. Furthermore, certain playground features seem to be particularly conducive to social play. These include partially enclosed spaces where children can find some privacy from adults,[35] linked play structures that can be used by multiple children at the same time[36] (as opposed to isolated pieces of equipment), and moveable play materials that children can operate cooperatively.[36,37] Playgrounds thus not only provide a context in which children have the opportunity to practice key social skills, but their structure may be deliberately planned to encourage social, interactive play.

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Finally, although adults often play a supervisory role on playgrounds,[35] these settings also have the potential to support many of the developmentally beneficial adult-child interactions described above. While adults can talk to children, discuss feelings, and teach them about social interaction anywhere at any time, life is full of distractions—from errands to emails—that can disrupt these exchanges. Setting aside time to play together in an environment designed for this purpose can provide a valuable opportunity for adults to devote their full attention to engaging with children.

PRETEND PLAY

Perhaps the most recognizable form of childhood play involves pretending—treating a person, object, or action as if it were something else.[38,39] This category encompasses a variety of behaviors that range from simply substituting one object for another (e.g., pretending that a slide is a waterfall) to engaging in elaborate, interactive scenarios wherein a group of children take on coordinated pretend roles (so-called "sociodramatic play").

Developmental Timeline

Children begin to engage in simple pretend actions as early as 12 months of age, and their pretense becomes increasingly complex throughout early childhood.[38,39] By age two, children can pretend that one object represents another and respond appropriately to others' pretend actions, and by the time

they reach preschool they can create elaborate pretend scenarios that are far-removed from reality.[39,40] Pretend play generally wanes after the preschool years, as children's interest shifts to games with rules (e.g., hopscotch).[39] However, there is evidence that many individuals continue to engage in some form of pretense throughout the elementary school years, with some pretending until adolescence or early adulthood.[41]

Pretense and Development

The links between pretense and development have been particularly widely researched, and evidence has accumulated that pretend play is associated with children's language skills, self-regulation, creativity, and social competence.

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Language and Literacy

At their core, both language and pretense are symbolic systems—just as a mountain of sand in the sandbox can represent an exploding volcano, the sounds and letters of language represent objects, actions, and ideas. Pretend play, therefore, may lay a foundation for language and literacy skills by helping children practice thinking in terms of symbols and what they represent.[2] Indeed, there is evidence that the complexity of preschoolers' symbol use during pretend play predicts the subsequent growth of their language abilities.[42]

When engaging in sociodramatic play, children also have many opportunities to practice using their language skills—both to negotiate with play partners and to narrate the story. For instance, consider the negotiation and narration occurring in the following conversation that might take place on the playground between two children playing "explorers":

Suzy: Let's play like we're exploring. There's a big, big treasure and we gotta find it.

Tom: We're the Wild Kratt brothers! We're in the rainforest and that over there [points to play structure] is a huuuuge cave! But we gotta go by the lions first.

Suzy: Nooo! No lions!

Tom: Alligators—I mean, alligators.

Suzy: I'm Chris Kratt and you can be Martin Kratt. I have a map to find the treasure, and a supersonic zapper for the alligators. Let's go!

Tom: Wait, we gotta read the map first [pretends to look at a map]. It says "TOP SECRET."

Research has indicated that preschoolers tend to talk more and produce more complex phrases during pretend play than during other activities,[43] and—perhaps more importantly—that the linguistic qualities of their play predict language development. For example, the frequency of preschoolers' literacy-related play (e.g., Tom pretending to read the map) has been found to predict subsequent reading skills,[44] and the amount of time 3-year-olds spend talking to peers while pretending has been found to predict later vocabulary.[45]

To successfully co-create an imaginary scenario, children must also clearly organize their ideas, comprehend others' suggestions, and integrate these into a coherent story. In the scenario described above, both children offer ideas and Suzy then puts them together into a clear plan for the play (fight the alligators, and use the map to find the treasure). Developmental researchers have suggested that mastering these organizational skills in play prepares children to understand and produce more complex narratives in other contexts as well,[45] and findings have supported this claim. For example, asking children to re-enact a story has been shown to improve their comprehension and memory of the story's plot,[46] and encouraging them to act out imagined scenarios has been linked to increasingly clear and complex storytelling.[18] Together, this evidence suggests that engaging in pretend play—especially sociodramatic play—may contribute to the development of effective language and communication skills.

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Self-regulation

Self-regulation, broadly defined, encompasses a child's ability to control his/her thoughts and emotions in order to achieve a goal[23]—whether that involves tuning out distractions to focus on a game of hopscotch, or staying calm during a disagreement over the rules while playing hide-and-seek. This ability begins to emerge early in childhood, and develops rapidly throughout the preschool years when the frequency of pretend play is at its peak.[47,40]

Despite the free-for-all connotations of the word "play," children's pretense is highly rule-based and provides many opportunities to practice self-regulation skills. Any pretend scenario contains implicit guidelines that govern what will be said and done, when, and by whom.[48] For instance, in a game that involves "riding the bus," there is an unspoken expectation that a certain section of the playground structure will be the "bus," that the "driver" will sit in front and the "passengers" will sit behind him, and that "passengers" cannot leave the "bus" except through an agreed-upon "door". To successfully sustain the pretend game, children must keep these rules in mind, actively tune out reality (e.g., ignore the fact that the play structure isn't *actually* a bus), and override any impulses or emotional reactions that might disrupt the play.[48]

A number of studies have provided evidence that pretend play and children's self-regulation skills are, indeed, associated.[48] Interventions designed to increase the frequency of children's pretend play have also improved their self-regulation, suggesting that engaging in pretense may be a key ingredient in the development of strong self-regulation skills.[49,50] Other studies have supported this conclusion less directly, by showing positive associations between self-regulation and various aspects of children's pretense, including their propensity to engage in imaginative play and the sophistication of their pretense activities.[52,53]

Play provides an opportunity for children to practice skills they will need to become creative, innovative adults.

Creativity

Perhaps the most striking feature of children's pretend play is how flexibly they can transform their surroundings. One minute a play structure may be the deck of a pirate ship, and the next it may become a cage full of roaring lions. This ability to generate stories and assign an object many different identities is conceptually similar to the ability to produce novel, useful ideas—commonly known as creativity.[54] Indeed, psychologists have argued that play provides an opportunity for children to practice skills they will need to become creative, innovative adults, including the ability to freely express emotions and to flexibly transform ideas and objects.[55]

Research linking pretense and creativity is relatively sparse, but nevertheless suggests that the flexibility shown in pretend play may be a precursor of future creative ability. One of the foundational studies on this topic found that a period of free play enhanced children's ability to generate uses for objects (a commonly used index of creative potential), but only for children who engaged in make-believe during this play period.[56] Although this study's methods have been criticized, it is interpreted by some researchers as evidence that pretending, at least temporarily, boosts children's creative thinking. Other findings have indicated that the frequency and quality of children's pretend play is associated with their current[58] and future[59] creative abilities. However, this association has not been consistently found in all studies[53] and it is important to keep in mind that research on this topic is still at a relatively early stage.

Social Understanding

Pretend play has several social layers that may contribute to children's emerging understanding of others' thoughts and feelings.[60] First, in sociodramatic play children directly practice social skills (e.g., turn-taking and collaboration) by jointly negotiating the rules of the scenario.[61] For instance, in Suzy and Tom's negotiation about playing "explorers," they need to collectively decide who will take on the role of which Kratt brother, and which animals they will face on their way to the treasure. As the play unfolds, they will also need to decide which part of the play structure will be the treasure cave, and whether they will use a physical prop to represent the alligator zapper. This process becomes even more socially complex with children of different ages, as younger children need to be assigned roles that they can realistically sustain. For example, if Suzy's little brother Johnny wanted to join in, the older children might negotiate to involve him in the play as a monkey:

Suzy: Johnny, you can be Martin Kratt's monkey. You follow Tom around and pretend to be a monkey, okay?

Tom: Martin doesn't have a monkey!

Suzy: It's his new friend from the rainforest. And besides, Johnny knows how to be a really good monkey!

Additionally, both pretending and perspective-taking involve keeping in mind two different versions of the world.[60] Just as pretending that a rock is a magic amulet that wards off monsters requires keeping in mind both reality (it is a rock) and pretense (it is an amulet), imagining another's perspective requires keeping in mind both one's own and someone else's view of the same situation. Thus, by pretending, children may practice key cognitive skills that they will need to imagine and understand what others are thinking. In adulthood these skills can become a vital part of individuals' social "toolkits," helping to support effective leadership and teamwork. Imaginary role-play (taking on a pretend identity) may be especially important in this respect, as it directly prompts children to consider how someone else might think and feel.[62]

Research has suggested that children who engage in more frequent and elaborated pretend play do, indeed, tend to be better perspective-takers and have a better understanding of others' mental states.[63,64] Furthermore, there is evidence that frequent pretenders tend to display more competent

social behavior in real-life settings—especially when interacting with their peers.[65, 61] As in other domains, these links are likely to operate in both directions—engaging in pretense may help improve children's perspective taking and social skills, but better perspective takers may also be more likely to engage in pretend play.[66] However, results from one study that actively trained 4-year-old children to engage in role play suggest that—at least in some circumstances—this type of play may contribute to improvements in children's perspective-taking abilities.[67]

Thoughtfully designed playgrounds can be a means of encouraging imaginative play that may contribute to children's development in multiple domains.

Pretend Play on Playgrounds

Studies of children's pretense on playgrounds are few and far between, but those that exist have reported that pretend play comprises between 4 and 12 percent of the time children spend on playgrounds, and between 4 and 37 percent of their playground play.[33,68,36,34] Much of the variation in these estimates is likely due to differences in the ages of children observed—as summarized above, preschoolers are particularly active in pretend play compared to older or younger children. Additionally, some of these figures may be underestimates, as pretense isn't always readily apparent. It can be difficult to tell whether a child is simply running around, or whether she is running to escape imaginary monsters.[34] Nevertheless, these findings clearly show that pretend play routinely occurs on playgrounds and may constitute a significant portion of children's playground activity.

Existing evidence also suggests that pretend play is supported more effectively by some play spaces than others. One early study found that, following the installation of a tire play structure on a blacktop school playground, the proportion of time children spent in pretend play nearly doubled.[68] Other researchers have observed that pretend play occurs more frequently on play equipment that is more "encapsulated" (enclosed or surrounded by other equipment),[69] and on playgrounds with a single, multipurpose structure as opposed to isolated pieces of equipment designed for a specific use (e.g., a slide and swings).[70] Playground settings can also be enriched in ways that support specific types of pretense that may, as outlined above, contribute to the development of certain skills. For instance, a section of the playground could be enriched with literacy-related equipment (e.g., a grocery store corner with simple signs and labels) to support language-related play. In sum, thoughtfully designed playgrounds can be a means of encouraging imaginative play that may contribute to children's development in multiple domains.

PHYSICAL PLAY

As the name implies, physical play refers to moderate or vigorous physical activity occurring in a playful context.[71,72] Similar to social play, physical play often co-occurs with other types of play—from pretense to games with rules. Physical play, however, can also occur on its own when children run, climb, or swing for no apparent reason other than the pleasure of movement.

Developmental Benefits

Despite the fact that physical play comprises a significant portion of children's activity—around 20 percent of activity in preschool classes and 13 percent on primary school playgrounds—its

developmental functions have received relatively little attention.[72] The rapid development of muscles and bones during the preschool years parallels an uptick in physical play, suggesting that the two are linked.[72] Indeed, there is some evidence that providing school-aged children with specific types of play equipment leads to increased strength of relevant muscles,[73] and that encouraging children to regularly engage in jumping movements like those that occur during active play has lasting effects on bone mineral content.[74] However, this link has not been widely researched and it remains unclear whether bone and muscle growth enables more vigorous physical play, physical play contributes to bone and muscle growth, or some combination of the two.

Studies of children's playground activity have also suggested that physical play may support the development of gross motor skills, although these findings are largely limited to skills displayed on the playground. For instance, there is evidence that children's play on overhead bars becomes better-coordinated with increasing experience. When given daily practice and encouragement, children as young as three can rapidly progress from simply hanging to shifting their weight and grip in order to move from one bar to the next.[75] Similar patterns of increasing coordination have also been observed on other types of climbing equipment, suggesting that the practice acquired through physical play may contribute to the refinement of relevant gross motor skills.[75]

Playgrounds and Physical Health

Physical activity has been linked to multiple indicators of child and adolescent health,[76] and the Centers for Disease Control currently recommend that members of this age group should spend at least 60 minutes per day engaging in moderate-to-vigorous physical activity.[77] In an age when children have ever-easier access to passive entertainment options (e.g., T.V. and videogames) and are increasingly likely to travel by car rather than walking or biking, the physical play that takes place in outdoor play spaces may contribute significantly to meeting these guidelines.[78,79]

Multiple studies have suggested that access to recreational facilities and programs (including parks and playgrounds) is associated with children and adolescents' physical activity.[79,80,81] For example, in a 1993 study, James Sallis and colleagues found that preschoolers who had easy access to outdoor play spaces and spent more time there were more physically active than preschoolers who did not have these resources or didn't take advantage of them.[82] Beyond issues of access, the specific qualities of an outdoor play space are also associated with children's levels of active play. Across multiple studies, the addition of play structures[68] or painted markings[83,84] to previously empty playgrounds has been linked to increases in physically active play. Furthermore, certain regions of playgrounds appear to support more physical activity than others—in two studies of children's playground activity playgrounds, play structures (especially integrated, single structures) supported the most active, physical play.[37,33]

Studies of children's activity during school recess further suggest that outdoor play contributes significantly to overall physical activity levels. Across a number of studies, elementary school children have been shown to spend a substantial chunk of their recess time—15 to 56 percent—engaging in moderate-to-vigorous physical activity.[85,86,87,88,89] Importantly, researchers have also suggested that unstructured outdoor play may provide a uniquely motivating context for physical activity; some children may find it more enjoyable to chase one another in a game of "hot lava monster" than to play on a soccer team or run relay races during a physical education (P.E.) class.[36] Indeed, there is evidence that some children may be more active during recess than during P.E. classes,[85] although the opposite (more physical activity during P.E. than recess) has also been found[90] and specific patterns of activity are likely to arise from the characteristics of a particular school. Taken together, however, these results suggest that time spent on playgrounds may play a key role in helping children meet physical activity recommendations.

Children's early experiences and the settings they inhabit play a powerful role in shaping the adults they will become.[91]

CONCLUSION: CHILDREN'S PLAY AND PLAYGROUNDS

Children's early experiences and the settings they inhabit play a powerful role in shaping the adults they will become.[91] To date, playgrounds have been largely overlooked as settings for development—perhaps because it is easy to assume that play is "just for fun" or playgrounds are just for exercise. However, as outlined in this report, research suggests that playgrounds may provide a context in which children can practice key social, cognitive, and physical skills.

According to recent studies, children spend around 80 percent of their time on playgrounds engaging in playful activities, including social, physical, and pretend play.[33,37,92] Furthermore, research suggests that these types of play can be reinforced by certain playground features. These include the presence of varied equipment that lends itself to diverse activities,[36,33] modifiable materials that allow children to alter the environment,[36,35,,37] and partly enclosed spaces that provide some privacy from adult supervision.[36,69,34] Playgrounds can thus be deliberately designed to encourage children's engagement in developmentally significant forms of play.

The research summarized in this report also makes it clear that playgrounds can function as a uniquely flexible play setting. They provide space for children to blend pretense and social play with physical activity; children can run around while "fighting dragons" or swing from the play equipment like monkeys, exercising their social, cognitive, and physical skills all at once. Furthermore, well-designed playgrounds can provide for children with diverse needs and levels of ability. Toddlers who are learning to walk can find a physical challenge in climbing a few stairs, while skillful 10-year-olds can find an equally exciting challenge in clambering to the top of a play structure. Children can take advantage of open spaces to engage in socially and linguistically complex pretend scenarios, but also find a quiet nook in which to privately create elaborate stories. In short, through their ability to support varied types of play for children of all ages, playgrounds may contribute to the development of critical skills that will eventually help children become healthy and effective thinkers, leaders, and collaborators.

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