Discovering Nature: The Benefits of Teaching Outside of the Classroom

Are there really positive benefits when teachers engage young children in meaningful learning experiences about the natural world outdoors? This article substantiates the positive learning benefits found in research.

Jill L. Jacobi-Vessels

When asked to think about their favorite places to play when they were little, many early childhood teachers tell exciting tales of 'forts' behind bushes, making 'soup' from grass and pine cones, or catching tadpoles in a creek. Some remember quiet moments of solitude watching the clouds drift by or sunlight flickering through the leaves of a tall tree. In spite of fond memories of outdoor play and a desire to support children's development, many early childhood teachers are reluctant to take the class outside.

Teachers who did not spend enjoyable time outdoors when little may be even more hesitant to open the classroom door and explore the great outdoors. Some teachers do not feel that they know enough to be effective when teaching about the outdoors, and others avoid going out because they dislike getting dirty or being too hot or cold themselves (Copeland, Kendeigh, Saelens, Karkwarf, & Sherman, 2012). Smearing on sunscreen and putting on coats and hats is a lot of work. Is it really worth the effort?

Nature play sets the stage for lifelong approaches to learning.

Benefits of Nature Play to Children

Nature play can be an effective teaching strategy across the curriculum and may provide children and teachers with lasting memories. While a little hesitance to open the classroom door may be understandable, the rewards of class time spent with nature clearly outweigh the drawbacks. Research shows that experiences in natural settings provide multiple benefits to young children including increased physical activity, reduced obesity, and improved concentration and enhanced social skills.

Physical Benefits

It can be very difficult for working parents to find the time or energy to engage in active play with their children. Dinner and laundry do not take care of themselves, but still must be done after a hard day at work. Children's television programming may be a very tempting distraction tool. It is important, however, to know that patterns of active or sedentary behaviors begin to form as early as infancy and that early television viewing habits carry over to preschool and beyond (Certain & Kahn, 2002). Television viewing is sedentary by nature and has been linked with reduced bone mass in children, which may lead to more frequent fractures (Wosje, Koury, Claytor, Copeland, Kalkwarf, & Daniels, 2009).

Sedentary behavior may contribute to obesity. In spite of heightened awareness, obesity is a growing concern in this country and the prevalence of being overweight in young children continues to rise (Ogden, Carroll, Curtin, McDowell, Tabak, & Flegal, 2006; Sherry, Mei, Scanlon, Mokdad, & Grummer-Strawn, 2004). The good news is that regular physical activity reduces the health risks associated with being overweight. In fact, overweight individuals who are physically active have lower health risks than those with normal weight who are not active (Blair & Brodney, 1999). The message is clear, children need to get up and move.

Photo courtesy of GLOBE/Pre-K, Phoenix Magnet Elementary School, Alexandria, LA

Children's curiosity can be a tool to help them develop scientific inquiry, a focused and systematic approach to observation, documentation and investigation.

Childcare center practices have a strong influence on children's overall level of physical activity (Finn, Johannsen, & Specker, 2002). One might hope that children would have time for active physical play while at childcare. Unfortunately, preschoolers spend as much as 89% of their time in childcare engaged in sedentary activities. (Brown, Pfeiffer, McIver, Dowda, Addy, & Pate, 2009; Sugiyama, Okely, Masters, & Moore, 2012). Is it truly developmentally appropriate to ask a preschooler to sit still for 89% of the day?

Children are intrinsically motivated to move when given extended playtime in settings that are abundant with plant and animal life. In a two- year study, Bell, Wilson, & Liu (2008) found that children who lived in greener neighborhoods were less likely to gain in body mass index than children who lived in neighborhoods with less vegetation. The outdoors, where curiosity and nature invite children to rush from log to anthill and back again, is an ideal setting for children's physical development.

Many American playgrounds offer climbing equipment, slides cushioned by layers of mulch or rubber, sandboxes, and wheeled toys. Some playgrounds, however, are missing the greener ingredient. Outdoor play spaces with ample vegetation may actually increase the amount of physical activity over that of the typical commercially produced playground structures planted in a barren surface (Trost, Ward, & Senso, 2010). Rocks and hills tempt children to climb or race to the top while using muscles to balance and adjust to uneven terrain. Fjortoft (2001) found that the rocks and slopes in a nearby forest provided Norwegian kindergarten children frequent balance and coordination challenges. Indeed, the children who played in the forest had better motor skills than the children who spent their time on the traditional playground.

Cognitive Benefits

Approximately half of American preschool children do not have an opportunity to play outside under parent supervision each day (Tandon, Zhaou, & Christakis, 2012). Finding an appropriate place to play can be challenging. Parents who live in urban neighborhoods may not let their children play outdoors in an effort to protect them from neighborhood safety issues (Farley, Meriwether, Baker, Watkins, Johnson, & Webber, 2007; Kalish, Banco, Burke, & Lapidus, 2010; Molnar, Gortmaker, Bull, & Buka, 2004). Many young children now spend the hours that used to be spent playing whole-neighborhood 'hide and seek' watching television and playing video games. This migration from playing in the yard to playing a video game has led to what Richard Louv (2005) calls 'Nature Deficit Disorder'. While this is not a medical diagnosis, Louv points to the increase in childhood depression, obesity, and shortened attention spans as products of lost time communing with nature.

Children need to get up and move.

While running and jumping on playground equipment keeps children moving, exposure to plant and animal life has great rewards. The cognitive benefits of sustained outdoor play in plant rich environments spill over into the classroom, providing children with increased attention after they go back inside (Holmes, Pelegrini, & Schmidt, 2006). Indeed, Faber Taylor and Kuo (2009) found that a twenty-minute walk in the park increased the attention of 7-to12-year-old children with ADHD more than a twenty-minute walk downtown or through a neighborhood. They suggested that "doses of nature" may be a safe and inexpensive tool for helping children with ADHD. In a similar study, children in the Netherlands with ADHD showed greater concentration skills

when in the woods than they did when visiting a nearby town (Van den Berg & Van den Berg, 2010). In a U.S. nationwide study, parents of children diagnosed with ADHD reported the effects of different types of leisure activities on their children's symptoms. The children showed fewer symptoms after play in green natural settings than after playing indoors or on installed playgrounds. (Faber Taylor & Kuo, 2009; Kuo & Faber Taylor 2004).

According to Howard Gardner (1999), knowing about nature is an intelligence of its own. Gardner added naturalistic intelligence to his theory of multiple intelligences. Naturalistic intelligence includes the ability to identify plants and animals and their relationships with other parts of the environment and to understand one's own relationship to other living things. By fostering naturalistic intelligence, we help children become stewards of the environment. Teachers support the development of naturalistic intelligence by providing early and frequent exposure to local plants and wildlife. Such exposure helps children establish respect for living things and the natural world around them (Wilson, 1993).

Teachers can use children's curiosity about nature to help them develop scientific inquiry, a focused and systematic approach to observation, documentation, and investigation. Scientific inquiry involves several stages, including wonder and exploration, taking action, extending and clarifying questions, searching for patterns and relationships, and sharing ideas (Chalufour & Worth, 2003; Worth & Grollman, 2003) and is evident in many forms of children's nature play. Children are intrinsically motivated to observe, examine, compare, and experiment when faced with unknown plants, animals, and physical environments. During nature play, children take in a wide variety of information that is not available indoors. They use all of their senses as they explore and create in outdoor settings. They may see a lizard scamper under a rock, smell the rain, hear squirrels chastise them from the tree tops, stroke the soft surface of a dandelion, or taste tomatoes ripe from the vine.

Social/Emotional Benefits

Nature play provides rich fodder for young imaginations, growing vocabularies, and budding social skills as children negotiate themes and scenarios and settle disputes. Children rather than teachers often direct nature play, thus building a sense of competence and collaboration. The Nature Action Collaborative for Children (NACC) provides universal principles for connecting children with nature. According to NACC, children should 'be respected as competent, powerful learners and risk-takers who have a voice in what they create and learn through nature.

Teachers who provide nature play set the stage for lifelong approaches to learning. When they encourage children to investigate, ask questions, and seek solutions, children begin to trust their own ideas. In early childhood classrooms, everything has its purpose and place. Unit blocks and foam bricks are for building in the block area. Scissors, glue, and paint are for masterpieces created in the art area. While the structure and predictability of the classroom meets many of the needs of children, nature play offers different and important experiences for children that include real and open-ended objects (Talbot & Frost, 1989).

Children experience stress and irritability for many reasons and often struggle to find socially acceptable ways to relieve strong emotions. Reading in the shade of a tree or tending flowers in the sunshine can provide children with a sense of peace and freedom that they cannot

Photo courtesy of Dora L. Lewis Family & Child Development Center, Richmond, VA

Block play is not just an indoors activity. Creative use of natural materials to provide building materials can be an innovative approach to a traditional activity.

necessarily find indoors. Frustrations with friends who would not share may melt away when the classroom door opens. In his book, *Last Child in the Woods*, Richard Louv states that children "bring the confusion of the world to the woods and wash it in the creek" (Louv, 2005, p. 7).

Many early childhood teachers seek to instill in children a sense of belonging not only within the classroom but also in the community and the world. Nature play provides hands-on opportunities to teach children to care about other people, living things, and their environments. Personal interactions with nature help children develop a caring and respectful attitude for all living things (Basile & White, 2000). Children who know and value the plants and creatures around them may be more likely to personally find ways to protect and preserve the environment (Blanchard & Buchanan, 2011).

Photo courtesy of Westlake United Methodist Preschool, Austin, TX

Teachers play an important role by helping children connect with nature. A positive attitude and modeled curiosity can go a long way.

Making Nature Play Part of Every Day

Research provides clear evidence that taking the class outside into green spaces is worth the effort. Opening the door to nature play is not as difficult as it may seem. Taking one step at a time rather than climbing the whole mountain will make the journey enjoyable for all. The following sections provide some ideas to make the adventure as smooth as possible.

Finding Time for Nature

In childcare centers, outdoor time is often scheduled with little opportunity to spend extra time because other classes are waiting for their time to use the playground space. How then can teachers give children in-depth opportunities to explore nature with the time and resources available? It is helpful to remember that there is more out there than the fenced-in playground.

Many of the same activities can take place both indoors and outdoors.

If a center is fortunate enough to be located near a field or small woods, it has a ready-made, cost-free location for play. Teachers who work in urban areas may feel that nature is not available to them yet cities abound with pigeons, worms, and squirrels. Regular walks through the neighborhood or visits to a nearby park provide ample opportunities to discover nature's best. We simply need to be attuned to the dandelions forcing their way through the cracks in the sidewalk and other instances of nature in the city. Many neighborhoods are home to dedicated yard gardeners who are happy to talk about their hobby. Teachers and children can enhance their own nature environment by planting a tree on the playground or tending container gardens.

Bringing the Indoors out and the Outdoors in

Viewing animals up close can be fascinating and exciting. Feeding stations such as birdfeeders and corn trays for squirrels are relatively inexpensive and bring nature to the classroom window. When children learn that the red birds are cardinals and the brown ones are sparrows they may search for the names of other birds that they encounter at the feeder and enthusiastically share their newfound knowledge with friends and family. Because the birds are local, the children are more likely to see them repeatedly and apply what they learn in other settings.

Outdoor spaces lend themselves easily to many of the same activities that take place in the classroom. Children may enjoy reading books on a blanket on the grass, writing and drawing in nature journals to document the growth in the garden,

or painting the shadows cast by a tree. Adding portable play equipment that is typically used indoors to the playground can increase the level of physical activity (Hartle, 1996; Kreichauf, Wildgruber, Krombholz, Gibson, Voegele, & Nixon, 2011). Block building may take on new meaning outdoors, especially when the typical unit blocks or waffle blocks are supplemented with rocks and natural pieces of wood. A container of magnifying glasses, plastic jars with holes in the lids, binoculars, and trowels can lead to in-depth exploration and discovery. With a little brainstorming and creativity, all types of indoor learning centers can be transferred to the outdoors. Meals and even naps can be successfully conducted outside (Torquati, Gabriel, Jones-Branch, & Miller, 2011).

Teacher engagement when children are outdoors increases their activity levels and enhances learning (Trost, Ward, & Senso, 2010). A positive teacher attitude and modeled curiosity can go a long way toward encouraging children to explore the world around them. Teachers play an important role by helping children connect with nature and by providing ongoing and active support of children's learning (Dowdell, Graya, & Malone, 2011).

Teachers can encourage children's familiarity with nature by bringing items from outdoors into the classroom. Tending indoor plants gives children additional opportunities to build a sense of responsibility and to care for living things. Being the plant waterer for the day is a job with real value that children recognize. An acrylic fish tank is a fairly simple and low-maintenance addition that may hold a variety of creatures such as fish, snails, or hermit crabs. If children find a living creature outside and, with teacher permission, bring it into the classroom, they should be taught to understand what the creature needs for survival so that they can temporarily meet those needs. After a short visit, the creature should be released so that it can thrive and children learn to do no harm. Because it is native to the area, the creature will likely survive after release and will not harm the local ecology (Hachey & Butler, 2012).

Teacher engagement with children outdoors enhances learning.

Thoughts on Safety

Appropriate supervision and teacher interaction is just as important outside as inside. Teachers should place themselves strategically to ensure that children remain within both line of sight and range of voice. Simple precautions and common sense will reduce the risk of illness and injury. Teachers should remove hazardous or broken materials. They should also know the local flora and fauna so that they are able to identify and avoid hazards such as a large patch of poison ivy. A well-equipped first aid kit and a cellular phone are important nature adventure tools and should always be with the teacher.

Teachers must take weather conditions into consideration when deciding whether or not to go outside. Be aware of extreme heat or cold and of possible air quality advisories. In summer, it may be possible to spend a little time outdoors in the morning before it gets too hot. When possible, direct children to play in shady areas as they reduce sun exposure and increase physical activity (Boldeman, Blennow, Dal, Martensson, Raustorp, Yuen, & Wester, 2006). Even when adventuring in shady spaces, sunscreen is an important precaution for all children.

Winter presents different challenges. Some teachers are reluctant to go outdoors when it is cold but children may not get to play outside at all if the class does not go out. Short days in winter mean that it is often dark when children arrive for care and dark when they leave. Making a snowman and watching icicles drip are adventures not to be missed. Bundling up in appropriate clothes and waiting until the sun has had time to warm things up a bit will help keep everyone comfortable and having fun.

It is important to ensure that all plants and animals brought into the classroom pose no risk to children and are allowed by regulation and policy. Plants such as amaryllis or mistletoe may seem harmless but are actually serious health hazards. Teachers should print lists of nontoxic and toxic plants to take along when shopping and post them in the classroom to raise the awareness of others. Care is also necessary when selecting animals to be brought into the classroom. Well-intended donations must also be reviewed for safety. Years ago, a parent offered to donate tropical fish to the classroom science center. The fish were actually piranhas and had to find friendly waters elsewhere.

Conclusion

So many of us have forgotten or never known the joys of spending

time with nature. Early childhood teachers are invaluable guides to children's experiences and have a direct impact on development and learning. By giving children frequent opportunities to play outdoors in plant-rich settings, teachers prepare children to recognize, appreciate, and reap the benefits of the natural beauty in our world throughout their lives. We have only to step outside of the classroom door to pique children's curiosity and take learning to a new level. Is it worth the effort of getting the whole class ready to go out? **Yes.** Yes, it is.

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Photo courtesy of Westlake United Methodist Preschool, Austin, TX

Being the "waterer" for the day is an important job that provides an opportunity to build a sense of responsibility.

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In Memorium

Nancy Eubanks Bacot (January 20, 1940-August 30, 2013)

Nancy Bacot served two terms on the SECA Board of Directors (1992-1997) as the representative of the Arkansas Early Childhood Association (AECA). She also served as President of AECA and the Northeast Arkansas Early Childhood Association. She was a member of the SECA Publications Committee for many years. Nancy was dedicated to SECA, was actively involved in the Division for Development Auction each year, her state organization, her local affiliate, and mentored many others as leaders within the organization. She will be greatly missed.
From her colleagues at Arkansas State University

Nancy Bacot was a mentor, friend, and role model to so many in SECA and AECA! She gave me strength and encouragement when I needed it and laughed with me in good times. She was a southern lady who represented SECA well, worked hard to improve quality programs for young children and families, and enjoyed being a Fossil tremendously! Dianne Lawler

From Her Colleagues Throughout the South:

- *She was such a lady and so well spoken.* Suzanne Gellens, Executive Director of Florida AEYC
- *What a lovely person and kind soul.* Dr. Pam Schiller, Past President of SECA
- *She was one of the first people I met when I became the TN Rep to the SECA Board. She was very special and will be missed.* Kathy Ennis, Former SECA Board Member from Tennessee
- *Nancy was truly a Southern belle of SECA.* Beverly Clayton Oglesby, Past SECA President
- *Nancy was a special lady and will be missed by so many people. She took me under her wing when I became a member of the SECA Board of Directors and I will always remember her!* Janet Stomer King, Former SECA Board Member from Tennessee

In Memory of

Marianne Leonard (mother of Mary Jamsek)
by Nancy Cheshire

Nancy Bacot
by Dr. Milly Cowles

Memorial donations made to SECA will be placed in the Janie L. Humphries Student Leadership Development Fund that will support the development of the next generation of early childhood professionals and leaders.