

Integrating Outdoor and Nature-Based Play in Community Programs

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Abstract

With the intent of determining best practices and recommended methods of incorporating outdoor and/or nature-based play in community programs, this thesis reviews existing literature and documents the results of four different community organization interviews. Each of the organizations provides family and child community programs and incorporates outdoor recreation in their programming. The author posed a series of six questions and found that some of the participant's responses were congruent with previous research while others provided new information. Their observations were both unique to their organization and relevant to similar programs. With that said, the author was unable to identify a best practice approach because methods of integration vary between programs. However, the data confirmed that outdoor and/or nature-based play is important to communities and should be a priority in programming.

Integrating Outdoor and Nature-Based Play in Community Programs

Introduction

Within the past two decades, research has emphasized the changing relationship of humans with the natural environment. As world populations migrate away from rural areas to urban metropolises, people's contact with nature is shifting from that of dependency to convenience. Despite societal changes, it is important for people to remain engaged in nature because studies show that green environments positively impact physical and mental health, career success, spirituality, and social bonding (Blanton, Oregon, Flett, Gould, & Pfeiffer, 2015; Flett, Moore, Pfeiffer, Belonga, & Navarre, 2010; Kuo, 2010; National Recreation & Park Association, 2010; Spencer & Wright, 2014). More specific research focuses on how regular interactions with nature affect childhood development (Blanton et al., 2013; Carson, 1999; Flett et al., 2010; Coles & Schilling, 2012; Hammond, McFarland, Zajicek, & Waliczek, 2011; Gopinath, Baur, Wang, Hardy, Teber, Kifley, Wong, & Mitchell, 2011; Griffin, 2003; Jarrett, Bahar, McPherson, & Williams, 2013; Kuo, 2010; Louv, 2005; The Nature Conservancy, 2011; Staempfli, 2009; Spencer & Wright, 2014). These studies detail numerous benefits of outdoor and nature-based play as well as provide insight to creating programs that utilize environmental elements while catering to urban communities (American Planning Association, 2003; Blanton et al., 2013; Flett et al., 2010; Coles & Schilling, 2012; Jarrett et al., 2013; The Nature Conservancy, 2011; Staempfli, 2009; Spencer & Wright, 2014). This thesis is a continuation of research as it reviews the literature and compares it to four community organizations that offer outdoor and/or nature-based play in their programs. The data will then be used to discover various methods of integrating outdoor and nature-

based play in order to determine practices that provide the greatest benefit to the community.

This research takes place in Central Virginia and focuses on six key areas of interest: the percentage of time programs dedicate to outdoor and/or nature-based play, the specific ways each organization incorporates said play into their programs, the perceived benefits of nature-based elements to both the organization and its target population, the observed differences between outdoor and/or nature-based play and indoor and/or technology-based play, the integration of spiritual principles in outdoor and/or nature-based programming, and the affects of Richard Louv and Rachel Carson's writings on program development. This paper will foster a discussion between organizations, the interviewees, and research pertaining to these six topics.

For clarification purposes, it is important to define outdoor and/or nature-based play. According to the *Merriam-Webster Online Dictionary* (2015), *outdoors* can either be used as an adjective to describe being outside a building, or as a noun, defined as "a place or location away from the confines of a building; the world away from human habitations." This study uses *outdoor(s)* as a noun and adjective interchangeably. Meanwhile, the dictionary defines nature as, "the physical world and everything in it... that is not made by people" (*Merriam-Webster*, 2015). Together, these words illustrate an environment separate from that of human construct, devoid of synthetic materials, and surrounded by trees, grass, and earth. However, as this study focuses on outdoor and nature-based programming, the definition is expanded to include indoor activities that concentrate on environmental subject matter.

Regarding the definition of play, Etzel (2010) points out that play is not what it used to be. When the boomer generation was young, play involved “building tree houses and exploring in and near rivers and ponds” (p. 101). Today, play consists of an assortment of computer and video games on electronic devices (Etzel, 2010). This study refers to the old-fashioned definition of play, meaning interactive activities that children and families engage in for fun. While academics argue the benefits of unstructured play versus organized or educational play, Staempfli (2009) asserts that community gardens, nature centers, and other educational spaces are important because they offer guidance, support, safety, and new experiences to children. This study supports Staempfli’s perspective and includes both purposed and spontaneous recreational activities in its definition of play. As a concise definition, this paper considers outdoor and/or nature-based play to be any interactive activity that takes place outdoors or is focused on natural subject matter.

In conclusion, this thesis delves into the topic of outdoor and nature-based programming by reviewing existing literature and comparing it to four community organizations. By focusing on the percentage of time programs devote to outdoor and/or nature-based play, different methods of integration, the perceived benefits of said play in comparison to those of indoor play, the spiritual outcomes of integration, and the influence of Louv and Carson, the author hopes to reveal the importance of outdoor and/or nature-based play and the ease with which organizations can adapt their programming to accommodate it.

Literature Review

The Percentage of Outdoor and/or Nature Based Play in Programs

Many experts assert that even small doses of nature and outdoor play positively affect children. The National Recreation and Park Association (2010) claims that just one hour of extra-curricular activity per week results in a decrease of high-risk behaviors in adolescents. According to their report, youth involved in extra-curricular activities for only one hour per week are 49% less likely to use drugs and 37% less likely to become teen parents. While the study does not specify whether or not these are outdoor and/or nature-based activities, they recognize the potential for community parks and recreation agencies to offer programs that empower youth and aid development.

In Michigan, researcher Trent-Brown and colleagues studied the effects that one hour of outdoor activity per week had on preschool children (as cited in Charles & Loge, 2012). They tested various measures of student's health and wellness both before the start of a nature intervention program and six months after it began. They also tested a control group not involved in the intervention program. Their findings showed that those exposed to nature for one hour, once a week, had greater self-efficacy and more-advanced literacy skills than the control group.

Another article, published in *Creativity and Leisure*, advised children and families to spend more time in physical activity to combat obesity, hypertension, and feelings of stress and anxiety (Coles & Schilling, 2012). It recommended that individuals participate in at least one hour of moderate physical activity per day and intense activity at least three times a week. These findings are not specific to outdoor and/or nature-based play but the principles are transferable to programs that combine active play with

environmental elements. Overall, research demonstrates that being outside positively impacts human health and that people who spend more time in nature receive greater benefits than their counterparts.

Incorporating Outdoor and/or Nature-Based Play

Scholars in the field of community programming understand the importance of recreational programs and recognize the positive correlations between health and wellness and outdoor play. Putting it simply, Kuo (2010) states, “Provide as much nature as possible, in as many forms as possible. Bring nature to people. Bring people to nature” (p. 35). But what are some practical ways service providers can incorporate natural elements in their programs?

In an article describing adventure playgrounds, Staempfli (2009) discusses how children tend to play outside of designated environments. They like to be on the fringe and to create toys out of objects that do not have a specific purpose. Responding to children’s natural inclinations, Staempfli recommends adventure playgrounds, playgrounds filled with seemingly random articles and junk such as two-by-fours, old tires, gardening tools, open fires etc. for children to play with under adult supervision. In these spaces, children are encouraged to be creative while play workers supervise, guide, and direct play in a model similar to psychologist Lev Vygotsky’s scaffolding theory. Adventure playgrounds, or equivalent spaces, are one way facilities can implement outdoor and/or nature-based play in their programs.

Other organizations and sources provide further suggestions. Head Start Head Body, an offshoot of the Head Start Program, recommends facilities utilize outdoor space as an extension of the classroom and intermingle natural and manufactured materials to

create play equipment (Spencer & Wright, 2014). On their website they provide a list of eleven key features for outdoor playgrounds including shelter and shade structures, natural features, and sensory elements. Head Start Head Body further advises that organizations keep playgrounds simple by utilizing open spaces, loose props, costumes, and natural building materials.

After identifying various reasons children do not play outside, The Nature Conservancy (2011) responded by suggesting that programs portray outdoor play as being fun and freeing. They encourage schools to send children outside and allow them to help construct spaces for natural play. Since many children are afraid of social exclusion, the Conservancy highlights the importance of positive peer pressure and making outdoor and nature-based play a socially acceptable activity. According to the data, “If American youth are given more opportunities to have a meaningful experience outdoors, they will be more likely to value nature, engage with it, and feel empowered to do something about it” (The Nature Conservancy, 2011, p. 3). Communities may also become more invested in their natural surroundings if programs recreate local history and backyard environments instead of global concerns and exotic ecosystems (American Planning Association, 2003). This allows families and children to apply the materials they are learning.

Blanton and colleagues (2013) surveyed Michigan youth and found they were interested in outdoor activities, animals, land, natural elements, and the personal benefits of being outdoors. However, the teenagers expressed hesitation about bugs, dangerous animals, unsavory people, bad weather, and having to leave indoor activities. A separate study supported these findings and included scenery and outdoor machinery in the list of

interests among youth (Flett et al., 2010). Again, the participants did not like the outdoors because of safety concerns, insects, inclement weather, and uncomfortable conditions. This research is relevant because it provides information applicable to developing outdoor programs for teenagers and their families.

The second study mentioned above, conducted by Flett and colleagues (2010), asked youth and their parents what they desired in outdoor activities. The teens responded by commenting on competition and independence while their parents wanted cooperation, relaxation, and leisure. Furthermore, the researchers found that participants were more apt to try activities if they saw someone else doing it and that social interaction was very important to the surveyed youth. Finally, Flett and colleagues reported that programs absorb the attention of their participants by providing challenges, stimulating internal motivations, having a process-oriented focus, and building confidence. In order to accomplish this goal and engage communities outdoors, they suggested organizations provide recreational activities such as archery, biking, hiking, climbing, fishing, horseback riding, snowmobiling, and camping.

Benefits of Outdoor and/or Nature-Based Play

What is the purpose of incorporating outdoor and nature-based play in community programs? Blanton and colleagues (2013) identified five distinct benefits: ownership of land and the environment, integration verses isolation, stronger sense of possibility, empowerment and skill development, and restoration and relief. Other sources suggest outdoor activity and exposure to nature improves health and cognitive functioning, increases physical activity and resilience to stress, speeds the immune system, fosters creative play and imagination, lowers stress rates, and develops respect (National

Recreation and Park Association, 2010; Spencer & Wright, 2014; Flett et al., 2010). Flett and colleagues (2010) believe that the greatest benefit of green environments is improved mental health as it restores mental capacity, decreases stress, and fosters emotional wellness. Further benefits include positive feelings. When The Nature Conservancy (2011) surveyed American youth they found that 71% associated being outdoors with peaceful emotions and more than half contributed natural environments to feelings of freedom, calm, happiness, adventure, being alive, curiosity, and interest.

In a report for the National Recreation and Park Association, Kuo (2010) synthesized a number of studies documenting numerous health and behavioral benefits associated with outdoor environments. He used the term *Vitamin G* to define the green components of a healthy human habitat. According to one study, people living in inner city apartment complexes with green vegetation reported more community interaction and outdoor activity than those without vegetation. In another study, people living in close proximity to a neighborhood park expressed higher levels of trust in their neighbors and environment than those who were not close to a park. Kuo also found that employees in work environments with views of greenery had greater job satisfaction and less stress than their cooped-up counterparts.

His research further revealed that Vitamin G increases individual's coping abilities and concentration (Kuo, 2010). One study administered a concentration test to children with ADHD after they had taken a walk in either a natural setting or an urban setting, or had spent time reading inside. The researchers found that the hyperactive symptoms of those who had walked in the natural setting were reduced the most.

Comparing these results to those done by medical researchers investigating ADHD

medications such as Metadate CD and Concerta, the study discovered that children exposed to nature were as or more focused than those taking medicine.

Kuo (2010) also describes a number of studies whose findings prove further health benefits. For example, by measuring participant's cortisol levels, pulse rate, blood pressure, and sympathetic and parasympathetic nerve activity before and after a 15-minute walk in the woods, researchers demonstrated that green environments reduce stress. Another study gave individuals in various city grids a list of 24 diseases and asked them to respond whether or not they were at-risk for each. Taking into account potentially altering disparities such as socio-economic status and ethnicity, the results showed that participants living in grids with more vegetation were at less of a risk than their counterparts for 15 out of the 24 diseases and were at similar, but not increased, risk for the other nine. Another group of researchers delved into the biological impacts of green environments on the immune system and found that nature stimulates the body to increase the number and activity of T- and B-lymphocytes. This may explain research demonstrating that hospital patients with natural views recover more quickly from surgery than those without.

Research supports the health and behavioral benefits of green environments on human populations. Therefore, it is important for family and child programs to offer outdoor and/or nature-based play. Community organizations can foster environmental engagement and benefit their target populations in the process. As Kuo (2010) contends:

People can clearly survive without regular contact with nature or elements of nature... At the same time, it is clear that humans need a connection with nature to thrive, and that they are worse off when they lack regular contact with nature.

(p. 33)

Differences Between Outdoor and/or Nature-Based Play and Indoor and/or Technology-Based Play

Sources say children thirteen and under spend a half hour per week in outdoor activity and approximately 12 hours watching television (Hammond et al., 2011). While research demonstrates the benefits of being outdoors, indoor activities, especially those where children are focused on a screen, can be detrimental to their health. In general, a lack of physical activity can lead to hypertension, weak bone structure, stress, anxiety, and a decrease in strength and endurance (Coles & Schilling, 2012). Furthermore, Kuo (2010) found that limited exposure to vegetated environments could cause loneliness, anti-social behavior, aggression, violence, and an increase in crime rates including those of assault, robbery, and homicide. The National Recreation and Park Association (2010) reported similar maladies as well as symptoms of ADHD and clinical depression resulting from limited environmental exposure.

Comparing the health of children engaged in outdoor versus indoor activities, Hammond and colleagues (2011) discovered that being inside could lead to obesity and other problems due to sedentary behaviors and increased caloric intake. Indoor activities also increase a child's risk of asthma and allergies. Overall, their research revealed a positive correlation between time spent indoors and health problems including congestion, trouble sleeping, diabetes, and swollen glands. In conclusion, Hammond and

colleagues recommend outdoor play and encourage parents to impress upon their children the positive characteristics of nature-based play and environmental exposure.

In a similar study, Gopinath and colleagues (2011) state that the average six-year old spends 1.9 hours a day in front of a screen and only 36 minutes in physical activity. To study the effects of screen time on microcirculation and early signs of hypertension, researchers measured children's retinal arterioles after spending time in various activities. Those who engaged in outdoor activities had wider arterioles while indoor physical activity and sedentary behaviors did not affect retinal microcirculation. Furthermore, the study revealed that the amount of time children spent staring at a screen positively correlated to the narrowing of their retinal arterioles. This is important because narrow arterioles are a marker for hypertension and an early sign of cardiovascular disease. In summary, Gopinath and colleagues found that screen time increases the risk of cardiovascular disease, that indoor and sedentary behaviors do not affect microcirculation, and that outdoor activity positively affects microcirculation by widening retinal arterioles.

Spiritual Integration

Most research on the subject concedes that there is a connection between spending time in nature and spirituality. However, *spirituality* is a vague term that is difficult to clarify. In her doctoral dissertation, Comeau (2012) defined spirituality as “an awareness of a being or force that transcends the material aspects of life and gives deep sense of wholeness or connectedness to the universe” (p. 12). Ashley (2007) adopts Johnson's six elements of spirituality in nature: the enduring aspect, the humbling experience, beauty, the sense of adventure, peace, and the ability to forget oneself. It is

important to note that secular research differentiates between spiritual experiences and religiosity. Spirituality generally refers to free and transcendent experiences while religion is defined as a set of binding beliefs that dictate worldview (Ashley, 2007).

Native American folklore and the Romantic writings of Thoreau and Emerson demonstrate the historic concept of achieving transcendence through nature (Comeau, 2012). Today, naturalists continue to recognize spirituality in nature (Comeau, 2012). For example, recent scientist E. O. Wilson coined the term *biophilia* to refer to human's "innate need for connection to other species and to connection with [their] natural environment" (as cited in Comeau, 2012, p. 16).

Ashley (2007) studied this affect and asked survey participants the question, "Some people find spiritual value in wilderness. This means different things to different people. If you find spiritual value in wilderness, what does it mean to you?" (p. 63). Responses included terms such as 'connection', 'interrelationship', 'transcendence', 'compassion', 'peace', 'harmony', 'respect', 'awe', 'humility', 'altered consciousness', and concepts related to Judeo-Christian theology, God, and religion.

In a faith-based publication, Griffin (2003) focused on the connection between religion and nature. He reported that Christian adventure programs have the ability to increase spirituality and religiosity. Comparing students attending a two-week adventure program to those in a control group who did not participate in the program, he found that the experimental group displayed increased spiritual growth while students in the control group declined in spirituality. The youth claimed that their growth was a result of adventure activities, relationships, and intrinsic rewards. As a result, Griffin (2007) concluded, "The key aspects of adventure-based programs, such as trust, support,

perseverance, personal growth, and *appreciation for nature* run parallel with Christian teachings” (p. 351, emphasis added).

The Bible itself records a connection between spirituality and nature. Romans 1:20 (NIV) says, “Since the creation of the world God’s invisible qualities – his eternal power and divine nature – have been clearly seen, being understood from what has been made, so that men are without excuse.” According to Scripture, nature testifies to the existence and character of God. Psalm 19: 1-4 (NIV) also speaks of God’s presence in the environment:

The heavens declare the glory of God’ the skies proclaim the work of his hands.
Day after day they pour forth speech; night after night they display knowledge.
There is no language where their voice is not heard. Their voice goes out into all
the earth, their words to the ends of the world.

The Christian church is beginning to recognize this connection between God, spirituality, and nature. A new movement labeled *ecothology* is emerging among religious populations (Environment & Ecology, 2015). Founded on the belief that a vital relationship exists between religion and nature, *ecothology* addresses environmental concerns and the degradation of nature (Environment & Ecology, 2015). Looking at environmentalism from a biblical and ethical standpoint, Christians are attempting to reform church thinking and engage the culture by advocating green living and environmental stewardship.

Richard Louv and Rachel Carson

Richard Louv. In 2005, Richard Louv published *Last Child in the Woods*, a synthesis of research regarding children and their disconnect with nature. Louv artfully

engaged readers in the discussion of children's interaction with nature by summarizing and connecting various research findings. Covering topics such as health benefits found in nature, the importance of unstructured play, and legislation restricting outdoor play, *Last Child in the Woods* served as a foundational resource for this thesis.

The percentage of outdoor and/or nature-based play in programs. Richard Louv (2005) coined the term *nature-deficit disorder* to describe, "the human costs of alienation from nature" (p. 34). During his research, he interviewed parents and students across the United States and found that many children were growing up with limited access to nature for a number of reasons: they were absorbed in indoor activities, parents were afraid of potential threats outside the home, there were not any wild areas nearby, and legal limitations to outdoor activity. While Louv does not give a standard recommendation for the amount of time children should be outdoors, he advocates an abundance of nature to counteract the effects of nature-deficit disorder.

Incorporating outdoor and/or nature-based play. Whether planting a school garden, allowing a child to build a tree house, or establishing a nature school or outdoor camp, Louv reiterates the importance of creating opportunities for children to engage in outdoor and/or nature based play. He dedicates three sections of *Last Child in the Woods* to the reunion between children and nature. Beginning one chapter with the words, "Alone, parents cannot heal the broken bond" (2005, p. 161), he recommends that educators, communities, and families band together to bring nature to the forefront of institutions and programs. Throughout the book, Louv instructs adults to take children into nature and teach them about outdoor experiences. According to Louv (2005):

Children need adults who understand the relationship between boredom and creativity, adults willing to spend time in nature with kids, adults willing to set the stage so that kids can create their own play and enter nature through their own imaginations. (p. 169)

Louv encourages schools to participate in this movement and integrate outdoor activities in their programs. His suggestions include utilizing neighboring parks and nature preserves, building gardens, and allowing children a 15-minute break outdoors every hour. Community programs can also implement outdoor activities. Regarding outdoor camps, Louv found that participants recognized the benefits of their nature experiences several years later. More ideas of incorporating nature in programs include using green and sustainable building designs and studying local wildlife such as birds, native plants, and waterways.

Benefits of outdoor and/or nature-based play. Since *Last Child in the Woods* is a synthesis of current research, many of the benefits Louv cites have already been represented in this paper. These include various health benefits, increased creativity, and a decrease in hyperactive behavior, crime, and violence. Louv (2005) also mentions educational benefits stating, “environment-based education produces student gains in social studies, science, language arts, and math; improves standardized test scores and grade-point averages; and develops skills in problem-solving, critical thinking, and decision-making” (p. 204). His research emphasizes that nature is important both physically and cognitively.

Last Child in the Woods highlights the ability of nature to engage all five of a child’s senses. Louv explains the difference between having a know-it-all state of mind as

opposed to first hand experiences. Referring to the seven types of intelligences categorized in Howard Garner's theory of multiple intelligences, he connects these experiences to an eighth intelligence: nature smart. This term describes how nature allows children to engage their senses and develop skills such as the ability to assess potentially dangerous situations, gauge risk, and pay attention to their surroundings. Growing up, children can transfer these qualities to their experiences in cities and urban areas. Ultimately, nature positively impacts children's current development and future success.

Differences between outdoor and/or nature-based play and indoor and/or technology-based play. Louv points out that the majority of research focuses on benefits of nature and not on what is lost when children remain indoors. However, *Last Child in the Woods* does present some startling facts that impact today's youth. First of all, the amount of TV children watch has a direct correlation to their percentage of body fat as well as their ability to concentrate and the probability that preschoolers will develop attention-deficit disorder. Other symptoms of nature deficit disorder include tunneled senses, isolation, and feelings of containment. It may also affect depression and mental illness. While these ideas are still being researched, current studies demonstrate the power of nature to transform health and positively affect society.

Spiritual integration. The final chapters of *Last Child in the Woods* are dedicated to nature and spirituality. Louv recognizes that the childhood years are extremely important as they provide transcendent experiences for youth in nature. While he references the Bible and points out that religious and environmentalist agendas are becoming increasingly similar, he also emphasizes spirituality as found in the wonder,

awe, and amazement of nature. Quoting a rabbi whom he interviewed for the book, Louv (2005) wrote, “To be spiritual is to be constantly amazed” (p. 286). This transcendence is important for children because it provides an element of spirituality that theology does not afford.

Overall, Louv allows his readers to develop their own beliefs about spirituality and nature. However, quotes from both Christian and secular sources imply a divine creator. This is evident when he subtly questions evolution by pointing out that human conscience, morals, values, and ethics could not originate from the natural themes of death, violence, and survival of the fittest. Another study presented in *Last Child in the Woods* asks, “Why should so many nonbelievers argue on the basis of God’s creation?... It seems that divine creation is the closest concept American culture provides to express the sacredness of nature” (2005, p. 298). Through these discussions, Louv stresses the importance of introducing children to nature and letting them feel the humility of experiencing something bigger. Furthermore, he encourages adults to listen and respond to the spiritual questions children ask. Outdoor experiences are opportunities for children to think deeply, thrive, develop, and explore the world around them.

Rachel Carson. Known as the “patron saint of the environmental movement,” Rachel Carson wrote *Silent Spring*, one of the first books on environmentalism and one that sparked controversy over the use of pesticides. Passionate about the natural world and outdoor experiences, Carson also wrote *The Sense of Wonder*, an essay on the wonder and awe children express when immersed in nature. Based on personal experiences with her three-year-old grandnephew, Carson uses *The Sense of Wonder* to tell stories about woodland explorations, visits to the beach, and midnight stargazing

(1956). Although Carson did not record academic research, her writings present foundational principles regarding children's interactions in nature.

The Sense of Wonder encourages adults to experience the outdoors with their children and to embrace the fascination provided by nature. If children are going to remain wondrous throughout childhood and into adulthood, they need an adult to accompany them in their excursions. While parents and program facilitators may not know the names of plants or constellations, Carson (1956) promises that facts and identification are not important. In her words, "It is more important to pave the way for the child to want to know than to put him on a diet of facts he is not ready to assimilate" (p. 56). This curiosity is accomplished by observation and feeling. Carson recommends using telescopes, binoculars, and magnifying glasses to study elements of nature that are usually taken for granted such as insects, moss, the moon, and droplets of sea or pond water. She instructs readers to ask questions like, "What if I had never seen this before? What if I will never see it again?" (Carson, 1956, p. 67) and to focus on feelings, emotions, and impressions instead of on concrete knowledge. Through this process, both children and adults are affected by a deep and lasting sense of wonder.

In addition to instructing adults how to engage children with nature, Carson recommends ways to incorporate environmental excursions into every day scenarios. She urges adults to let children out in all kinds of weather and at night as well as during the day. Highlighting the changing patterns of the sky, the feel of rain on the skin, and the sound of wind whistling through trees and past buildings, Carson demonstrates that even urban children can experience nature. Furthermore, she firmly believes that adults should not sacrifice their children's natural experiences for the sake of convenience. Youth need

nature in order to develop and retain the wonder and mystery that inspire individuals and make life exciting.

In summary, this literature review demonstrates the importance of providing children regular contact with nature. It offers recommendations for how much time children should spend in nature and how to incorporate outdoor and/or nature based play in community programs. The literature also outlines the benefits of outdoor and/or nature-based play and compares them to the effects of indoor and/or technology-based play. Finally, this review presents various viewpoints on spirituality and religion in nature and introduces the influential writings of Richard Louv and Rachel Carson. It discusses each of the six key topics covered by the interview questions that follow, in order to compare participant's responses to existing literature.

Methods

The purpose of this thesis was to discover how four different community organizations integrate outdoor and/or nature-based play in their programs and to compare their methods of integration with existing research to determine practices that provide the greatest benefit to program participants. The author chose the organizations based on their location in Central Virginia and the fact that they offer interactive community programs with some element of outdoor and/or nature-based play. Before commencing research, the author received approval from Liberty University's Institutional Review Board to conduct interviews upon the condition that the identity of the organizations and interviewees remain confidential.

Participants

The first participant was a local parks and recreation department offering general recreation and nature education programs. Their programs extend to city schools, churches, and private associations as well as those of neighboring counties. Programming includes activities at area parks and a nature center complete with live animals, exhibits of local environments, and a gift shop (personal communication, January 16, 2015). Located next to a historic park and an urban trail head, the parks and recreation department advertises itself as being “first and foremost an environmental education center that celebrates the special and unique environmental riches of Central Virginia” (Parks and Recreation, 2015).

Providing campers with opportunities to hike, fish, and participate in activities such as field sports, street hockey, basketball, mini golf, crafts, and movies, the second organization runs a faith-based church camp (personal communication, January 19, 2015). Their mission is “to provide a camp experience that’s not only fun and exciting, but encourages campers toward a life-changing relationship with Jesus Christ” (N/A, *Home*, 2015). The organization hosts overnight and day camps and includes daily rallies, group sessions, and chapel services to convey Biblical messages and principles (personal communication, January 19, 2015).

As a community outreach organization, the third set of interviewees came from a company that creates programs to “engage youth in physical, learning and imaginative activities that encourage them to explore who they are and what they can achieve” (N/A). Focusing on cognitive, physical, and social development, they offer before and after school programs, fun days, and winter, spring, and summer camps (N/A; personal

communication, January 21, 2015). Available for children ages 5-12, their programs are open to all members of the community (N/A).

The final participant was a non-profit children's museum consisting of nine galleries spanning four floors of what used to be an insecticide plant (N/A, *Explore*, 2015). While the museum is self-guided, their staff provides outreach programs to area schools and members of the community (personal communication, January 23, 2015). The overarching goal of the organization is learning through exploration and the staff is dedicated to "motivating children and adults... toward greater creativity and understanding of themselves and the world through hands-on learning" (N/A, *Mission*, 2015). Featuring exhibits with Native American heritage, plants and animals, and local history, the museum presents educational concepts through fun, interactive, and intergenerational play.

Data Collection

While reviewing literature pertaining to outdoor and/or nature-based play, the author developed a set of seven questions to ask interviewees about their organization's programming. These included: a description of the programs offered, the percentage of programming that included outdoor and/or nature based play, how organizations incorporated said play, what the perceived benefits were, the observed differences between outdoor and/or nature-based play and indoor and/or technology-based play, whether or not organizations integrated spiritual principles in their programming, and the influence of Richard Louv and Rachel Carson on program development (See the Appendix for the list of interview questions).

Each interviewee signed a consent form before interacting with the author, who documented responses on her computer; interviews were not recorded in either audio or visual format for confidentiality purposes. Visiting each organization, the author interviewed participants at their place of work, sometimes one-on-one and other times in pairs. A total of eight interviews were conducted; the parks and recreation department providing one participant, the church camp and children's museum each providing two, and the community outreach organization providing three.

When analyzing the interviews, the author looked for themes between participant's responses and relevant research. Accumulating information through personal communication and published data, the author synthesized her findings to identify both recommended and practiced methods of integrating outdoor and nature-based play in programming and the subsequent effects.

Results

Interviewing four organizations, this study found that the percentage of outdoor and/or nature-based play in community programs varied from 25-100% and that each participant incorporated outdoor experiences in different ways. The most common methods were using nature as a platform for learning and utilizing outdoor spaces for activities and games. While interviewees identified numerous benefits of outdoor and nature-based play, the most common were new experiences, increased health and activity, and heightened social interaction. In general, participants noticed a difference between social interactions and children's ability to concentrate and focus indoors versus outdoors. Furthermore, three of the four organizations provided interesting insight regarding spiritual experiences within their programs while only two were familiar with

Richard Louv or Rachel Carson. These participants revealed that their writings did not influence programming as much as they supported pre-existing educational philosophies.

The Percentage of Outdoor and/or Nature-Based Play in Programs

Each organization differed in the amount of time their programs afforded outdoor and/or nature-based play and the percentage varied depending on the program. For example, during their afterschool programs, the community outreach organization sets aside 25-30% of the time for outdoor play. This is based on licensing requirements stating that children must spend at least 30 minutes outside each day. However, during summer camp, the children are outside almost 50% of the day. These percentages are subject to change depending on weather conditions because the children are not allowed outside if it is raining or unbearably hot (personal communication, January 20, 2015). Interviewees from the children's museum also claimed that the percentage of outdoor and/or nature-based play in their programs varied. They stated that 30% of their general programming incorporates natural elements while 50% of their wonder camp and 90% of their adventure camps are dedicated to outdoor and nature-based themes (personal communication, January 23, 2015).

When asked what percentage of time the church camp allotted to outdoor and/or nature-based play, the staff determined that 50% of day camp activities and 90% of overnight activities are conducted outdoors, excluding sleeping. Furthermore, the campers remain outside despite the rain unless there are signs of severe weather, thunder, or lightning (personal communication, January 19, 2015). Like the church camp, the majority of the parks and recreation programs incorporate outdoor and/or nature-based play. Because the department focuses on nature education and recreation, the director

surmised that 100% of their programs are steeped in natural elements or environments (personal communication, January 16, 2015).

Incorporating Outdoor and/or Nature-Based Play

Incorporating outdoor and/or nature-based play in 100% of their programs, the parks and recreation staff highlight subject matter such as local watersheds and ecosystems. They host weeklong summer camps specifically geared toward nature, facilitate stream studies with students, and offer outdoor activities like fishing and water play. The department conducts these programs at local parks and trails and at the nature center. They also incorporate microscopes, guidebooks, live animals, and other hands-on aids to encourage learning and play (personal communication, January 16, 2015).

The church camp and the community outreach organization both utilize outdoor spaces for scheduled events and recreation. Children at church camp engage in outdoor games and activities such as fishing, canoeing, and field play. Each week, administrators schedule a night hike for overnight campers and a day hike for day campers. The children also attend bonfires and eat meals in an open-air pavilion (personal communication, January 19, 2015). Meanwhile, the community outreach organization incorporates outdoor and/or nature-based play by allowing children to use playgrounds, parks, and open fields for unstructured play or group games (personal communication, January 21, 2015). During their summer programs, the organization takes the children on field trips to nearby hiking trails, water parks, zoos, nature centers, gardens, museums, and aquariums (personal communication, January 20, 2015). Meanwhile, their afterschool programs incorporate seasonal crafts centered on natural elements of snow and leaves (personal communication, January 21, 2015).

The final organization, the children's museum, uses outdoor and/or nature-based play to segue into learning. For example, they offer a garden program that allows participants to feel compost, smell lavender, plant seeds, and eat produce. They also have a transportable planetarium to teach the community about planets and stars. Other nature-based learning activities include leaf preservation programs where children learn about the scientific method and math lessons that use pumpkin plants and their seeds to demonstrate circumference and estimation (personal communication, January 23, 2015).

Benefits of Outdoor and/or Nature-Based Play

Participants gave various answers to the question, "How do you think outdoor and/or nature-based play improves your programming and benefits your target population?" A few individuals, mainly from the parks and recreation department and children's museum focused on the benefits they received as an organization or facilitator. Judy, with parks and recreation, commented that outdoor and nature-based play is the goal of her organization but it is difficult to determine long-term community impacts (personal communication, January 16, 2015). Interviewees from the children's museum noted that integrated play allowed them to demonstrate concepts when teaching. Avery said, "For me, it's a great way to connect understandable principles to deeper meanings" (personal communication, January 23, 2015). Laura, from the community outreach organization said something similar, "I think you can learn more outside" (personal communication, January 21, 2015).

Besides noticing personal and program-oriented advantages, each organization indicated benefits to their target populations. Several interviewees mentioned that their programs offered new experiences. Judy stated that parks and recreation programs

expand children's range of experience and that "first hand experience is the best experience" (personal communication, January 16, 2015). Similarly, the church camp noted that many of the activities and environments they offer, such as sandy beaches and an inland lake, are new experiences for children growing up in the city (personal communication, January 19, 2015). Brenda, at the community outreach organization, commented that children are not usually active at home and said, "If they don't get it with us, you know they're not going to get it at home" (personal communication, January 20, 2015). A representative of the church camp, Carol reflected this thought when sharing about campers, "They love being out in the rain because it's something that if they were at home, their mom would say, 'Come on in, it's raining!'" (personal communication, January 19, 2015).

From a different perspective, the parks and recreation department pointed out that outdoor and nature-based play dispels many fears children develop because of inexperience in nature. Outdoor activities also spark an interest to learn more about nature and can generate environmental stewardship (personal communication, January 16, 2015). Furthermore, interviewees stated that their programs increase cognitive functioning and creativity by allowing children room to explore, providing sensory experiences, and furnishing tactile evidence of learning concepts (personal communication, January 23, 2015).

Participants also mentioned that being outside is better for children's health. Three individuals stated that outdoor play increases activity levels and provides exercise. Jennifer, a staff member at the community outreach organization, mentioned that it allows a greater amount of blood flow to the brain and that there are fewer germs outside

(personal communication, January 21, 2015). Multiple organizations also commented on the importance of free play. Faye, with the church camp, stated, “It allows kids to be kids” (personal communication, January 19, 2015). Furthermore, play stimulates social interaction. The community outreach organization noticed that children are more likely to instigate group games when outside and the church camp found that youth build friendships during outdoor and nature-based play (personal communication, January 21, 2015; personal communication, January 19, 2015).

Finally, two participants highlighted that kids love to be outside (personal communication, January 20, 2015; January 21, 2015). While they may hesitate and complain at first, the experience quickly becomes enjoyable and absorbs their attention. Jennifer said, “They don’t like to come back in” (personal communication, January 21, 2015), while Brenda recounted a story about taking a group on a nature hike: “We had this one little girl and she was fascinated with rocks... the kids were fascinated with all the little things that they stopped to pick up... they loved getting down by the water” (personal communication, January 20, 2015).

Differences Between Outdoor and/or Nature-Based Play and Indoor and/or Technology-Based Play

Throughout the interview process, there were three reoccurring responses to the question, “What different outcomes have you observed from outdoor and/or nature-based play in comparison to indoor and/or technology-based programming?” They were as follows: fewer behavioral issues outdoors; a bigger, more holistic and sensory experience outdoors; and the difficulty children have focusing their attention outdoors versus indoors. Other things interviewees mentioned were a greater amount of teamwork,

interaction, and independence when outdoors and the difficulty children have differentiating between real and virtual experiences when immersed in technology.

Interestingly, the children's museum finds that youth often respond better to technology but that children, especially younger ones, have trouble connecting virtual experiences to reality. They recounted a story of a facilitator at the museum who attempted to use a Smart Board in her programming. Her participants protested, favoring tangible experiences over technological advances (personal communication, January 23, 2015). When asked about indoor and outdoor environments, the community outreach organization responded similarly by noting that children tend to be more focused indoors because facilitators can control the environment (personal communication, January 21, 2015).

Despite these findings, participants agreed that outdoor experiences allow for greater amounts of exploration and learning among youth. Emphasizing sensory experiences, Judy communicated that outdoor environments allow participants to "fully engage at every level" while indoor settings limit exposure (personal communication, January 16, 2015). Additionally, Carol, when discussing how being indoors is a reprieve for children at camp said, "If they are in there too long they get restless" (personal communication, January 19, 2015).

Focusing on social development, interviewees at the community outreach organization observed that children are less aggressive when outdoors and exhibit fewer behavioral problems and less bickering (personal communication, January 20, 2015). The organization also reported that youth, especially boys, are more interactive outdoors and that facilitators witness greater amounts of intergenerational teamwork when children are

outside. Youth are also more likely to address conflict amongst themselves instead of seeking assistance from a teacher (personal communication, January 21, 2015).

Spiritual Integration

Only one organization interviewed is faith-based. When asked, however, five of the eight interviewees and two of the four organizations expounded on spiritual experiences within their programming.

The two interviewees with the church camp shared that while the camp includes Biblically based rallies and chapels three times a day, the majority of outdoor programs focus on having fun. During outdoor activities, individual staff members may expound on Biblical principles and lessons but these are not intentionally integrated into the programming. Furthermore, the only long-term spiritual effects the camp is aware of come from parent's comments or follow-up phone calls with children who had a salvation experience while at camp (personal communication, January 19, 2015).

Originally founded as a faith-based establishment, the community outreach organization now operates as a secular institution. However, many of the organization's rules are founded in spiritual principles and moral absolutes. For example, the staff is able to pray before snacks and meals and engage in spiritual discussions when children introduce the subject. While Brenda could recount multiple instances of children bringing up church events and Bible stories, these conversations are spontaneous (personal communication, January 20, 2015). They do not correlate with outdoor and/or nature-based play or increase in outdoor environments.

The children's museum strives to be secular. Yet as a learning institution, they expose children to different religions and beliefs. When asked specifically about

integrating nature and spirituality, both interviewees mentioned an element of wonder in their programs. Avery stated, “The only thing I would consider spiritual is wonder. I try to expose kids to the wonder: the wonder of science, the wonder of math” (personal communication, January 23, 2015) and Samantha added, “The wonder of discovery” (personal communication, January 23, 2015). Each of the women also highlighted that parents and adults can experience wonder. It is not reserved for children.

Richard Louv and Rachel Carson

Few of this study’s participants were familiar with Richard Louv or Rachel Carson. Only two interviewees had read any of their writings while a third was familiar with their names. These individuals represented two of the four organizations.

The children’s museum has a copy of Richard Louv’s *Last Child in the Woods* in their employee improvement library. Samantha had read it. She stated, “I stumbled upon it by happenstance, but found that my philosophies mirrored his” (personal communication, January 23, 2015). Through personal experience, Samantha has witnessed children’s ignorance as they lose touch with food sources and the environment. She believes it is educators’ responsibility to acknowledge and address the deficit.

Judy, with the parks and recreation division, was familiar with both Louv and Carson. Recognizing that *Last Child in the Woods* does not offer new information but synthesizes exiting research in a public format, she agreed with his writings. Similar to his goal, she stated that the mission of the parks and recreation department is to engage the community outdoors and provide first hand nature experiences. Discussing Rachel Carson, Judy became very enthusiastic. “[She] is one of my idols. What can I say about Rachel Carson? She’s just awesome” (personal communication, January 21, 2015). Judy

was familiar with *Sense of Wonder* as well as Carson's other published works and admired Carson for being personable and for connecting with both children and adults.

Discussion

Comparing interviewees' responses to the literature review, the author found both similarities and originality. Many results were unique because they depended upon individual programs and the organization's mission and purpose.

According to the literature, even limited exposure to outdoor environments and natural elements can affect programs and benefit participants. While different studies recommend children spend between one hour per day and one hour per week outside, the organizations interviewed incorporate outdoor and/or nature-based play into 25-100% of their programming. While it is difficult to compare time and percentages, research suggests that the participating organizations provide adequate amounts of outdoor and/or nature-based play.

To incorporate outdoor and/or nature-based play into programs, the literature advises a number of different methods. The four interviewing organizations utilize many of them such as employing local parks, trails, and open spaces for outdoor activities. Studies also suggest using natural features and sensory elements in programming. The children's museum accomplishes this by incorporating elements of nature in their exhibits and instructional sessions. Furthermore, both they and the parks and recreation department focus on local history and environments, another recommendation made by researchers. While these two organizations concentrate on learning and education, the church camp and community outreach organization apply unstructured play and group games that foster independence, competition, challenge, and fun. According to the

literature, these are key elements of a successful outdoors program. Finally, each organization makes outdoor and/or nature-based play a social activity and the literature emphasizes this method as a means to get children and adolescents interested in their environment. In addition to existing recommendations, participants incorporate outdoor and/or nature-based play through learning experiences, live animal exposure, field trips, and seasonal crafts. This comparison with previous research demonstrates that there are a variety of ways to incorporate outdoor and/or nature-based play into community programs. How an organization chooses to go about it depends on their mission, purpose, resources, schedule, and structure.

As demonstrated by participant responses and existing literature, the incorporation of outdoor and/or nature-based play in programs is important because of the myriad of benefits it provides. Interviewees confirmed the literature by saying that their programs spark an interest in nature, generate environmental stewardship, increase creativity and cognitive functioning, provide exercise and activity, boost the immune system, absorb children's attention, decrease conflict, increase problem-solving abilities, and allow children to build friendships. Participants also identified at least eight other benefits not noted in the literature review. The additional findings of this study point to the need for further research and suggest that there remain many undocumented benefits. However, the overall continuity of research indicates the importance of outdoor and nature-based play for children, families, and community programs.

When comparing the effects of outdoor and/or nature-based recreation to those of indoor and/or technology-based play, the literature review focused on physical health versus social differences. However, since the participants of this study create and

facilitate hands-on programs for the public, their responses reflected more social differences. Similar to Kuo (2010), participants noticed fewer behavioral issues and an increase in teamwork and social interaction when outdoors. Participants also mentioned that natural environments provide greater sensory experiences. In addition, they stated that children were more independent outside and that technology caused confusion when differentiating between real and virtual experiences.

The only discrepancy between the literature and interviewees appeared when the children's museum and community outreach organization reported that children are less focused outdoors. However, the camp supported the literature by stating that children get restless after they being indoors for extended periods of time. Perhaps it is true that children need regular outdoor exposure to explore their surroundings, burn excess energy, and increase their sense of wonder; but indoor spaces prove better for learning due to facilitators' ability to control the environment. While further research is necessary to explain the conflicting findings of the literature review and participant interviews, peripheral findings support this theory. When documenting the affects of environmental exposure on ADHD populations, Kuo (2010) reported that researchers administered concentration tests indoors. The reprieve of outdoor activity seemed to positively affect the children but concentration was not assessed in an outdoor environment.

When the author asked participants whether or not they incorporated spiritual principles into outdoor and/or nature-based play the answer was generally, no. Even the church camp stated that their chapel times were separate from outdoor activities and that any spiritual outcomes are dependent upon a variety of factors and not only environmental exposure (personal communication, January 19, 2015). Griffin (2007) may

have identified three of these factors during his research on Christian adventure programs; however, the correlation between Griffin's findings and the camp's response is outside the scope of this study. Only the children's museum was consistent with the literature. Both interviewees from the museum mentioned the spiritual quality of wonder, which supports literary definitions of spirituality as being free and transcendent.

Rachel Carson also emphasizes the importance of wonder. While only a number of participants were familiar with either her or Richard Louv, the themes and concepts present in *The Sense of Wonder* and *Last Child in the Woods* reflect many of the organizations' foundational principles. For example, the parks and recreation department's mission and purpose run parallel to the values of both authors. Attempting to educate the public on local environments, the staff provides first hand experiences for their participants. Meanwhile, the children's museum utilizes observational principles similar to those advocated by Rachel Carson. Both the church camp and community outreach organization support Louv and Carson's writings by providing opportunities for children to play outdoors, to become connected to the natural environment, and to disconnect from electronics and the stressors of daily life.

Conclusion

The purpose of this study was to research how four different organizations incorporate outdoor and nature-based play in their programs and to compare the results with existing literature in order to identify ways of integration and benefits to the community. By interviewing staff at each organization, the researcher identified the percentage of programming participants dedicate to outdoor and/or nature-based play, how they incorporate natural elements into their programming, the perceived benefits of

this integration, the observable differences between nature-based play and indoor and/or technology-based play, if and how they integrate spiritual principles, and whether or not the writings of Richard Louv or Rachel Carson affect their programming. After comparing the responses with existing literature, the author found that while many of the results mirrored research findings, others were unique to organizations and their programs.

In conclusion, the researcher found that the methods and benefits of outdoor and/or nature-based play, in community programs, vary depending on the facilitating organization. Therefore, it is impossible to identify a best practice approach. However, it is clear that the benefits are numerous as supported by the testimonies of working professionals and documented research. It is also possible to incorporate natural elements into any program. With this in mind, community organizations and recreation facilities should increase outdoor programming and incorporate outdoor and nature-based play in existing programs for the benefit of program participants.

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Appendix

Interview Questions

- 1) Tell me about your organization and the programs you offer.
- 2) What percentage of your programming incorporates outdoor and/or nature-based play?
- 3) How do you incorporate outdoor and/or nature-based play in your programming?
- 4) How do you think outdoor and/or nature-based play improves your programming and benefits your target population?
- 5) What different outcomes have you observed from outdoor and/or nature-based play in comparison to indoor and/or technology-based programming?
- 6) Are you familiar with the writings of Richard Louv or Rachel Carson? If so, does your knowledge have any effect on your organization's programming?
- 7) How do you integrate spiritual principles with outdoor and/or nature-based play?
How does this affect your programming?