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NATURE PLAY FOR URBAN ELEMENTARY PRESCHOOLERS:
BENEFITS TO THEIR DEVELOPMENT AND CONNECTEDNESS TO THE
ENVIRONMENT

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A capstone submitted in partial fulfillment of the requirements for the degree of Master
of Arts in Education: Natural Science and Environmental Education

Hamline University

St. Paul, MN

May 2019

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ACKNOWLEDGMENTS

This project becomes a reality with the kind support and help of many individuals. I would like to express my gratitude towards my family for their encouragement which helped me complete my capstone project and fulfilling my dream of international travel and teaching. To my wonderful husband, Mark, who was always by my side when I needed him the most and my son, Alec, who helped with editing and clarification from outside the field of nature education. Thank you to my content reviewer, Carmen Cook, for sharing her knowledge about environmental education and approaches to research, along with the professors at Hamline University, Patty Selly and Brian Wood, who have inspired me with their passion for nature. Lastly, to my study partners and coworkers, Sue Schiffman and Emily Peka who gave me inspiration, countless hours of support, collaboration and humorous experiences through this process of writing and research.

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“Time in nature is not leisure time; it's an essential investment in our
children's health”—

Richard Louv, *Last Child in the Woods: Saving Our Children from
Nature Deficit Disorder*

CHAPTER ONE.

Introduction

There is growing interest in nature and environmental education and research that supports the benefits of nature and outdoor play. Preschoolers need opportunities to play outside, to explore nature and to ask questions about the environment around them. Nature play develops their senses, learning and creativity and the quality of exposure to nature affects their health and research has shown that when young children have high quality experiences prior to kindergarten they are more successful academically and socially (Ernst, 2014; Sobel, 2008; White, 2008).

Many people think of nature opportunities as far off places such as national parks, farms, lakes and oceans, or large wooded areas. The majority of the United States population lives in an urban setting and it is important to provide nature play opportunities for preschoolers in their own environment. Urban areas have green spaces, living things such as trees and animals, and changing of the seasons and it is the daily interactions with nature that will build the connections to future stewardship.

Elementary schools in urban areas are adding preschool programs to their buildings and there are benefits and challenges to this partnership. The benefits include easing the transition to kindergarten, readiness for kindergarten and familiarity with the school. A major concern is the decreased amount for recess at elementary schools. When preschool teachers are sharing resources and space in and around the building it is important to provide outdoor nature play opportunities for preschoolers to benefit their overall growth and build connections to nature.

My capstone examines how preschool programs can increase nature play at their elementary school by identifying nature-based resources, using a guidebook with nature play suggestions and professional development . Professional development at the beginning of the year encourages teachers to evaluate how they are currently using nature based activities and to reflect on their own experiences and views of nature play. A guidebook provides teachers with concrete examples of nature based learning opportunities that are integrated into daily routines. The examples reflect developmentally appropriate practices as established by Minnesota's early learning standards Early Childhood Indicators of Progress (ECIPs) that correlate with a nationally used assessment tool, *Teaching Strategies GOLD™* (TSG).

My Personal Journey

I am a preschool teacher, licensed in early childhood and elementary education, working in an urban elementary school with a new preschool program and have experience teaching at both levels of education. I have also recently returned from living in Korea and extensively traveled around Asia for three years. I observed different strategies that were used to engage students. These experiences made me more aware of how beneficial nature experiences are to brain development and to our overall physical and mental health.

I was raised in a small agricultural town in Iowa. I had many opportunities to freely play outside with friends and family, camp in our backyard, visit many different types of farms and explore the local caves multiple times every year. I used old refrigerator boxes for play spaces and as they got destroyed they became a slide on the

backyard hill. The lilac bushes made an outstanding fort and neighborhood yards had apple, pear, and mulberry trees for climbing and tasting their fruit. Building a treehouse with my neighbor when I was in third grade gave me a chance to see the world from a new perspective and to create a space that was just for us. I had the benefit of being outside in the fresh air, looking for and discovering new things every day, and making connections through hands-on exploration and observation.

I continued to explore the outdoors as an adult by camping with friends and my involvement in Cub Scouts and Boy Scouts with my sons. We camped regularly and as my sons got older, we went on several high adventure trips. We traveled to the Dominican Republic and built an outdoor learning environment for an English immersion school, complete with running water, a small kitchen area, and camping areas. We climbed Grays Peak in Colorado at 14,200 ft. I was always amazed at what the scouts were capable of doing and how energized they were with being outside. Scouting is learning about the environment, being a steward to nature, doing your personal best and developing leadership skills. The scouting experience was beneficial because it kept me connected with my children and nature.

Professional Story

When I went to college I chose elementary education as my major and added early childhood to my Bachelor of Arts degree because it was suggested to have an additional emphasis. I enjoyed all of the classes for elementary education but I found myself wanting to learn more about early childhood. Early childhood gave me the freedom to plan and implement a variety of themes that reflected the children's interests

and gave them freedom to explore. Playing outside was an opportunity to continue to practice our social and motor skills. In elementary school, the curriculum was teacher-directed, very structured and based on state and local standards. There were very few interactions between teachers and students outside of the classroom. Outside play was a stress release from sitting in desks and working on worksheets and an opportunity to use your large muscles reserved on the playground. Teachers had a supervisory role and primarily were redirecting inappropriate behavior. There was no exploration of nature or emphasizing things found outside. The different student teaching experiences were my first look at the philosophical differences between early childhood and elementary school regarding the purpose of outdoor play and its learning potential.

Shortly after moving to Minnesota, I worked in several different early childhood programs; the majority of them had a square enclosed playground with a small sandbox and plenty of plastic toys with several tricycles to ride. My next position was at a private church preschool where the director was a former university professor with a background in early childhood. The director firmly believed in outdoor play every day and each classroom made it a priority to use the courtyard for at least 45 minutes out of the three hour class. We used platforms and planks, a playhouse, and studied plants. There were always balls and large blocks to make forts. Inside the classroom, we had plants and a classroom rabbit and the freedom to explore, make observations and ask questions. The children were able to make their own choices about play and were always fully engaged in their learning.

My next position was working in a suburban Early Childhood Family Education Program (ECFE). The program offered classes for families with children birth to five that combined parent-child activities with parent education. I created curriculum that encouraged positive parent-child interaction onsite, as well as, throughout the community. One of my favorite classes was called Out and About where I organized field trips to apple orchards, a goat farm, a recycling center, four different nature centers and some local parks. Families would drive to the different locations to explore the area or meet with a specialist. The class was very successful in the spring and fall. The only downside to the class was transportation. It required families to use their own transportation to get to the different locations and it included a homogenous group of white suburban families. Another ECFE class that I really liked was about science. This class combined inside and outside time to explore topics such as sink and float, wind and air, light, shadows and reflection and physics. The class was offered three times a year and each session incorporated activities related to the changing seasons.

For many years, the ECFE program had the plastic climbers and toys to use outside in the sandbox and it was always a very safe and routine place to play. Then, in 2005, *Last Child in the Woods*, by Louv, brought the nature-deficiency of children in the US to the attention of our early childhood program. Our administrators were looking at the national and international trends of outdoor classrooms and decided that our playground would provide our young children with more benefits if it became an outdoor classroom. Our playground was completely renovated and the peat rock, sand, and fences were removed. Trees were planted and large rocks were moved in to define play areas. It

was now one large playground with areas such as Tip top Treehouse, Cricket corner and Sandy Cove Sandbox. Teachers were encouraged to overlap times outside, sharing the space, to encourage students to play together.

Changing habits with the new space was challenging. The norm had been to play outside only when the sun was shining and when the kids were not going to “get dirty” because the parents would be upset. The new design required the teachers to think differently about how to use the new space and to define developmentally appropriate practices. Is it ok to climb the trees? If so, how high can a student climb? Is it ok to play with sticks? What kind of weather is appropriate to play outside? Is it ok to dig in spaces that have not been designated digging locations? Many professional development hours were spent on learning how to use the space cooperatively and to use it in all kinds of weather.

Teaching Internationally

In August of 2013, my husband and two of our four sons moved to South Korea so that I could follow my dream to live and teach internationally. It was an urban school with a student population of 250 students, Pre k -12th grade that was very academically focused. The school had just finished a major expansion but the original preschool playground equipment remained untouched. It had a little climber with three swings that was built on a rubberized floor for safety. There were some bushes and trees surrounding it that provided some shade. It was a cute playground but far from the outdoor classroom space that I left.

In this urban setting, we took walks on the walking path that was near the school and talked about the seasonal changing of the trees. Occasionally, we would play on the soccer field, with the artificial turf, with balls but the children had the most fun with the small plastic pellets that were used to keep the strands of the turf separated. They would collect them and make “castles” and pass them to each other like money. There was no extra money for classroom supplies so we made do with what we could find. I found some bug containers in another classroom and we looked around for bugs every day. We also took field trips to the zoo and the strawberry garden. The students loved learning about the zoo animals and tasting the red, ripe strawberries that they picked themselves. Every day, I tried to find ways to increase my nature play and education.

Summary

Nature play is important to a child’s growth and development. Children should be outside everyday exploring and learning in nature. Louv (2008) struck a chord with the world when he wrote the book, *Last Child in the Woods*, and made people notice how far we have moved from nature and how it is impacting our children. The way that I grew up in the 60’s and 70’s is vastly different than how my children and other children in the US are being raised today.

In my experience, educating children in preschool about the importance of outdoor play and education will have a life-long impact on their learning (Chawla, 1998). In chapter two, the literature is divided into 3 parts. The first section studied was defining nature play, the importance of nature play and its benefits. The second section researched the barriers and benefits of preschools at urban elementary schools and the last section

provides research on how teachers can increase nature play with preschoolers at their urban elementary site by using the *Teaching Strategies* Gold as a guide for assessing learning and helping preschoolers grow in all areas of development.

Chapter three is about the development of the guidebook and professional development for preschool teachers. The goal of the guidebook is to make a sample of nature play lesson plans and ideas that align with the standards of *Teaching Strategies* Gold™ but are flexible enough that preschool teachers will be able to use the ideas in a variety of locations. The guidebook will also include a justification about the importance of nature play and along with how teachers can increase their comfort levels implementing nature play in elementary school settings.

CHAPTER TWO

Literature Review

Nature play is very important to the development of preschoolers. According to Piaget (Jardine, 2006), preschoolers think of themselves first and in concrete terms and need experiences that are tangible to have greater understanding of concepts. In order to increase nature play and exploration for preschoolers, that will benefit their development and connections to nature, their experiences need to be hands-on, place based and involve all of the senses. The focus of this literature review is to support and the development of a guidebook with examples of lesson plans and professional development that is answering the research question, *how can we increase nature play for preschoolers at urban elementary schools so that it benefits their development and connectedness to nature?*

The literature review has been divided into three sections; understanding nature play, preschools in elementary schools, and professional development and assessment. The literature review begins by defining nature play and its importance to development, the benefits of nature play and urban nature play. The last two sections focus on the benefits and barriers of preschoolers in elementary schools and professional development and assessment for preschool teachers. The goal of the project is to increase the frequency and quality of the nature play experiences for preschoolers at elementary schools. By providing lesson plans that follow *Teaching Strategies GOLD™* (Teaching Strategies, 2016) assessment tools for developmentally appropriate practices the teachers can build a quality foundation for future learning into the elementary school years.

Understanding Nature Play

Defining nature play. Nature play does not have one specific definition but there are common threads of nature, inquiry-based and child-led play that are found in studies and with environmental educators regarding young children, nature and play.

MacEachren (2013) stated that nature play includes, “regular and repeated access to the same natural space, as well as emergent, experiential, inquiry-based, play-based, and place-based learning” (p. 219). According to Natural Start Alliance North American Association for Environmental Education (NAAEE) nature play requires “land that is not too protected and is wild - at least in the child’s eyes, outdoors with ‘child-centered’ play where the children are actively engaged with nature and its elements and nature play is enjoyed nearly every day, in good and bad weather” (p. 1) and in *Natural Wonders: A guide to Early Childhood for Environmental Educators* (2002), Nature play is hands-on learning through open-ended inquiry based activities that support outdoor exploration(Oltman, 2002).

Piaget and Vygotsky (as cited in Jardine, 2006) emphasized the importance of direct interactions with the world. Piaget said that preschoolers think in concrete terms and need experiences that are hands-on and involve all of the senses to make long-lasting impact on their future (as cited in Jardine, 2006). Vygostky believed that young children learn through their social interactions and use a constructivist approach, beginning with what they know and making more complex connections with additional experiences (as cited in Brooks, 1999). Nature play allows the child to have hands-on experiences with

things in nature that help them to make connections to the world around them at their own pace (White, 2008).

Nature play is inquiry-based and emphasizes the natural curiosity of the child. Children are active explorers and want to increase their knowledge, skills and understandings of themselves as they develop an inner awareness of trust when they are given the opportunity to explore (Gurholt & Sanderud, 2016). Educators can facilitate their inquiry by asking open-ended questions that encourage children to experiment, ask more questions and reflect on their own thoughts and perspectives (Oltman, 2002). A study by Kiewra and Veselack (2016) looked at how creativity was enhanced through interactions in nature and found that interactions with nature often encouraged more creative play that was inspired by their imagination than when children are playing with manufactured toys that tend to have defined play. Nature play can be established with simple creations such as a digging area, secret garden or loose parts (Byron, 2015).

Nature play involves playing outside and engaging in nature (NAAEE, 2018). A natural setting is a very broad area that can include a local park, their backyard, a neighborhood stream or any area where a child has the ability to explore and discover natural elements such as rocks, plants, flowers or bugs. The size of the space is not important for a preschooler. “The dugout in the weeds or leaves beneath a backyard willow, the rivulet of a seasonal creek, or even the ditch between a front yard and the road - all of these places are entire universes to a young child” (Louv, 2008, p. 172). Fully engaging in nature uses all of the senses (Yogman, 2018) including playing outside in all types of weather. A frequent mantra from environmental educators is “There is no

such thing as bad weather, only poor clothing choices” (Louv, 2008; Sobel, 2016; Selly, 2014). When a child is dressed for all types of weather every day they can experience the brisk air on a cold winter day or the smell of the rain on a hot summer day.

In the 1960’s, a nature movement called Waldkindergarten began in Germany for children, ages three to six, who were educated almost exclusively outdoors. Scandinavia also embraced the principles of Waldkindergarten and started their own Forest School programs (Larimore, 2016; Savery, 2017; Sobel, 2016). They have the same basic philosophy with Forest Kindertagens, defined as “educational programs which provide daily outdoor experiences with limited or no indoor facilities with 70-100% of their day outdoors, immersed in nature” and Forest Schools “take children to a nearby natural area on a regular basis for half of the day or a whole day. Some extend beyond early childhood and involve public schools.” (Larimore, 2016). In both types of programs, the forested areas were considered the classroom where children could freely play, follow their curiosity, building relationships with the land. Loose parts, which were moveable objects such as sticks, rocks, and dirt, were considered the materials that were needed for imagination, creative play and problem solving. (Byron & Foutz, 2015).

In summary, nature play uses all of the senses and is inquiry based with child-led exploration in the outdoors. It incorporates widely used theories of Jean Piaget and Vygotsky that uses hands-on experiences to promote higher understanding and social interactions. The role of the adult is to ask the children questions that encourage further reflection and additional exploration. As exemplified by Forest Kindertagens and Forest

Schools, the outside was used for most of the day and valued play as an important component to the development of the whole child and to their future.

Benefits and importance of nature play. Louv (2008) attracted the attention of the world when he wrote the book, *Last Child in the Woods; Saving our Children from Nature-Deficit Disorder*. He wrote about how in the last 40 years our current trends in society, of spending less time in nature, has contributed to what Louv has coined “nature-deficit disorder”. With less nature, we are seeing higher levels of obesity, attention problems and depression (Louv, 2008). This section will demonstrate the importance of increasing nature play for preschoolers to develop their mental and physical health, cognitive benefits and connections to nature.

There are cognitive benefits to nature play for preschoolers. Ernst,(2014, p. 735) cited Elliot (2010) and Wilson (2012), “Educational theorists such as Froebel, Dewey, Montessori, Steiner, Rousseau, and Malaguzzi all emphasized the role of experiences in nature for young children’s development and well-being”. Developmentally appropriate play with parents and peers also promotes the social-emotional, cognitive, language, and self-regulation skills that build executive function and a prosocial brain (Yogman et al., 2018) and, when it is combined with nature, the outdoor learning supports interdisciplinary connections, provides children with a deeper understanding and engagement in learning (Dowdell, Gray & Malone, 2018; Macquarrie, 2018; Thorburn & Allison, 2012. Marcon (2002) completed an six year study with low-income minority children and found that the children who experienced two years of active, child-initiated

preschool had greater school success six years later than those who had attended an overly academic preschool.

Time outside in nature benefits a preschooler's physical and mental health. Louv (2008) wrote that nearly 40% of American schools eliminated or were considering eliminating recess but research has shown that outdoor play time serve as an important means of preventing obesity with children in Head Start (Ansari, Pettit, & Gershoff, 2015) and findings indicated that "doses of nature" can "enhance the attention of the general population and as a safe, inexpensive, widely accessible new tool in the tool kit for managing ADHD symptoms" (Faber Taylor & Kuo, 2009, p. 1). Additionally, children's mental health and ability to deal with life stress was lower among children with high levels of nearby nature than among those with little nearby nature (Wells & Evans, 2003) as nature moderates the negative effects of stressful events (Corraliza, Collado, & Bethelmy, 2017).

Nature play creates connections to nature and stewardship. Adults play a role in building a sense of caring and connection to the local environment when they highlight positive natural elements with what children see every day (Fisman, 2005). These connections then stay with a person into adulthood. According to Chawla (1998), the hours spent outside an unstructured natural place in childhood had positive effects into adulthood with their health, creative play, and developing a bond with nature and forming a foundation of environmental stewardship. Preschoolers can learn about where food comes from or the life cycle of plants and animals, and as they get older, transfer that knowledge to how their actions impact the local ecosystem (Byron, 2015; Selly 2012).

While preschoolers are actively immersed in nature play it is important to remember, that developmentally, young children should be “talking to trees and hiding in trees which precedes saving trees” (Sobel, 2008, p. 19).

In conclusion, nature play benefits children in all areas of development. It impacts their mental and physical health, cognitive skills, and builds connections to nature. The benefits of nature play in preschool continue on through future stewardship and greater school success. But nature play is not just found in rural areas or national parks. It can be found in urban areas where a majority of preschoolers live every day. Preschoolers that live in urban areas also benefit from nature play.

Urban nature play. Urban nature play is a subcategory of nature play. Urban nature play programs have a variety of names such as “nature preschool” or “forest school” but will divide their time between indoor and outdoor play. Like the Forest Kindergartens or Forest Schools of Europe, the emphasis is on regular, repeated visits to a nature space that is inquiry-based and child-led with its philosophy focusing on making connections to the natural environment (Byron & Foutz, 2015). The key to increasing nature play in an urban setting is to identify the natural resources that are available in the area for children to explore daily. These areas should provide children with opportunities to have meaningful hands-on experiences with their environment that are developmentally appropriate and culturally relevant. Additionally, unlike the Forest Kindergarten or Forest School, the educator needs to make appropriate preparation for barriers that may be found in urban areas, such as access to bathrooms, appropriate clothing or safety concerns (Brown et al., 2015).

Parks offer outdoor year-round exploration opportunities that can be used in all kinds of weather. It could be a landscaped park, man-made woods, open fields or urban farm (Brown et al, 2015). For preschoolers, small outdoor spaces such as a yard, a garden, asphalt play space or rubber-tiled playground will provide experiences that develop inquiry skills and nature experiences (Byron & Foutz, 2015). Nicholson (1971) first used the word “loose parts” to describe movable materials that can be moved, carried, taken apart or put back together such as sticks, rocks, or leaves that are found around us every day in the wilderness, countryside, or city.

According to Ernst (2012 and Peterson (2013), educators in urban areas should plan ahead for barriers that may prevent children from fully enjoying their outdoor experiences. Students may not have the appropriate clothing due to inexperience with changes in weather or the inability to purchase the outdoor gear (Byron et al., 2015). Programs can increase the accessibility of appropriate clothing by organizing clothing swaps or fundraising, or accepting donations from families as the children outgrow them (Selly, 2012). The educator’s enthusiasm can even change the mood and offer a distraction from discomfort by playing an active game or finding a warm shelter (Byron, 2015).

Preparing the children before going outside helps to manage expectations and to address any fears that they may have regarding safety or the unknown. Students may see unfamiliar animals or insects as “bad” or dangerous. The teacher can remind the children that the insect is looking for food or is trying to fulfill another need (Byron et al., 2015). Children need time to make discoveries and interacting with nature but for children that

may have some fears it is helpful to provide some structured focus such as finding things that grow or insects, or, playing familiar games in unfamiliar areas (Bryon et al., 2015)

In conclusion, nature play is defined as open-ended inquiry-based exploration in nature. It is important for development of the whole child and creating connections to nature. Playing outside in nature improves the mental and physical health, cognitive skills and social skills. Forest Kindergartens provided opportunities for preschoolers in Germany to spend most of their time outside and to be fully immersed in nature where their own creativity and imagination are guiding their play. Urban nature play follows the same principles of nature play but in an urban setting. Urban nature play uses nature that is found in local parks, landscaped gardens, or asphalt. It is child-led and inquiry-based, making observations and asking questions and exploring. The components of nature play can be adapted to a variety of settings. It would also benefit the development of preschoolers that are at elementary schools.

Preschools in Elementary Schools

Public schools in the United States are adding preschools to their buildings due to policy changes, school readiness and aligning curriculum (Brown & Gasko, 2012; Clark & Zygmunt-Fillwalk, 2008, Graue et al., 2018). According to research (Barnett, Epstein, Friedman, Sansanelli, & Hustedt, 2009; Bogard & Takanishi, 2005), “prekindergarten has become one of the fastest growing state-supported education initiatives” (as cited in Brown & Gasko, 2012, p. 264). With these new relationships, partnerships and competencies there are differences between early childhood experiences and the

expectations of ‘formal’ school which begins in kindergarten (Clark & Zygmunt, 2012). One of the biggest differences is that early childhood professionals follow developmentally appropriate practices as defined by National Association for the Education of Young Children (NAEYC) and the elementary school is required to use the standards that are established by local, state and national policy. This next section discusses the benefits and barriers that teachers will have when trying to increase nature play with preschoolers in the elementary school so that it is developmentally appropriate and builds connections to nature.

Benefits of preschools at elementary schools. There are many benefits to having a preschool program at elementary school such as familiarity to the school for an easier transition to kindergarten, access to curriculum resources and shared spaces, and collaboration with teachers and parents (Desimone 2004; Ernst, 2009; Jacobson, 2004; O’Brien, 1991; Sobel, 2016). One of the biggest benefits for preschool programs is familiarity with the school and easing the transition to kindergarten (Shore, Shue, & Lambert 2010). In a case study with elementary principals in North Carolina (conducted by Shore, Shue, & Lambert 2010) the most cited benefit to having preschool in the elementary school was that it eased the transition to kindergarten. Students were “more ready” for kindergarten with social and developmental skills, familiar with the campus, staff and other students (Clark & Zygmunt-Fillwalk, 2008).

Collaboration between elementary staff with curriculum and lesson planning is a benefit for preschool programs. Preschool teachers feel that there is a shared mission

when they are working together with the kindergarten teachers and other teachers at the elementary school (Clark & Fillwalk, 2012). Resources such as equipment, materials, technology, and play areas contributed to the quality of the early childhood environment. Preschool teachers in one study indicated that they were often able to take advantage of the school's resources that this benefited their programs (Desimone, 2004). When incorporating outdoor learning opportunities they were able to take advantage of elementary school shared spaces such as nearby parks, using a central gathering space or other open spaces (Ernst, 2009; Jacobson, 2004; Sobel, 2016, p.198). These collaborations build a community for the children and their families that significantly raise achievement and social-emotional competence for low-income children (Jacobson, 2018).

Collaboration with the community helps to create stronger nature programs that are culturally relevant and developmentally appropriate to engage students to encourage participation, and involvement with the community and parents (Fisman, 2005; Powell, 2009; Wal, 1994). Urban areas have very diverse populations and many cultures have oral traditions that tell the history of the environment and their relationships with the condition of the earth. Storytelling is a teaching strategy that engages diverse urban audiences, acknowledges the importance of their story and generates interest in nature through cultural connections by challenging students to use their imaginations (Hughes et al., 2015). Preschoolers make connections to the stories by using hands-on and concrete materials such as passing a rain stick when taking turns talking, listening to music or smelling pine needles (Hughes et al., 2015).

In conclusion, preschools that are located in elementary schools have access to resources that will support nature play and outdoor education to increase their social and academic skills and stewardship of nature. Preschool teachers can collaborate with the kindergarten teachers to develop outdoor curriculum and nature based learning opportunities that can be connected from one year to the next. Transitions between preschool and kindergarten are easier due to the familiarity with the school and its routines, thus supporting a stronger community. Using community resources that blend in the history and oral traditions of the local culture and environment help preschoolers make connections to nature.

Barriers for preschools at elementary school. When a preschool program is located in an elementary school there are barriers that may prevent a preschool program from increasing their nature play. Some of the barriers from elementary administrators and teachers may include lack of support and value of outdoor play, safety concerns, lack of physical spaces that are age appropriate and within walking distance, and school philosophies and standards (Ernst 2012; Louv 2008). From an early childhood teacher's perspective additional barriers included lack of time, apprehensiveness due to weather, safety concerns, and lack of supervision (Ernst, 2014).

One of the barriers is that elementary teachers and administrators may not value outdoor play or understand its importance to the development of preschoolers. Nearly 40% of American elementary schools either eliminated or were considering eliminating recess (Louv, 2008, p. 99) and teachers may not associate natural outdoor settings with learning and see them only for their physical and social development (Ernst 2014).

Studies have shown that administrators are not knowledgeable about developmentally appropriate practice with preschoolers or the importance of nature play and child-led inquiry-based learning (Shore, Shue, and Lambert 2010). As referenced by Desimone, principals in elementary schools with preschool need additional knowledge in early childhood education because it is usually not part of their formal training (Egley & Egly, 2000). It is recommended that administrators attend conferences that offer sessions with administrators that are successfully implementing Environmentally Based Education (EBE) programs (Ernst 2014) and professional development regarding the developmental needs of young children (Shore, Shue, & Lambert 2010). The principal plays such an important role in policy decisions, that they could be a powerful advocate regarding environmental education within the school. (Ernst, 2014).

Safety concerns at the elementary school are a barrier for early childhood staff and elementary staff. In one study, one of the strongest objections to EBE in elementary schools are the safety and liability issues (Ernst, 2014). As stated by Savery et al.,(2017), even in England, a House of Commons (2010) report found health and safety concerns and resultant fear of litigation as a major barrier to learning outside the classroom and that Early Years practitioners saw a “risk averse culture’ (Waite, 2009, p. 8) This culturally risk-averse indoor movement is a recent occurrence and has changed the balance of learning to a “risk free” indoor environment. Ernst (2014) recommended that professional development is one strategy to reassure teachers that safety policies and regulations would be followed from the local, state, and federal codes. To reassure teachers that safety is a priority, before the program begins, they can discuss safety

situations on school grounds or field trips such as allergies, getting “too wild”, picking up rocks and sticks, and someone getting hurt (Selly, 2012).

Safety is also a concern when school children, and their parents, have had limited exposure to the natural environment and may be more fearful of things in nature such as animals or insects. The role of the educator should be to empathize with the student and do everything possible to keep them safe. Do not dismiss their fears but address them right away and try to make the situation positive. “For example, in a response to a question about tigers, a Chicago area program leader said, “No tigers around here! They live far away in Asia. But we have other furry animals like rabbits and squirrels.” “There are rabbits?” the little girl exclaimed. “Yes, would you like to look for one with me?” (cited by Byron, Steinbrunner, 2014, p. 79).

There is also an elevated level of concern regarding neighborhood security and navigating the routes such as traffic patterns (Byron, 2015). Beyer, Heller, & Zets conducted a study in 2015 in Milwaukee, Wisconsin. They created an urban program that was designed to connect children in the Hispanic/Latino communities to nature, addressing fears that may have prevented them from interacting with nature. They found that the mere existence of a park may not automatically be beneficial to building connections to nature. Urban parks must be promoted in a positive way to shift children’s thinking about outdoor education (Beyer, Heller, & Zets, 2015).

Lastly, monetary resources for new materials, equipment or outdoor gear may be a barrier for the school or the individual family, as a disproportionate number of families are low income households in urban communities. A quality outdoor program will go

outside in all types of weather and will embrace the philosophy, “There’s no such thing as bad weather, only bad clothing!” (Nature Start, 2018). With the help of an educator, children can learn how to dress for all types of weather and that every change in the weather has something to explore and to investigate (Byron 2015). If families are not able to afford to purchase all of the different types of outdoor gear to stay warm and dry, Selly (2012) suggested starting a scholarship fund to buy extra gear, ask parents for outgrown clothing or establish a type of lending program to ensure that all children are comfortable.

Developmentally Appropriate Curriculum

School reform regarding standards of learning, such as No Child Left Behind and Common Core State Standards, has progressively moved into early childhood and there is great concern about their pedagogy (Graue et al., 2018). Focus on academic preparation at the early childhood level make it difficult for early childhood educators in the United States to implement child-led outdoor experiences in natural outdoor setting even though there is a nationwide movement to reconnect children and nature (Louv 2008). This section looks at how Minnesota addresses standards for early childhood, how it is used with developmentally appropriate practice and assessment of nature play.

In 2009, North Carolina elementary administrators were surveyed about preschool standards in their school. Thirty-five percent were unaware that North Carolina had adopted preschool standards and 53 percent did not use the document to make curricular decisions (Shore, Shue, and Lambert, 2010). In the study, *What Guides Pre-K Programs*,

(Graue, et al., 2018) compared 4 different state standards based on developmentally appropriate practices and posed concerns about pressure from the K-12 system to become more standards based. In one situation, teachers were being asked to align the preschool curriculum to the Common Core standards of district. Teachers were feeling frustrated and confused with the time-consuming expectations, especially when working with English Language Learner (ELL) populations trying to make sure that the children were academically “kindergarten ready” (Graue, et al., 2018).

Early learning standards in Minnesota have been created for the young child based upon how children learn and not just on academic accomplishment. Minnesota Department of Education created the *Early Childhood Indicators of Progress* (MDE, 2016) recognizing that this is a rapid period of brain development, and, that there is a strong need for nurturing environments and appropriate interactions that encourage maximum brain development. One of the assessment tools that MDE is using for early learning assessment is *Teaching Strategies GOLD™* (TSG) (MDE 2017, *Teaching Strategies, LLC*, 2016) It has been found to be a reliable form of assessment for children birth to five years old (Kim, Lambert, & Burts, 2013; Lambert, Kim & Burts, 2015) using developmentally appropriate practice for ongoing observational assessment. It is aligned with Common Core State Standards, state early learning guidelines, Head Start Child Development and Early Learning Framework.

Teaching Strategies GOLD™ has identified 38 objectives that assess the child’s knowledge, skills and behavior with progressions of development on a learning spectrum. Teachers establish where a child is at developmentally through observation and

interactions and then can create learning opportunities that promote greater understanding. The guiding principles demonstrate a continuum of learning from birth to third grade entrance and emphasize that the learning is strongest when integrated across domains. The learning domains are social and emotional development, approaches to learning, language and literacy, the arts, cognitive, physical movement, mathematics and scientific thinking. Teachers can refer to the continuum in TSG as they observe what the child can do, have a general idea of what to expect next, and identify ways to support the child's learning and development (ECIPs, 2016). For example, the cognitive domain, list "demonstrates a positive approach to learning with an objective of shows curiosity and motivations"(*Teaching Strategies GOLD™*, 2016, p. 65). A teacher can observe the child when they are engaged in child-led exploration in nature.

In conclusion, a preschool at an elementary school creates a unique set of circumstances that have benefits and barriers. The driving educational philosophy of preschool is based upon developmentally appropriate practices that are child-led, developing social skills and encouraging curiosity, asking questions, and problem-solving. Elementary schools are outcome based and have guidelines and requirements that have been established at the state and federal levels. Teachers follow the district curriculum and the local, state, and federal standards. Barriers that preschool teachers may have while trying to build an outdoor education curriculum may include lack of support from administrators and K-5 teachers, unsafe outdoor space for preschoolers, lack of resources, and knowledge of outdoor education. Urban elementary schools may have a diverse or low-income population which does not value or

understand the importance of outdoor play and education. Minorities and people with disabilities are underrepresented in our local and national park system. Therefore, many of the adults that are raising the children may not be familiar with all of the benefits that nature can offer. Ideally, the school will support the importance of outdoor play and education and provide professional development for teachers and community events for families.

Teacher Implementation

If teachers are being asked to increase nature play with preschoolers in an urban elementary school setting it is important to have professional development that will equip them for success. The Learning Policy Institute (2017, p.23) “identified seven common design elements of these effective PD approaches.

1. They are content focused.
2. They incorporate active learning strategies.
3. They engage teachers in collaboration.
4. They use models and/or modeling.
5. They provide coaching and expert support.
6. They include time for feedback and reflection.
7. They are of sustained duration.”

By incorporating each of these elements into the PD the teachers become active agents in their learning rather than someone telling them what to do. (Baker, 2018).

During the PD, and throughout the year, teachers need to reflect on their own values and

understanding of outdoor play, and to recognize nature learning opportunities inside and outside the classroom in an urban setting. How teacher's value outdoor play also impacts the implementation increasing nature play.

According to Wilson (2008), teachers need to alter their mindset so that they are not viewing time outdoors as a break from teaching or "down time" and, although the teacher may see the value in outdoor play, it may not be viewed as important as inside classroom activities (MacQuarrie, 2018). Additional research has shown that teachers will think of nature experiences as only "being dominated by camps and more rugged forms of activity"(Tan & Atencio, 2016, p. 32). Research has shown that, with guidance, educators can reframe how they view the outdoors and take advantage of the learning opportunities that exist all around them and that "encouraging awareness of what is feasible is vital, rather than focus on changing attitudes or ensuring that teachers have a positive outlook regarding outdoor learning" (MacQuarrie, 2018, p. 347).

Professional development should focus on the value of the outdoors and recognizing opportunities that provides social interaction and nature exploration. As cited by Tan & Atencio (2016) "We assert that teachers need to invest time in understanding the salient features of outdoor learning places, which includes the local history, culture and ecology of specific local places." (Brookes, 2004; Wattchow & Brown, 2011, p. 33). Identifying outdoor spaces that support formal and informal learning, in relation to curriculum, reinforces a deeper understanding of place-based approach (Tan & Atencio, 2016). A play-based approach for preschoolers provides hands-on learning and exploration with such observations as life cycles of plants, animals, the seasons and the

weather (Dowdell, Gray, & Malone, 2011). Additionally, teachers should be reassured that safety policies and regulations would be followed from the local, state, and federal codes (Ernst, 2014).

A guidebook and professional development, that includes self reflection, modeling and collaboration, would provide concrete examples of how teachers can combine nature play with the TSG standards and objectives. In the report by The Learning Policy Institute (2017) cited a study by Kleickmann et al. (2016) that “found that teachers who utilized educational curriculum materials alone had lower student achievement than those teachers who had access to those materials and expert support combined with collaborative active learning opportunities that focused heavily on sequencing and presenting science concepts to facilitate student learning”. (p. 12)

In conclusion, a nine month study in Sweden (Fagerstam, 2014) revealed that “teachers who undertook a professional development course showed that outdoor learning can directly contribute to supporting delivery of the curriculum and valued making links between experiences” (as cited in MacQuarrie, 2018, p. 347). It will be important for teachers to think about their values toward nature play and exploration both inside and outside the school, learning about the importance of nature play and identifying resources that are available to them for a place-based curriculum. The guidebook and professional development will provide teachers with concrete examples and collaboration opportunities so that they will have the skills to increase nature play and build connections to nature at the elementary school.

CHAPTER THREE

Project Description

The goal of the professional development and guidebook was designed to focus on the question, *How does increasing outdoor education with preschoolers in an urban elementary school benefit their development and connections to nature?* With the use of these tools, preschool teachers feel more comfortable increasing their outdoor nature play and education, understanding why it is important, and identifying how they can do it in an urban elementary school setting. Chapter One provided an overview of my personal and professional experiences with environmental education and the reasons behind my research. Chapter Two defined and explored the importance of nature play, preschools in urban elementary schools, developmentally appropriate practice using TSG, and professional development to increase teacher understanding of nature play and implementation of lessons. Topics in the Chapter Two literature review included the definition of nature play, the benefits of nature play in all areas of development, and how children establish a foundation of connections to nature through regular experiences in nature. The last section shows how preschool teachers can create a positive outdoor education experience by identifying the benefits and barriers of being in an urban elementary setting.

Assessment

Assessment of the project used a variety of approaches that included professional development (PD), group discussions, teacher surveys and reflections. One week prior to

the beginning of the school year, teachers were provided with an online survey with two parts. The first part of the survey asked the teachers about their own experiences with nature while they were growing up. The second part of the survey focused on how the preschool teachers at elementary schools integrated nature play and opportunities that built connections to nature with their preschoolers. At the beginning of the year professional development, teachers were encouraged to share their personal experiences with their colleagues and some of the methods and activities that they currently use at their school. The information gained from the surveys provided me with information on teachers' views, their connections to nature, and how they are currently integrating nature play at their elementary schools (Grimwood, Gordon & Stevens 2018). This enabled me to understand the teachers' perspectives and prior experiences with nature which guided the discussions during professional development and implementation of the guidebook. The discussions between the teachers at the professional development helped the teachers to build common ground within the district school sites and created a foundation for learning new strategies for increasing nature play at elementary school. (Baker 2017)

The beginning of the year PD utilized a powerpoint presentation which incorporated information regarding how nature play has changed in the last 40 years, how our own experiences affect building our connections to nature as an adult (Chawla, 1998), the importance of nature play and the importance of creating connections to nature for preschoolers (Louv 2008, Sobel 2013). Intertwined with the slide presentation, teachers had interactive discussions that helped them see how they could increase their nature play by identifying where to find nature at their elementary school and how they

can use TSG assessment tool. Assessment of the PD would be interactions with the participants, observations of discussions within groups and a google online survey on the effectiveness of the PD.

In January and April, I sent out an online survey that asked teachers follow up questions regarding increasing nature play and building connections to nature with their preschoolers. The surveys asked what they are doing to build connections to nature and if this is greater than what they had done the previous year. At the PD in January, there were segments of time to share how teachers were using the guidebook and to reflect on the lesson. In April, teachers were sent an additional survey where they could reflect on how they used nature play at their elementary school and compare it to the one that was sent out in August. The information gathered from the surveys, collaborative discussions, and professional development enabled me to assess how the guidebook and professional development increase outdoor education with preschoolers in an urban elementary school that benefits their development and connections to nature.

Project Rationale

Children in urban areas are growing up in a world with fewer opportunities for nature connections due to increased technology, unfamiliarity with nature, and the cultural attitude to keep our children safe (Louv, 2008). Children that are living in urban areas need to see that nature is all around them and that connections can be made through formal and informal experiences. The benefits to nature play include: social and

emotional skills, problem solving and creativity, physical and mental health, cognitive growth and connections to nature.

Several authors were used as models for guidance in designing curriculum to increase outdoor education for preschoolers in urban elementary schools; Louv (2008) author of *Last Child in the Woods*, Sobel (2013) author of *Place Based Education, Connecting Classrooms and Communities* and White (2008) who wrote *Playing and Outdoor Learning*. Each author emphasized that children need regular opportunities to learn and play outside that increase all areas of development for preschoolers and that no matter where a person lives connections can be made to nature.

Project Description

The project was divided into two sections. The first section is a guidebook with a series of lesson plans that teachers can use to create outdoor learning opportunities in natural settings in urban areas. The second section is devoted to professional development for teachers and additional resources that they can use for support in the classroom and outside

The guidebook contains 7 formal sample lessons that are designed to provide the teacher with suggestions on how to combine *Teaching Strategies GOLD™* (TSG) and nature using developmentally appropriate practices. These lessons are formal learning opportunities that target an assessment goal by using topics of interest that are found in urban areas such as living things, shadow, and seasonal changes. The lessons are designed to be flexible in their implementation so that the teacher can follow the interests

of the children and the available daily nature opportunities. Rituals and songs are integrated into transitions to maximize learning. The lesson plans are informal learning opportunities that can be implemented throughout the school year from September to June. Activities are designed to be flexible for each teacher, with suggestions for building connections between PreK and elementary schools.

The second section of the project includes professional development activities to help teachers understand the purpose of nature play, increase the nature play and how it can be implemented at their elementary school. There were opportunities to collaborate with other teachers, feedback and reflection of current and past practices, along with examples of how to identify resources around their own elementary school. This includes places to explore such as walking to parks or open spaces, as well as using buses for field trips to nature centers or zoos.

Audience

The intended audience will be preschool teachers that are located in urban elementary schools. Elementary teachers and administrators may be interested or benefit from this project. Creating continuity and scaffolding lessons between preschool and elementary school has proven to be beneficial to learning. The curriculum guide is designed to appeal to a variety of preschool teachers, providing lesson plan ideas and resources that can be used throughout the year. The differences in location, demographics and resources will determine the lessons and approaches that teachers can implement.

Project Framework

While many of the preschool experiences is child-led discoveries, there were formal lessons that were introduced by the educators designed to move the children to a higher level of understanding. *Teaching Strategies GOLD™ (TSG)* were used as guidelines to develop and implement developmentally appropriate curriculum for the nature play inside and outside of the classroom. The work of Wiggins and McTighe, *Understanding by Design* (2005), and its method of backward design, will be used to identify the standards and purpose of the lesson, how children learn, and then to look for opportunities in nature plan the lesson. For example, if the teacher has identified “engaging in conversation” from TSG as a goal, then the teacher would develop lesson plans in nature exploration, using the teachings of Louv (2008), Sobel (2013), and White (2012), that encourage conversations by asking questions or partnering children in think, pair, share activities. Many activities and overlap with other areas of development and will change based upon the setting or resources available.

History

For 30 years, the district only offered private preschool programming that was funded primarily through tuition and was located in two early childhood dedicated facilities. Classes were held two to three days per week for two and a half hours in 5 different classrooms. With legislative support since 2016, the district has expanded its programming by offering state funded preschool programs in seven classrooms at an early childhood dedicated facility and at eight of the ten elementary school sites in this

suburban district. The elementary sites offer classes three hours per day, four days per week. Each preschool program follows similar curriculum methods at the elementary schools, but there are differences between demographics, classroom space, outdoor space, resources, and administrative support for nature play at each site.

Nature play has been a major focus in child development in the early childhood program since 2010. The original early childhood site includes an outdoor classroom that focuses on nature play, the use of natural materials and loose parts. Many of the preschool teachers at the elementary schools are interested in incorporating the nature play philosophy at their schools but are finding many benefits and barriers that are unique to their setting. The district is experiencing declining enrollment and each elementary school has a different set of demographics. Since 2003, the primarily white affluent school district has seen an increased need for free and reduced lunch, an increased ELL population, and schools that qualify for additional Title I funding.

Setting and Demographics

The project was implemented at one preschool program located at one of the elementary schools in the district. According to the Minnesota Department of Education (MDE) the school has 483 students in K-5 who are served by 29 licensed staff and 18 non-licensed support staff. This school has a large Somali population and qualifies for Title I funding. According to MDE, the student population breaks down in the following way: 48% Black, 8% Hispanic or Latino, 3% Asian, 6% two or more races, and 35%

White. Additional facts about the student population include: 24% English learner population, 57% free and reduced lunches, 1.2% homeless, and 10% special education.

The preschool population at the school has demographics that are similar to the elementary school but with a higher percentage of children with special needs. Twenty percent of each group is receiving services through the Early Childhood Special Education program (ECSE). There are 39 children enrolled in the AM and PM sections that attend school for 3 hours a day, 4 days a week from September to June. There are 3 staff each day with one licensed teacher and two educational assistants. The program is fully supported by elementary administration and staff.

There are 4 acres of school grounds which includes the school and parking lot. There are approximately 2 acres of playground space that consists of 2 plastic climbing structures with wood chips beneath one, two small baseball diamonds and a blacktop area. There is a school garden, a memory garden and about 20 trees near the playground. There are a variety of trees that include maple, ash, linden, basswood, blue spruce pine, and elm. Adjacent to the school is 5 acres of wooded land that belongs to the city with several walking paths. A half of a mile north of the school is a neighborhood pond that students can walk to through a residential neighborhood. A half of a mile to the east of the school is a 230 acres city park with native oaks, a nature playground, prairie grasses, and numerous walking paths.

Timeline

The timeline for completion is the spring of 2019. Implementation of the project begins with staff development in August with an introduction to nature play and a participant survey that asks teachers their values and previous experiences regarding nature play (MacQuarrie, 2018). Information about why nature play is important and how to identify common resources at their elementary school will also be included. Planned check-ins will take place throughout the year offering additional support and field trips in the community will be organized to reinforce the nature concepts.

Summary

This project was designed to increase outdoor learning opportunities for preschoolers in an urban elementary school setting. The long term goal was to provide preschool teachers with professional development and a guidebook that assisted in creating developmentally appropriate experiences throughout the year that were located within walking distance of the elementary school. The lessons were flexible and adaptable to a variety of settings in and around urban elementary schools following the *Understanding by Design* method (Wiggins & McTighe, 2008). Teachers identified their TSG assessment goals and then made observations through nature play .

In chapter four I reflected on my personal experiences, literature review connections, and the process of developing a guidebook to increase outdoor education for preschoolers at an urban elementary school. I made conclusions regarding the implementation of the curriculum, identified its limitations, and looked toward the future of outdoor education for preschoolers in urban elementary schools.

CHAPTER 4

Introduction

Louv (2008) sparked a national conversation regarding the importance of nature play in children's lives and the impact that our society has played in its reduction. This capstone project was designed to provide professional development and a guidebook that supports how teachers can increase nature play with preschoolers that attend urban elementary schools. Chapter four is divided into seven sections. The first two parts discuss my capstone journey as a writer and learner, followed by an analysis of the literature review that describes my biggest influences and connections that I made in the research process. The middle section reflects on the implications and limitations of the literature review and project. The last three sections focus how this project can influence education policy and my profession, along with future research projects.

My Capstone Journey

I started this project because of my passion as a preschool teacher and as someone who loves to be outside. Growing up in a small agricultural town in Iowa in the 1970's, I was given the freedom to explore nature without the concerns of parental oversight, time, or fears about safety. Because of these open experiences to explore my neighborhood and town, I was able to discover the joy of building my own treehouse and eating the mulberries right off of the trees. As a parent and teacher, I have been fortunate to have traveled internationally to see the impact that people have on the earth's resources.

Society's values and attitude toward nature play has changed dramatically in the last 40 years. Children are growing up in a world where materialism, schedules, and technology are guiding parent's decision making and the education of our children. As Louv (2008) described in his book, *Last Child in the Woods*, children are suffering from "nature-deficit disorder". If children have no connections to nature how can they be expected to be stewards of the earth. The focus of my project was to help preschool teachers increase nature play and nature-based activities at their elementary school, which will enable preschoolers to make connections to nature through play and exploration of the world around them. While compiling the research for the literature review, I learned that it is extremely important to create connections to nature in the preschool years so that the children will become life-long stewards of the environment.

This is my first experience writing something of this magnitude and I have grown a great deal as a writer, researcher and learner throughout the process for a capstone paper and project. Initially, the concept seemed very overwhelming. As the year progressed and the sections were broken down into smaller sections, I felt more confident in my writing and research methods. When I started my literacy map about my topic last semester, my thoughts moved into ten different directions. My content reviewer helped me to focus my research directly toward the research question and to put everything else to the side. Collaboration with the professors and other students in the class helped me to process the information in the literature studies and to synthesize the different areas of research that supported my research question.

Connections to the Literature Review

I connected with several authors and researchers that embody the philosophy of nature play and the benefits of giving preschoolers more opportunities to enjoy the outdoors. Sobel (2013) and Louv (2008) presented research that addressed the importance of nature play and place-based education. *Urban Environmental Education (UEE,2105)* is a compilation of research based articles devoted to urban environmental education and inspired by the author's experiences in environmental education. I used several chapters as resources regarding EE trends, nature programs for young children, barriers to the outdoors, and creating community partnerships. It reminded me that with all of my experience in early childhood education I have already been doing many of the things to provide opportunities to young children and families in nature play. However, given all of the new research regarding the importance of nature play, and how it is perceived by society, it is crucial to broaden its scope even further.

Implications

In Chapter 2 of the literature review, I wrote about the benefits and barriers of preschool programs that are located in elementary schools. The benefits included an easier transition to kindergarten, using available resources, and support from elementary teachers, while the barriers discusses differences in pedagogy, assessment, and values toward nature play. With so much research supporting inquiry-based nature play, school districts need to shift school policies away from an academic and testing culture and spend more time outside with inquiry-based nature play. Preschool curriculum should

continue to be developmentally appropriate and should not become a new level of kindergarten.

School districts need to provide teachers with professional development about interdisciplinary activities can happen outside and are not just one more thing that they need to fit into their already packed schedule. Professional development should focus on scaffolded experiences that preserve the inquiry-based pedagogy of preschool while creating a seamless transition to kindergarten. Nature play which encourages open-ended questions and exploration opportunities is developmentally appropriate for all children in elementary school, promotes connections to nature and develops skills in all areas.

Limitations

The limitations of the project may include not allowing enough time for professional development on nature play, open discussions between early childhood and elementary staff regarding resources, safety, pedagogy, and promoting nature play in all types of weather. The main component of the project is to increase nature play with preschoolers that are open-ended to engage students in their learning that is developmentally appropriate. Professional development should be allotted at the beginning of the year so that teachers are able to reflect on their own biases toward nature play and to introduce the guidebook which assists with implementing the project. Sometimes, the PD is filled with required topics and meetings that there isn't enough time to do anything else.

Another limitation is the possible lack of collaboration and support between the preschool and the elementary program staff. As stated in the literature review, most elementary principals have little training in child development for preschoolers. There are different methods of teaching and assessment between the two programs and if principals do not have the background knowledge to support the developmental needs of the preschoolers it can be difficult to implement. For example, in preschool, children are encouraged to play outside in all types of weather. But there are many elementary school policies that only allows children to be outside when the sun is shining, or at least not raining. Additionally, it can be difficult to implement if being outside is not valued by staff and administration and is only considered a break from the “real” learning.

Lastly, safety must be discussed at all levels. In an urban elementary setting there may be playground equipment and resources that are not age appropriate for preschoolers. Philosophically, the two programs need to discuss playground rules such as playing with sticks, climbing trees, or touching the plants. Areas that are safe for exploration need to be clearly identified. Additionally, if the outside space is not enclosed, it is essential to provide enough staff so children and teachers can be engaged in open conversations and exploration.

Future Uses of the Project

This project was designed to be used primarily by preschool teachers, but may be helpful to elementary teachers and administrators. Preschool programs are becoming more common in elementary schools and society is beginning to see the importance of

having daily interactions with nature. The guidebook and professional development can be also used in other preschool programs that are not affiliated with an elementary school such as a daycare center that had a very small, fenced in playground. The guidebook provides ways to take a small urban space and transform it into an outdoor classroom.

Teaching Strategies Gold is used as an assessment tool throughout the United States. Preschool teachers are looking for easy ways to assess students that blend into the everyday activities. The guidebook expands the TSG assessment tools for teachers so that it can be used with nature related activities.

Future Research

Additional research could focus on bridging the transition between preschool and kindergarten and future success in elementary school using nature play and environmental education. While there are some districts that identify as E-12, the majority are just beginning to see preschool as an integral beginning to formal education. Preschool and elementary have different pedagogy, assessment tools, and time commitments and will need to find common ground in what is developmentally appropriate for all young children. Elementary schools are structured around national, state and local policies which dictate curriculum, schedules, and assessment. The rigidity of the requirements in elementary schools often prevent teachers from implementing an inquiry-based learning program. There is also added pressure for preschool teachers to make sure that the children are “ready” for kindergarten through academic activities. As stated in Chapter 2, Marcon (2002) completed a 6 year study that showed that

low-income children that had been in a child-lead preschool program had greater success in third and fourth grade than students that were in a academic based preschool.

Additional research could also focus on parents and their influence on nature education. I believe that the parent is the first and most important teacher to their children. Chawla (1998) has stated that the nature experiences that you have as a child have a life-long impact. There are many parents that have not had positive nature experiences and may not see the connection and importance with nature and its positive connections to all areas of development. Just as many teachers believe that the “real” learning can only happen inside a classroom, parents often believe that “real” education happens at the kitchen table by studying letters and number out of workbooks. Some future research ideas may be how does a parent’s connection to nature influence their child’s formal education, or, multigenerational program designs that create interactive nature play and connections.

Long-term Benefits

Nature play during the preschool years has many long-term benefits regarding physical and mental health, developing cognitive growth and stewardship to nature. Louv (2008) presented studies regarding higher rates of obesity, ADHD, and depression in the last 20 years as our society has become more focused on technology, parental control of children’s activities, and fears of the outdoors, creating a “nature deficit”. Spending a greater amount outside in nature play and nature related opportunities will prevent some of these deficiencies and promote the social-emotional, cognitive, language and executive

function skills. The skills that are learned in preschool will continue into elementary school (Maron,2002) and into adulthood (Chalwa, 1998). In urban areas there are opportunities to build a strong community through culturally relevant exploration and storytelling.

Conclusion

This chapter elaborated on key findings regarding how preschool programs at urban elementary schools can increase nature play to develop skills and connections to nature through the use of professional development and a guidebook. This capstone has impacted me personally and professionally and has given me writing and research skills that I can use for the rest of my life. My goal for the project was to make it easier for preschool teachers to infuse nature play into the daily routines and the TSG assessment tools while working at an elementary school. Once preschool and elementary school are more similar in pedagogy and assessment it can help children seamlessly transition to kindergarten with a solid foundation in all areas of development that will be supported in future grades. There is so much research that supports the project and I believe the next logical step is to ensure that cross-curricular nature play experiences and nature connections are embedded daily in every PreK-5 elementary school.

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