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How Can Nature-Based Learning Support Healthy Overall Development Of Preschoolers In Early Childhood Education?

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How Can Nature-Based Learning Support Healthy Overall Development Of
Preschoolers In Early Childhood Education?

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Abstract

As nature-based learning is gaining momentum in early childhood education programs (Jordan & Chawla, 2019), this is an opportunity for early childhood educators to recognize how nature-based learning can support the healthy overall development of preschoolers in early childhood education. The purpose of this capstone project was to evaluate current research to understand how nature-based learning can provide equitable learning opportunities for preschoolers enrolled in early childhood education programs. Knowing what nature-based learning opportunities are, early childhood educators can incorporate developmentally appropriate practices (NAEYC, 2020), along with scaffolding, and the use authentic assessments and observations to provide evidence of what and how the child is learning (Snyder & Delgado, 2019). The findings indicate how nature affects what children learn and how children learn. There needs to be opportunities for children to have guided and free play in an outdoor environment to support children's overall wellbeing (Nedovic & Morrissey, 2013). Early childhood educators need to be provided with professional development opportunities to build on an educator's current knowledge on child development. Using developmentally appropriate practices and following the NAEYCS guiding principles (NAEYC, 2020) to provide equitable learning opportunities in nature, so children can explore, experiment, engage, use appropriate risk taking, problem solve, and master skills to support whole child learning.

Keywords: nature-based learning, whole child development, developmentally appropriate practices (DAP), scaffolding, authentic assessments

Chapter One: Introduction

Early childhood educators can promote the benefits of nature by engaging children in learning opportunities the outdoor environment provides (Deaver & Wright, 2018). The research examined indicated that when early childhood educators have a better understanding about the benefits of nature, early childhood educators can promote whole child development. Through teacher planned daily activities to unplanned equitable learning opportunities, nature-based learning can support overall healthy development in preschoolers in early childhood education programs (Crinall & Somerville, 2019; Laird, McFarland-Piazza, Allen, 2014; Wilson, 2018, cited in Dunst, 2020). The indoor classroom is still viewed as the ideal environment for an early childhood education program and outside time is often referred to as recess. Recess is often viewed as an opportunity to release the children's energy, so children can "focus" on learning when children go back to the indoor classroom. Deaver & Wright (2018) outlines how early childhood educators can plan for engaging nature-based experiences where additional learning opportunities can support the needs of the whole child.

Early childhood education is where young children go to school to play and learn. Learning often takes place in a school, most often with a philosophy, curriculum, and schedule. Learning can also take place outside, known as nature-based learning. Learning through exposure to nature and nature-based activities occurs in natural outdoor settings that may include plants, animals, and water (Jordan & Chawla, 2019). Early childhood educators can extend preschool children's learning beyond the four walls of a classroom. Through outdoor play and a more natural setting within the broad scope of whole child development, early childhood educators can achieve this by providing a variety of engaging developmentally appropriate practices in learning environments for preschoolers. Nature-based learning needs to be included in early childhood

education because there is a multitude of learning opportunities to meet the needs of every child in an inclusive classroom. Yildirim & Akamca (2017) reveal how the effects of an outdoor learning environment supports the cognitive, physical, social-emotional, and language in young children. Early childhood educators play an important role in supporting the healthy overall development of preschoolers in high quality care and education programs. Early childhood educators can enrich children's experiences where learning is fun and including natural environments supports whole child development.

Outside Time

According to Child Care Aware of America (2021), more than 12 million children under the age of five are spending a great deal of time in a childcare or early childhood programs. Around 60% of children from birth to five, are being cared for by a non-parent and 56% of children attend a center-based child care (National Center for Education Statistics, 2013, as cited in McClintic and Petty, 2015). Many early childhood programs include some outside time for children, not only to have children exert that extra energy, but to include time for children to play freely. Research has shown this is an exceptional time to encourage early childhood educators to allow children to be outside longer, to enjoy the fresh air, but to also learn through self-discovery or teacher guided activities that meets whole child development.

Nature-based learning provides equitable learning opportunities that supports the social-emotional development of preschoolers. Kuo, Barnes & Jordan (2019) assert that children are less stressed, more self-disciplined, more engaged and interested when in nature, which allows the learner to be motivated and immersed in their learning that is surrounded by the wonders of what nature offers. Nature allows children to increase a child's academic learning, but also support personal development that includes perseverance, problem solving, taking initiative and

communication skills (Kuo, Barnes, & Jordan, 2019). The National Association for the Education of Young Children (NAEYC) Code of Ethical Conduct and Statement of Commitment provides early childhood educators guidelines with a set of ideals, guiding principles and moral obligations in the field of early childhood education. Early childhood educators have a responsibility and obligation to meet the needs of the children and families being served in any early childhood education (NAEYC, 2011). Through outdoor play and a more natural setting within the broad scope of whole child development, early childhood educators can achieve this by providing a variety of engaging learning environments for preschoolers.

Meeting the Needs of the Whole Child

Currently, many early childhood educators are always searching for ways to provide learning opportunities for children to grow and support healthy overall development. The National Association for the Education of Young Children (NAEYC) advocates for the support of the whole-child development. Whole child development emphasizes on meeting all the developmental areas (social/emotional, cognitive, and physical) (NAEYC, 2009). The research findings explored ways that teachers can plan for learning activities that support more than one developmental area at a time. For example, a child can help water the flowers, taking turns with a friend, supporting social development. The other child can show excitement when getting a turn to water the flowers, supporting emotional development. Teachers can support language by asking a child questions, like what is the color of the flower, how does it feel, what does it smell like, engaging children into investigating and gaining cognition of the natural elements. Filling the watering can support fine motor skills by feeding a hose into it the opening of the can. Walking with it to the garden and pouring water unto the plant also supports large motor development. As Deaver & Wright (2018) demonstrates, early childhood educators can provide a

multitude of learning opportunities where outdoor experiences promotes learning in all developmental areas, meeting the needs of the whole child.

Keywords

Nature-based learning: Learning through exposure to nature and nature-based activities that occur in natural settings that may include elements of plants, animals, and water (Jordan & Chawla, 2019).

Whole Child Development: Whole child development emphasizes on meeting all of the child's developmental areas (social/emotional, cognitive, and physical) (NAEYC, 2009).

Developmentally Appropriate Practices (DAP): Methods of teaching based in research in child development and learning to promote each child's optimal development using play-based approach to engaged learning. (NAEYC, 2009).

Scaffolding: New information or task is introduced, often demonstrated by a variety of instruction, to meet the needs of each child. Scaffolding is a process of transition from a teacher assisting a child to child independence (Wood, Bruner & Ross, 1976, as cited in Bodrova & Leong, 2001).

Authentic Assessment: The on-going process of observing and collecting information on child's daily routine. (Bagnato et al., 2014)

Conclusion

As nature-based learning is continuing to gain attention in the United States. These kinds of programs are being implemented to create an optimal learning environment beyond the walls of a traditional school classroom setting (Dennis & Kiewra, 2018). This extension of learning is not to replace recess or extend recess. It is meant for additional learning opportunities to take

place outside. Nature-based learning environments are supportive of preschool learning and is not intended to replace the indoor learning environment. It is to be an *extension* of the learning environment that takes place outside, in a natural, outdoor setting that endorses a high quality early childhood education preschool program.

Outdoor learning encourages social interactions, promotes social and emotional skills and provides opportunities that impact children's academic performance (Deaver & Wright, 2018). It is the role of the early childhood educator to provide intentional learning opportunities indoors and outdoors. Children are curious learners. Deaver & Wright (2018) acknowledges that the outdoors provides opportunities for children to make observations, inquire, investigate, and learn through free play or scaffolding by adults or with peers. When early childhood educators connect children to nature it provides children to be immersed in the environment where natural learning occurs. The Reggio Emilia approach identifies three educators, one is the teacher, the second is the child, and the third the environment (Strong-Wilson & Ellis, 2007). Early childhood educators can use this approach to inform best practice.

The role of the early childhood educator is to educate and care for the youngest learner. Hickey (2019-2020) reports there is a growing momentum for early childhood educators to build on professional competencies, which includes being knowledgeable, educated and accountable when supporting children's learning. Blatt & Patrick (2014) indicate that early childhood educators need to recognize the benefits of implementing nature-based instruction because children are growing up with less experiences in nature. When early childhood educators include outside time in a child's day at school, it can provide an abundance of learning opportunities (Deaver & Wright, 2018). Research studied identified evidence that nature-based learning supports overall healthy development of preschoolers in early childhood education.

Chapter Two: Literature Review

Research findings has shown that the outdoor environment can provide for engaging, developmentally appropriate experiences that children learn through self-exploration and through scaffolding with peers and adults. Machado (2016) states that one of the goals of the educator is to create a classroom environment that is inviting and comfortable for children to explore. There is not one specific teaching method that meet all the children's needs, as Neuman, Cople and Bredekamp (2000) demonstrate that good teachers that provide play and a variety of teaching methods to embrace the diversity of all the children, will have the most effective learning outcomes. The literature review in this chapter explored how preschoolers can learn in nature when supported by effective teacher's that provide meaningful, outdoor learning experiences.

Nature-based learning is an important aspect of the Reggio Emilia philosophy that emphasizes a child-led, play based natural learning environment for preschool aged children, where the ideas were based on fundamental principles that were developed by John Dewey, Jean Piaget, Lev Vygotsky, David Hawkins, Jerome Bruner, and Howard Gardner (Kelemen, 2013). The first teacher is the parent, who is an active participant in guiding their child's education. The second teacher is the classroom teacher, who conducts research and engages children through intentional teaching that includes meaningful experience and conversations. The third teacher is the environment, which is set to be functional for the child to learn but also esthetically appealing and reflective of what the children are learning. Beirmeier (2014) states that all these relationships encompasses the child to be motivated in their learning where the teacher has an understanding of think, inquire, and explore in the natural environment.

The review examines studies that nature can support the overall healthy development of preschool aged children. Research supports inquiry, where children's learning involves

exploring, investigating, and understanding what children know and using that information to acquire more knowledge. Kelemen (2013) states that giving children the opportunity to participate in activities makes the child aware of the child's capabilities in acquiring new knowledge. Stacey (2015) states the ability to observe with knowledge of whole child development and listen with intent of learning is what early childhood educators need to practice daily. Using developmentally appropriate practices allows early childhood educators to support whole child development (NAEYC, 2009) whether it is implemented inside of a classroom or outside in nature.

Connecting with Nature

Research has shown that nature can provide preschool children with tools to enhance learning. The children are able to discover, problem-solve, and be creative in play and self-exploration. Preschoolers can often be observed having conversations with plants and animals, where the child is not necessarily expecting a response, but connecting with nature in a child's own little world. Ward (2014) examines how exposure to nature with young children creates a sense of calmness and encourages children to be curious in the learning environment, which also supports social, emotional, and physical health. Watching children explore nature and all of its beauty gives early childhood educators a little glimpse of a child's world. Early childhood educators can gain a better understanding of how children think, play, and move about in the learning environment. Ward (2014) also contends that learning in and about the environment will help children be prepared for primary education. Early childhood educators need to expose children to nature to continue to support a variety of learning opportunities.

Results of a study by Ernst and Tornabene (2012) encouraged the use of the natural setting with young children, which can reconnect children with nature. By children exploring

and deciding how grass feels that day, searching under rocks for living things, watching a butterfly, smelling a flower, hearing and maybe even seeing a plane in the sky. Children can have active play like running, jumping and climbing, which increases physical activity, but children also get to enjoy the wonders of nature through all of one's senses, where learning is happening simultaneously. Children can develop in nature that includes outdoor play, where children are exploring in with a sense of curiosity and simply observing one's surroundings. Gustavsson & Pramling (2014) suggests that an expanding body of research is showing that children still need some adult scaffolding for children to recognize certain features and phenomena when learning about nature. These findings demonstrate how early childhood educators can truly offer additional support and enhance learning for preschool children in nature based learning environment.

Reggio Emilia Approach

The Reggio Emilia Approach comes from educational pedagogies and philosophies within early childhood settings from the small town of Reggio Emilia in Northern Italy. The community was supported by Loris Malaguzzi, who was a teacher, philosopher and poet. The families built a school that was centered around community and its culture. The program emphasized a child-led, play based natural learning environment for preschool aged children, though the ideas were based on fundamental principles that were developed by John Dewey, Jean Piaget, Lev Vygotsky, David Hawkins, Jerome Bruner, and Howard Gardner (Kelemen, 2013). During this time, Malaguzzi had noted that the families wanted to recognize the right of each child and to sustain each child's curiosity at a high level (Edwards et al., as cited in MacDonald, 2011). It is the role of the educator to provide an environment where children are engaged in learning. Biermeier (2015) asserts that a flexible learning environment allows the

teacher to be responsive to the needs of the children and where children can construct new knowledge or build on current knowledge.

Philosophy

The Reggio Emilia Approach to early childhood education is an educational philosophy that has three core principles; the child, the teacher, and the environment. It based on the image of the child and being recognized as capable learners. This approach views a child's learning as a self-guided curriculum where the child steers the child's own learning. According to Arseven (2014) this approach is centered on the child, where children are encouraged to use self-express and use the child's experiences in different ways when teachers provide an appropriate learning environment. The three core principles combined, provides for a relationship-driven learning environment, which Reggio Emilia emphasis is building and sustaining relationships (Biermeier, 2015). This educational philosophy encourages play-based, hands-on learning in an emergent curriculum.

It is John Dewey's philosophy that is mostly noticed in a Reggio Emilia early childhood classroom. The Reggio Emilia schools are built upon the social constructivist framework of John Dewey, Jean Piaget, Lev Vygotsky, and Jerome Bruner (Gandini as cited in Dodd-Nufrio, 2011). The socio-constructivist models reports the "both the children and adults co-construct their knowledge through interaction with people and the environment (Dodd-Nufrio, 2011, p 235-236). This model supports the idea that children participate in the child's learning. The Reggio Emilia approach sees the image of the child as capable in constructing the child's own knowledge, and when given the opportunities to explore the environment and engage in the child's learning, this provides for optimal learning.

Natural Learning

There are a multitude of opportunities for preschool children to learn in nature. Yıldırım and Akamca (2017) conducted a study on thirty-five preschool children with low socio-economic status unable to attend kindergarten. The children participated in outdoor activities five days a week for ten weeks. The activities were based on preschool education of the Turkish Ministry of Education. A non-parametric test, Wilcoxon signed-ranked test, which is a statistical test that compares two paired groups, was used for pre-test and post-test scoring. According to Yıldırım & Akamca (2017), the results of the analysis data showed a difference of cognitive scores, showing cognitive skills were enhanced after the ten week education study. The children's linguistic skills improved, as well as the children's social-emotional skills and improved motor skills, all these outdoor activities contributed to support the healthy overall development of preschool children.

When children play, children learn through experiences and practice. Allowing children more control and opportunities to share ideas, build self-esteem, and encourage positivity will often reduce behavioral problems, too (Elkins, 2019). When children are also involved in the planning and learning within a classroom, it becomes more meaningful and often more hands on. Research has shown the more meaningful experiences and learning is for students, the more the students will retain and comprehend. When children are immersed in natural surroundings, this deepens current and new knowledge about nature and what the outside world provides (Ward, 2014). Including nature indoors, using natural materials can continue to encourage children to explore, manipulate, and improve thinking, while learning about the natural materials nature provides.

When educators continue to practice and incorporate learning for preschool children in the outdoors, it will become a natural part of learning in a preschool education program...for the teacher and the child. Incorporating open ended materials-loose parts can provide children with endless possibilities of using those “loose parts” to be build, move, and be creative with the loose materials (McClintic, 2014). To provide a high-quality learning opportunities, early childhood programs need to have variety of equipment and materials in the indoor classroom to support the children’s learning. Including equipment and a variety of materials outside will provide the same learning opportunities (using different material) that support the overall healthy development of children. Loose parts can be natural material such as bark, seeds, stones, leaves, twigs, sand, etc. (Frost as cited in McClintic, 2019) or recycled objects such as boxes, cloth, tools, buckets, baskets, dramatic play props, etc. (Drew and Rankin as cited in McClintic, 2014). These loose parts can be incorporated into all areas of play, similar to the learning centers that are offered inside, where children can explore, discover, and create, using their imagination freely.

Another study by Klaar and Öhman (2014), researched the relations that existed between how teachers teach and how children learn of nature in preschool. Using an epistemological move analysis (EMA) and substantive learning quality (SLQA) analyses helped identify functions of teachers’ action and the responses of the children that allowed for other opportunities for children to learn. One example that highlights the process of teaching and learning in nature is where a child pushed another child who had entered into an area where the student and teacher were planting wild strawberry plants. The teacher immediately intervenes but encourages the child that was pushed to join in on the planting. The teacher and children work together where the teacher is guiding with instruction and through the process of planting together, the children were learning social skills, including moral learning (being a friend), while

nature-oriented teaching was being instilled through cognition (talking about physical attributes of the plan), social skills (taking turns, following instruction), and supporting physical activity (fine and large motor). Klaar and Öhman (2014) showed how including nature content in preschool can promote meaningful experiences for the child and demonstrate educators teaching with intent and building on a child's learning in nature.

A qualitative study that included an action research approach that focused on children's responses to an organic outdoor learning environment (Nedovic and Morrissey, 2015). This group also included a kindergarten teacher, a kindergarten assistant, and the center director, which data was collected throughout the action research cycle. This study points out that the research participants all have a shared interest in the development of a garden for the center that supports the overall development for preschool children. (Kemmis and McTaggart as cited in Nedovic & Morrissey, 2017). Using of teacher's and children's ideas, a garden was created with intent for learning and meeting the interests of the children who would be participating in one's own learning. Overall, this qualitative study, using an action research cycle, concluded that a garden in a childcare center showed the importance of providing children with natural elements and using the recorded data collected, reported positive outcomes.

Physical Health

Physical activity in nature, also provides positive outcome for preschoolers that supports a preschooler's physical development (Deaver & Wright, 2018). Preschoolers seem to always be on the move, self-exploring from one area of self-interest to another. A study by Ernst and Tornabene (2012) reports that from a physical perspective, preschool children were more active during play outside, than play being observed in the indoor classroom (Baranowski et al., 1993, as cited in Ernst & Tornabene, 2012). Active preschoolers also need unstructured play where one

can have wide open spaces to move about freely within an early childhood program. Indoor spaces can restrict that open forum of play.

According to Gehris, Gooze, and Whitaker (2015), many early childhood classrooms often see children displaying a need to move and keep one's bodies functioning in a healthy way. What better way to move and exert that young energy into playful learning outside. When physical activities are encouraged, these opportunities also provide children with learning about healthy habits, which can also help diminish childhood obesity (CDC, 2016). Research findings indicated that being active is just one preventative measure than can add to children's healthy development.

When children are able to move and explore, nature-based learning provides physical outdoor activity which can increase children's functioning and decrease children's functioning in terms of ADD or ADHD symptoms (Taylor & Kuo, 2009). Based on research conducted by Taylor and Kuo (2009), found that children with Attention-Deficit/Hyper-Activity Disorder (ADHD) concentrate better after a walk in the park, versus children who walked downtown or walked within a residential setting did not benefit as much as the walk in the park. The Center for Disease Control (CDC) data and statistics about ADHD are staggering. There are 6.1 million children diagnosed with ADHD in the US. Nearly 2 of 3 children with ADHD, also have one other mental, emotional or behavioral disorder. About one out of two children have a behavior problem and one out three children had anxiety. When children have time outdoors and in nature, these health risks have been shown to reduce symptoms of ADHD (Mårtensson et al., 2009). Some schools provide recess as an opportunity to get those wiggles out and exert some of that extra energy building up in the classroom. This outside time, can include nature-based learning, which can be identified as an extension of the classroom, and not just recess. Dunst (2020)

contends that young children with or without disabilities or delays are engaged in daily activities that include informal natural experiences that offers a variety of learning opportunities.

Natural areas can provide a positive environment for children with ADHD. In a mixed methods research study between two groups of children with ADHD, two groups of children were observed and evaluated in a natural and a built environment (van den Berg and van den Berg, 2011). Based on van den Berg's previous research on the health benefits of nature, it was expected that children would respond better in a natural setting. This expectation was partially confirmed, as the study concluded that the children with ADHD appeared to function at a consistent higher level in the wood. The research methods used, were a combination of qualitative and quantitative methods of data analysis, found that the behaviors in the built setting showed a lower level of cognitive functioning (van den Berg and van den Berg, 2011). By incorporating nature in the curriculum, children with ADHD can have improved functioning, even if it is a temporary effect. Van den Berg and Van den Berg (2011) suggests that the natural environment can play a role in reducing the symptoms of ADHD and creating alternative treatments without the use of pharmaceutical treatments. As educators seek ways to improve learning for all children, providing an additional learning environment, can lead to additional learning opportunities. Brillante (2017) emphasizes when early childhood educators are planning for and implementing effective learning opportunities, regardless of individual needs, using best practices for every child requires modifications to meet each child's abilities to learn and develop.

Jacobi-Vessels (2013) research indicates that outdoor learning provides many benefits to young children that includes physical activity, helping to reduce obesity, and improve concentration and enhanced social skills. Playing outside provides free play and allows play

without structure, too. Adding outdoor spaces, that include vegetation, could also better increase the amount of children's physical activity compared to a typical commercial playground structure. (Jacobi-Vessels, 2013). Early childhood educators can provide opportunities for preschoolers to observe the natural wonders of the outdoors and let children's curiosity be the motivation in wanting to learn more about nature. Research has shown that being outside allows room for a variety of learning opportunities.

Physical activity in the outdoors has been associated with learning and brain-related function (Lundy and Trawick-Smith, 2021). Research has indicated to find that active play and cognition enhances preschooler's performance on measures of executive functions, such as inhibition and attention. Lundy and Trawick-Smith (2021) found that 21, three-five year olds were compared under two conditions-one, where children played outside prior to an on-task experience and the other did not. This study indicated that the group who were exposed to outdoor play prior to an on-task experience, resulted in greater on-task behavior.

Challenges

One study by Nedovic and Morrissey (2017) included that the educators in this study reported two negative effects on the children's behaviors from the natural garden. The examples given were children would hide behind the teepee and "sword fight" with sticks, the children would pick flowers, leaves or step on the plants (2017). To resolve the tee pee situation, the educators included putting up a mirror near the teepee, so the children could be seen by the adults, and the children would still continue to play. To also resolve the issue of the flowers being picked or stepped on by the children, the planting areas would be moved to lower traffic areas. As with finding solutions, it is important to also educate the children to appreciate nature.

Research findings included video recording devices and found that it was sometimes difficult to hear conversations between the children, so it limited the observers understanding of everything that was being said (Brussoni, Ishikawa, Brunelle, & Herrington, 2017). Though other forms of materials and methods were used to measure and analyze data to support this research study, one can state that observations were subjective, through the eyes of an educator (Brussoni, Ishikawa, Brunelle, & Herrington, 2017). One of the many roles of an early childhood educator is to educate families by helping families understand the importance of children connecting with nature. Wirth and Rosenow (2012) points out the importance of involving families in the child's education. Informing families about the benefits of children having daily interactions with the natural world can help families understand the value in outdoor learning and how children can be supported in the children's overall development (Wirth and Rosenow, 2012). Supporting children's learning is a shared responsibility. Communicating with families about what is happening at school and what a child is learning is building an important teacher-family relationship. Wirth and Rosenow (2012) suggest the importance of early childhood educators to inform families on the benefits of children's daily interactions with the outside world. During observation in outdoor play, and documenting and assessing a child's engagement with nature, early childhood educators can provide ample information on how much the child is learning at school. With sharing of the importance of outdoor play and being in nature, it can encourage families to allow a child to spend more time outside, for continued learning.

Barriers

In 2011, The National Resource Center for Health and Safety in Child Care and Early Education reports that not all states require daily outdoor time in an early childhood setting, where regulations to the amount of time outside and the minimum outdoor space per child varies

(Ernst & Tornabene, 2012). Some early childhood programs that are located in highly populated cities may not have the space in a rural or suburban location. Deaver and Wright (2018) claim that children must have the opportunities to get outside, as outdoor play boosts sensory development, even if it is just for some fresh air.

Research has shown that children who get enough sleep have a healthier immune system, perform better in school, better behaviors, increased memory, and improved mental health (American Academy of Pediatrics Supports Childhood Sleep Guidelines, 2016). Outdoor play allows children to take appropriate risks while being active in exploration and taking risks to investigate the great outdoors. Kinser (2019) contends that children who play outdoors sleep better at night, due to physical activity, less stress, and having exposure to natural light can create a happy, tired child who sleeps well.

Having limited physical space can be a challenge for early childhood programs, as adding more physical space often comes with a cost. Using existing space and incorporating natural elements, like soil, plants, rocks and water can provide activities in nature. Also, the lack of professional development in this topic and having an understanding and awareness of the benefits, is why outside play can be perceived as only “free time” for children. In one research, it is noted where early childhood teachers had a “philosophy-reality conflict” (Hatch & Freeman, 1988, p. 158, as cited in McClintic & Petty, 2015) where children are free to play, though teachers still had a need to have some sort of organization and reinforcement of outside play rules.

Research stated it can be a challenge to promote nature-based learning, when there is often so much construction of new buildings and bigger parking lots. Crain (2001) poses the question of how do people and children reconnect with nature as early childhood educators in

bigger cities will need to be creative when teaching about the nature, where there is less natural settings, then in a smaller, rural community. Crain (2001) proclaims that everyone needs to do take some responsibility in protecting our natural surroundings. Crain (2001) also emphasizes on the fact that if children cannot connect with to the natural surroundings (trees and the earth), if there are no natural surroundings around for children to see.

Living in a region that has long winters can also be a challenge. While nature-based learning can provide children with an abundance of natural resources in the outdoor classroom, teachers can bring nature inside when extreme weather conditions prevent children from being outside. Olsen (2013) suggests providing bird feeders or corn trays for squirrels, close to windows, can be one way of seeing nature from inside. Teachers can provide snow in sensory bins, allowing children to have their gloves on and play “in the snow” inside.

Wirth and Rosenow (2012) acknowledge that educators, administrators and even families, often express two concerns about having a nature-based environment: maintenance and safety in the outdoors. The natural outdoor classroom can have native plants, flowers or even a garden, where children can explore and learn. Children, teachers and families can help maintain and take care of the outdoor space (Wirth & Rosenow, 2012). By involving everyone, creating a sense of community and belongingness, this also provides opportunities for families to invest in their child’s education and see the importance of the nature-based learning environment.

Whether children are inside or outside, safety is always a concern when it comes to children playing. When teachers and families communicate and have open conversations about safety in the outdoors, it allows teachers to educate families how children will learn to take appropriate risks (Wirth & Rosenow, 2012). Providing nature-based learning environments, just like the traditional playgrounds with commercial equipment, will always need supervision by adults

whenever children are at play. Olsen (2013) admits that while providing a safe place to play, it is also important to allow children to discover, learn and move about, which provides plenty of opportunities to incorporate curriculum in an outdoor environment.

To help address such issues, Wirth and Rosenow (2012) asserts involving families in their child's education. One of the many roles of an early childhood educator has, is to educate families by helping families understand the importance of children connecting with nature. Informing families about the benefits of children having daily interactions with their natural world can help families understand the value in outdoor learning and how children can be supported in their overall development (Wirth & Rosenow, 2012). Supporting children's learning is a shared responsibility.

Some early childhood educators may still see outside time as just a break from learning, which is often known as "recess" at school. Learning is just happening differently at this time, with very little or no interactions between adult and child. McClintic and Petty (2015) study concludes that expanding the teacher's professional development on the importance of outdoor play for young children and how teachers need to become advocates for the importance of outdoor play. Research shows that learning is still happening in many different developmental levels in the outdoors. The National Association of Early Childhood Specialists in State Departments of Education (2001) states that recess is an important part of education and that school children should have opportunities to have active, free play with peers in the school day. Recess and play supports the social, emotional, physical, and cognitive development in young children (National Association of Early Childhood Specialists in State Departments of Education, 2001). During recess and active play, learning is still happening as children are making choice, investigating, problem solving and being creative.

Risk Taking in Play is Learning

Though risk taking can often be seen as a negative effect, risky outdoor play that typically includes varied physical activity, does support a child's healthy development. A case study conducted by Brussoni, Ishikawa, Brunelle, and Herrington (2017) used a mixed-methods design of quantitative and qualitative research to support its finding that children can learn in an environment that includes nature and risky play and studying the effects of intervention to promote risky play with two childcare centers, two timelines, each illustrating quantitative research and qualitative research. Findings of this investigative research study found that risky outdoor play allows for opportunities for children to develop social skills, support mental health and have active play (Brussoni, Ishikawa, Brunelle, and Herrington, 2017). Using this mixed method of measures, analyses and questionnaires, offer dual insight of an outdoor learning environment. Brussoni, Ishikawa, Brunelle, Herrington (2017) illustrate that the evidence-based interventions in a nature based learning environment can have a positive influence on the health and wellbeing of children. Risk taking in play allows children to explore and allows a child to figure out how world works. McFarland and Laird (2018) report that many parents thought that outdoor risky play was important and that the outdoors can provide appropriate activities to engage in children's learning. In any form of play that a child prefers, safety is important, and can be balanced with some fun, self-exploring, teacher scaffolding, outdoor learning, too.

Providing nature-based learning environments, just like the traditional playgrounds with commercial equipment, will always need supervision by adults whenever children are at play. When teachers and families communicate and have open conversations about safety in the outdoors, it allows teachers to educate families how children will learn to take appropriate risks. (Wirth & Rosenow, 2012). It is important to provide safety guidelines but also allow the children

to explore, learning to make decisions, and beginning to understand those decisions have consequences, too. Olsen (2013) admits that while providing a safe place to play, it is also important to allow children to discover, learn and move about, which provides plenty of opportunities to incorporate intentional learning opportunities in an outdoor environment. Using documentation and assessments also provides evidence that the teacher is provides a plan with a purpose.

Conclusion

Early childhood educators create and implement varied equitable learning opportunities to support the youngest learners. Ward (2014) states that children benefit from nature in numerous ways, which includes witnessing children being better observers and connecting with nature. Ward (2014) points out how children with challenging behaviors are able to focus longer when immersed in a natural setting. Because preschool children are active learners, nature supports physical and mental health. When children are learning outdoors, in nature, the natural elements provides opportunities for children to expand their learning through self-exploration, free play and guided play, where scaffolding can take place with adults and or peers (Nedovic & Morrissey, 2013).

The research in this chapter provided studies on how nature-based learning can support the overall healthy development of preschoolers. Children learn through play and when children have opportunities to explore and investigate, children are learning. Outdoor learning has positive impacts on children's school performance, developing peer relationships, and improving social and emotional wellbeing (Deaver & Wright, 2018). Early childhood educators can use the outdoor space to allow children to have free play but also include developmentally appropriate activities to support children's learning. According to Kinsner (2019), the outdoor provides

numerous benefits for children and educators, where children learn about science, where social interaction and collaboration occurs, promotes physical health, intentional learning opportunities, promotes better sleep, where being outside leads to better physical and mental health, and where children are learning are developing a more comprehensive knowledge on what nature provides.

Providing professional development for educators on the importance of nature-based learning not only supports the child's learning but allows for early childhood educators to share with families how children are provided with numerous learning opportunities outside. The National Association and Education of Young Children's Code of Ethical Conduct and Statement of Commitment (2011), where people who work with children are willing to hold the values and moral obligations of the field of early childhood education. This includes having ethical responsibilities to children and families. As Riojas-Cortez & Berger (2020) imply, having respect for all families, which includes collaborating with families to provide safe and healthy experiences to support child's development, creating a trusting relationship between families and educators. When educators share the importance of learning outdoors, it can provide parents with a better understanding of how children can learn at school, along with ideas or activities that families can provide at home.

The barriers of limited outdoor space or regions that extreme weather conditions limit outdoor play, educators can be creative when it comes to planning and implementing curriculum. Hughes (2015) points out the importance of building the children's relationships with nature and provide numerous experiences outdoors, as well as bringing in open-ended materials for children to investigate the natural elements. Research demonstrated that self-exploration of natural elements promotes creativity in children, connecting experiences and learning opportunities that nature can provide.

Early childhood educators can create safe outdoor environments that can support risk taking in play and children's interests. Olsen (2013) addresses how maximizing the outdoor environments is an important part of early childhood programs where nature can provide children the right to play while including the curriculum for outside learning. Risky plays allows children to make choices, problem-solve and understand the consequences of their actions, good or bad, and figure out the limits and possibilities that nature can provide.

Nature benefits children and educators, adding an additional environment of learning and an opportunity for fresh air, to move about and enjoy the sight and sounds of the outdoors. Kinser (2019) states that outdoor play is an important part of child care and education programs that supports learning across all domains which children and the adults can enjoy. Deaver & Wright (2018) acknowledges how early childhood educators can provide experiences with nature to support the learning opportunities in the indoor and outdoor classrooms. Early childhood educators can apply a multitude of learning opportunities that support the overall healthy development of preschool children, with research findings, developmentally appropriate practices, intentional and effective teaching, documentation and assessments, which provides evidence that children can develop a world of learning, whether it is inside the four walls of a classrooms or outdoors, immersed in nature. The next chapter will arrange for discussions and applications that research findings of how nature based learning can support the overall healthy development of preschoolers.

Chapter Three: Discussions and Applications

The National Association for the Education of Young Children (NAEYC) advocates for the support of the whole-child development. Whole child development emphasizes on meeting all the developmental areas (social/emotional, cognitive, and physical) (NAEYC, 2009). The fundamental values in the Reggio Emilia Approach offers guidance that focuses on the education of the whole child, valuing who the children are as individuals. Emergent curriculum stems from the interest of the child. The NAEYC (2009) states that improving the educational experiences for all young children and having rational for those experiences. Allowing the curriculum to emerge with children's interests, supports how children construct knowledge and understanding that can support all developmental areas.

According to Abdelfattah (2015), the NAEYC recommends that teachers provide Developmentally Appropriate Practice (DAP) resources for children to have opportunities to explore materials. It is the educator's responsibility to promote the quality and care for young children, which the Reggio Emilia approach expects the educator to practice as well in an intentional learning environment. The NAEYC position statement provides a framework for best practice outlining how to promote a young child's optimal learning.

Developmentally Appropriate Practice

Abdelfattah (2015) states that the National Association of Young Children (2009) defines Developmentally Appropriate Practice (DAP) as age appropriateness and individual appropriateness. The learning environment allows for individual appropriateness which acknowledges that teachers need to accommodate their individual needs and development levels or milestones. Knowledge of DAP is a requirement that teachers should have knowledge of,

being a responsive and engaged, and recognizing where the child is at developmentally to support the child in reaching learning goals. According to Shabazian (2016) early childhood educator's use of documentation makes learning visible and allows teachers to be responsive to children, the children's interests, initiating dialogue to further understand the child while addressing learning goals. Reggio-inspired teaching aligns with current research on how children learn. (Wurm, as cited in Abdelfattah, 2015). The Reggio Emilia approach sees the child as unique, where children are self-guided in personal interest. Educators provide DAP to improve children's learning.

Reggio Emilia Approach

The Reggio Emilia Approach is an opportunity to support children's curiosity, influence teaching and learning, along with using fundamental principles to guide the educator, and provide learning. This approach brought international attention it was reported to be one of the best in early childhood education in Newsweek "The 10 Best School" (Wurm, as cited in Abdelfattah, 2015). It inspired schools across the nations to look deeper into how early childhood education can best support children's learning. Research has shown the Reggio Emilia Approach allowed early childhood educators to provide opportunities for the overall growth and development of the young learner.

Description of the Curriculum

The North American Reggio Emilia Alliance (2020) emphasizes the "strong image of children, of adults, of educations, of life, and flows from a set of guiding principles". The Reggio Emilia Approach to early childhood education sees children as capable of constructing a child's own learning, in which the child is guided the child's interest to understand and know more

about the world and where the child fits into this world. Biermeier (2015) states that using fundamental principles guides the teachers in provide learning opportunities, along with the environment playing an important role, too. The curriculum framework is child-centered where learning takes place during through self-exploration. This includes teacher's observations of children's interest, family background, as well as current events that can provide curriculum topics to enhance further learning. The teacher is then able to provide a learning environment that is based on the information that is collected about each child's interests.

O'Donoghue (2011) points out the several key principles that guide the educator, which include: the image of the capable child who is able to construct their own learning, the environment is the third teacher, the importance of teachers as researchers, documenters, observer and listeners. Another key principle that supports the Reggio Emilia Approach is the hundred languages of children, which means children have many different ways to discover, invent, imagine, and the ability to self-express, through thoughts and creativity (Arseven, 2014). When children are able to discover and learn in ways that children are comfortable with, especially in things that the child is interested in, the child will continue to learn through self-exploration and sometimes through dialogue with a teacher or even a peer. Every person is able learn in one's own way, when given the opportunities to do so.

Physical Environment

The Reggio Emilia's physical environment includes an equipped environment that allows for the opportunity for each child to explore items and construct knowledge. Arseven (2014) reports that children are natural researchers, asking questions, experimenting, problem solving and making guesses on self-discoveries. When children have opportunities to explore the outdoors, children can become immersed in the natural environment. This form of open-ended

play supports the imagination of the child. Crain (2001) asserts, “Nature instills a sense of peace and being at one with the world” (p. 23). Watching children explore nature, being immersed in natural surroundings, children are using all of one’s senses, allowing the true beauty of nature. It gives early childhood educators a little glimpse of a child’s world.

Classroom Materials

The arts is one way to make personal connection to lived experiences, this form of communication is not a new idea (McCann, 2014). When children have the freedom to communicate, “words taken by themselves are not the expressions; they only hint at it. The expressiveness, the esthetic meaning, is the picture itself” (Dewey, p. 17, as cited in McCann, 2014). Having paint, various writing tools such as crayon, markers, watercolors, can provide a means for child to express thoughts and feelings. Because many preschool children are just learning the concept of print and reading, children at this age can often draw what a child knows, has experienced, and what a child understands (McCann, 2014). This is an opportunity for the teacher to communicate with the child about the child’s creations and possibly get a glimpse of what a child is thinking or already knows.

Nature can provide children with tools, loose parts, to enhance their learning. Loose parts are materials that moved and used in numerous ways. Examples of loose parts that can be found in nature are rocks, sticks, flowers, pinecones, leaves, water, sand, dirt, just to name a few. If there is a mud puddle outside, that is often the first place where one would find a child playing and jumping in it. Crain (2001) describes how nature foster creativity through children’s art and poetry. Young children can be seen talking to plants and animals, not necessarily expecting a response, but connecting with nature in self-talk or conversation. The outdoors provides natural materials for children to learn through exploration and investigation.

Role of the Teacher

Teachers need to be flexible and creative in getting to know each child, as each child is unique, and building those relationships is a good start to understanding the child and then trusting the teacher enough to share what the child knows. Teachers are learning, along with the children, and considered guides or mentors in a child's learning. The teachers role is to also observe, listen, find out what the children's interest are and provide children with opportunities to expand on those interests. When teachers display children's work, it is not only essential for a child's learning process, but also for discovering something more, the child's inner voice (Shabazian, 2016). When children see their work displayed, children feel valued. When teachers inquire or ask about a child's work, the child feels heard.

Role of the Child

Each child is unique. The child's culture, family, traditions, family systems, all shape who the child will become (Riojas-Cortez & Berger, 2020). When a child has better understanding of self and the child's place in the world, the child is more apt to seek knowledge through one's own investigation. The Reggio Emilia approach allows the child to decide what to learn about and the length of time to engage. A child can initiate and create interactions in the surrounding environment.

Children are communicators, using language as play. Children are naturally driven by self-guided interests, where self-exploration and discovering things, allows children to understand and want to know more. The Reggio Emilia approach to educational experiences is supported in the form of projects, that teachers create and the children are encouraged to participate in those experiences.

Evaluation

An evaluation of the curriculum framework is consistent with the principles of the DAP, with the criteria found in the NAEYC Position Statement and consistent with the principles of Vygotskian Instructional strategies. In the Reggio Emilia Approach to education, social-constructivism allow children to construct one's own learning and construct learning from others, the child's families, peers, teachers and even the community. Lev Vygotsky, whose sociocultural theory supports how the Reggio Approach is implemented, that child development occurs when there are interactions between the child and their social environment. The Vygotskian Instructional strategies allows children to gain more knowledge through scaffolding, modeling, zone of proximal development and teachers using dialogue to enhance further learning.

Bodrova and Leong (2001), authors of the *Tools of the Mind: The Vygotskian Approach to Early Childhood Education* instructional strategies, is similar to the Reggio approach, as it emphasizes on make-believe play as a primary activity in an early childhood program such as preschool. The tools curriculum use specific activities that promote self-regulation and incorporates self-regulation strategies within the context of the academic activities (Bodrova & Leong, 2001). When children are able to self-regulate and understand self-emotions, this gives children the confidence to self-explore and investigate, which the Reggio Emilia Approach encourages children to do. Building a child's self-esteem increases self-image and the child is more apt to explore the learning environment, participate in self-discoveries or even group activities.

Family and School Partnerships

In early childhood education it is the responsibility of early childhood educators to

make certain that children are provided with developmentally appropriate practices that allows children the best opportunities to learn. The NAEYC's DAP: Position Statement states that early childhood educators must have knowledge of a child's cultural background that includes the family system. The definition of family fits into many families today with diverse culture backgrounds and being linguistically diverse, and includes families with children with special needs (Riojas-Cortez & Berger, 2020). For families to meet the needs of the WHOLE child, it means to have a family unit that has consistent relationships, who are caring, nurturing, and supportive of meeting the child's needs. Research has shown when educators build relationships with the families, both can support a child's developing social, emotional, physical and intellectual needs.

As Riojas-Cortez & Berger (2020) imply, having respect for all families, which includes collaborating with families to provide safe and healthy experiences to support a child's development, creating a trusting relationship between families and educators. Being able to examine the diversity of families will allow early childhood educators to be effective teachers to provide an environment with equitable learning opportunities for all learners. Being culturally responsive is essential for all culturally and linguistically diverse children allows for opportunities allow for families and children for a better life (Riojas-Cortez & Berger, 2020). When children and families are supported and feel supported in a school system, the chances of making a connection are increased. Research indicted when families see and understand what the school or an early childhood education can provide daily for children, a connection is made.

To support student learning equability, school environments need to be welcoming, where there is a positive climate and culture. Though climate and culture are different, both affect family-school partnerships. As culture is the behavior seen within the school environment

and the climate is how the people actually feel (Muhammad, 2017, as cited in Riojas-Cortez & Berger, 2020). Schools, including administration, staff and teachers, all need to have every child and family feel welcomed. It is important that teachers also provide an antibias classroom, to meet the needs of all the children. Riojas-Cortez & Berger (2020, p. 60) outlines some suggestions that uses a child's *funds of knowledge* as a resource for learning in a culturally relevant classroom. This includes providing children's books that reflect differences in race, gender, culture, and disabilities. Listening to different genres of music (rap, jazz, country, classical, etc.). Displaying art from around the world and allowing children to create their own art. Engage children in different types of games from around the world. Most importantly, creating an environment that parents or family members can support a child's learning, at home and at school. It is important for educators and administrators to provide antibias classrooms that applies to a student learner's life, which includes several cultural aspects of every child in the classroom (Riojas-Cortez & Berger, 2020). The classroom does not need to be inside a building, the suggestions to support a culturally relevant curriculum, can also be integrated in the outdoor learning environment. Educators need to be culturally responsive in how children are being taught in school.

Observations and Documentation

The same child assessment data that is used to understand how children grow and learn can also provide a wealth of information that lends to teachers practices (Snyder & Delgado, 2019). For children to be able play, explore, inquire, and be creative, educators have to plan for that. With that planning, teachers are then able to assess and documents progress. Stacey (2015) adds that observation and documentation provides a method and means to better understand the children's learning. Documenting takes time and that seems to be what challenges educators

most often, finding the time to observe, document, assess, and plan for further learning. The time spent in the process of observation and documentation will guide teachers to be intentional in meeting the needs of the whole child.

Hansel (2019) asserts how educators can use intentional and supportive assessments on children's learning across their developmental domains and reflecting on that information to plan for meaningful instruction, activities and environments. Whether it is an indoor or outdoor learning environment, it is important for the educator to observe, document, and assess children's development and learning. This is important to support and promote further learning, as well as providing evidence that learning is taking place (Hansel, 2019).

Promote Observation Practices

As Stacey (2015) acknowledges how observation can be used as a tool and a methodology that provides an opportunity to focus on capturing those moments of learning that truly allows educators to gain a better understanding about the child and overall development. Using a multi-sensory process is noted by Stacey (2015) where teachers actually use many senses, but mostly looking and listening. This happens often in a classroom full of children where the educator needs to be able to see and hear all the children. Stacey continues that when teachers and children listen to each other, the teaching and learning relationship shifts (Stacey, 2015). This learning becomes universal in an environment that promotes observation practices. The ability to observe with knowledge of child development and listen with intent of learning is what teachers need to practice daily. When looking and listening that is created between the teacher and the child, it is raising levels of a better understanding as a result of this observation process (Fiore & Rosenquest, as cited in Stacey, 2015.)

There are many tools that early childhood educators can use to support evidence of a child's learning. Documentation takes time and practice, so every early childhood educator should find what process works best for the children being served. Stacey (2015) outlines some educational tools to promote observation.

Educational Tools

Running Records, which information starts at the observation and concludes at the end of the observation. This information includes everything that a child says and does with as much detail as possible to review at a later time.

Anecdotal Notes, which are brief notes that record a specific incident that occurs during the school day or even during a specific activity. This may provide information that can be used for curriculum planning that is based on a child's interest.

Student Notebooks, which teachers can observe a child throughout the day. It is important to note that observations are based on one individual's interpretations. If there is an opportunity for observation to occur by another colleague, it can be helpful to compare notes and negotiate interpretations (Stacey, 2015).

Checklists, which can be a quicker way to use data and convert into numerical data. Stacey (2015) points out that checklists are most effective when the data that is gathered meets the philosophy of the classroom. Sometimes checklists do not provide enough time to observe a child. Meaning that the child could possibly master a skill if observed for a lengthier period of time.

Reflective Practices, which allows teachers to review documentation of learning and assess their own observation practices that leads to better teaching practices. Stacey (2015) explains that teaching practice is always evolving, just like how children's learning evolves, and how both are

actually working through each other's learning process. Promoting one or more of these observation practices can assist early childhood educators with building a learning environment that provides curriculum, instruction, observation and assessments. Building those learning environments can be done in nature, too.

Hancock & Carter (2016) emphasizes how creating a predictable environment encourages positive behavior, along with teaching expectations, acknowledging appropriate behavior and responding to challenging behavior. Just as the indoor environment has expectations, the outdoor environment should have consistent expectations, too. Teachers provide a multitude of learning opportunities in the indoor classroom. Those teachers already have the basic knowledge of child development and most often provide creative ways to support whole child development in the classroom. This is an opportunity for teacher's to extend children's learning beyond the four walls of the classroom.

Solutions for Success

Research findings supported benefits of nature-based learning that provides an extension to today's early childhood education programs which includes outdoor learning environments. To begin integrating nature-based learning, one must envision the outdoor environment as a second classroom. Ghirotto and Mazzoni (2013) assert that children have an active role in navigating experiences that support greater autonomy within a child's capabilities, thinking and understanding of the child's idea. An outdoor classroom full of natural elements to discover, as well as enjoying the beauty of nature and all that it has to offer provides an environment for learning. Early childhood educators are an important resource for children's healthy development (Ghirotto & Mazzoni, 2013). The early childhood educator can guide the children's experiences to help children develop ideas, be creative and engaged in the learning process.

Specific Changes

For nature-based learning to be successful in today's early childhood education program there must be professional development, along with motivational support that this can be a success (Hickey, 2019). Providing research on what nature-based learning is, how it supports children's growth and development, and understanding the significance of how including the outdoors can truly offer an optimal learning environment. Teachers will work together in establishing what resources are available and how to maximize the outdoor learning environment. Additional steps would be to include a parent survey, as getting families involved to help with providing additional resources. For example, the parent who works at the gravel pit can possibly provide some sand and different types of gravel. Or the parent who is a "natural gardener" may be able to assist with planning and help care for a vegetable and/or flower garden. Many families most often like to help in one way or another, but time or energy to assist in a classroom can be a challenge. It is important for teachers to consider a family's culture, beliefs, and values, when considering ways to have families participate (Ostrosky & Meadan, 2010). These strategies can encourage families to be involved in the child's school and support the child's learning.

Asking the children enrolled in the program, as to what the child would like to play with outside, will give educators some insights of what is interesting to the child. When the children are also involved in the planning and learning within a classroom, it becomes more meaningful and often more hands on. Research shows the more meaningful experiences and learning is for the children, the more children will retain and comprehend. Children who are provided with predictable, responsive relationships with peers and adults, have shown improved learning competencies and executive functions (NAEYC, 2020). By working together, this can alleviate

some of the challenges in starting up a nature-based learning environment. Research concluded when all voices are heard and valued, then there is more of an investment in making things happen.

Assess for Success

The assessment would start with small steps, starting with assessing the outdoor learning environment. This is an opportunity for teachers and the director to work together in identifying what “loose parts” are available and how these resources will be obtained. With mindful planning, the outdoors can provide aesthetics, active learning, a sense of flexibility, and working together and forming relationships (Fraser, 2006, as cited in Phillips, 2017). As teachers can plan for learning experiences in the outdoor learning environment, this is the same for planning for learning opportunities inside, building on more learning opportunities for the children to connect with nature and collected natural materials to bring in the indoor environment (Hughes, 2015).

Teachers can use an environmental rating scale (Appendix, p. 56) which can be provided to review the new process of planning the outdoor classroom. From that information, children’s learning can also be documented in each play area in a student notebook or portfolio. The information is noted by the assessor, which can be a teacher or administrator. A parent can also have the opportunity to assess the environment, too. The environmental rating scale can be a shared vision of what learning outside can look like.

Child Engagement and Learning

Teacher observations and assessments can determine if the changes implemented in a program have improved child engagement and learning (LeeKeenan & Ponte, 2018). Because teachers work with children with different needs and abilities, so it’s important to gather

information on every child, get to know each child through building trusting relationships to support and promote each child’s developmental domains. An assessment is an ongoing responsibility of the early childhood educator. The guidelines in the National Association for the Education of Young Children’s Code of Conduct (2011) are an educator’s responsibilities to support children’s development and learning.

Anecdotal observations offer details on a child’s behavior and this can be helpful when assessing a child within the context of learning areas and/or centers. Effective assessments can provide documentation of a child’s progress (Hansel, 2019). Evidence of learning is often through a child’s own words, actions, behaviors or work samples. The teacher can organize this information in a sequence of learning from the beginning of the school program year until the end of the program year.

Using a Goals Chart can help determine a child’s learning outcomes. This chart, shown below, would be useful with individual teacher planning or used as a collaborative tool in other areas of joint program planning.

	Action What do you want to do?	Action What will you need?	Action How long will it take?	Action What do you want to achieve	Action What did you achieve?
Project #1					
Project #2					
Project #3					

Anticipated Response

Early childhood educators can also create a child’s portfolio to determine learning. It can be useful when educational goals are identified and the portfolio serves as a purpose to support learning (Snyder & Delgado, 2019). When teachers are equipped with resources to understand what is being proposed and are part of the process, teachers are more likely to invest in something that provides some flexibility and always an opportunity to be outside to enjoy the

outside world. Teachers may initially respond to using an environmental rating scale as just one more thing to do. As teachers become more involved in the process of including nature-based learning, this may provide an opportunity for the teacher to balance both environments. This is not adding to the indoor classroom but possibly lessening indoor planning and incorporating outdoor learning, therefore providing a balance of both environments. Even on those days where it seems cold to the adults, the children are ready with snow suits on, shovels and ready to build forts, go sledding, or hunt for hidden treasures (toys that got buried in the snow). The children's outdoor playtime provides opportunities for self-exploration, active learning, working alone or working with a friend and discovering the outside world. The teachers in an early childhood education program rarely hear preschool children wanting to go inside to play. According to Snyder and Delgado (2019) having opportunities for children to experience the natural beauty of the real world can offer creative and meaningful ways for a child to learn, which is supported by current educational research, and evidence of learning through documentation and assessments.

Teachers can share portfolios of the children's learning outside will provide evidence to families how much learning occurs in the outdoors, too. Some ways to make home-school connections are having newsletters to let families know what is happening at school. Communicating with families is essential in building a stronger relationship with parents and when parents feel informed, parents will invest in the child's learning at school (Riojas-Cortez & Berger, 2020). These solutions mentioned would provide administration that learning does occur in an outdoor environment. When the weather allows, learning opportunities can be provided, just as educators plan for learning to happen in the classroom, educators can plan for learning to happen in the outdoor classroom. Allowing teachers, families and the children, along with school

administration, to all be part of the planning and implementing of a nature-based play space creates a sense of connectedness and community.

Future Studies

COVID-19

Due to the current pandemic of COVID-19 and the world is still navigating through this pandemic, a future study could be conducted on how the long term effects of children learning from home by communicating through computer technology with the teacher. Questions to consider would be, has learning from home stifled or set back the progress of the student learner? Did children's behaviors change from learning at home? For early childhood education programs who used technology to communicate and provide "at home" activities for the child at home, were the teacher's able to assess the child's learning through technology? Did programs who increased outside time when children were social distancing at school, did teachers find that challenging behaviors diminished or remain the same? Learning outcomes that includes understanding how learning in nature compares to learning in a classroom, including varying factors of age, gender, socioeconomic status, family background, or special needs. What short and long-term changes would teachers have to make to implement more nature-based learning? Because the pandemic is still at the forefront of health and safety in early childhood programs, it will take more time to incorporate studies to assess how the COVID-19 pandemic affected children and families, as well as education programs finding ways to increase learning when challenging factors arise. This worldwide pandemic comes with many complex factors in determining the outcome of the pandemic and time and research will provide opportunities to improve the education of young children.

Developmentally Appropriate Practices

Research has identified that early childhood educators who implement developmentally appropriate practices (DAP) provides quality, equitable learning opportunities to help children achieve their full potential (NAEYC, 2020). Further research could include how children engage in DAP in the outdoors as compared to learning indoors. Children can be engaged in counting rocks in a pile outside or counting plastic blocks inside, both experiences providing math skills. Using natural elements can motivate the youngest learners. The early childhood educators can encourage children to explore the environment while using scaffolding to further conversations and get children engaged in the learning environment.

Authentic Assessments

Every early childhood educator should know about assessing young children. Stacey (2015) acknowledges the value of assessments requires the educator to have a purpose, with the intent of evaluating a child's learning and how to promote further learning. Catlett & Soukakou (2019) provides practices, with a set of strategies that can be used in early childhood programs for assessment opportunities. As Stacey (2015) asserts documentation starts with observing and listening to children, so ideas can be put into action, to enhance children's learning. The school year has to begin with understanding what the children know, from family background to experiences, and begin to grasp children are conveying to the educators.

According to Bates, Scheck, S.M., & Hoover (2019), using anecdotal records can provide concrete descriptions and enough details that will help to guide future lessons. Portfolio examples will also be discussed and are most often used to show parents the child's work samples, along with notes & photos taken. Encourage staff to find an assessment system that works best for the educator to assess. Further research could include how authentic tools are

implemented in early childhood programs for nature-based learning outside and learning that takes place indoors.

Conclusion

This paper summarized research to answer the question: How does nature-based learning support the overall healthy development of preschoolers? Early childhood educators continue to search for ways to provide equitable learning opportunities for children to grow and support the child's overall development. The National Association for the Education of Young Children (NAEYC) advocates for the support of the whole-child development. Whole child development emphasizes on meeting all the developmental areas (social-emotional, cognitive, and physical) (NAEYC, 2009). Research identified what nature provides by creating a sense of self-participation that may help children gain more attention and thinking skills to possibly perform at a higher level (Bodrova & Leong, 2001). Early childhood program can incorporate opportunities in nature for self-discovery, investigating, peer engagement, and creative play. In play, a child is learning to self-manage, self-direct, and be responsible for the choice child makes.

Early childhood educator's focus is the child and meeting the needs of the child. It's important to see the child as capable of constructing a child's own learning, though it is the role as educator to learn alongside the child, being involved, observing, documenting, and reflecting on what works or doesn't work for the child or classroom. Showing and sharing of ideas is a great way to continue conversation on what works for each classroom. Stacey (2015) points out how educators can follow a cycle of observation, reflection, documentation, and then decision making for future learning opportunities for the child. Research found that teachers need to find a system of documenting, so that information can support what and how the child is learning, as well as sharing that information with families.

Providing learning opportunities with less instruction and let the children learn through play, indoors and outdoors. Children communicate thorough play and it is important for educators to observe children during play, learning right alongside of the children, and create dialogue to continue to support a child's learning at the child's own pace. Play in nature provides a foundation of supporting and developing whole child development. It is essential for early childhood educators to create learning in spaces that allow children to explore and learn. This includes the outdoor space, in nature, where children can explore, be creative, and be provided with an abundance of opportunities to support the child's whole being. When there is a deeper understanding of what nature can provide for the youngest learners, this will be an opportunity to guide practice and policy decision making in early childhood education (Jordan & Chawla, 2019). Early childhood educators need to advocate for early childhood education, using research to support how children learn best and to educate families and communities. Nature-based learning provides an added opportunity where children and adults can truly enjoy all the sights, sounds, touch, smells, and even tasting through garden spaces. As research continues to investigate the relationships between nature and learning, the NAEYC (2020) emphasizes that it is the professional responsibilities of early childhood educators to plan and implement intentional, effective, developmentally appropriate practices the support the healthy overall development of every child being served in a high quality early childhood program. Time spent in the outdoors must be included to support optimal learning and development for every child being served in every early childhood program. Every child deserves an opportunity to experience and enjoy learning in an equitable early child education program.

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Appendix

Environmental Rating Scale

Site Name:

Program & Age Group:

Date:

Time of Observations:

Assessor:

Learning Centers & Areas: Please rate by placing an X in the column that the observation best fits the indicator observed

Comment section: Include anecdotal observations when a child displays a developmental happening and/or communication between child-teacher or child-child.

Consistently Indicators are met consistently	Occasionally Indicators are met occasionally	NO-Not Observed Indicators were not observed
--------------------------------------------------------	--------------------------------------------------------	--------------------------------------------------------

Blocks Center	Consistently	Occasionally	NO
Aesthetically appealing center that is clean and organized			
Area and/or shelf labeled with picture(s) and print at eye-level that serves a purpose			
Containers are labeled with picture & print			
Variety of materials present: Soft Blocks, hard blocks, cardboard blocks, other materials			
Additional materials to manipulate or integrate into their block play (Animals, vehicles, people figures or theme related toys)			
Props and/or materials that represent different cultures, race, gender, ability and/or language			
Teacher engages in conversation with child(ren) to promote thinking creatively, express thoughts or ideas, practice problem-solving skills, and develop self-regulation skill			

Blocks Comments:

Blocks Strength:

Blocks Improvement:

Sensory Table	Consistently	Occasionally	NO
Aesthetically appealing area that is clean and organized			
Area labeled with picture(s) and print at eye-level that serves a purpose			
Generous amounts of materials and utensils for a minimum of 4 children to use at the same time			
Props and/or materials that represent different cultures, race, gender, ability and/or language			
Teacher engages in conversation with child(ren) to promote thinking creatively, express thoughts or ideas, practice problem-solving skills, and develop self-regulation skill			

Sensory Table Comments:

Sensory Table Strength:

Sensory Table Improvement:

The comments, strengths, and improvement can be noted during the observation or recorded after the observation from each person recording information. Then through staff meetings, this documentation can be discussed about all the possibilities and visions for keeping some items or improving on other items in each area.

Time frame for implementing change: The learning centers that need strengthening, will be addressed to staff in monthly staff meeting. Once established, a monthly review will be assessed by Director and other staff. Would like to see improvement by the next staff meeting, usually within 30 days if possible.

Person(s) responsible for implementing change: Teachers are responsible for implementing improvements. They are able to delegate tasks in the improvement plan to aides when available.

This is also an opportunity to include children in creating an area of play or even maintaining the area, so items are organized to allow for exploring and moving safely about in each area. The Director will assist as needed and work with staff to meet goals. Additional planning time may be required and it is the responsibility of administration to include this additional time to be a success.