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Developing A Proposal Plan To Create Nature-Based Classrooms In Early Childhood Settings To Support Inquiry Learning

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DEVELOPING A PROPOSAL PLAN TO CREATE NATURE-BASED CLASSROOMS IN EARLY CHILDHOOD SETTINGS TO SUPPORT INQUIRY LEARNING

by

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TABLE OF CONTENTS

CHAPTER ONE

Introduction

Introduction

Early childhood education has a 2000-year-old history, established by psychologists, educators, philosophers, writers, and physicians. It was founded on the premise that children need to play and socialize in order to make connections to enhance learning and development of the whole child. These original ideas and practices have lessened in importance over the years in early childhood programming. There are now higher expectations for children; including but not limited to, mastery of letter recognition, both upper and lower cases, the quantification and counting of numbers 0-20, pattern continuation and creation, and the ability to retell and sequence stories. In addition to these academic standards, there is a long list of cognitive, social-emotional, physical and language standards that they are expected to achieve.

The preschool environment has various factors that may influence the school experience for the child. The setting in which preschool children are typically learning these concepts is in a room filled with bright colors, plastic toys, and fluorescent lights. Currently, the audience that primarily uses that setting is 19 children who have had different opportunities and different experiences before coming into that classroom. A handful of those children have been attending daycare the whole of their life, and some have never socialized consistently with other children their age. These factors impact the school experience for a child.

The practices defined in environmental education reflect the lens I look through to guide my teaching. Many of the preschool lessons and standards I have developed

revolve around the idea of utilizing a nature element. Now that my school has adopted Creative Curriculum, a completely inquiry-based curriculum, I have found myself seeking ways to implement the studies in our outdoor courtyard learning space. In my experience, four- and five-year-old students prefer a learning environment that is experiential in an outdoor setting rather than indoors. It is this answer-seeking mindset created in early learners and current school practices that have inspired my research question: *How can a nature-based setting support inquiry learning in early childhood education?* Using this question as my guide in research, I will be creating a proposal to the school leadership team advocating for the transformation of the cement-filled outdoor space into a nature-based classroom for the school to use. This chapter will walk through my professional experiences that have sparked this passion for creating outdoor learning opportunities for my students, and the students of the Edina Early Learning Center.

Personal Experiences

I was raised in a family where the outdoors was valued. We spent long weeks at the family cabin my grandfather built. My father taught me at the age of eight to filet a fish, my mother taught me about how to hike and appreciate the world God created for us. My grandmother and I sat with bird books and binoculars out on the farm and identified countless species. We explored the woods behind our home and came in only when the sun dipped below the trees. My time in this small forest solidified my belief that the outdoors was where I was meant to be.

The University of Minnesota Duluth (UMD) opened a world of camping, canoeing, rock climbing, cliff jumping and opportunities to learn in nature. I was taught by creative, passionate, and dedicated educators in beautiful places. It was in Duluth

where I found my passion to become an educator and my desire to give children an outdoor learning experience in the way I was given. It was during my study at UMD, that those passions were ignited through experience. During my sophomore year I was invited to study with NOLS (National Outdoor Leadership School), this non-traditional, highly experiential learning opportunity truly ignited something within me. For three months we lived as a community, traveling through the outback with bare essentials, learning both life lessons and a sound leadership curriculum. We canoed and hiked, cooked meals together, slept under the stars waking to the sound of a flock of cockatoos. Learning the native culture of the Aboriginal people in the land they live brought an increased awareness and perspective shift. This mysterious land truly left an indelible mark on my life. It was here that I developed an understanding that we are a part of this world, not just inhabitants of it. This concept is a core part of my personal experiences and a major underlying reason for why I choose this research question.

This seed grew exponentially working within a career that gave me space to explore and experiment with these principles. However, it was the birth of my son and my life as a mom that showed me an avenue to transfer this passion into a sustainable way of teaching from a nature-based perspective. We adventured around the city, finding all the natural spaces and hidden gems. The pandemic further allowed me the opportunity to push some of the boundaries of traditional teaching. We created Nature Center Fridays and explored a different one each week. I taught him how to identify trees, plants, rocks, and birds. He learned to find patterns in nature and pushed his body to climb, jump and move differently. He was learning in an outdoor setting, not just facts and concepts, but beginning to learn how to relate to the natural world around him. This was carried into

the virtual learning lessons I was responsible for preparing for my own preschool classroom. There was a moment where we were releasing the butterflies that had hatched from my preschool class. It was something we did each year, and in a normal school year all the kids would be present and release them in the gardens at school. They would cheer and wave goodbye and wish them well on their new journey of being a butterfly. But during 2020 that wasn't going to happen. My son and I made videos talking through all the stages of the butterflies' life for my students to watch. When it was time to release them, he felt so sad for my students, and shared, "They didn't get to experience this in real life, and they won't ever get to again." It broke my heart, and I knew that this was an experience I wanted all of my students to have from that moment on. I would give them opportunities to experience jumping off logs, splashing in puddles, and releasing the butterflies.

I wrote in my admissions essay that I wanted to attend Hamline University because I had my heart set on starting a nature-based preschool in my community. This would give children these types of opportunities during the school day. The more time I spent researching, collecting data, and observing other programs like the one I was envisioning, the more I realized that my goal had shifted. I would realize my goal was to give all children in my community the opportunity to experience outdoor learning. I would become a fierce advocate for nature-based learning within the public-school setting. Using this capstone as a platform to show there is evidence-based research proving that inquiry-learning in a nature-based setting is beneficial to our youngest learners will jumpstart the process.

Professional Experiences

Learning comes from play and playing outdoors adds an additional layer of learning to every subject. Bringing a "nature time" concept to life in my classroom once school officially resumed in the fall of 2020 was a welcomed process. Nature time became a part of our class schedule. The courtyard outside our classroom became our "park"; cement, woodchips, dirt patches, no trees and a few hosta plants was not ideal, but was enough to work with. Simply being outside offered a range of opportunities for our learning that were not available indoors. My son and I collected hidden gems that filled the space and created a haven for students to seek and find. Pinecones, leaves, and sticks were excitedly found and sketched in the students' nature journals. This became a special time in our morning together. They would say, "Can we have explore time all day long?" or "Explore time makes my body feel good, it can breathe!" This time outside observing, exploring and actively learning together as a group created an environment where the students were happier with a greater eagerness to learn.

The fall of 2021 welcomed a new group of students through our doors. With the successes of the previous year in the courtyard, I started the school year with inspired ideas on ways we could utilize this space. The first step was building the mud kitchen with my father from scrap wood collecting dust in the garage. Employing the help of my classroom paraprofessionals, we salvaged a sensory table and repaired broken easels with super glue, patterned duct tape and a little love. The physical space combined with the extended teaching time for the all-day pre-k program, it seemed attainable to transform a general education classroom into an outdoor-centered experience for the children. The

team was on board and had a strong desire to explore this new way; however, there was one factor we didn't consider, the students.

There were no children identified on my roster that had any behavioral needs or challenges, no Individualized Education Programs (IEP), no apprehensions reported from parents at open house. To my surprise, on the first day of school several unexpected concerns came to light. While playing with Legos, a student became so angry that he was unable to transition to circle time. He immediately engaged in aggressive, dangerous behavior from one minute to the next. Throwing toys and chairs, turning over tables, punching, and kicking me. I needed to call for support staff and evacuate the other children from the classroom. This behavior occurred every day for 4 months and we were at a loss. We tried to use our courtyard space, but it became too dangerous. He desperately needed more than I alone could give him. Our focus for the year quickly shifted from integrating outdoor-learning opportunities into class time, to social emotional coaching, building friendship skills, learning how to manage emotions and how to be safe at school. These social-emotional competencies are what all students need. We had a great plan, schedule, and lessons for outdoor learning, but it wasn't responsive to our students' specific needs. As an educator, the priority will always be and should always be what the children need, not what I think they need.

The year continued and we had great successes and great attempts that were not successful, but we learned and grew into stronger educators because of the experiences in the 2021-2022 Dragonfly class. By the spring, we were able to open the doors and utilize the courtyard space we had created. Our students were ready and regulated to learn outside. They often referred to the courtyard as "the sunshine classroom". It was a

beautiful ending to the most challenging year I've experienced as a teacher; and a learning experience I would never trade. It opened my eyes to see the importance of recognizing and meeting the needs of my students, who they are and where they are in their journey of growing and learning.

The fall of 2022 began with an enrollment of 19 and it was quickly apparent that changes needed to be made to the indoor and outdoor spaces. A parent from a previous year who worked as a landscaper, graciously donated wooden stumps to create an outdoor meeting space. We added more sensory opportunities in the courtyard and received donations for outdoor blocks and toys. It was a community effort to create our new outdoor learning space, but it still has a long way to go. Though we added materials to make it more of a "classroom" it still feels as though we are just outside in a courtyard, not in a natural space. We continue to make it the best version of what we think it should be, but barriers still stand in our way.

Research Question Development

The development of my capstone project question has been challenging. Originally, I was going to create outdoor learning extensions to the already developed studies in our new curriculum. Upon further investigation of Creative Curriculum (Dodge, Heroman, Colker, & Bickart, 2010), I found that these extensions already existed. They were not obvious at first, but they are present in the material. I didn't need to recreate the wheel. This graduate school journey has been full of opportunities and challenges, and I wanted to make this final project meaningful as well as a full encapsulation of these last few years. While discussing with my content expert, she

suggested using Creative Curriculum as a foundational piece of the capstone. That's when I realized I could complete two tasks with one action: creating a written proposal to the school leadership team, grounded in current research, to gain funding and permissions to transform the courtyard or "sunshine classroom" into a true nature-centered learning space. This capstone project proposal will be centered around the positive impact this space can make on the educational experience for our youngest learners and how we can transform this space into a fully functional nature classroom within the borders of the Edina Community Center, a secret place that students can learn, grow, explore, create, and play. This project would provide all the students at the Edina Early Learning Center access to nature-based learning. This access will expand to learning and understanding about the environment, developing a recognition of the world around them, how they relate to it, and how they can preserve it at the earliest age. I do believe that the global environment challenges we face today and those to come will only be resolved with the development of a generation who has a deep desire to care for that which surrounds them. And one way forward is through an education that grows within the love of and for our natural world around us.

Conclusion

This chapter outlines the personal and professional experiences I have had as a student, a mother, and an educator and how it has deeply influenced my research question and rationale behind this capstone project. The passion I have for inquiry learning and ensuring my students have outdoor educational experiences are what drive me to keep moving forward and being a lifelong learner myself. Morgan (2017) advocated that before we ever put a pencil in a child's hands, those hands should dig, climb, press, pull,

squish, twist and pinch in a wide array of environments and with a variety of materials (paras. 6). This I believe is how children can best learn and when at all possible, they should be given the opportunity to learn in this way: amongst the trees sensing the world around them, not confined to a desk with little to look at other than the worksheet in front of them.

This capstone has had many revisions along the way. In the past, I had used an emergent curriculum. Our adoption of Creative Curriculum (Dodge, Heroman, Colker, & Bickart, 2010), brought needed resources but also brought theoretical challenges to our work. How would I address the state standards while using our new materials within an environment that was grounded in nature-based learning? I used this as an opportunity to integrate my work into the studies developed in Creative Curriculum. I took a step back and rearranged my thinking. How can our outdoor setting and nature-based learning work hand-in-hand with our inquiry-based resources through Creative Curriculum? Looking at it with this lens made the process less forced and more open for interpretation. This, in turn, led to my final question, *How can a nature-based setting support inquiry learning in early childhood education?* The opportunity to research and write about something so close to my heart, truly is an honor. I want this project to make a difference in not only our school building, but throughout the district and surrounding districts as well.

Chapter Two will provide an insight into the background information in this project. It will include a guide to the history of nature-based education and nature play. It will also take a deeper look into the Creative Curriculum (Dodge, Heroman, Colker, & Bickart, 2010), and how this curriculum stands tall against others that are not based in inquiry learning. Chapter Two will also provide evidence-based research behind the

rationale for outdoor play and learning. There are many ways to define these different concepts, what they look like all over the world, and what they look like in the school I am currently working in.

CHAPTER TWO

Literature Review

Introduction

There are many different elements of early childhood education, and the environment they learn in can mold a young child's whole experience. Children need to have learning opportunities in natural spaces. It is a crucial part of their development and as Sobel said, “If we want children to flourish, to become truly empowered, then let us allow them to love the earth before we ask them to save it. Perhaps this is what Thoreau had in mind when he said, ‘the more slowly trees grow at first, the sounder they are at the core, and I think the same is true of human beings’ (Sobel, p.32). We need to give children time to be in natural spaces, to learn and grow with nature. There is value in a child finding a flower and counting its petals or stepping into a fresh snowfall and feeling the crunch of snow under their snow boots. To learn and inquire, students need an environment that encourages questions and exploration. Some schools offer an outdoor learning experience on a playground, with static and stationary equipment incorporating rules and regulations. Others offer outdoor learning spaces abundant with wildflowers, trees, running water or paths through wooded forest. These environments offer different types of learning experiences. This literature review will explore the benefits of each type of space, including their limitations.

The focus of this literature review is to support and develop a proposal to the school leadership team to transform the north courtyard space at the Early Learning Center, into a nature-based classroom for the students. This space would provide all

students an equal opportunity to learn at the earliest age about the environment, to develop a recognition of the world around them, how they relate to it, and how they can preserve it. It is this answer seeking mindset and the changes in early childhood schools today that inspired the research question: *How can a nature-based setting support inquiry learning in early childhood education?*

This chapter will provide an insight into the background information needed for this project. It will include a guide into various learning environments in early childhood education through looking closely at traditional early childhood classrooms and a variety of outdoor learning environments. While giving attention to these learning spaces, the research review will lean into the different barriers these environments face in early childhood education. This chapter moves into a deeper look into the Creative Curriculum (Dodge, Heroman, Colker, & Bickart, 2010), and how its grounding in inquiry-based learning provides a bridge to more authentic nature-based opportunities. Alongside with the resources from Creative Curriculum, this chapter will examine the benefits of using a social emotional learning framework like the pyramid model (Hemmeter, M. L., Snyder, P. A., Fox, L., & Algina, J., 2016) which has shown a number of positive outcomes for early childhood students. Finding the optimal intersection between the frameworks of Creative Curriculum, pyramid and nature-based learning will allow us to teach to the whole child in a way that is proven to create a comprehensive and safe learning environment for our students. Finally, Chapter Two will provide evidence-based research behind the rationale of risky play and looking closely at the partnerships involved with gaining the support teachers need to pursue outdoor learning opportunities with their classes.

Learning Environments in Early Childhood Education

The environment in which children are taught has an impact on how they learn. Many components of their learning can be done both indoors and outdoors, but some experiences can only occur in a nature-based setting. One of the typical expectations of a preschool classroom is walking feet, in order to stay safe and avoid running into classroom furniture and peers. Young learners need to have opportunities to run, jump, balance, leap, fall, climb, etc. These are skills that must be assessed in the physical domain of any early childhood assessment. The assessment of these physical skills can show indicators of cognitive processing such as problem-solving and motor planning as well as give educators a better understanding at how a student is able to use their large motor skills.

The assessment element aside, students need to move. Moving recalibrates the brain and gets blood flowing, allowing children to focus and be ready to learn. This can be achieved by providing outdoor experiences for students in a space where they are encouraged to take risks, explore, and utilize all of their senses. When a student is completely immersed in their learning, it becomes an experience, in addition to something learned.

Traditional Early Childhood Learning Spaces

Early childhood teachers are responsible for creating the learning environment for their students. Though this is one of the duties of the classroom teacher, it is influenced by the families and students that will be learning in this space. Copple & Bredekamp

(2009) communicate that teachers ensure that the environment is safe and promotes children's exploration and independence for learning new skills (p. 152).

A typical classroom is broken down into areas: a meeting and movement area usually defined by a large rug, a block or a building area, a classroom library, a manipulatives area, a space for eating/ tabletop learning, and a dramatic play area. Depending on the program and the curriculum used, these areas may have different names and include a variety of materials. One example is a Montessori-based program that follows a minimalistic approach to a classroom environment. Hojnoski et al. (2008) spent significant time observing Montessori- based rooms containing furniture that is natural wood, with child sized shelves with Montessori materials on trays, and bare walls to minimize distractions (p. 195). Another example, from a curriculum point of view, Creative Curriculum (Dodge, Heroman, Colker, & Bickart, 2010) involves additional center spaces that are broken down into categories for a specific purpose, including discovery, sensory table, music, technology and more. The reasoning is to invite inquiry and embed play and learning all throughout the classroom. This specific curriculum is further explained in the latter part of this chapter. Items most found in an early childhood classroom begin with child- sized tables and chairs, cubby shelves, developmentally appropriate toys and games, art materials, a sink and/or bathroom within the classroom.

An element of a traditional early childhood classroom is based on creating a learning environment where children feel safe and a sense of belonging and community. Educators are encouraged to foster this sense of classroom community. Coople & Bredkamp (2009) give the example of involving each child's home culture into the learning space (p. 152). To achieve a strong classroom community, students should feel

represented, and the classroom should reflect the diversity within it. Again, this specific topic is further explored in a latter section involving the social emotional framework of the Pyramid Model, (M. L., Snyder, P. A., Fox, L., & Algina, J., 2016).

Preschool-age children need an environment that is rich in opportunities to promote motor development. Most early childhood schools or centers have an outdoor playground space, as well as an indoor play space, in addition to the classroom where children can have access to ample gross motor practice. Climbing, jumping, running, swinging are just a few activities that encourage gross motor development. Outdoor play is described by Coople & Bredekamp (2009) and how outdoor play should provide locomotor, stability, and manipulative skills experiences that will naturally involve concepts of body awareness, problem-solving, and relationship building (p. 152).

There are numerous universal elements of an early childhood classroom. In traditional early childhood classrooms, the classroom environment is valued and well thought out by professional educators who specialize in child development. Outdoor learning spaces also hold value in traditional early childhood education. There are unique learning experiences that children are exposed to when given the opportunity to explore in a space with natural elements.

Outdoor Early Childhood Learning Spaces

Tuuling, L., Õun, T., & Ugaste (2018) believed that it is important to create both indoor and outdoor possibilities for students to ensure a variety of creative activities and socialization conditions for children. Outdoor learning, to encompass all its different definitions, includes components of curriculum alongside the elements of the outdoors to

have an immersive learning experience. An outdoor learning space does not have a definitive definition other than being outside, because nature is everywhere. An outdoor learning space can be a wooded forest with an abundance of biodiversity, or it can be a courtyard space with gardens and concrete. Being outdoors, in any space, can offer numerous benefits for young learners.

Benefits of Outdoor Learning Spaces

While indoor learning has its own set of unique characteristics, outdoor learning spaces can offer opportunities for growth in many areas of development. According to the North American Association for Environmental Education (NAAEE, 2014), the benefits of outdoor learning can improve not only areas of a child's physical health, but also equally important a child's emotional and cognitive health. Cooper (2014) investigated this type of setting can strengthen gross motor skills and development, exercise the brain to improve cognitive development and in turn improve academic performance alongside concentration, and encourage self-awareness to build self-confidence (p. 86). These benefits can occur because of the prefrontal cortex. This part of the brain is the executive control center that is responsible for problem solving, creating ideas, and regulating emotions. Hamilton (2014) relates to research showing this can only develop when children are given opportunities to play (paras. 5). Unfiltered free play guarantees situations where children create plans, come up with solutions to social problems, and practice recognizing their own emotions, among many other social skills that are practiced and learned through play. There are indoor opportunities where these developmental areas can be exercised as well, but the addition of an outdoor classroom naturally deepens the authenticity of an experience in a traditional indoor learning space.

Barriers of Outdoor Learning Spaces

A variety of barriers can impact how outdoor learning may or may not be implemented in schools. Scaffolding the experience, not just for the students but for the educators as well can assist in softening some of the anxiety generated from educators and families. For example, it can appear more manageable when looking at a lesson that involves being outside for 10 minutes, rather than looking at one that has a day field trip to the nature center. Other hesitations may include cultural considerations, the management of challenging behaviors, additional support needs and possible safety concerns. The safety of students is the highest priority of teachers. There are many factors to consider while meeting the needs of all students in an outdoor setting. There are ways to make outdoor learning more accessible for all students and educators. A strong and research-based curriculum (Dodge, Heroman, Colker, & Bickart, 2010) is a foundational step to support educators with tools and strategies to be successful in nature-based learning. The next section gives an overview of two different types of curricula that have been proven to be comprehensive and dynamic in order to incorporate outdoor learning into a typical school day.

Curriculum to Support Learning in a Nature Based Setting

Many early childhood educators create their own methods of content instruction. This has worked in schools for many years, but it can lack continuity and consistency within a program with multiple sections of classes. Teachers are responsible to perform concrete assessments that need to be completed multiple times a year, but often, there is

no formal curriculum provided to guide the teaching and learning involved to assess progress.

Studies performed by Dodge, Heroman, Colker, & Bickart (2010) have shown that comprehensive curriculums that are implemented school wide show overall success in students (p. 4). A universal curriculum can provide continuity in the programming of the school and offer shared resources, coaching and an opportunity to collaborate with other educators on the same content. When there are school wide expectations established, it creates a deeper sense of community between educators, providers, families, and students.

This section will provide an overview of two specific curricula: one social-emotional learning-based framework and one that has a social emotional learning component, but also covers all domains of early childhood education including: math, literacy, language, physical and cognitive learning. This section will also include the importance of an inquiry-based curriculum choice and the benefits it has on student learning when researched based and developmentally appropriate practices are being integrated to their learning each day.

Creative Curriculum

There has been debate whether indoor curriculum being implemented outdoors is truly outdoor learning. This is primarily due to a lack of content specific to the outdoors or the environment in a traditional curriculum. *Teaching Strategies Gold* put a team of researchers together and designed a curriculum that incorporates both indoor and outdoor opportunities for students. Creative Curriculum (Dodge, Heroman, Colker, & Bickart,

2010) begun in 1978 by Trister Dodge, who desired to create a curriculum that was not only comprehensive, but also followed developmentally appropriate practices and had a foundation of inquiry learning. She had influences from educational theorists such as: Abraham Maslow's hierarchy of needs; Erik Erickson's eight stages of man; Jean Piaget's cognitive development; Lev Vygotsky's social interaction and Zone of Proximal Development; Howard Gardner's multiple intelligences; and finally, Sara Simlansky's play- based learning (2014).

Creative Curriculum includes a series of volumes that explicitly describe each element of the curriculum from setting up the environment to teaching material. In addition to the paper and online resources, there are multiple in person and video training sessions. These are delivered by experts in the field who have taught and been a part of the curriculum implementation. The training takes an in depth look at the structure of the curriculum and what it looks like in full implementation, ensuring educators can successfully execute each element with confidence. The foundational piece begins with the environment which is broken down into interest areas. The eleven interest areas include: blocks, toys and games, dramatic play, art, library, discovery, sand and water, music and movement, cooking, technology, and outdoors. These interest areas are research-based and were created to encourage inquiry learning. Setting up classrooms with these interest areas in mind gives students many opportunities to explore, create and discover on their own, with less guidance from teachers. The interest areas are an important aspect of guiding the learning in this model. Though not all mandatory, having a designated outdoor learning space is key. Providing an outdoor space for students to explore can enhance learning. Children are born with the instinct to be a natural explorer

and to wonder. Temiz & Karaarslan Semiz (2018) concluded that this instinct starts during infancy when they first begin to interact with their environment (p. 557). Children need opportunities to grow in an environment where they are invited to wonder, Temiz and Karaarslan continued to study how children can learn and explore all living and nonliving things and this is only possible if they have access to such a place (2018). Natural outdoor learning spaces provide these endless opportunities for learning in all curricular domains to have an inquiry learning experience (p. 558).

Teaching Strategies Gold is partnered with Creative Curriculum (Dodge, Heroman, Colker, & Bickart, 2010). This program outlines the standards that are used for assessment. These standards are broken down into academically-based categories including math, literacy, science, social studies, the arts. Dodge (2002) explains her methods in sharing that students practice and explore these areas through play and guided instruction that is developmentally appropriate (paras. 3). The Creative Curriculum Foundations Handbook lays out these principles: social–emotional competence is a significant factor in school success, constructive, purposeful play supports essential learning; the physical environment affects the type and quality of learning interactions; and teacher–family partnerships promote development and learning (p. 34). These foundational pieces make it possible to assess each of the domains and objectives defined in the curriculum and also to support all types of learning in and outside of the classroom.

The environment requirements outlined in this curriculum are just one aspect of the program. Unlike other early childhood curricula, Creative Curriculum (Dodge, Heroman, Colker, & Bickart, 2010) is organized by investigations or studies. The writers have created a series of investigations to organize concepts for inquiry learning. A few

examples of investigations included in Creative Curriculum are; the trees study, wheels study, building study, and insect study. They all begin with a large group lesson where students are able to share what they know about the topic, and then move into a time where students share what they want to learn. This is where the inquiry-learning process begins. Students are able to list what they would like to learn and it is the role of the teacher to create opportunities for children to investigate the answers to their inquiries. Each study lasts from four to six weeks and there are several activities and resources for teachers that help guide the learning during these investigations.

Creative Curriculum (Dodge, Heroman, Colker, & Bickart, 2010) promotes a child-centered curriculum that cultivates social-emotional competence in children, supports positive relationships in the learning environment, encourages constructive play between not only peers, but teachers as well, and nurtures strong family engagement building a stronger school to home connection. In a review of the Creative Curriculum, Gullickson and her team (2018) observed that teachers are encouraged to set up the classroom and lessons in a way that children can construct their own learning through discovery and play (p. 5).

Inquiry Learning

Creative Curriculum (Dodge, Heroman, Colker, & Bickart, 2010) clearly defines and values the learning environment. It is also grounded firmly in inquiry-based learning. It can be described as a child-focused framework where the subject is child-led and the teacher guides the process of investigating the learning and the seeking of answers to their wonders. Guided inquiry learning emphasizes the importance of the

discovery process by the students themselves. In 2019, Margunayasa's team say that guided inquiry learning can be defined as a teaching method that empowers the students to move in a progression using the steps beginning with identification of a problem or question, defining a hypothesis, identifying the problem, collection data and observations, looking for result, and ending with a conclusion of the study (p.738).

Utilizing an outdoor learning space can enhance this type of learning process. Gurholt & Sanderud's (2016) research explores how children engage in these investigations using their hands, feet, eyes, and cognitive skills. This process is further defined by the use of inference and recall of previously learned facts that will generate expected and unexpected experiences. All of these factors were found to be important for self-formation and growth to discover the answers being sought (p. 320). They also found that the unpredictability of the outdoors provided the dynamic interplay that continually extends surprising responses and reactions. Only the unpredictability of the outdoors can provide such a rich experience. Creative Curriculum (Dodge, Heroman, Colker, & Bickart, 2010), as an inquiry-based program, can be enhanced when the outdoors is added into the process. The environment and materials provided will give access to a rich, authentic experience where students are free to perform experiments in a different type of setting. It brings a connectedness to the investigation that they might not have been able to experience in an indoor setting. For example, generating questions about trees indoors from only recalling previously known information will result in a lack of context to the child. To take the same activity and bring it outside, students are now able to ask questions about what they experienced first hand. These experiences build a shared background and help to create equality in the group as well. Students that may not have

the same exposure to trees, will less likely be able to participate in the first group discussion. Giving those students a space in an outdoor setting to have an experience like their peers builds self-confidence and expands their learning experiences so that they are able to become invested in the topic.

The next section will focus on the Pyramid Model, a social emotional learning framework that focuses on building relationships, teaching prosocial behaviors and expectations (Hemmeter, Snyder, Fox, & Algina, 2016). This model is meant to be a bridge between home and school learning. First established in the classroom and applied in various areas of a child's life. Students are taught core expectations and are provided opportunities to practice a variety of social skills. It can be an important piece to having a successful outdoor learning experience.

The Pyramid Model

The Pyramid Model was developed in 2003 by Hemmeter, Snyder, Fox, & Algina to define the evidence-based practices and approaches that can be used within a program to promote young children's social emotional competence and address challenging behavior (2015). This type of framework takes years of implementation hours, internal and external coaching, hours of training, large budgets provided by the state to create and obtain resources for educators and families. This model was created to support all children in all different stages of development. It breaks down three tiers of intervention practice: universal promotion for all children, secondary preventions to address the intervention needs for children at risk of social emotional delays, and tertiary interventions needed for children with persistent challenges (Fox et al., 2009).

One key element of this framework is offering students ample time for child-directed activities. As stated earlier in this chapter, Hamilton (2014) clarified the development of the prefrontal cortex can only happen when the neurons in the front of the brain are making connections and changing (paras. 3). This occurs during free, open-ended, undisturbed play between peers. Teachers are trained to incorporate this type of play within the school day, along with other competencies to ensure they are providing a high-quality experience for their students. While play is of the utmost importance in early childhood programming, so is creating a culturally appropriate and relationship-based environment for that play. Using the tools the Pyramid Model provides, teachers are given resources to assist in guiding and integrating concepts of problem-solving, teaching friendship skills, teaching emotional competencies, and creating expectations for the classroom. Through training and peer coaching, teachers are equipped with research-based information and resources to integrate these concepts into their classrooms. As teachers create these learning environments for their students, the students are equally as involved.

Through large and small group teaching and play, students are modeled ways to problem solve with peers and are taught a variety of solutions for social problems. Teachers demonstrate how these are used and offer the tools for students to practice. The Pyramid model (Hemmeter, Snyder, Fox, & Algina, 2016) is unique in that it is meant to be accessible to each and every child. The symbolism behind the name Pyramid is based on the tiers. The first tier is grounded in building relationships and creating an environment where all children feel a sense of place and belonging. As tiers move upward, students that require greater guidance and assistance in their day are given

interventions to help them reach their classroom goals. The most important thing that teachers and team members can do to enhance learning in an early childhood setting is to build positive relationships with every child in their classroom, including family members. O'Grady & Ostrosky (2022) note that the focus should be on positive social emotional skill development through teaching of universal supports and strategies that are intentionally in place. They continue to share how teachers have an integral part in this skill development and must consider their role as facilitators of children's learning and development. While maintaining their own expectations, biases, teaching practices, and classroom environments to make it a successful practice (2022).

Other integral components of the Pyramid Model are broad school wide shared language and expectations as well as supportive family partnerships. The next section of this chapter explains the importance of these partnerships and how they impact outdoor learning in schools.

Partnerships Involved to Ensure Outdoor Learning Success

Early childhood education has a large family partnership element to ensure its success. Bridging the gap from school to home requires clear and open communication. Families need to be informed about what and how their children will be learning. One of the sections in this chapter speaks to risky play and what that looks like in an educational setting. Parents and caregivers should know that their child will be learning with their bodies, not just sitting at a desk. A large component of a study by O'Farrell & Liu (2020) included the teacher and family partnership that involved the experiences children have at

home. Sharing these experiences with the educators builds a communicating relationship between school and home.

Ernest (2014) looks closely at positive interactions with and in nature as being essential to the health and development of young children. She observes that outdoor experiences in nature are linked to improvements in the areas of children's physical abilities and development, mental health and improved cognitive and executive functioning (2014). In order for children to access all of these benefits, they need to be given outdoor learning opportunities throughout their day. In a researched-based experiment, Puk (2021) took a deeper look at how children play and take risks in different play settings. They found that teachers and staff working with these children who set up expectations for different play settings found more success in children following the expectations, rather than the children being defiant towards them.

Family Role in Outdoor Learning Experiences

Puk (2021), conducted a series of interviews with a group of parents to evaluate their thoughts on outdoor play, risky play, and what factors play into their fears, hesitations, excitements and joys. The results showed two main categories of responses. The first group of parents were not fond of the word choice 'risky' because a majority of their thoughts went to 'danger' (p. 4). The other perspective he summarized in this study were uncovered as the opposite: restorative, supporting, healing, and beneficial. This second group of parents also shared positive interactions and experiences they themselves had in nature (p. 8). Puk's interview study concluded that parents felt misinformed and associated risk with danger, when really, their anxiety is coming from the unknown.

Educators can have a role in informing families about the risks and how they are teaching their students to be safe in an outdoor learning space. Giving families more information and giving them experiences in nature, can build positive relationships between teachers, students, and their families.

Teacher Role in Outdoor Learning Experiences

A teacher's role, above all, is the safety of children. Teachers often fear the elements of the outdoors, especially in nature areas, because of the risks involved. There is value in teaching children to explore and push their limits in a safe and meaningful way. Teaching children how to recognize risk, and how to safely navigate outdoor learning spaces is going to ensure that students are safe. Intentionally articulating and reviewing behavior expectations is another key element in this type of learning. Teachers can set these up in advance, before entering the outdoors. Ernst (2013) had conducted, she concluded that most of the barriers of outdoor education for early childhood educators came from the teachers' lack of outdoor experiences, safety concerns, access to outdoor space and the overall know-how when they do have access to natural spaces. Through different professional development and training for early childhood teachers, many of these barriers could be eradicated.

There is value in teaching children to explore their limits in a safe space. Teaching and training teachers and parents the importance of risk taking while in natural spaces and the safe and thoughtful way to do so was her ambition to reduce the gap that there is between early childhood programs going out in outdoor learning spaces. Ernst (2013) closed with the facts there is a growing need to reconnect children and nature. This is

combined with the recognition that experiences during the early years of children's lives have a profound influence on development, lifelong health, learning, and behavior. Ernst (2016) makes the connections of early childhood education paired with outdoor learning experiences and inquiry-based learning has the potential to make a significant impact on the development of young children and a significant contribution to a sustainable society.

Summary

To summarize, there is a large amount of research that proves the benefits of outdoor learning opportunities for early childhood students. Children need to have open play experiences in order for their brains to develop properly. Giving children outdoor learning experiences will ensure that they are using these skills to practice social competencies they will need in adulthood.

Intentional curriculum choices are also vital when looking into how and what needs to be involved in choosing a curriculum. Staff need to examine their beliefs about teaching and learning, while prioritizing developmentally appropriate content, and decide what makes a comprehensive curriculum. Taking a deeper look into social-emotional learning and the importance of a well-balanced and equitable framework for an early childhood school. Simultaneously inquiring how it can also benefit and enhance nature-based learning experiences.

Fears and barriers of educators and families were a factor examined within this chapter. Discussing what could be a barrier to the completion of this outdoor learning space is an important step in researching this topic. According to the research, in several different studies, the main barrier came from fear based in the unknown. Using this

information to make a positive effort into sharing information and creating experiences for parents and educators could give insight and support to the efforts of outdoor learning settings being a regular part of the early childhood school experience.

The research for this literature review, examines my research question: *How can a nature-based setting support inquiry learning in early childhood education?* This question guides my research. As Amanda Morgan has stated, “Before we ever put a pencil in a child’s hands, those hands should dig, climb, press, pull, squish, twist and pinch in a wide array of environments and with a variety of materials.” This is how children can best learn and when at all possible should be given the opportunity to learn in this way. Amongst the trees sensing the world around them, not confined to a desk with little to look at other than the worksheet in front of them.

The next chapter will be an in depth look at the process of writing the proposal to transform the current outdoor space into a nature-based classroom. It outlines the procedures involved in creating the proposal, including potential blueprints, material lists, and how this proposal will benefit the Edina Early Learning Center.

CHAPTER THREE

Project Description

Introduction

Creating opportunities and places for students to have a meaningful relationship with nature is one of the highest priorities of this project. To wonder, inquire, learn and grow, children need to feel, smell, hear, and be immersed in natural places. This chapter, which is accompanied by project materials, will give a detailed overview of the process and methodology used to complete a project proposal to answer the research question: *How can a nature-based setting support inquiry learning in early childhood education?* It is centered around the positive impact this space can make on the educational experience for our youngest learners and how we can transform this space into a fully functional nature classroom within the borders of the Edina Community Center, a secret place that students can learn, grow, explore, create, and play. This project would provide all the students at the Edina Early Learning Center access to nature-based learning.

I used this as an opportunity to integrate my work into the studies developed in Creative Curriculum. I took a step back and rearranged my thinking. How can our outdoor setting and nature-based learning work together with our inquiry-based resources through Creative Curriculum? Looking at it with this lens made the process less forced and more open for interpretation. Creative Curriculum offered an ideal platform to advocate for this space. Lessons to encourage students to display their large motor

development, cognitive and language skills, and literacy and math competencies are a significant piece of each study. Currently teachers are utilizing the indoor gym or a small grassy area next to the parking lot. The second option being one that has many safety concerns to consider. Providing an outdoor motor space for early childhood educators to teach these components of the curriculum would be not only a safer option but equally beneficial for students getting more exposure to a nature-based setting.

Project Overview

The goal of this project is to create a nature-based classroom for educators to utilize with early childhood students. This project was created to expose students to a nature-based learning environment that would enrich their learning experience during their time at school. This begins with a proposal to the school leadership team outlining how we can utilize the space that is currently available and transform it into a space that is beneficial for the community. The proposal is broken down into three sections: a powerpoint presentation, grant opportunities, and community involvement.

This project begins with an online survey for school staff. Teachers and paraprofessionals answered questions including: who is currently using the courtyard space, how are they utilizing it as is, barriers to why they are not using it and what would make the space more appealing to teach in. Gathering this data first helped design the rest of the project pieces and research ways to overcome some of the barriers.

The proposal presentation has several elements including the initial proposal for the school leadership team. This group is made up of the director of the Edina Early

Learning Center, the director of Early Childhood Special Education, the director of Community Education and the Parent Advisory Committee. This group of people are responsible for making building changes. The proposal, along with the grant ideas to fund the space will be presented in PowerPoint form. This will also involve a draft blueprint design of the current space and proposed ideas for the new space. Also included in the presentation are potential vendors, material lists, and a rough estimated budget for transforming the space. Using this format will give this team of people a detailed overview of what to expect in the new space. There are steps leading into the proposal presentation, outlined in the next section of this chapter.

Outside of the formal proposal, this project will include grant options that if obtained would provide funding for this space. Grants, along with the community funding program, would ensure a large enough budget making it possible to transform this space into a functioning nature-based classroom. This part of the project will take the most time and will be the deciding factor to the overall design and success of this courtyard update. If there is a lack of funding, there are a variety of ways to work with what the space has to offer in its current state. This project includes a powerpoint presentation accompanied by a handout.

Setting

The setting for the nature-based classroom is located on the north side of the Edina Community Center, which is the home to the Edina Early Learning Center. There are educators that currently use this space in the warmer months as an additional “run around” area for students. It is a space that is accessible for anyone in the building. At

one time in this courtyard's history, there were picnic tables that staff members would utilize for their lunch breaks. There are very few adults that use this space currently now that there are no longer tables available. Which, in turn, leaves this space empty and unused.

My classroom is one of three classrooms in the school that has direct access to the courtyard. I have already begun cosmetic changes to the space to make it a more inviting place for children to learn, and to encourage others to use it as well. The courtyard now has a mud kitchen, a sensory table, easels for art, and logs in various sizes for children to sit on, climb, and use for building forts. With the increase in activities that are out in this space, it has naturally enticed others to use it. As described in Chapter 2, Creative Curriculum has been adopted this year as part of our teacher materials. It includes several lessons that take place outdoors. The courtyard is currently the only "nature space" that these lessons could take place that has a containment aspect that is appealing to educators. The other outdoor spaces available, not including the playground, are located in the south courtyard, leading into parking lots, the football field, and busy roads. Dedicating a space for outdoor learning would provide educators and their students increased learning opportunities.

Research Framework

Children learn by playing, it is the only way that the prefrontal cortex of the brain can develop. Undirected and self-guided play sparks the neurons in the brain to change. Gurholt & Sanderud (2016) found that while playing, children are using the skills of problem solving, effective communication, creating ideas all while strengthening

friendship skills, and self-confidence Playing and learning in a nature-based setting, increases these skills, because now the elements and unpredictability of nature is added into the experience. There is an abundance of research, like this example, that supports a nature-based setting and the benefits of inquiry learning, beginning with the overall development of children.

Using Creative Curriculum (Dodge, Heroman, Colker, & Bickart, 2010) as a foundational resource, this curriculum was modeled using some of the most influential educators in our history. A majority of these educators, as further unpacked in Chapter Two, used nature as a tool to teach students. Nature was used as the backyard playground to inspire an inquiry-learning format for learning. Giving students the opportunity to connect to their environments by asking and seeking answers in natural spaces. Khales & Meier (2013) explain that inquiry learning, at the teacher-education level, involves reflective practice and has been advocated as a powerful conceptual framework and a set of tools for strengthening teachers' understanding of child development, educational reform, and effective instruction. Using these practices and models to inform my proposal will ground this project in research based and developmentally appropriate practices.

Summary

This capstone project is a proposal to convert the Edina Early Learning Center courtyard into a nature-based setting for students to learn and explore in. The renovation of this space and the purpose of this capstone project is to answer the research question: *How can a nature-based setting support inquiry learning in early childhood education?* Using observations and developmentally appropriate practices, I will be able to teach and

conduct lessons in the current space and use these experiences to convey the need for a courtyard update to make it into a true nature-based setting for young learners.

I've heard phrases through my open window by other teachers urging children to use only looking eyes, to not play in the mud or not touch the flowers, and not to walk in the wood chips. Marris (2016) spoke to what nature has become and the challenges that children are faced with. If we continue to define nature as something that is pristine and untouched, we will have no more nature left. She closed with:

> First, we cannot define nature as that which is untouched. This never made any sense anyway. Nature has not been untouched for thousands of years. And it excludes most of the nature that most people can visit and have a relationship with, including only nature that children cannot touch. Which brings me to the second thing that we must do, which is that we have to let children touch nature, because that which is untouched is unloved.

Chapter four continues this work in the form of reflection. It explains, in detail, the processes of the inner workings of the capstone project and what elements were successful and different challenges I was faced with. Using my research question as a foundational piece, this upcoming section will develop extensions that could further the research and different methods of delivering that content. Chapter Four will conclude with a summary of the professional and personal importance and significance of this project and review the main emphasis of nature-based settings supporting inquiry learning in early childhood education.

CHAPTER FOUR

Conclusion

Introduction

"Children deserve to grow and learn in a place alongside a force that is as wild and alive as they are" Nicolette Sowder shared in an interview when describing her initiative for nature-based homeschooling education. How can a nature-based setting support inquiry learning in early childhood education? This question is what I have been investigating throughout this capstone process. The capstone project to support this research question is a proposal to transform the courtyard space on the south side of the Edina Community Center.

This concluding chapter is a summary of the capstone project in its entirety. It will review key resources that influenced my research question and helped guide the final product. There will be a section to discuss the limitations and implications of this work and the different barriers to overcome with a project of this magnitude. This chapter will be looking closely at the research and work that can be continued beyond one small school and provide assistance and inspiration for other early childhood schools and centers. Finally, a reflection of my experiences during this project including the outcomes of the pilot nature-based classroom and how staff and students reacted to the idea of extending our learning space outdoors.

Literature Review Highlights

While reflecting on the resources I used for this project, a handful were the roots that supported my vision. Creative Curriculum and the Pyramid Model were the jumping off point for formulating a research question. In order to build a space to support early childhood student learning, I needed the audience to fully understand how and what students learn during these formative ages of development.

The Pyramid Model, a social emotional learning framework that was reviewed in chapter two, has been implemented at the Edina Early Learning Center for the last five years. The implementation of this framework changed the school culture and shifted how children learn and practice prosocial behavior skills, recognizing and responding to others' emotions and the process of problem solving with peers. It additionally created cohesion amongst the various programs offered at the Early Learning Center. The Creative Curriculum section of chapter two provided an overview of the inner workings of an inquiry-based curriculum.

Outside of curriculum resources, the Puk study on risky play was a key element to seeing an opposing view on outdoor learning and play. Though it could appear counterintuitive to include an opposing side of the proposal that I created, it was extremely beneficial, therefore making it one of the highlights of my research. This study aided in the language I choose to describe different elements in the proposal. It also informed my research in materials to use for the nature-based classroom.

Emma Marris's Ted Talk in 2016 was the driving force behind this project. Prior to listening to this Ted Talk, I struggled with my research question because what I had

available was not “nature.” I battled with the preconceived idea that if I was going to call it a nature-based anything, it had to be in the middle of a forest. After listening to this lecture, my perspectives changed. She shares, “that nature is anywhere where life thrives, anywhere where there are multiple species together, anywhere that’s green and blue and thriving and filled with life and growing.” If this can be a definition of what nature is, then the courtyard space that is mostly concrete outside my classroom can be a nature-based classroom. This resource encourages people to look for outdoor opportunities for children, no matter how small they may seem. I took this on as my responsibility for this capstone project, to give children a nature that can be touched and loved.

Project Implications and Limitations

While completing research for this project, I needed to investigate the specific district guidelines for early childhood students being outdoors in the winter. According to the ELC Recess Guidelines, students will not participate in outdoor play if it is below 15 degrees, including air temperature and wind chill or above 90 degrees. These policies were considered when deciding if this proposal should be for an entirely outdoor based preschool class to be added to the catalog and held in the courtyard space. Upon further reflection, it would be a challenge to hold a class out in this space for the school year because of the limitations of inclement weather in Minnesota. There would be no indoor space available for these students to retreat to if the weather were severe or too cold.

Another implication to this idea is that it would place a limit to one group of students having access to this space. The main purpose of this project was to give all the students at the ELC an opportunity for a nature-based learning experience. If a class were

being held in the courtyard every day, it would not allow others to use this space during their school day.

The limitations to this project stem from the courtyard space as it currently stands. There are two courtyard spaces within the Edina Community Center. One courtyard space on the opposite side of the building is the playground for the Edina Early Learning Center and the Spanish Dual Language School that includes permanently installed playground equipment, such as a climber, merry-go-round, and swings. Also in this space is a sandbox, a bike track, and a small patch of grass. The other courtyard, the focus of this project, had an original intent to be a space for staff members to gather for lunch, meetings, and events. The limitations of this project come from this space never being intended for children to learn in, so the concrete covering most of the space hinders a lot of what I would like to do for students. The cost and labor to remove the concrete and return the space to its natural state would be an extraordinary project and include permits, inspections, and approval from the head of maintenance and grounds as well as other building and district leads.

While creating this project, I removed the possibility of removing the concrete to make the project more attainable. All the items being suggested for this space, based on my proposal, are not permanent. I choose to do it this way, so in the future, if the concrete is removed from the space to expose the natural ground, the original materials from this project can be used.

In addition to this extensive project, installing sun shades or canopies would be ideal for this space. In the afternoons, the sun shines on half of the courtyard and there is

no shade. Planting trees in this space is not an option. During the playground renovation in 2018, trees were removed because of an interference with the water lines for the building. This is true for the other courtyard as well. There has been research done on a sunshade that would still fit the theme of this space, without it taking away from the original vision of the space. Adding this sunshade canopy would add an additional cost between $9,000- $14,000. It would definitely be a substantial expense, but would also increase the amount of usable space in the courtyard.

Future Growth

According to Child Care Aware, there are more than 12,000 licensed early childhood centers in Minnesota and only a small handful of them are nature-based (2022). The future growth of this project is to expand the idea that nature-based learning can be achievable to anyone. Giving early childhood schools and centers the tools to create their own nature-based classroom spaces and the research to show they don't need a big, beautiful forest with a pond and a stream and big trees. But a nature-based space can support inquiry learning in children no matter what the nature looks like. To inspire other schools to try out something new, to teach outdoors, or to inspire educators to see the benefits of nature-based settings is where the future of this project lies. The research for this capstone project could be the foundation of a share site of nature-based resources, and links to materials. The proposal presentation I developed could be used as a template and a guide for the share site as well. This would give other educators a starting point to advocate for their schools to start something similar.

Conclusion

The research has provided examples of the benefits of utilizing outdoor learning for early childhood students. What I have found the most solidifying as evidence in regard to nature-based settings, was not found in a book, an article, or lecture. It is what my team and I witnessed firsthand from our students. This Spring, I was inspired by the warmth in the air and the slow melt of snow, to put all that I had learned from this Capstone project to a test. A mockup design and class of the main elements of this proposal.

Our indoor classroom moved to an outdoor classroom, including all teaching supplies from the Creative Curriculum and Pyramid Model resources. Additional play spaces and discovery areas conducive to outdoor learning were also included. The day operated with the same expectations and schedule. What we discovered was thrilling. The Dragonfly students were more focused on journaling, a group of students inspired to cover the concrete with colorful paintings, a group of boys insisted they discovered dinosaur bones in the wood chips. The joy of learning was alive!

Nature has a myriad of definitions, to a four-five-year-old, nature is where there is dirt. A place where you can touch, smell, hear, and see things growing. For me, it is a place that has the power to instill infinite possibility. It has been my time with my students over the years that has provoked the question, “How can I bring more nature to this place, how can I transform this space into an outdoor classroom?” This answer seeking mindset and the current deficits that students are facing in early childhood schools today was the inspiration for the research question, *How can a nature-based setting support inquiry learning in early childhood education?*

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