

Teacher Perceptions of a Sustained Nature Focus in a
Minnesota Early Education Program: A Single Case Study

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Prologue

Sitting on a North Florida beach recently, watching the pelicans fish, it seemed that their behavior was dizzyingly random at first. A group of pelicans fishing in the same vicinity provide a comical display of dive bombers plopping into the water like giant raindrops. A pelican in flight seems to stall and then plunge straight down into the ocean bill-first. Almost always, that seemingly random dive yields a fish and the pelican pauses for a moment before it rises again to search for the next target. Along with these periods of brisk fishing there are other times when the pelicans scout the coastline in cohesive groups with one clear leader. These groups move together in rhythm, swooping and gliding on shared air currents, looking for the right place to fish.

For the pelicans, the group leader sets the pace and also decides when and where to fish. In early childhood programs, the program leader has some of those same responsibilities. The question that is often on the mind of a program leader is: “Is this the right place to fish?” How do we decide when to dive into an opportunity, and when do we need to scout the coastline for better possibilities? This research summary is concerned with sustaining program focus but the prelude to sustainability is deciding on where to fish. How do we land on an area of focus that will inspire and motivate into the future? Though we may like to believe that it is all about controlled planning, the reality is that it often seems to be equal parts serendipity and intentionality. Sometimes the right opportunity glints in the sunshine at just the right moment and we have to be able to trust our instincts and dive in head first. The work at the Family Center on connecting children to nature presented itself at just such a moment and has proved to be a rich fishing ground ever since the first plunge.

So here is our serendipitous prelude to this study....

In 2005 Vicki Bohling, a parent educator at the Forest Lake Family Center, had been working with Dimensions Educational Research Foundation in Lincoln, Nebraska. Her journey from Nebraska to Minnesota is a story of connections which put her in the right place to present the program with a possibility. That possibility was presented to Cindy Saarela, a program coordinator who had come to the Forest Lake district in 2004. Dimensions (which would later develop the Nature Explore program) was developing a series of workshops to train early childhood teachers and support staff to better identify and support visual spatial learning in classrooms and they were looking for a program, outside of their own, to pilot the workshops. So the proposal was made. Did the Family Center want to participate as a pilot site in a series of training workshops around visual spatial learning in young children? Since Cindy was relatively new at the Family Center the agenda was not yet full of ongoing initiatives and the timing seemed right. It also seemed like a project that was simple and straight forward enough to be manageable yet broad based enough to have meaning throughout the program and durable enough to be sustainable. Vicki was able to provide the connecting link initially and Dimensions quickly became part of the lexicon at the Family Center. From that beginning the collaboration with Dimensions grew into a partnership which included the design and development of a Nature Explore Outdoor Classroom and participation in an ongoing three year qualitative research project that energized and inspired teachers and parents alike.

As we look back to that initial conversation about possibilities between Vicki and Cindy we know it was a glint in the sunshine that could have easily been missed. Without the suggestion from Vicki, the resources from Dimensions, the investment from Cindy and the openness of the teaching staff, this possibility may not have become a reality. Though policy

makers yearn to discover the formula for program success, replicating a successful initiative in other locations is often doomed for failure if the role of chance and converging circumstances is not recognized. As is so often the case, this opportunity was shaped by relationships, circumstances, connections, a climate of openness, a moment of clarity, instinct and timing. We know that every program needs to find their own rich fishing ground and we wish you happy hunting!

*To reach a port we must sail, sometimes with the wind,
and sometimes against it. But we must not drift or lie at anchor.*

- Oliver Wendell Holmes

Introduction

The teacher role in sustaining any curricular or programmatic focus is significant. Teachers are largely responsible for establishing the learning environment, delivering curricular content, and assessing student needs and progress. Teachers serve as interpreters and advocates of children’s learning to parents and administrators. Administrators and education policy makers may chart the vision for where a school will place its curricular emphasis, but teachers do the largest work in implementing curriculum on a day to day basis.

During the 2011-12 academic year – four years after the installation of our Nature Explore outdoor classroom and the subsequent shift to a program-wide focus on children’s learning in nature – we conducted a qualitative study of Family Center teachers’ perceptions of sustainability regarding the nature focus within our early childhood program. This study serves as a natural extension of research conducted at the Forest Lake Family Center on the skills children develop in an outdoor classroom (Bohling, Saarela, & Miller, 2010) and parent engagement in children’s learning outdoors (Bohling, Saarela, & Miller, 2012).

The findings of these two previous studies underscored the integral role teachers played in supporting children's skill development in an outdoor classroom and facilitating parents' understanding of the unique health and learning benefits children experience in outdoor play. Teachers in both studies served as co-researchers. Teachers collected qualitative data through close observation and careful documentation of children's play in the Nature Explore classroom (NEC). They then used the data to reflect on practice and scaffold children's learning (Berk & Winsler, 1995). From our previous study in Forest Lake and other qualitative study conducted in Nature Explore classrooms (Miller, 2007; Miller 2007; Miller, Tichota, & White, 2009; Veselack, Cain-Chang, & Miller, 2010), we understood how key the teacher role was in promoting and supporting children's learning outdoors, and we wanted to extend this understanding into an exploration of what teachers perceived to be the contributing factors in keeping a nature focus alive and well within our school.

A considerable body of contemporary literature, across many disciplines, has been devoted to the unique health benefits and learning opportunities available to young children when they work and play in outdoor settings (Children & Nature Network Research and Studies, 2007, 2008, 2009). The literature also identifies many curricular domains in which children's learning occurs outdoors, including science and mathematical thinking, environmental education, social-emotional development, language and literacy, and music and movement (Chalufour & Worth, 2003; Galizio, Stoll, & Hutchins, 2009; Miller, 2007; Thomas, 2007; Thompson & Thompson, 2007; VanGilder, Wike, & Murphy, 2007; Wilson, 2007; Wilson, 1996).

There is a notable absence of literature, however, related to program focus or curriculum sustainability within early childhood settings, particularly as it relates to children's learning in outdoor settings. Significant research has been devoted to the study of quality indicators within

early childhood programs (Cryer, 1999; Mashburn, Pianta, Hamre, Downer, Barbarin, Bryant, Burchinal, Early, & Howes, 2008; Melhuish, 2001; Phillips, Mekos, Scarr, McCartney, & Abbott-Shim, 2000;), but “less is understood about the sustainability of implementation once a preschool curriculum has been adopted” (Lieber, Butera, Hanson, Palmer, Horn, & Czaja, 2010, p. 225).

The minimal study that has been devoted to curriculum sustainability in early childhood settings points to the relationship between systematic teacher in-servicing and training, and sustained student outcomes. Most of this study has been focused on teacher training in formal curriculum applications for social and emotional development, language and literacy learning, and classroom behavior management in early childhood settings (Carlson, Tiret, Bender, & Benson, 2011; DeRousie & Bierman, 2012; Dickinson & Caswell, 2007). We identified no evidence-based research in the literature, however, on teacher perceptions of sustaining a nature focus within an early childhood program. This clear void warrants the study at hand.

The findings of this study will be useful to a number of audiences who are interested in cultivating a deep and lasting connection between children and nature within an early childhood setting. Administrators of early childhood programs will learn how they can facilitate a culture shift from learning that occurs primarily indoors to daily learning in nature that goes far beyond “recess.” Early childhood teachers who seek inspiration for making learning outdoors a more significant part of their teaching day will find out how their own connections with nature and close observation of children’s work can better inform their practice. This study will also provide stakeholders in the larger educational community—primarily parents and policy makers—with information on how to better advocate for teachers and programs who want to keep children’s learning outdoors a priority.

Purpose Statement and Research Questions

The purpose of this single case study was to examine teachers' perceptions of sustaining a nature focus in an early childhood program through teacher focus groups and individual interviews. Sustaining a nature focus simply means that, at the Family Center, it is a program priority for children to spend time outdoors, engaged in child-directed exploration and discovery, in a well-designed learning environment. This priority also includes a commitment to educating parents about the value of outdoor learning for young children and an understanding that outdoor play and learning is part of the program identity and will not change over time. Participants in this study were early childhood or parent education teachers working with parents and their young children (infants, toddlers, and preschoolers) enrolled in classes at the Forest Lake Family Center during the 2011–12 school year.

Six research questions guided this inquiry:

1. How do teachers describe the changes that have occurred as a result of making nature a primary focus in the early education program?
2. How do teachers describe their vision for sustaining the program's focus on nature?
3. How do teachers describe the challenges of incorporating a focus on nature in the early education program?
4. How do teachers describe the support needed to implement a consistent focus on nature in the early education program?
5. How do teachers describe their co-researcher role and how it has informed their work?
6. How do teachers describe the future of their work and partnerships in connecting children to nature?

Research Approach

According to Yin (2003) a case study design is optimal when “the focus of the study is to answer “how” and “why” questions... and you want to cover contextual conditions because you believe they are relevant” (Baxter & Jack, 2008, p. 545). In framing our research questions, we crafted “how” questions to explore the ways teachers described program changes, teacher vision for a sustained nature focus, perceived challenges and areas of support, the co-researcher role, and hopes for future work. Using a qualitative single case study approach allowed us to pursue depth in our analysis of teacher perceptions and better understand the context surrounding teacher responses in individual and focus group interviews.

The Forest Lake Family Center was purposefully selected to conduct this study because of our prior relationship with the Dimensions Educational Research Foundation as a pilot site for Nature Explore workshops and field testing of outdoor classroom equipment and materials. All teachers in this study received co-researcher training in observing children in the Nature Explore classroom and documenting children’s learning outdoors. The Family Center enjoys substantial longevity among teaching staff, with an average of 15 years of service for teachers as a whole within the program. This dedicated service means that nearly all teachers involved in this study were involved “from the beginning,” when our partnership with Dimensions was largely devoted to the foundational study of children’s visual-spatial skill development in indoor and outdoor environments.

We collected data for our study through teacher focus group interviews and interviews with individual teachers. The first teacher focus group was conducted in October of 2011. Because the focus group was scheduled during a regular week of classes, teachers were interviewed in three separate groups of three to five teachers to accommodate the variety of

teaching schedules. Eight questions were asked (Appendix A) related to perceived program changes and teachers' vision for sustaining a program nature focus.

The second teacher focus group was conducted in February of 2012. Because this focus group took place on a day when no classes were scheduled, teachers were able to meet as a larger group for one interview session. Ten teachers participated in the February focus group. Nine questions were asked (Appendix A) related to the teacher co-researcher role and teachers' hopes for their future work in connecting children to nature.

Between December 21, 2011 and February 16, 2012, individual interviews were conducted with ten teachers. Ten questions were asked in each individual interview (Appendix A) related to perceived program changes and support needed to implement a consistent focus on nature. All focus group and individual interviews were tape recorded to allow for a complete capture of teacher responses. Each interview was transcribed and typed into a written transcript for use in data analysis.

We analyzed focus group and individual interview data by combing through transcripts and identifying in vivo codes (using words actually used by interviewees) for each key idea represented in teacher responses. Each individual transcript took an average of 90 minutes to analyze; focus group interview transcripts took three to four hours. We then created lists of codes, identified by teacher, under each of our six research questions. Throughout both of these processes, we simultaneously identified patterns and links among codes and began forming sense-making questions that allowed us to begin looking for threads of meaning (e.g., the word "permission" is showing up frequently in teacher responses—what does this say about kinds of support teachers have experienced as they've worked to connect children to nature?).

During the coding process, we saw recurring patterns in the ways teachers described the challenges and virtues of incorporating nature focus, the kinds of support they found valuable in adapting to the change, shifts in teacher attitudes and teaching practice as the nature focus evolved, important partnerships they had fostered with parents and the larger community, and their hopes for their future work in supporting children’s learning outdoors. Once we identified clear themes and subthemes (which we will describe more fully in the summary of the findings), we went back to interview transcripts to extract descriptive teacher quotes. We then sorted these quotes according to theme and subtheme categories. As a final step, we re-sorted all in vivo codes according to themes and subthemes as a way to cross-check the strength of our analysis.

The Site

This research was conducted at The Forest Lake Family Center, which is part of Independent School District 831 (Forest Lake Area Schools) and is located in Forest Lake, Minnesota. The Family Center serves families with children from birth to five years (or until they enter kindergarten). The building, which currently houses the Family Center, also serves as home to a K–6 Montessori program and the Alternative Learning Center for grades 10–12.

Set in an established residential neighborhood, the grounds of the Family Center building allow for a generous dedicated outdoor space for the early childhood programs as well as access to a small wetland, residential streets, and open fields. The Family Center offers a variety of programming, with varying levels of involvement, to any child in the school district. We offer full integration for children with a variety of abilities and income levels. Approximately one-third of our preschool children are supported by Early Childhood Special Education staff and over 50% receive financial assistance.

Along with this primary site early childhood programming for pre-kindergarten students is offered at four elementary buildings and at Wargo Nature Center. Preschool classes at these outlying sites are taught by the teacher/co-researchers included in this study. At the elementary buildings, outdoor space varies from site to site. Basic playground equipment is the norm although all elementary buildings have some undeveloped fields or woods which can be used by the preschool classes. One elementary school has a school forest on the property. Wargo Nature Center offers a large Nature Explore Classroom along with wetlands, trails, a small lake, and open space. Children attending the nature center spend extended periods of the day in outdoor settings.

Forest Lake Area Schools is one of the largest districts in Minnesota geographically, encompassing 240 square miles. Eleven towns, cities, and townships lie within the district boundaries. Family Center programming was established in 1989 as part of a statewide network of school-based programs for young children and their parents. Involving families through direct parent education classes is a hallmark of the Minnesota Early Childhood Family Education (ECFE) and School Readiness programs, which receive partial funding from state aid and local levy dollars. In ECFE or School Readiness classes, families commit to weekly attendance to participate in parent/child activities and parent education classes. The Family Center also offers preschool classes with no parent component where children attend independently.

In addition to these state-wide programs the Family Center also offers preschool classes without a parent education component, home visits, family literacy services, intervention services and early childhood screening. A full time child care program for young parents in the community is an additional program of the Family Center. The teaching staff in Forest Lake consists of early childhood and parent education teachers. All teachers are licensed by the

Minnesota Board of Teaching and hold, at minimum, a four year degree, with 60% holding graduate degrees in their respective fields. (Site description adapted from Supporting Parent Engagement in Children’s Learning Outdoors: A Single Case Study, Bohling, Saarela & Miller 2011.)

The Staff

Name	Role	Organization
Robin Bigelow	EC Teacher / Co-Researcher	Forest Lake Family Center
Anna Duffy	EC Teacher / Co-Researcher	Forest Lake Family Center
Ruth Endthoff	EC Teacher / Co-Researcher	Forest Lake Family Center
Marianne Matlon	EC Teacher / Co-Researcher	Forest Lake Family Center
Shayna Navara	EC Teacher / Co-Researcher	Forest Lake Family Center
Sherry Pratt	EC Teacher / Co-Researcher	Forest Lake Family Center
Laurie Tessier	Childcare teacher / Co-Researcher	Forest Lake Family Center
Sue Wilcox	EC Teacher / Co-Researcher	Forest Lake Family Center
Connie Laurent	Parent Educator / Co-Researcher	Forest Lake Family Center
Carissa Waite	Parent Educator / Co-Researcher	Forest Lake Family Center
Vicki Bohling	Parent Educator / Co-Researcher Research Site Co-Director	Forest Lake Family Center
Cindy Saarela	Program Coordinator Research Site Co-Director	Forest Lake Family Center
Dana Miller	Research Director	Dimensions
Kathy Tichota	Research Site Coordinator	Dimensions
Nancy Rosenow	Executive Director	Dimensions

Supporting Elements

As part of the commitment to the nature focus at the Family Center, teachers were assured by the program coordinator that this was important and would be supported long-term. Specific ways that this occurred included compensation for time to observe and document children’s play outdoors, encouragement to spend more teaching time outdoors, and devoting meeting time to sharing documentation and ideas. Teachers in the infant/toddler childcare room were allowed to overstaff in order to assure that children were getting outside. Added paraprofessional time allowed for maintenance of materials and of the outdoor space. Phrases

such as “if you can teach it inside, you can teach it outside,” “outdoors is not just for recess,” and “it all comes back to why we do what we do” were repeated often and became part of a common language which was echoed back during teacher interviews and focus groups.

Dimensions offered ongoing support through inservice training, focus group interviews, and meetings with teachers. Fall and spring site visits underscored the importance of the research and the work of each teacher involved. Dimensions also provided technical expertise and support for publishing and distributing research summaries along with opportunities to present research findings at yearly research symposiums.

Inservice training	Date
The importance of visual-spatial learning	2005
Developing observation skills	2005
Moving to learn	2006
Nature inspired indoor environments	2006
Music and nature	2006
Learning with nature	2007
Using your outdoor classroom	2007
The arts and nature	2008
Documenting children’s learning with nature	2009

Findings

I like being part of a program where the focus is on nature.

- Carissa Waite, first year teacher

Three key themes emerged during our analysis as we explored teachers’ perceptions of sustaining a nature focus within our program. For each key theme, we identified three subthemes that allowed us to frame our data into distinct categories. The number after each key theme and subtheme indicates how many in vivo codes were identified for each category.

Key Themes	
Teacher perceptions of a changing culture	629
Change is hard	164
The support structure changes	371
Indoor and outdoor environments change	94
Changes in teacher attitudes and practice	708
Teachers think differently	260
Teachers teach differently	265
Teachers observe changes in children’s growth and development	183
Teachers create meaningful partnerships	202
Relationships with parents	109
Relationships within the larger community	44
Vision for the future	49

Theme One: Teacher perceptions of a changing culture

When we adopted a nature focus at the Family Center, it was not just a change in the way our outdoor environment looked or the time children spent outdoors, it was an entire *culture* shift that affected all components of our program. The new teacher/co-researcher role meant that teachers would be spending concentrated time observing children’s play in the Nature Explore classroom and recording Nature Notes based on those observations. From our analysis of focus group and individual teacher interview data, the first key theme to emerge was teachers’ perceptions of this comprehensive change in culture.

Teachers’ initial response to the shift toward a nature focus reflected enthusiasm, but also some hesitation. Teachers felt that the change to a nature focus was good, but at the same time, *hard*. As teachers described their early involvement with the nature focus, they used words like “questions,” “reservations,” “resistance,” “difficult,” “skeptic,” and “challenging,” but often in the same comment, they went on to describe how they began to embrace the nature focus over

time, using words and phrases like “glad,” “on board,” “exciting,” “way it should be,” and “good thing.”

Teachers were honest in describing the questions and concerns they had about the new nature focus, as illustrated in this comment from Marianne: “Looking back now, I did have a lot of questions, and maybe some reservations at first. When we were first learning about (the nature focus) it was ‘I am so excited, but how am I going to fit it into my day?’” But as teachers considered the shift to a nature focus in hindsight, they also identified ways they had come to appreciate the changes. Connie described her early impressions this way:

I found (the new nature focus) exciting, but that’s not to say that I wasn’t one of those who whined and complained about having to shift. I didn’t realize how much work it was to make that shift. But in my heart of hearts, as a nature lover, it was an exciting opportunity to offer it to families.

Sue said, “I think there was a little resistance initially, quite frankly, but I certainly am glad we did it. I’ve come on board with it.” Robin found the shift toward a nature focus challenging in the beginning, but more comfortable as time progressed: “At first I thought, ‘Now we’ve got this other thing to do.’ But now (the nature piece) is just another part of the day, and it’s just the way it should be.” Anna felt that the change to a nature focus wasn’t challenging, it was just new: “We had to rethink and come up with new ideas, which, of course is a good thing, but not always easy.”

With the new commitment to getting children outside more regularly, teachers described feeling challenged by the *time it took to get children dressed and ready*, especially in the winter. According to infant/toddler teacher, Sue Wilcox, “I think one of our biggest challenges is actually getting outside, and it has to do with the amount of time it takes to get ready when the kids are not self-sufficient in getting coats and boots on.” Sherry and Robin echoed Sue’s sentiment: “The challenge is getting 18 three-year-olds dressed and outside,” and “Sometimes

just trying to get the kids out—that is the challenge. Just the timing of trying to get on boots and coats and hats and all of that.”

Teachers also expressed feeling challenged by the *weather in winter*, especially teachers of infants and toddlers who felt limited by the heavy snows of the 2010–11 school year (84 inches total). Laurie put it this way: “Weather was not as much a challenge this year, but last year with the deep snow it was hard for us to get out there and move around, especially with the early walkers.” Connie explained that parent perceptions about winter weather sometimes posed additional challenge in the beginning: “Because most of my classes were with the younger kids, it was difficult when the winters were really hard and parents didn’t want their kids to go out.” Sherry added that depending on parents to supply children’s winter outerwear also presented a challenge: “When it is really cold and parents don’t bring their snow gear it is a little hard, but we manage.”

An additional challenge that made the initial shift to a nature focus feel hard had to do with the *adjustments teachers needed to make to record regular Nature Notes* in their co-researcher role. One challenge Sue described was keeping up with the pace of toddler play in the Nature Explore classroom. “With toddlers, it can be over so quickly. You see them doing something and rush over there, and they’re on to something else.” Laurie expressed concerns that observation and documentation tasks would distract her from supervising children. “My main challenge is being able to write down observations while simultaneously watching the children and making sure they are safe, especially with infants and toddlers.” Some teachers described challenges in coming up with the right “system” for recording Nature Notes. Robin expressed initial uncertainty in her organizational approach: “I don’t know if I have really found the best

(Nature Note) system that works for me,” and how to use Nature Notes with parents; “I feel challenged because, what if I don’t have (a Nature Note) for everybody?”

At the same time that teachers were feeling stretched and challenged by the new nature focus, they were noticing that the *support structure* within the program was changing, as well. We were interested to note that the greatest concentration of teacher comments in the data overall (371 individual codes total) fell into this category of “support.” Teachers identified five specific types of support in their interview responses:

1. Support found in research
2. Formal training
3. Support of leadership
4. Peer support
5. External support from Dimensions

Teachers cited numerous examples of how they felt their work was supported by the *research* on children’s learning outdoors. Eight out of twelve teachers cited research as a clear source of support. When teachers talked about the support of evidence-based research, they used words and phrases like “validates,” “reinforces” “gives us intentionality,” and “backs up best practice.” Connie attributed her new found confidence in promoting children’s outdoor learning to research. Carissa felt that research helped her to “compete with all the marketing on technology” in her work with parents. While some teachers spoke of “research” in broad terms, others spoke specifically about the study they were involved in at the Family Center. Marianne stated that “we’re in a constant battle to stay true to what is (developmentally) appropriate for young children” and that the collaborative research in Forest Lake “reinforces what we do—what we believe.” As program administrator, Cindy felt that participation in the research was integral

in sustaining a nature focus: “The findings reinforce the whole idea of being focused in a particular area and staying there.” Connie described the weight of being personally involved in research with this poignant comment: “I think that to read research and share research is one thing, but when you’ve been a part of the research, it takes on a whole new life... it’s not just research that somebody else did, but research that we’ve been a part of.”

Seven out of twelve teachers identified *formal training* on children’s learning outdoors as an important support in transitioning to a nature focus. Teachers talked about their personal reactions to the in-services and workshops they had attended on children and nature, using words and phrases like “valuable,” “critical,” and “most important.” Connie, Vicki and Sherry made direct links between the education provided through in-services and staff “buy-in” to the nature focus. Four teachers talked about the importance of having classroom paraprofessionals receive the same formal training on children’s skill development and documentation. Vicki shared that “parents need to know the value of observing children’s skill development and getting children outdoors,” and Robin added, “parents observe things we don’t necessarily see, and we can count on them to give us feedback.” Robin also commented that substitute teachers don’t come in with the same kind of knowledge base: “We have to backtrack a bit if we have substitutes. If we have a new sub for the day, I have to remind myself that this is probably a new experience for them, and I may need to give them a mini introduction to what we do and why it’s working.” Laurie extended this thought to new staff hired after the initial trainings: “I think of our staff who have started after those in-services and how much they are probably missing in the understanding of this.”

The significant role of *leadership support* was unmistakable as we looked at the data. In focus groups and individual interviews, 100% of Family Center teachers spoke about how integral the support of administration was to maintaining a nature focus within the program. Connie described administrator buy-in as “key” to adopting a nature focus, adding, “I don’t think we could do it by ourselves.” Sherry also characterized the support of leadership in make-it-or-break-it terms: “If you don’t have the support from the person at the top, it’s not going to happen.” Ruth said she liked knowing that “someone was taking charge and getting things done,” and Shayna said that without the support of administration for the nature focus, the outdoor space would be “just another playground.” Anna added that she felt “lucky” to have “strong leadership support” for the nature focus, and Marianne expressed a value for administrative support “not only in our (building) but district-wide, going up the ladder.” Marianne also commented on the staying power of the nature focus, which she credited to program leadership: “It wasn’t like (the nature focus) was something we tried and then it was gone the next year. It is ongoing... like a tree that keeps (branching) out.” Some teachers detailed specific, pragmatic ways they had experienced administrative support. Robin said that provisions made by leadership to “have (NEC) materials on the cart and having (a paraprofessional) take it in and out” made teaching outdoors “a lot easier.” Laurie acknowledged that she and her colleagues were able to overstaff in the daycare in order to get children outside while other children were napping, adding, “This shows me how important this focus is for our center and how valuable it is for children.”

Having program leaders encourage and condone the time classes spent in the Nature Explore classroom was important to teachers. The word “permission” appeared in seven distinct teacher comments within the data. According to Marianne, “I always took children outside, but (the nature focus) gives me permission to take children outside more and longer.” Sherry agreed

that she already valued getting children outdoors as much as possible prior to the establishment of a formal nature focus, but she appreciated the more intentional support of her efforts, realizing that it might be quite different in other settings: “I used to worry and think people would wonder what we were doing out there... I mean, if we spent all day outdoors at some schools I would probably get in a lot of trouble.” Robin said she felt more confident being told that it was “OK to be outside,” adding, “We don’t always need to be inside working on something but we can be learning outside, too. We can take things that in the past we maybe would have done inside—we can take them outside.”

Having the *support of peers* was also important to teachers as the program shifted toward a nature focus. Seven teachers spoke about the impact of peer support, using words and phrases like “encouragement,” “helpful,” “valuable,” “all in this together,” and “makes it easier.” Sherry felt that the nature focus gave teachers a united mission, providing a consistent thread throughout the program: “One of the biggest changes I’ve seen is that we are all working together—even more because we have a single focus rather than individual teachers and individual classrooms doing their own thing.” Anna felt that teachers were “working together more than we used to” and were “more on the same page.” For Connie, peer collaboration was “huge,” adding, “we’ve worked together to organize and implement (the nature focus) and on what to do when challenges arise.” One of the biggest areas of peer support identified by teachers was the ability to share stories, observations, documentation, and ideas with colleagues—informally with one another and during teacher meetings and site visits. For Ruth, hearing the experiences of peers provided new motivation: “I’ve been inspired by the stories other teachers have shared. They make me want to do more.” Sue described sharing with peers and “reading what other people

have observed” as an “incentive” for further work. She identified particular benefits of working collaboratively versus functioning independently with this thoughtful comment:

It is hard to teach in a vacuum where you are on your own. It is always really helpful to have other staff to bounce ideas off of or share the responsibility for materials. You don't have the same energy or enthusiasm if you are out there on your own that you do when you are part of a group.

The Dimensions Educational Research Foundation provided critical *external support* to teachers in their co-researcher role through formal training, semi-annual site visits, teacher focus groups, documentation feedback, and published teacher work. As teachers described the support they received from Dimensions, they used words and phrases like “framework,” “foundation,” “fit our needs,” “bigger than us,” “part of something larger,” and “major building block.” Connie said that Dimensions served as the “larger piece,” providing insight into “what we are doing and what others are doing.” Several teachers spoke about receiving new ideas and new energy during the semi-annual site visits provided by Dana Miller and Kathy Tichota, particularly during teacher focus groups. According to Vicki, “Site visits give us the chance to pause—to stop the flow of activity and look forward and backward.” Ruth added, “(The site visits) keep me focused and reassure me that I’m on the right track... it’s really important to have that connection.” Robin stated simply, “When Dana and Kathy come, they bring it all back.” Anna found participation in teacher focus groups helpful “just to bounce ideas and to start thinking.” Cindy credited Dimensions with providing “accountability, structure, and motivation” in the development of the nature focus at the Family Center, adding, “Without this framework and incentive we may have gone down this path, but it wouldn’t have looked the same.”

A third subset of data related to teachers’ perceptions of a changing culture had to do with *changes in indoor and outdoor environments*. As we looked at the data related to changes in the environment, teachers used words and phrases like “warmer,” “softer,” “less sterile,” “more

inviting,” “more welcoming,” “more pleasant to teach in,” and “more relaxed” to describe the physical changes they had observed. Seven out of twelve teachers spoke about replacing plastic materials with natural ones, related to the purging of plastic playground equipment and the replacement of brightly colored plastic storage containers with natural baskets and bowls. In describing *changes specific to the outdoor space*, Sue said she had forgotten “how stark it was” when she looked at before and after photos, and Laurie said she noticed the intentional shift from “less hard equipment to more nature-related items.”

Seventy-five percent of teachers made specific comments related to changes they had observed in *indoor environments* as a result of the shift to a nature focus. Teachers talked about “bringing nature in” as they described specific changes made in the materials offered to children indoors, including leaves in the sensory table, real branches and magnifying glasses, wildflowers, dried plant material, snow, pumpkins and gourds, and natural items used as art collage items and manipulatives. Teachers also noted the influence of the nature focus in more subtle aspects of the indoor environment—white industrial wall paint replaced with natural tones, the use of photos of natural items in the classroom instead of “cutesy posters,” and photos in hallways and waiting areas of children at play in the Nature Explore classroom.

Carissa, who was a parent in our program for a number of years before she became a staff member, had this comment to offer about the *sequence and pace of changes* to the environment: “At first the playground looked different and slowly (the nature focus) began to appear in the classrooms and parent rooms. But it was slow and gradual—losing all the bright plastics to feathers and sticks.” Connie addressed sequencing in a different way. She felt that alterations to the physical environment served as an important change agent in helping staff adopt the nature focus in their day to day practice: “If your environment changes then you kind of have to change

the way you do things. Without changing the environment first, I'm not so sure we would have been able to make the other changes in (classroom practice)."

Teachers described how changes in the physical outdoor environment provided *enhanced experiences* for children, staff, and families. Marianne felt there were fewer "no"s for children in the Nature Explore classroom and added, "The environment out there provides so many more opportunities (for children) to try, to explore, to puzzle about things, to ponder, and to problem solve." Marianne also described how specific properties of natural materials provided unique learning opportunities for children.

It's been fun to watch the materials change over the years—like the tree cookies and the big hollow logs. Over the years they've dried out, and they're a lighter weight so children can carry them and roll them. As materials age they can be such different resources.

Sherry felt that the absence of "walls" in the outdoor classroom gave children more freedom and room to "spread out and work with different materials." Sue said that she noticed less competition between children when they played outdoors, and she noted that the changes in the space made her "love being able to go outside, too." Laurie indicated that the different areas established in the NEC helped promote all kinds of learning, "not just gross motor," and she saw these clearly delineated areas as helpful in "teaching families how important being outside is to the development of their children."

Theme Two: Changes in teacher attitudes and practice

Throughout the data, we saw examples of how teachers were *thinking differently* as a result of the change to a nature focus at the Family Center. In individual and focus group interviews, teachers indicated a sense that the nature focus had been transformative—both personally and professionally—using phrases like "changed me," "reenergized me," "encouraged me," "gave me a new focus," "expanded my vision," and "made me happier to come to work."

We feel it is important to note here that half of the teachers we interviewed emphasized that their value for learning in nature and deep personal connections to nature existed long before our intentional program shift to a nature focus. Teachers frequently used the word “always” to describe their *longstanding connection to nature* (“I have always been a nature girl,” “I’ve always known (nature) is an important part of learning,” “I have always thought outdoor time was important,” “I have always been an outdoor kind of person”).

At the same time, teachers attributed an extension of this value to the shift in focus, using a kind of “*then and now*” phrasing to describe changes they had experienced in their thinking. Shayna used this type of comparison to talk about her changed posture related to weather: “To me it’s just the change in attitude: from ‘it’s too cold, misty or muddy’ to ‘as long as it’s not freezing cold we’re going to go out’.” Anna offered her thoughts about changed thinking regarding messy play: “Now I have no worries about children getting dirty. It’s a different way of thinking.” Robin told a story of an experience she had had at home that illustrated this “then and now” thinking related to a value for natural materials: “I recently watched a neighbor cutting up logs. Before I would have been glad for them to be taken away, but now I ask, ‘Could we load those up and bring them to school?’”

In all of the training Family Center staff received on supporting children’s learning in nature, a high premium was placed on the importance of *close observation skills*—slowing down and looking for the intricate detail in children’s work. As teachers described changes in their thinking related to children and nature, their practice of close observation was evident. Sue talked about experiences she’d had as she noticed more detail in the world around her:

I notice that I’ve expanded my scope of vision when we go for walks or when we are outside. In the past I just looked at the whole environment, but now I am able to look at specific things. If we are walking in the woods now I’ll see something interesting in a

tree log where the woodpeckers have chiseled out holes. I'll stop and observe and pick up things that might look interesting to bring into the environment (at school).

One of the quotes frequently used in Nature Explore workshops to support close observation comes from Marcel Proust: "The only real voyage of discovery consists not in seeing new landscapes, but in having new eyes." Shayna made a reference to this quote as she described new thinking she had done since the adoption of the nature focus: "I appreciate being outside much more and seeing what children are getting out of it. I'm seeing opportunities I didn't see before—the 'new eyes' you talk about." She extended her thoughts about observation to the importance of child-initiated play and the value of looking through children's eyes:

I think it would be easy to come out and show the children what to do with the tree cookies and things like that, but I think it is important for teachers to really let the children develop their own ideas. You can expand on those and bring up some teachable moments, but when kids look at those things, they have such different eyes.

Teachers provided many examples of *teaching differently* as a result of the nature focus at the Family Center. Here we saw more "then and now" comparative phrasing in the data, though in this case, the examples teachers gave were specifically related to teaching practice. As a licensed parent educator, Connie described changes she had experienced in teaching parenting classes:

Before we didn't always have parent classes discuss the importance of taking children outside and all the things children learn out there. It was just not a topic we focused on in a formal way. Now the wonder of nature has become one of those topics we will always focus on.

Shayna talked about allowing her students to experience spaces and materials that she would have avoided prior to the nature focus: "Before I would kind of leave that muddy corner or sticks alone. Now I am much more open—I understand the importance of (these experiences). This kind of play has made an impact on me and on my students, as well." Sherry described one way she had substituted a traditional indoor material with more natural ones during math

exploration: “Before we might have measured things by how many Legos long they were—now it would be sticks or apples.” And Sue claimed higher levels of awareness and intentionality in her interactions with children:

I probably did some of these things before, but I am more aware of why I am doing them now. I’ve become more aware and more observant in terms of what children are doing. I’ve become a better observer and a better listener. I think I’ve gotten better at asking questions to understand what is going on in the children’s minds—what they are thinking and processing.

Teachers said they took children *outside more frequently* and for longer periods of time as they learned more about the benefits of learning in nature. Anna said, “We are taking children outside more—every day—which was not always the case before.” Robin agreed that more of her class time was occurring outdoors, and she added she was spending more time observing children. Laurie said, “I have noticed that our inside gym is used more infrequently as opposed to classes going outside.” As teachers spent more of the teaching day outdoors, they described *higher levels of engagement* with children. Sherry said she was more likely to “become a part of children’s play” and Cindy noted, “I still notice teachers (at other sites) who see outdoor play as time to be standing and talking, where I see our teachers directly engaged with their students.”

Seventy-five percent of teachers said that the nature focus had helped them to *step back and slow down* in their work with children. Five of these nine teachers specifically attributed these enhanced teaching skills to their experience with recording Nature Notes. Laurie said that she felt the nature focus had allowed her to become a better observer of children and relax more as children explored their environment:

I have learned through (the nature focus) to really watch children and see what they are learning. Just by watching them float a squash in a bucket of water and not worrying about them getting their mittens all wet, but really see what they are learning. I have been able to step back and see more of what is going on.

Marianne described how the nature focus had supported her in to moving more slowly through curriculum to allow children to have deeper, richer learning experiences:

(The nature focus) slowed me down, and that is okay. Now I extend and repeat things, and I take many more activities outside. Something that at one time might have been set up for one day we will now do another day, or we will do it another week. I find that the children love coming back to do something a second time.

Ruth described stepping back and listening as a new experience within her teaching role in outdoor settings:

For me it was not having to act, but to just stand back and listen—I'd never done that before. The nature piece had me stand back and listen—it helps me figure out what children are getting out of being in the grass, or today it was the fabric with the wind blowing. It's stopping and taking mental note and then talking to parents about it, too.

Ruth's comment about *sharing information with parents* was echoed by the majority of her colleagues. Eighty percent of teachers said that they were more intentional about talking about the value of nature with parents. Marianne said, "We communicate that outside is just as important as inside." Ruth added, "We let parents know we go outside all the time, so bring your boots and snow pants. We're showing them how important it is and hopefully it will trickle down." As a parent educator, Carissa related her experience in working with parents new to Family Center programs: "I talk to them and tell them this is who we are—this is part of our culture. I give them a history of the program and the research." And Robin stressed the importance of moving from talk to action by getting parents outside with their children during the teaching day:

One way we have definitely changed is that we take parents outside more. We do group time outside, we take snack outside, and we do our tree walk with parents. It's not only a great benefit for the children to be learning outside but (it's so important) to have the parents come out and interact with them.

Teachers described how they had used *documentation* to share information with parents on their children's learning outdoors. Sue saw Nature Notes as a "great way to connect with

parents,” adding, “When we share Nature Notes with parents, they can see what children have done outside.” Marianne said that Nature Notes were particularly helpful in communicating skill development to parents of children with special needs: “I’ve seen the impact (documentation) has made on parents of children who are receiving specialized services. They can see the skills that are strengths in those children that would have been difficult to see in some other settings.”

And Laurie described how Nature Notes had served as a vehicle to both reinforce and inspire family time outdoors:

I think that for a family who already includes outdoor time as a big part of their family time, (Nature Notes) reinforce that they are doing well as a parent—kind of a pat on the back and encouragement to keep it up. Other families who may not participate in outdoor activities as much at home have been able to see through our observations and photos what their children can experience, so they might be more likely to go outside and try some of these things themselves.

As the nature focus progressed, teachers began to see *changes in children’s growth and development*. Here, teachers described specific behaviors and skill practice they observed in children that were unique to the outdoor environment. Throughout this section of data, teachers made connections between the unique learning opportunities in the Nature Explore classroom and children’s demonstrated skill practice. Out of 183 in vivo codes identified for this subtheme, teachers used the word “more” 16 times to describe the enhanced skill development and behavior they observed in children in the outdoor classroom:

- More excitement
- More relaxed
- More social
- More thoughtfulness
- More language
- More creativity (2)
- More calm
- More comfortable
- More cooperation
- More problem solving
- More stories

More running
More social interaction
More building
More fun

Teachers used similar comparative phrasing as they provided examples of *behavioral changes* they observed in children in the Nature Explore classroom. Robin, in describing some particularly challenging behaviors she had seen in two boys in one of her classes, said she noticed the boys were much calmer in the Nature Explore classroom, where, she said, “there’s just a lot less aggression and anxiety.” Ruth noticed that this increased sense of calm was sustained as children moved back indoors: “The children are calmer when they come in from outside—they always have stories to tell about something they did outside.” Shayna described children as “more emotionally balanced” outdoors, offering this example of a shift toward more positive behavior: “Just this morning with my three- and four-year-olds, they were not getting along inside and were not playing together. Outside they were calling each other by name, playing together in groups and really enjoying each other.” Ruth attributed some of the behavioral changes she had observed to a higher degree of child-directed play outdoors: “Indoors, children tend to argue about who gets what, but outside they just get along better because it’s not teacher-driven. It’s them creating their own play.”

Throughout this data thread, teachers shared examples of *children’s skill development* in the Nature Explore classroom. As we analyzed the interview data we found that teachers noted children’s skill development in 16 distinct learning areas, with particular concentrations in social skills, language and literacy, creativity, and problem-solving:

(*n* = *in vivo codes*)
Social skills (23)
Language/Literacy (8)
Creativity (7)
Problem-solving (6)

Intrapersonal skills (confidence, curiosity, independence, risk-taking) (5)
Motor skills (4)
Math (3)
Artistic expression (1)
Caretaking (1)
Leadership (1)
Science (1)
Sensory exploration (1)

Teachers clearly saw the Nature Explore classroom as a place that inspired rich *social* exchanges between and among children. In describing children’s social skill development, teachers used phrases like “wonderful interactions,” “children come out of their shells,” “role playing,” “get along better,” “everybody is involved,” “more cooperation,” “working together,” “playing in groups,” and “new interactions.” Robin said that she noticed “more cooperation and more collaboration” among children in the outdoor classroom, adding, “everyone is accepted outside.” Anna added that “at Wargo (a local nature center), we’re outside all the time. There are a lot more social interactions, and it’s easier (for children) to join the group.” Marianne said she had observed “interactions that you don’t always see indoors” in the Nature Explore classroom, and Sue commented that with toddlers, “kids seem more social outside because they are watching other children move tree cookies or logs and they want to help.”

Along with enhanced social interactions, teachers saw examples of children’s *language and literacy* development in the outdoor classroom. Marianne gave an example of how bumblebees inspired language and conversation in her students: “Sometimes it takes five minutes to get from the door to the sidewalk because the children all know to look for the bumblebees, and they want to talk about it.” One particularly poignant story of language practice in a preschool class came from Shayna:

We have one little guy who has maybe said two words to us inside—he is very quiet, and he is receiving services for speech right now—but when he is outside his confidence level just seems to soar. He will begin talking to us in ways we never hear inside, as he brings

us things like pinecones. It is evident that he feels much more comfortable outside—it feels like ‘his space’.”

Children’s *creativity* was also cited frequently by teachers in individual and focus group interviews. Sue said she felt that the Nature Explore classroom “fosters more creativity” and that outdoors children have “more freedom to express themselves.” She went on to describe the creativity she saw in children’s dramatic play outdoors, noticing “They have incorporated things that are happening outside of school into their role play.” Robin said that in the NEC, children were “free to use their imaginations.” And Marianne related an example of how children’s ideas sometimes trump adult thinking: “(In the winter) the children wanted to take the sled outside, but there was not snow. We would have never thought of that. I never saw children have so much fun with a sled when there was no snow!”

Teachers also cited evidence of children developing *problem-solving* skills in the Nature Explore classroom. Marianne felt that the outdoor classroom afforded “more opportunities for problem-solving,” and Ruth said she observed children “working out their own problems” outdoors. Robin said she observed more examples of children problem-solving outdoors than in. Sherry described the relationship she saw between natural materials and problem-solving as she observed one of her students working in the Messy Materials area:

A few days ago I was watching Andy outside as he worked with all the big logs and sticks. He wanted to move a big stump, so he used a stick as a lever. He couldn’t have done that in the indoor classroom—there just isn’t the space or the same kinds of materials.

Beyond observations of behavioral changes and children’s skill development, teachers also noticed the pure *enjoyment* children experienced when they played in the Nature Explore classroom. Teachers used the word “fun” eight times in this data strand to describe children’s enjoyment of their time outdoors. Teachers said they noticed how children in their classrooms

desired outdoor play. Marianne said “the children want to be outside more,” and she suggested that being outside is organically part of a child’s natural habitat: “We are on their turf out there.” Vicki felt that good materials drove children’s enjoyment of the outdoors: “What children love about the outdoors is all the loose parts—things they can move and manipulate.” Robin used the word “joy” as she described what she saw and heard in children’s play outdoors, intimating that adults are naturally drawn to things children love:

It’s not just the sights (in the NEC), but the sounds. Yesterday I was observing children outside—they were playing, laughing, and using their imaginations. It just made me so happy to hear that. If I were a parent, that would be such a draw to me—to hear such joy.

Theme Three: Teachers create meaningful partnerships

As we analyzed our data, we discovered a concentration of 202 in vivo codes that pointed to the relationship between community partnerships and a sustained nature focus. We found that as teachers responded to the nature focus with their own changed thinking and teaching practices, they were diligent in communicating the value of children’s learning in nature to parents, and they began to see ways that parents were “owning” the nature focus for themselves. At the same time, teachers became more aware of the need to share this value with the larger community, as a way to sustain the nature focus over time. Teachers also identified their hopes for future work, understanding that in order for the nature focus to stand, a longer range vision must be established.

The data surrounding this theme showed that teachers clearly understood the importance of creating *relationships with parents* in moving the nature focus beyond the confines of the school day. As Robin stated, “Parents are a key piece. We have their children four, five, six hours a week—that’s a lot of hours that we’re not with them.” From our analysis of transcript data, we identified 109 in vivo codes that addressed the results that teachers saw regarding ongoing communication with parents on the value of children’s learning outdoors.

As teachers shared information with parents on the value of children’s learning outdoors, they began to see evidence of a change in *parent awareness* related to the nature focus. Vicki saw a connection between the professional growth of teachers and increasing parent awareness within a trusting parent-teacher relationship: “Parents mirror the confidence of the staff. As we’ve shown confidence and support, parents have come right along.” Connie observed that the nature focus was more evident in conversations with parents. Sherry noticed that “parents are thinking differently—they’re ‘getting it,’” providing specific examples of the increased parent awareness she had observed:

I think the parents are becoming more aware of how their children behave outside and even inside and how good it is to get them there so they feel better, eat better, sleep better. I think families are also more aware of the way children learn, and that they need to be comfortable and enjoy themselves, too. Learning doesn’t need to happen at a desk with a worksheet.

Teachers recognized *changes in parent attitudes about children spending more time outdoors at school* as the nature focus progressed. Connie reflected back on the early days of the nature focus: “When we first started, the parents would ask, ‘Are kids going outside today?’ Now they just know.” Marianne observed a similar shift in attitude in the parents of her students: “I don’t seem to get much ‘oh, you’re not going to go outside today, are you?’ anymore—especially from the families who have been with us for a couple of years. They just know that this is part of what we do.” Teachers also recognized that parents’ support of more classroom time outdoors meant a higher level of commitment in making sure children had the appropriate clothing to go outside every day. Sue said, “Parents have the expectation that we are going outside so kids just come prepared.” Marianne observed an increase of understanding and support of children’s time outdoors the longer a family was involved in the program: “The families who have been with us for a couple of years just know that this is part of what we do so

they send their children fully ready to go outside.” Robin recognized what this higher level of parent commitment meant for a family with multiples: “We have a mom with triplets who comes every day with a huge bag of (outdoor) gear. I think if she can do it, anyone can.”

As teachers provided education, modeling, and support to parents on the importance of children’s growth and learning outdoors, they observed a growing *school-to-home* connection as parents moved from awareness to action. Vicki stressed the weight of this exchange by describing the school-to-home connection as “the key to sustainability.” Robin shared her delight in seeing the transfer of experiences in nature from home to school, as well. Within this strand of data, we identified nine distinct types of school-to-home/home-to-school connections:

(n = in vivo codes)

Spending time outside at home as a family (11)

Making sure children’s outerwear gets to school each day (4)

Parents better observers (3)

Changes in yard space at home (less manicured, creating an outdoor classroom) (3)

Collecting natural items from home to share with classroom (2)

Making sure adults have appropriate outerwear (1)

Sharing information on children and nature with family, friends and neighbors (1)

Parents use NEC during non-school hours (1)

Using NEC as criteria for choosing school (1)

Seventy-five percent of teachers felt that the information and experiences provided through the nature focus at the Family Center had influenced the time families spent outdoors in home settings. Connie described a relationship she had observed between participation at the Family Center and time spent outdoors at home: “I can tell parents who have been a part of our program—they get their children outdoors more.” From comments Sue received from parents, she felt that parents were also spending more time outdoors with their children: “I’ve heard parents talking about doing more things outside with their children. They’re spending more time with them—not just sending the kids out.” Ruth had a similar impression: “I think more parents are trying to be better about taking their kids outside and being out there with them. Parents are

showing that they love the outdoors too, and that they are willing to play with them, make snow forts, mud pies, or let them help in the garden.” Shayna said her perceptions of family time outdoors at home came directly from her students: “It seems like I hear a lot about children being outside with their families, especially after they come back after a weekend.”

Teachers identified eight additional types of school-to-home connections within this same subset of data. Anna said she felt the nature focus was helping parents notice the detail in their children’s play outdoors: “Parents are better observers of their children—that’s a big change.” Two teachers provided examples of ways parents had intentionally structured their physical space outdoors. Shayna said that “Parents are putting outdoor classrooms in their backyards,” and Sue shared that “parents who are moving into new additions are not in a hurry to landscape because children are playing in the dirt and having so much fun outdoors.” Marianne noted a home-to-school connection in the form of collected natural items: “I always know parents are ‘getting it’ when they bring in materials—milkweed, cattails—their eyes are looking out for things.” Connie understood that sometimes parents are good about outfitting children for winter, but may be less likely to think about their own gear. She noticed that as parents gained information through the nature focus, however, “more are saying that they have the clothes or boots to be able to go out with their kids.” Sue shared examples of parents sharing information on the value of outdoor play “with other kids in the family, neighbors, and friends.” Ruth said she knew of parents who enjoyed spending family time in the Nature Explore classroom outside of school hours, and Robin shared an example of a family who specifically chose the Family Center because of the Nature Explore classroom: “I think one of my parents summed it up when she said to me, ‘The reason I picked this school for my child is because of your playground.’”

Our analysis of the data indicated that teachers also recognized *relationships within the larger community* as key to sustaining the nature focus. This subtheme contained the shortest list of in vivo codes (44), but we felt the content was no less valuable in helping us understand teacher perceptions of sustainability. In this section of data teachers identified 1) partnerships they had already forged within the larger community and 2) community partnerships they would like to pursue.

Though teachers clearly recognized that the nature focus had become an integral part of their work at the Family Center, they also understood that this work was far from mainstream within the larger community. Shayna said that as she talked about the nature focus at the Family Center with friends outside of the district, “they had no idea that something like this existed.” She also identified a specific strategy for addressing this disconnect: “I think one of the most important things we can do is to keep sharing our findings with others—what we’re learning.”

Teachers recognized that the nature focus within early childhood at the Family Center was still fairly unknown within the larger community, even within other parts of the school district. Sue said, “We need to get to administrators and talk with them about the importance of supporting (children’s learning in nature).” Shayna expressed a desire to get the nature focus “out district-wide.” She added, “There are a lot of (older) kids who need (nature), too. I think our (secondary) schools would benefit from taking students outside, too.” Robin added, “It should really be part of the (K–12) curriculum. There’s a science and math curriculum, but we need a nature curriculum.”

Teachers underscored the importance of getting community members to visit the Nature Explore classroom to see the value first-hand. Connie said this was probably the best way of “getting your foot in the door.” She added, “You can talk until you’re blue in the face, but if

(people in K–12) see it, (the space will speak for itself).” Sue also felt that visual messages bore weight: “Even if we’re not physically out there talking about it, (the NEC) is visible to people. They’re driving by and seeing it.” Laurie underscored the value of families in the community putting themselves in the space: “They just have to come in with their children and experience it.”

As program administrator, Cindy cited ways the nature focus at the Family Center had garnered attention from the higher ed community and within early childhood professional groups. “In some circles we’re the ‘go-to’ program when it comes to nature. We’ve been at more statewide conferences this year, and at places we’ve never presented before. I think we need to expand that.” Cindy stated the importance of tapping into established networks and stressed that all teachers can serve as ambassadors of the nature focus. “It’s a matter of finding those places where you’re already connected and taking the message to them. The message has to come from all of us, not just a couple of voices.”

Teachers identified 4–H groups, health care organizations, local nurseries, private businesses, and teacher preparatory programs as additional partnership opportunities. Robin shared her experience in making generational links to sustain the nature focus. She described the work some of her preschool classes had done to help install some raised bed gardens at an eldercare facility across the street from the school. “This goes farther than just our kids—it’s going two to three generations deep. (These experiences) will trickle over to their families and to the next generation.”

Vicki felt that the work Family Center teachers had done to slow down and tune in more fully to student learning was important to share with other educators. “I think we have so much to say about what the nature research reinforces about slowing down. We have colleagues who

would love to slow down, but assessment keeps pushing us. We should be bold (in saying to others), ‘A lot of what we do at our school happens outside—try it.’”

In our analysis of the data we identified 49 in vivo codes that described teachers’ *vision for the future* in sustaining the nature focus at the Family Center. Their collective vision included hopes for enriching the Nature Explore classroom space, a desire to expand the nature focus to outlying elementary school sites, and enhanced classroom practice.

Teachers identified 13 new or expanded elements they wanted to see added to the Nature Explore classroom over time. These “wishes” included:

- Ways of incorporating water
- More space for gardening
- A greenhouse
- A tree swing
- A large fort structure
- More variation in surface elevation
- A raised tree deck
- Climbing rocks
- Additional climbing logs
- More tunnel features
- More ornamental grasses
- A platform stage in the Music & Movement area
- A vertical drum

Teachers at outlying sites had specific hopes for their preschool classes within elementary schools. Sherry said, “I would like to have a messy materials area (at Lino Lakes). I make do and pile up a bunch of sticks, logs and rocks, but I would love to have a mini Nature Explore classroom.” Robin said that adding a digging area and messy materials area at her outlying site would “make things better.” Anna added, “I’m hoping in the future we’ll have something similar to the Nature Explore classroom at our elementary school. Right now we have some woods and a big playground. If we got a little outdoor classroom going, the other teachers would be able to see how we use it.”

Teachers also identified ways they hoped to sustain the nature focus through enhanced classroom practice. Vicki stated a hope to simply “get parents outside more.” Marianne hoped to “share more information with parents through newsletters and articles.” She also identified a desire to improve the way digital photos are used to communicate classroom activity to parents: “I want to come up with a simple, easy way to incorporate the pictures we take and get those up to share with parents at the end of the day. That way parents can stop and look at them, and we can have a conversation with them about our day.”

Discussion

Sustainability can be an elusive goal in program planning. How do we maintain focus yet move forward in all areas? Teachers identified some of the elements that were essential to maintaining the focus on nature at the Family Center. Within the themes of this research four primary elements emerged; challenge, support, perspective, and relationships.

When thinking about sustainability it is essential that we recognize the importance, even the necessity, of challenge in the equation. Teachers reported that they felt challenged by the shift to the nature focus but that meeting the challenge and moving to a level of mastery gave them a sense of personal accomplishment. It also gave them a sense that their efforts were worthwhile and meaningful. It is difficult to have a sense of accomplishment around a task that is easy or overly familiar. Yet any challenge also brings with it a certain amount of trepidation as the long-term outcome is unknown. When planning for long-term change this moment of trepidation must be factored in. When presented with the challenge of taking on the nature focus, teachers found themselves excited by the possibilities, but since there were no guarantees regarding the outcome, they also experienced a typical amount of trepidation. In focus groups and interviews teachers recognized that because the task was **not** easy was exactly the reason that it was worthwhile and meaningful. From an administrative perspective a certain level of

resistance, something that is often seen as staff being uncooperative, can actually be interpreted as a positive sign that the initiative provides a challenge. A pause at the beginning of something new is a natural response to a challenge. The moment of initial resistance or pause is a good time to re-frame the project, give teachers a chance to talk about their concerns and provide goals and timelines for the beginning steps. One of the most reassuring things that staff are waiting to hear at this point is that leadership will provide adequate support through the process and also that the initiative will be long-lasting. Adding another project, curriculum, or focus area to a teacher's pile with no promise of continued attention is one of the quickest ways to bury enthusiasm and personal investment.

Teachers describe finding a tipping point where they began to see the benefits and worth of the nature focus rather than the inconvenience or challenge of it. As Robin states after the shift had occurred, now it is "just the way it should be." Getting to the tipping point is not immediate and without adequate time an initiative comes to an end prematurely leaving teachers in the phase of inconvenience and challenge rather than benefit and worth. This tipping point is when the focus on nature truly began to be part of the culture at the Family Center. Like climbing a mountain, there comes that moment of cresting the summit and fully understanding the value of the climb in the splendor of the panorama in front of you.

There is no formula to predict how long it will take to get to the "A-ha!" moment of a project. The climb to the crest can take a number of months or even years. Early in the process of installing the Nature Explore Classroom a master gardener gave us this advice as we impatiently waited for plantings to fill in "The first year they sleep, the second year they creep, and the third year they leap." We found that the advice could also be applied to implementing culture change in a program. At the Family Center the three-year rule aptly described the time it took for

teachers to move from processing ideas through the beginning small steps of change to enthusiastic implementation and pride in the accomplishment. Genuine change requires patience and tending over time and results in personal changes as well as program changes.

A sustained focus over time creates shared experiences and is essential to building a cohesive support network for teachers. At the Family Center, support came from a number of sources, each providing validation, affirmation, and accountability. All of the teachers agreed from the beginning with the philosophy that children benefit from outdoor learning, yet they clearly recognized the value of support from a variety of fronts throughout the process. Being part of something larger and the strength gained from shared goals and beliefs was cited by teachers when they described support from staff training, peer collaboration, administrative leadership, the involvement of an outside organization (Dimensions) and the research itself. Collaborating together and working toward a shared vision provided accountability and motivation while ongoing expectations from leadership—both internal and external—pushed teachers to excellence from different directions.

Support took on a number of differing shapes. Some support was in the form of expectations or benchmark goals. Certain expectations (such as every class spending parent/child time outdoors a minimum of once each trimester, or completing documentation regularly) came from program leadership. Teachers were expected to share progress and observations during regularly scheduled meetings. Dimensions provided site visits which required the program to keep documentation and analysis up to date. Site visits were the impetus to inch it back up with a “company’s coming” mindset. These types of expectations pulled us toward the crest of the mountain requiring us to strive a little harder, meet deadlines, and establish the next goal.

Support also took the form of shared conversations and experiences providing opportunities for reflection and collaboration. Teachers shared stories and observations formally during individual interviews, focus groups, and teacher meetings, but also informally in daily conversations and planning. These shared conversations occurred because there was a clearly identifiable focus and purpose across the program providing cohesive collaborative opportunities. Collaboration and reflection allowed teachers to occasionally catch their breath and refuel before moving forward.

Finally, the support structure provided foundational footholds for teachers and parents. The focus on nature and changes in teacher practice at the Family Center were built on research. The research that Dimensions brought to staff development training was based on ten years of analysis and field testing at their Nebraska site. The research conducted at the Family Center and two other research sites located in California and Nebraska was focused on children's skills, parents' attitudes, and teachers' beliefs. Teachers were co-researchers at all of these sites giving the research findings added weight and meaning. In order to promote change that is meaningful and sustainable, teachers need to have a clear understanding of why they do what they do. Being directly involved in the research helped give teachers that understanding. Teachers who are well informed and can speak clearly about the "whys" of their practice are also very effective in educating parents and ultimately having an impact on home environments. Teachers have to be given the time and resources to fully "get it" if an initiative is to have staying power over time.

Teachers reported changes in their thinking and their practice as a result of the change in program focus. A cementing factor in this change was the ability to see a progression over time. Teachers identified historical changes and reported their perceptions in a then and now framework. Short-lived projects and initiatives do not allow this type of long-term perspective

taking and often yield no long-term, lasting change in practice as they do not have a chance to actually take hold before the next focus area is introduced. The data collection methods used, individual interviews and focus groups of varying sizes, provided not only rich data but were a surprisingly effective method to promote retrospective thinking and helped teachers articulate their beliefs in the value of connecting children with nature.

For Family Center teachers, a critical component of sustained change was the ability to see positive changes in children's skill development in outdoor settings. Direct observation of children gave teachers a chance to see theory translated into personal practice. As a result of the increased time spent observing and documenting children's play in the Nature Explore Classroom, teachers reported not only changes in how they saw children but also in how they saw themselves. Along with changes in children's growth and development, teachers recognized that they had also experienced growth as teachers. The process of changing the program culture validated teachers existing practices and also added new practices to their repertoire. These practices were seen as positive improvements. The focus on nature moved from program identity to personal identity as teachers put it into practice.

Parents often mirrored the changes seen in both teachers and the program. Teachers recognized the influence that the nature focus at school had on parents' beliefs and practices in the home setting. This influence was fortified by the relationships between parents and teachers. Family Center classes include options for weekly attendance by parents to participate in parent education groups. This class model is grounded in relationship-based practice. With time, teachers became more certain in their practice and more direct in their teaching about the value of outdoor learning which had an impact on how families spent time outdoors in home settings.

Parents were often eager to share their family experiences outdoors with teachers knowing that these types of experiences were valued.

Teachers also recognize the importance of relationships in building a broader understanding of the nature focus in the larger community. Getting the message out to those beyond the Family Center was a goal for teachers. As they recognized changes in themselves, their students and the program they also recognized that connecting children with nature is an important message for other programs and populations. Newly established and existing relationships outside of the Family Center can provide the beginning for new partnerships and opportunities to sustain the focus on nature. In the remainder of this paper we discuss the implications of our findings and recommendation for the target audiences of this study.

Recommendations

Based on the findings of our study we offer the following recommendations to target audiences interested in moving toward more nature-based programs for children.

Recommendations for Administrators:

- Go into the adoption of a nature focus with eyes wide open. Expect the shift to feel hard in the beginning, but know that buy-in occurs as teachers and stakeholders see the benefits of a nature-infused curriculum for themselves.
- Look to the growing body of research on the skill development and health benefits unique to outdoor play and use this information as a means to encourage and inspire staff.
- Provide ongoing training opportunities for staff on children's learning in nature, documentation, and use of outdoor classroom space. Make sure that paraprofessionals and new hires receive the same consistent training and provide briefings for substitute staff on outdoor classroom expectations before they begin their work with children.

- Allow for teacher peer support by devoting staff-meeting time to the exchange of stories, ideas, and written documentations. Consider using a focus group format to gather information about teachers' experiences.
- Make program provisions that address the potential challenges of taking children outdoors more regularly in all types of weather.
- Ensure that documentation is a part of the teacher role so that children's learning in the outdoor classroom becomes visible to all. Support documentation by providing compensated time and supervision coverage when teachers are doing targeted observations.
- Make sure that indoor environments reflect the same value for learning in nature by allocating resources toward nature-inspired images, furniture, storage containers, and materials.
- Give the process time to evolve. In Forest Lake (and in other peer programs), cultivating ownership with staff took a solid three years. Remember the *sleep, creep, leap* adage and pace programmatic change accordingly.

Recommendations for Educators:

- Seek out research-based information on children and nature and share the pieces you find most inspiring with program leaders, colleagues, and community members.
- Do what you can to expand children's time outdoors during the school day.
- Bring nature inside as often as you can. Simple things like replacing plastic storage containers with baskets, scavenging natural items to use for art collage materials, and substituting store-bought posters with images from nature can dramatically change the feel and function of your school environment.

- Seek out trainings on children and nature and ask your administrator and colleagues if they would like to attend with you.
- Submit a written “wish list” to program leaders of nature-based materials you would like to have in your schools indoor and outdoor spaces.
- As you gradually work to incorporate more nature into your teaching day, share your ideas and experiences with colleagues. The more you feel like part of a team in adopting more nature into your curriculum, the more sustainable the focus will be.

Recommendations for Parents:

- Accompany children outdoors and watch for detail in their play. Take note of the questions they ask, the materials they select, and the moments that bring them joy.
- Make sure that all family members have appropriate outerwear to enjoy outdoor play in all kinds of weather.
- In addition to traditional playground equipment, allow for “messy,” less manicured spaces in your yard that allow children to build, dig, explore, and create.
- Look for schools and programs where children are allowed to play *in* nature and *with* nature—for more of the day than just recess.
- Talk to your child’s teacher about the kinds of experiences your family is enjoying in natural settings. Help your child collect natural items that can be used as art media, in sensory tables, or in science exploration.
- Participate in advisory groups at your child’s school that might have influence over the amount of time children are able to interact with nature during the school day.

Recommendations for Policy Makers/Funding Entities:

- Provide financial incentives and rewards to programs that do the slow, intentional work to sustain the focus over time, beyond simply initiating a nature focus.
- Create curricular structures that allow teachers to “step back and slow down” in their work with children.
- Connect schools who are working to incorporate nature-based experiences into their curriculum with research organizations and other experts in the field, through site visits and specialized trainings.
- Make learning in outdoor settings a part of formal outcome benchmarks and indicators of program quality.
- Provide vehicles for schools to interface with agencies and organizations that can help support a nature focus—4-H groups, nurseries and landscapers, health care organizations, and local businesses.
- Equip new teachers with an understanding of how to teach in outdoor settings by making nature-based learning a part teacher pre-service coursework in higher education settings.

Epilogue

In the two years since this research was completed, the Family Center has experienced numerous changes.

- Teachers: Seven of the 12 teachers who participated in the project have retired or moved to other assignments.
- Administration: Cindy Saarela, the program coordinator during the development of the Nature Explore classroom and the nature focus, left the position in the fall of 2012.

- Dimensions: The 2011–12 school year was the final year of the three-year grant that supported the research at the Family Center. With the completion of the grant, site-based visits from Dimensions staff came to an end.
- Program focus: Focus areas for the Family Center have been expanded to include assessment, social-emotional development of children, and new curriculum. These changes have been necessitated by the adoption of a new early childhood quality assurance initiative in Minnesota.
- Program location and structure: Family Center programs for preschoolers have been expanded to offer more programming in elementary-school buildings with increased program hours available for pre-kindergarten children. Elementary sites all have traditional playground areas available. Access to natural settings at elementary buildings varies from site to site. The only preschool classes with access to a NEC are those located at the Family Center, which remains unchanged and serves as the “home base” for early childhood administration and staff in the district.

Despite these changes, five areas of support identified by teachers are still present and valued in the program.

- Research-based practice: Teachers and administrators continue to lean on scholarly literature related to children’s learning outdoors for guidance. The three years of qualitative study conducted at the Family Center also guides teaching practice and work with parents.
- Formal training: Staff attend ongoing training on outdoor environments and benefits of outdoor learning experiences for young children. This training is an integral part of the annual re-certification process for the Nature Explore Classroom.
- Administration: The current Program Coordinator (Kate Andersen) and Program Development Specialist (Cheryl Smoczyk) are committed to maintaining the Nature Explore Classroom with full certification. This requires a commitment of program resources (i.e. time and dollars) throughout the year. New materials and equipment are regularly added and staff time is designated for upkeep and maintenance of the outdoor space. Orientation materials have been developed to familiarize new staff and substitute teachers with foundational information. Program leaders promote the daily use of the

Nature Explore Classroom and other outdoor areas as an integral part of curriculum implementation and assessment.

- **Peer Support:** There is a core group of five teachers actively teaching at the Family Center who were part of developing and adopting the Nature Explore Classroom and the program focus on connecting children to nature. These teachers have a strong understanding of the value of maintaining and using the Nature Explore Classroom. They hold the history of the project and are able to model effective teaching strategies in the outdoor setting.
- **Dimensions:** The Family Center maintains its status as the site of the first Nature Explore Classroom in Minnesota. Annual re-certification is an opportunity to recognize that the Family Center is part of a larger entity. Family Center staff regularly welcome other programs who request tours and information about incorporating nature play into their own settings. Support from Nature Explore and Dimensions continues to be available through training, resources and information.

We have learned that initiatives, such as the focus on children and nature, may look different over time. Changes in staff and physical space have required adaptations in order to sustain the core components of the project. What is heartening to note is that despite multiple changes, the support for the focus on children and nature has not disappeared. Though it is no longer a singular focus, it is still evident in the culture and identity of the program.

Appendix A

Individual Teacher Interview Questions

1. What changes have you seen in our program since we made nature a primary focus?
2. How has the focus on nature at our school changed you personally?
3. How has the focus on nature at our school changed the way you teach?
4. How has the focus on nature made a difference in the lives of children and families?

5. What challenges have you encountered as a teacher since we incorporated the focus on nature in early childhood?
6. What challenges have you encountered in implementing the nature focus in our new outlying preschool sites? (for teachers who are teaching in two buildings this year)
7. What challenges have you encountered in planning for time in the NEC? (Probes: Scheduling, materials, weather)
8. How would you describe the kind of support that is necessary to change a culture – to create a focus on nature and on teaching in an outdoor classroom?
9. What has been the one most important piece of support you've received as a teacher in implementing our focus on nature? (Probes: Materials, resources, in-services, clerical support, peer to peer sharing, teacher meetings, administrative support) Why – what about this support has been so valuable to you?
10. Imagine teaching in an environment where this support didn't exist – what would that look like and feel like?
11. If you could give advice to teachers who are at the beginning of establishing a focus on nature, what advice would you have for them?

Appendix B

Fall 2011 Teacher Focus Group Questions

1. How has the change (to a focus on nature) supported our standards of best practice in early childhood?
2. If connecting children to nature was no longer a program focus – how would your practice change?

3. Think back to the beginning – our very first introduction to the nature focus, then constructing the Nature Explore Classroom...to NOW...How would you describe your own process of change and buy-in over the years? (Probes: Changes in attitudes about nature, about taking children outdoors, about incorporating nature indoors...)
4. From your perspective as a teacher, what needs to happen to sustain this nature-focused culture we've created:
 - a. for you personally?
 - b. for the program as a whole?
5. How would you describe your role as a teacher in sustaining our focus on nature?
6. How would you describe the paraprofessional's role in sustaining our focus on nature?
7. How would you describe the parent role in sustaining our focus on nature?
8. How would you describe the administrator's role in sustaining our focus on nature?
9. What has Dimensions' role been in supporting and sustaining your work?

Spring 2012 Teacher Focus Group Questions

- How would you describe your perceptions of your co-researcher role – being part of a collaborative research effort these past two years?
- How have the findings of our research informed your work?
- What role has documentation (recording Nature Notes) played in your teaching practice?

- What would make more regular Nature Note documentation easier or more doable?
- What are your future hopes for the Nature Explore Classroom? (or...could ask, “Ideally, in the future, what would you like the Nature Explore Classroom to “look like” and how would you like it to be used?”)
- What are some things that you want to implement into your teaching practice related to connecting children to nature?
- How can we use what we have learned in our partnerships with K-12?
- What advice would you have for other teachers who are thinking about making interaction with nature a regular part of their teaching day?
- What role would you like to see “research” play in our/your work in the coming year?

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Research Questions and Interview Questions
Forest Lake, MN
2011-12

Color Key for Interview Questions:

Fall 2011 Teacher Focus Group

Individual Teacher Interviews

Spring 2012 Teacher Focus Group

Research Question #1:

How do teachers describe the changes that have occurred as a result of making nature a primary focus in the early education program?

Related interview questions:

- What changes have you seen in our program since we made nature a primary focus?
- How has the focus on nature at our school changed you personally?
- How has the focus on nature at our school changed the way you teach?
- How has the focus on nature made a difference in the lives of children and families?
- How has the change (to a focus on nature) supported our standards of best practice in early childhood?
- If connecting children to nature was no longer a program focus—how would your practice change?
- Think back to the beginning—our very first introduction to the nature focus, then constructing the Nature Explore Classroom...to NOW...How would you describe your own process of change and buy-in over the years? (Probes: Changes in attitudes about nature, about taking children outdoors, about incorporating nature indoors...)

Research Question #2:

How do teachers describe their vision for sustaining the program's focus on nature?

Related interview questions:

- From your perspective as a teacher, what needs to happen to sustain this nature-focused culture we've created:
 - a) for you personally?
 - b) for the program as a whole?
- How would you describe your role as a teacher in sustaining our focus on nature?
- How would you describe the paraprofessional's role in sustaining our focus on nature?
- How would you describe the parent role in sustaining our focus on nature?
- How would you describe the administrator's role in sustaining our focus on nature?
- What has Dimensions' role been in supporting and sustaining your work?

Research Question #3:

How do teachers describe the challenges of incorporating a focus on nature in the early education program?

Related interview questions:

- What challenges have you encountered as a teacher since we incorporated the focus on nature in early childhood?
- What challenges have you encountered in implementing the nature focus in our new outlying preschool sites? (for teachers who are teaching in two buildings this year)
- What challenges have you encountered in planning for time in the NEC? (Probes: Scheduling, materials, weather)

Research Question #4:

How do teachers describe the support needed to implement a consistent focus on nature in the early education program?

Related interview questions:

- How would you describe the kind of support that is necessary to change a culture—to create a focus on nature and on teaching in an outdoor classroom?
- What has been the one most important piece of support you’ve received as a teacher in implementing our focus on nature? (Probes: Materials, resources, inservices, clerical support, peer to peer sharing, teacher meetings, administrative support) Why—what about this support has been so valuable to you?
- Imagine teaching in an environment where this support didn’t exist—what would that look like and feel like?
- If you could give advice to teachers who are at the beginning of establishing a focus on nature, what advice would you have for them?

Research Question #5:

How do teachers describe their co-researcher role and how it has informed their work?

Related interview questions:

- How would you describe your perceptions of your co-researcher role—being part of a collaborative research effort these past two years?
- How have the findings of our research informed your work?
- What role has documentation (recording Nature Notes) played in your teaching practice?
- What would make more regular Nature Note documentation easier or more doable?

Research Question #6:

How do teachers describe the future of their work and partnerships in connecting children to nature?

Related interview questions:

- What are your future hopes for the Nature Explore Classroom? (or...could ask, “Ideally, in the future, what would you like the Nature Explore Classroom to “look like” and how would you like it to be used?”)
- What are some things that you want to implement into your teaching practice related to connecting children to nature?
- How can we use what we have learned in our partnerships with K-12?

- What advice would you have for other teachers who are thinking about making interaction with nature a regular part of their teaching day?
- What role would you like to see “research” play in our/your work in the coming year?