Nurturing Curiosity in the Outdoors: A Kindergarten Case Study

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Learning in the Outdoors as a Right of Childhood

- “I have the right to learn about friendship, peace and respect for our planet and for each human being who lives on it, for each animal that inhabits it, for each plant that nourishes it.” (Excerpt from “I Have a Right to be a Child” by Alain Serres)

- Children are competent, capable of complex thinking, curious, and rich in potential…When we recognize children as capable and curious, we are more likely to deliver programs and services that value and build on their strengths and abilities. (How Does Learning Happen, 2014)
Key Literature Influences

Environment as Teacher:

- responsive classrooms build on children’s interests, make thinking visible and foster engagement (Fraser, 2012);
- educators plan intentionally and involve learners (The Third Teacher, CBS Monograph)
- physical environment includes a place of wonder (Heard & McDonough, 2009), inquiry and investigation (The Third Teacher, CBS Monograph)

We need to think about creating classroom environments that give children the opportunity for wonder, mystery and discovery; an environment that speaks to young children’s inherent curiosity and innate yearning for exploration is a classroom where children are passionate about learning and love school. (Heard & McDonough, 2009)
Key Literature Influences

• **Wellness/Well-Being**: Relationship with natural world is integral to wellness; hinges on capacity to live in mutually respectful, balanced way (Steele, 2011)

• **Play**: “Access to active play in nature and outdoors--with its risks--is essential for healthy child development” (Position Statement on Active Outdoor Play, 2015)

• **Materials**: intentional, thoughtful arrangement of materials to “invite[s] engagement, meaning-making, and exploration” (Callaghan, 2013)

• **Sustainability**: “…education about interconnections between humans, environments and others is a vital requisite to living sustainably now and into the future” (Steele, Hives and Scott, 2016)
Importance of Outdoor Play

“...many early childhood educators are often unaware of the importance of outdoor play and lack strategies to support outdoor play and promote children’s interactions with nature” (Kemple, Oh, Kenney, Smith-Bonahue, 2016, p. 451)

Recommended strategies by Kemple et al. (2016) include:

- providing natural outdoor play spaces with low-cost natural materials
- creating a multi-sensory or herb garden
- inviting little visitors with bird feeders, flowers, etc.
- bringing typical learning activities out to the natural environment
- noticing and maximizing teachable moments
- reflecting on attitudes about weather and dirt
- considering accessibility
Overview of the Study

- **Methodology:** Case Study (Dyson & Genishi, 2005)
- **Research Question:** In what ways does one Kindergarten classroom in Northern Ontario nurture curiosity in the outdoors?
- **Participants:**
  - 4 educator voices
  - 2 teacher candidate voices
  - 14 family voices
  - 10 children’s voices through documentation
Case Study Context

- K classroom within a publicly-funded Elementary School
- situated on a hill neighbouring a conservation authority/ski hill offering an inviting context for outdoor learning opportunities through the year
- retrospective look at documentation from September 2017 to March 2018 (during which time Lotje was the K Teacher on the team)
Permission to collect examples of documentation from September 2017 to March 2018 (June 2018)

Documentation Discussion Circle with Educators (K Team (T/ECE), Gr. 2, Gr. 3/4) (August 2018)

Data collected from 10 children:
- creation of slideshow with 80+ photographs/learning stories
- collection of hard copies of learning stories

Guiding Questions:
- What stands out to you as you look back at these moments?
- Why does it stand out?
- What does this mean to you as a teacher when you consider the role of the outdoors in learning?
### Outdoor Learning Experiences
- reading rock under trees
- Jot Spots - sketching trees
- shadow play - noticing how sun helps to tell time
- discovery walks (patterns, shapes & numbers)
- hatching/releasing Monarch butterfly
- demonstrating how Nature recycles naturally - e.g. log in the classroom, sunflower
- scavenger hunt with Gr. 6 Nature Buddies (made class book)
- snow play, snow & ice safety
- Winter Olympic Sports - observing skiing and snowboarding on ski hill with Olympic Buddies
- discovering tracks in the snow; Winter track walk
- celebrating wonderful water with Earth Buddies
- noticing maple sap buckets
- planting with older students - e.g. math in gardening
- exploring changes through cycles of the seasons

### Materials & Loose Parts
- chalk for hopscotch
- reused cardboard boxes, tubes and other materials as loose parts - e.g. huge shed kit box *giant structure for role play
- planks, and sticks for play and writing
- clipboards
- toboggans for pulling friends
- shovels for snow play & building
- bowls, wooden spoons, reused plastic containers for making mud pies, snow recipes, musical instruments
- magnifying glasses, collecting containers
- snowshoes (comparing to how animals adapt to winter)
- pedometers (counting steps)

### Within Classroom Experiences
- world map to plot places around the world that have meaning to children, families, guests
- natural, found and re-purposed materials in Art Studio and for creative design
- log with welcome message
- using senses to feel, smell and taste different squash in the Fall (survey and graph)
- reusing items for centrepieces; bark photo frames
- painting inspired by natural materials
- designing athletic figures using “beautiful stuff” (Topal & Gandini, 1999)
- melting snow provocation
- songs and storybooks to extend learning; as well as book-making
- fostering elephants (e.g. research, voting, graphing)
- designing & posting water posters
- making tube rainsticks
- making used file folder games to share with Math Buddies
- I Spy Nature colours poster

### Community Experiences
- “Growing with the Biosphere” - free experiences for families (e.g. seed starting, butterflies)
- “Discovering the Wonders of Nature” - website with activities
Research Methods Cont’d

- **Family Survey (Anonymous)**
  - Families invited to share beliefs and experiences about learning in the outdoors
    - 6 open-ended questions, 3 yes/no questions with space to elaborate
    - offered both online and in hard copy
    - a number of surveys were completed by 2 or more family members (including the child)

- **Teacher Candidate Survey**
  - Teacher candidates who worked in conjunction with Lotje were invited to respond to 3 open-ended questions
Data Sources/Analysis

- Sources for reflection and analysis:
  - documentation (photographs of learning, narratives and artifacts of children’s thinking - e.g. quotes, pictures, writing samples, survey responses 14)
  - teacher candidate responses (2)
  - discussion circle transcript (50+ pages)
  - research team reflections and discussions

- Analysis process:
  - Reading and rereading data in relation to research question (and secondary questions)
  - Uncovering of barriers and ways to address barriers
  - In-depth conversations about outdoor learning, and next steps re: supporting policy
Noticing, Naming & Nudging Perceived Barriers
Perceived Barrier #1: Preparedness (all weather/all seasons)

- “Sun exposure without protection” (Parent Survey)
- “Bug bites that are potentially dangerous - ticks, vector mosquitoes” (Parent Survey)
- “... if it's drizzling we're going to still go out into the trails...to bring an extra pair of socks...” (Courtney)
- “towels for the kids that don’t like to sit in the dirt” (Courtney)
Nudging at the barrier of **preparedness**...

**Parent Communication/Conversations with Children**

- “We were really intentional at the beginning of year to **let parents know** we were going to be going outside everyday.” (Lotje)
- “...we have **real conversations** with the children... we talked about what animals do and how they adapt.” (Lotje)

**Availability and Choice of Materials**

- “...she [Lotje] provided a **variety of materials**... snow shovels, toboggans, plastic bins and snowshoes for the children to use if and how they chose to.” (Teacher Candidate 2)
- “He loves the outdoors, and really **enjoys getting dirty**! :I “ (Parent Survey)
- “...[he] has become so **confident ‘moving’ on different surfaces** and being so comfortable on knowing what his body can do.” (Parent Survey)
Perceived Barrier #2: Behaviour/Risk

- “But safety, behavior can be an issue absolutely because if you have a runner, like the year before, I was hesitant to bring my group out there because some of them are quite loud or they would run ahead…” (Courtney)
- “Other teachers might think “maybe we shouldn’t go near that, maybe we should do something else” (Robin)
- “It’s hard because they want to climb the trees, and they get the sticks and whack the other children, so management can be tricky... once the novelty wore off, I found that that diminished a little bit.” (Courtney)
- “We spend a lot of time outside ourselves so he knows mostly how to stay safe. He is just as likely to hurt himself running around the gym as he is outside.” (Parent Survey)
Nudging at the barrier of behaviour/risk...

Pairing Up with Older Learners

- “...having a learning buddy that's older, [asking] how we can grow this and invite other people into this experience...the other [educator] is learning from you but you're learning together at the same time. You'll see your children in a different light.” (Lotje)

Learning Respect for the Environment

- “…if schools and child-care before schools were helping the children be mindful of living things and how to treat them...then by the time they come to an older class, it's a whole different way of being...(Lotje)
- “He has started to be very concerned about animals and bugs...” (Parent Survey)
Nudging at the barrier of behaviour...

View of Children as Capable Learners

- “…important to **treat the students as capable** and provide a variety of different ways for the students to learn.” (Teacher Candidate 1)
- thinking “…**why this for this child at this time?**” (Lotje)
- “He **notices what is around him** and will stop to look and observe… and share his thoughts with us.” (Parent Survey)
- “…**more independent** outside than before…” (Parent Survey)
- “…it’s nice to send pictures when children are in situations like this where they are **being curious**…[the child] could **explain and have this conversation** with his parents” (Robin)
Perceived Barrier #3: Unpredictability of Inquiry-based Learning

- “...they might have knowledge that you don’t have...or they might have a question that you can’t answer” (Judy)

- “I wonder if that unpredictability can be barrier or a challenge for some people because they are thinking ‘ohh I’m not really sure what they are going to be curious about, where is this learning going to go?’” (Lotje)

- “I do find it a little harder to be...‘let’s go out and see what happens’” because I have to teach them sometimes... (Courtney)
Knowing the Curriculum/Knowing the Environment

- “...how do we help people to come to that place of being okay with [being flexible and responsive] ... it makes me think about knowing your curriculum so well that you see the connections, and also knowing your environment...if it’s winter time and there’s ice, to get a good sense of what’s out there.” (Lotje)

- “Sometimes those little moments can be ‘Hmm, I’ve never thought about that,’... it’s also imagination and creativity... you can use things from nature in so many different ways and there are no rules that you must use it this way.” (Lotje)
Nudging at the barrier of unpredictability...

Curriculum as Integrated and Living

- “That was probably the biggest thing...the way the outdoors and the curriculum connected. And in a really subtle way. [Children] don’t realize they are doing curriculum learning because it is stimulating, because its connected to the outdoors” (Judy)

- “Learning experiences allowed the children to discover basic elements of science, math, art and literacy…. For example, some children discovered how they could use toboggans to make it easier to carry heavier items...” (Teacher Candidate 2)

- “Curriculum is about learning about how to live in your world.” (Lotje)

- “The children were quite creative...through their play... Problem solving and social skills (were encouraged)” (Teacher Candidate 2)

- Kindergarten children are able to understand complex concepts regarding the environment including photosynthesis, weather patterns, tree seasonal cycles - AND are able to explain them in detail to transfer knowledge. (Parent Survey)
Nudging at the barrier of unpredictability...

**Viewing Learners as Designers**

- “I wonder if they can be thinking about where does that live in nature or where does it live in what we do... in engineering or building or designing or whatever... think of learners as designers” (Lotje)
- “children learned what is most pertinent and interesting to them” (Teacher Candidate 2)

**Asking Questions to Deepen Understandings**

- “Some of the ways that I noticed curiosity being nurtured in the outdoors was through the use of questions.” (Teacher Candidate 1)
- Any time you can use the environment as a teacher [e.g. use of materials] and support the organic learning opportunities that come from this through the use of ‘noticing and naming’ and questioning strategies the stronger the learning outcome will be. (Teacher Candidate 2)
Opportunities for Literacy/Making Connections

• “they can **generate ideas easily** outside I find...then you can focus on other things in writing, in word choice and those **sensory details** and making your audience visualize...” (Courtney)

• “you are seeing a very natural way to **inspire writing** through being in the outdoors” (Lotje)

• “It was interesting to see the students **connect** what they are learning in the classroom to what they were learning outdoors” (Teacher Candidate 1)

• “…said it was fun and he has **stories to tell**…” (Parent Survey)
“...that's how the water thing all started... I said 'tell me about what you're doing, I've never seen this kind of tool before’... he was measuring the slope because the school board was making decisions about what they needed to do so that this flooding wouldn't happen and [the children]... could use the grounds... **became a real problem**...to bring to the kids [outdoors]- so it's looking for **where the math lives**... 

**This inspired**...

- reusing cardboard tubes to represent countries
- working together to make clean water (represented by a blue marble) accessible to all children around the world
“how amazing it was to connect math, geography, and science to one experience...outside.” (Teacher Candidate 1)

“...it opened up so many possibilities for learning... the awareness of conservation of water, the teamwork that had to go into achieving the goal” (Judy)

“... I wanted to provide leadership opportunities for my children...” (Courtney)
Starting with The Why
Benefits

- Increased Overall Physical Health and Wellness
- Authentic, Hands-on Experiences
- Enjoyment
- Problem Solving
- Deepened Understandings of the Natural World
- Growing Appreciation/Respect for Planet We Share
- Growth for All Learners
- Engagement

Fresh Air
Sunshine and Vitamin D
Natural Light
Wellness & Wholeness
Improved concentration
Relaxing
Change of Scenery
Happiness
Less Stressed
Calming
Implications for Policy and Practice

What are we learning?

• to weigh risks with benefits on a continual basis
• to involve children in taking a shared responsibility for their environment
• to encourage healthy and active habits
• to connect mathematics and literacy learning with outdoor learning
• to view children as storytellers, designers, authors, artists, and scientists of their world

How do we move forward?

• Develop consistent messaging with respect to the Rights of the Child, View of Children
• Support nudgers and nudges - intentional strategies to interrupt the status quo
• Target funding (time, resources, research) towards developing lifelong attitudes and healthy habits
  *see next slide
Funding & Development Opportunities

• promote strategies that connect home, school and community (e.g. Learning Buddies, co-educators, family engagement, community partnerships)

• provide opportunities for pre and in-service educators to grow shared understandings

• support community development of resources

• feature local voices and contexts (inclusive, Eng/Fre/Indigenous) through publication of stories (e.g. books, social media and far-reaching articles for public, educators, families, children and youth) that inspire:
  • curiosity
  • respect for the environment, stewardship
  • global citizenship
  • philanthropic visionaries, making a difference
  • co-construction/design of outdoor learning spaces
Questions/Areas for Further Research

If we deepen understandings about learning in the environment, about the environment and for the environment from all societal perspectives,

Then we are intentionally taking steps to reculture and design a new normal, shifting what we know from our own lived experiences, to how we want our world to BE.

Let’s continue to learn with and from each other’s stories! Across all contexts, we invite others to keep asking, “What will our ripple be?”

Thank you for your interest and dedication!
Benefits of Nurturing Curiosity in the Outdoors - The Why

“They run, jump, hop, skip, dodge all on their own. they look at their learning area differently and appreciate the freedom and take in all this learning with wide open eyes.” (Parent Survey)

“It has to happen regularly for the benefits to be shown instead of a special time” (Courtney)
References


Fraser, S. (2012). Authentic childhood. TO, ON: Nelson Education


The Kindergarten Program (2016), pp. 29-30, 34-35, 49-50, 92-93, 103-104

The Third Teacher, Capacity Building Series: http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/cbs_thirdteacher.pdf
Position Statement on Active Outdoor Play
https://www.haloresearch.ca/outdoorplay/

