Title: *Exploring the national scope of outdoor nature-based early learning programs in Canada: Findings from a large-scale survey study*

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Abstract

Across Canada, early learning nature-based programs are gaining popularity with many new programs being implemented each year. Currently, little is known about the number, type, pedagogies, and curricula content of Canadian outdoor and nature-based early learning programs. Thus, this mixed methods study was conducted to explore this growing movement. In total, two hundred educators, representing 165 various programs across Canada completed an online survey. Fifty-one percent of the participants reported having a diploma in Early Childhood Education or similar qualification. In addition, it was estimated that between 40 000 to 60 000 Canadian children, mostly aged between 3 to 9 years, had taken part in these programs during 2018-2019. Moreover, findings suggested that weather conditions can impact the time spent outdoors and that emergent, child-centered curricula rooted in play were guiding the pedagogy of a large percentage of the represented programs.

Background

Across Canada, early learning nature-based programs have gained popularity with many new programs being implemented each year. Programs tend to vary in size, offerings, locales, context, philosophies, and children served and exist under various labels such as "Nature Nursery", "Nature Kindergarten", or "Forest Preschool". Once considered an alternative educational approach (McLaughlin, 2016), the growing popularity of outdoor and nature-based learning experiences and programs signals a need for Canadian based research to be conducted. Currently, few studies exist, and little is known about the number, type, pedagogies, and curricula content of Canadian outdoor and nature-based learning programs. Thus, clear research gaps exist within Canada.

International research indicates that confusion about nature-based programs endures (MacQuarrie, Nugent, & Warden, 2015) and a general reluctance from both parents and educators alike exists in relation to the idea of teaching outdoors. Some educators hold somewhat constrained views of the developmental and learning potential of unstructured 'wild' outdoor spaces as it has been insufficiently researched and understood (Torquati & Ernst, 2013). Even amongst nations with the longest history of delivering outdoor early childhood-based experiences and programs, researchers recognize that teachers' pedagogies are under-researched (Bentsen & Jensen, 2012; Bentsen, Mygind, & Randrup, 2009; Bentsen, Søndergaard Jensen, Mygind, & Barfoed Randrup, 2010; Breunig, Murtell, Russell, & Howard, 2014).

Currently, within Canada and aside from a small-scale survey conducted by Boileau and Dabaja (2020), very little is known about the state of outdoor nature-based programs. This mixed methods study (Creswell, 2013) was therefore designed to define, identify, and understand the varied contexts and approaches being implemented within early learning nature-based programs across the country. As researchers, we sought to quantify the number of programs and identify some of the variances across provinces, as well as illuminate some of the experiences of diverse educators[1] who are implementing nature-based programs. Two overarching questions guided our research project, namely; 1. What are the features of Canadian outdoor and nature-based learning programs and where are they geographically located? 2. How are Canadian nature-based programs described in terms of pedagogies and curricula?

The study offers a glimpse of the state of outdoor and nature-based learning programs within Canada, helping to identify gaps in services, particularly in more remote geographic areas and among diverse and/or marginalized populations. These insights into nature-based pedagogies and the benefits and challenges of implementing a nature-based program can also help inform pre-service and in-service training needs for educators. For the purposes of this study, we defined an outdoor and nature-based learning program as a child-directed, play and inquiry-based learning approach that occurs outdoors, whereby children (0-12 years) go outdoors on a regular and repeated basis over an extended period of time. Individual respondents to the survey self-identified as educators of outdoor and nature-based learning programs based on the definition above. No attempts were made to exclude full day kindergarten programs in either public or private school systems or educators of other grades within schools. The article reports on some of the descriptive findings of the study (i.e., number of programs by region, number of children

[1] Here, we use the term diverse to refer to multiple elements that the study aimed to identify, including, but not limited to, geographically diverse, diverse educational background and credentials, and diverse pedagogical practices.

attending programs, weather variations, time spent outdoors, etc.) as well as insights into program philosophies and curriculum approaches.

Philosophical tenets of outdoor nature-based early learning

Emergent child-focused curriculum and place-based learning figure prominently within the theorizing of outdoor nature-based early learning programs. Emergent curriculum is rooted within a long-standing early childhood education orientation of utilizing children's interests as a starting point for learning and teaching (Betrand & Gestwicki, 2016). Educators closely observe and document children's interests, using these curiosities to build upon and deepen the child's understanding or experience. Infused with philosophies of Erikson, Piaget, Vygotsky, and Bruner (to name a few), emergent curriculum assumes the child is active in constructing knowledge through play and experiences (Gordon & Browne, 2016). Thus, the educator's role is one of facilitator - a co-player, co-participant, and collaborator in the experiences that unfold within the play in a particular environment (Stacey, 2009).

The construct of 'place' is also philosophically significant in the discussions related to outdoor nature-based learning. Place-responsive teaching moves beyond examining the physical locale as the classroom or container (Mannion & Lynch, 2016) to recognize "the importance of place as changing, as relational, as cultural and social, as human and more-than-human, as aesthetic and focus for reflection, as experienced through embodiment, yet arising with its own agencies" (p. 87). Place-based educators advocate for deep, authentic and critical explorations of a 'place' in order to deepen an individual's empathetic connections to the familiar before broader goals can be considered (Gruenewald, 2008; Sobel, 1996, 2008; Somerville, 2010, 2013).

Teaching within Outdoor Models

Teaching in the outdoors appears to require a different approach than indoor educational models. Specifically, Blenkinsop (2014) proposed outdoor educators need to embrace epistemological, ontological, and metaphysical shifts quite unique from their mainstream counterparts (private/public school system educators). The outdoor educator must find ways of harnessing their own curiosity and those of the learners within flexible, adaptable, and fluid experiential learning contexts and experiences.

> Teachers need paradoxically to be sensitive to students' incomplete completeness and recognize both the abilities and the potential of each child, the extent of her or his current knowledge and future interests and provide the needed support and challenge. All of this happens within the context of the group that is also interacting and growing, and a teacher who is changing and re-thinking practice (Blenkinsop, 2014, p. 150).

Blenkinsop also noted that the rhythm of learning outdoors is vastly different given the lack of physical constraints and regular routines, as well as the many unknown variables in the outdoors (e.g., weather, animals); implicating a need to be fully attentive to children while also remaining trusting and comfortable with their risk-taking. Reflection and co-reflection also become critical within an outdoor educational model as the educator (alone and with others) not only reflects upon the children's learning but also upon their own practices, contexts, and personal beliefs. Blenkinsop (2014) proposes this type of co-reflection might involve other educators, parents, researchers, community members, and the more-than-human world. He stresses that meta-reflection is essential where educators (and the community) question the 'status-quo' of cultures of learning and schooling.

Outdoor models require a paradigm shift in educators' thinking and approaches to teaching. A greater focus on the relationality of place is required outdoors, an appreciation of the affordances of the rain on a child's face for example, and a deep recognition and awareness of the interdependence and entanglement of all things in the outdoors (Ritchie, 2014), all viewed as an invitation for teaching and learning.

> If teaching were to go wild, this teacher would overcome anthropocentrism even as she practices humility and care. For such a teacher to flourish, the educational map might even capture more closely an ecologically embedded territory (Williams, 2002, p. 55).

Becoming an outdoor educator

Currently within Canada, a consistent approach to preparing and educating outdoor educators does not exist. Moreover, topics such as outdoor play and learning, outdoor curricula and pedagogies are largely neglected within pre-service ECE publicly funded post-secondary training programs (Dietze & Cutler, 2020). In-service training of educators also varies widely across the country with no consistent requirements or consensus of what constitutes professional learning. However, one Canadian national organization offers a certificate program for educators who elect to pursue a core understanding of teaching in the outdoors within ECE contexts. The *Forest and Nature School Practitioner Course* offered by the Child and Nature Alliance is a non-accredited certification route providing "educators the theoretical and practical tools they need to safely and effectively establish and run Forest and Nature School programs" (CNAC, 2020). Currently, 1800 educators have either undergone or are currently in the process of gaining their forest school certification (CNAC, 2019). Although not a requirement for many ECE positions, and CNAC estimates it has reached only 0.0005% of educators and early childhood educators across Canada (CNAC, 2019, p. 6), the growing popularity of outdoor and nature-based learning

experiences and programs indicates a need for shifts within both pre-service and in-service training and education.

In essence, while outdoor nature-based programs are increasingly being proposed as a counter to disengaged curriculum/learning, little is known about the Canadian landscape—the number of programs, contexts, experiences, complexities, and approaches involved in enacting an outdoor program. International research has found that early childhood educators remain somewhat resistant to educating outdoors (Coe, 2016; Mawson, 2014; Munroe & MacLellan-Mansell, 2013) and the learning potential of an outdoor approach is not always fully appreciated. More often, educators (and programs) tend to focus on the physical benefits and aesthetic value of the outdoors, while the holistic, complex, ethical, nuanced and subtle advantages are overlooked (Elliott, 2017; Mawson, 2014; Maynard & Waters, 2007; Torquati & Ernst, 2013). Currently, a dearth of research exists, and little is known about outdoor and nature-based learning programs within Canada. Thus, we undertook a more comprehensive study with a larger sample size to help further the literature and understanding of the Canadian landscape of nature-based programs.

Methodology

A mixed method study (Creswell, 2013) was undertaken to define, identify, and understand the varied contexts and approaches being implemented within nature-based programs for children across the country. Creswell (2013) proposes that "mixed methods is a research approach, popular in the social, behavioural, and health sciences, in which researchers collect, analyze, and integrate both quantitative and qualitative data in a single study or in a sustained long-term program of inquiry to address their research questions" (p. 6). Our study followed one of Creswell's (2014) mixed method study designs: convergent parallel design, whereby

researchers collect both qualitative and quantitative data concurrently. These data sets are first analyzed separately, and the results are then compared for convergence or divergence. In this study, both qualitative and quantitative data were collected simultaneously using the same data collection instrument.

Informed by previous studies of Boileau and Dabaja (2020) and NAAEE (2017), an online survey tool (developed in both French and English languages) of open and close-ended questions was developed and distributed via multiple Canadian networks associated with outdoor play programs. Networks such as the Lawson Foundation, Child and Nature Alliance Canada, Forest School Canada, Environment and Sustainability Education-Teacher Education helped disseminate the survey to their respective members. Additionally, the survey was advertised on social media sites and with various groups associated with outdoor programs (e.g., forest schools, outdoor learning and play research) as well as professional educator networks (e.g., Association for Research in Early Childhood).

Two hundred educators who self-identified as 'nature educators' and/or persons involved with implementing outdoor nature-based learning models responded to the survey. Qualitative data was analyzed inductively (Braun & Clarke, 2006). Data from open-ended responses were initially coded separately by each researcher and then a list of final emerging themes was created. Both descriptive and inferential statistics were used to analyze the quantitatively collected data. Ethical clearance for this study was granted from Brock University, Lakehead University, and the University of Windsor research ethics boards.

Limitations of the study

There are several limitations to be noted. Firstly, given the self-report method of the survey and the recruitment procedures (i.e., outdoor networks and affiliations) a somewhat

homogenous sample of respondents was expected (i.e., educators already engaged in outdoor program delivery). And despite the relatively high number of 200 participants, we make no claims that this sample is representative of the landscape of programs and educators across Canada. Moreover, translating the survey tool took a significant amount of time and the French survey was disseminated after the English version, possibly contributing to the low response rate among French Canadian educators. Thus, in order to guarantee anonymity, these few French responses were translated and analyzed concurrently with data from the English survey. The study was also limited by institutional ethics protocols which regulate research within Indigenous communities from non-Indigenous academics, thus Indigenous focused survey questions and recruitment procedures were constrained. Without making claims of generalizability, what we present in this article are insights from a spectrum of outdoor nature-based educators in Canada as an initial starting point for understanding the wider landscape.

Findings

Programs and Participants

Two hundred respondents, representing 165 various programs across Canada participated in the study. Approximately, 99 of the 196 participants (51%) who answered the question about educational qualifications reported having a diploma in Early Childhood Education (ECE) or similar qualification. A total of 68 of the respondents (35%) indicated they held a Bachelor of Education degree (or provincial teaching certification) and 118 of the 196 respondents (60%) indicated having some other credential (e.g., recreation and leisure studies, outdoor experiential education, botany, nursing, business administration, Montessori training, etc.). Fifty-seven respondents (29%) specified they held a Forest School Practitioner certificate.

When asked whether a specific course on environmental education or outdoor/nature play

(or similar) was part of their degree/diploma program, 85 of the 113 respondents (75%) who answered this question reported that they had not received training on this topic. Upon closer analysis, 49 individuals with an Early Childhood Education or Bachelor of Education level diplomas (or both) answered that they had not received nature or outdoor-related training as part of their program while 21 answered that they had.

As for the total number of children attending the represented outdoor nature-based programs, the researchers' estimation suggests, based on the reported data, that between 40 000 to 60 000 Canadian children[2] had taken part in these programs during the year of data collection (2018-2019). In terms of the age-range of the attendees, 139 of the 180 respondents (77%) of this item communicated that their programs cater to children aged 3-5 years, followed by 97 (54%) for the 6 to 9-year-olds, and 59 (33%) for children aged between 10-12 years. Additionally, 49 of those respondents (27%) indicated that their programs accommodated 0 to 2-year-old children, while 31 (17%) and 56 (31%) reported their programs were offering either family sessions or sessions for mixed and multi-age groups of children, respectively (Figure 1). When answering the two items pertaining to educational qualifications and the attendees' age-range, participants had the choice to select more than one option.

[2] Only an estimate is possible given the variability of how participants responded to the question (e.g., providing a range of numbers, not providing a number, more than one participant responding for the same program).

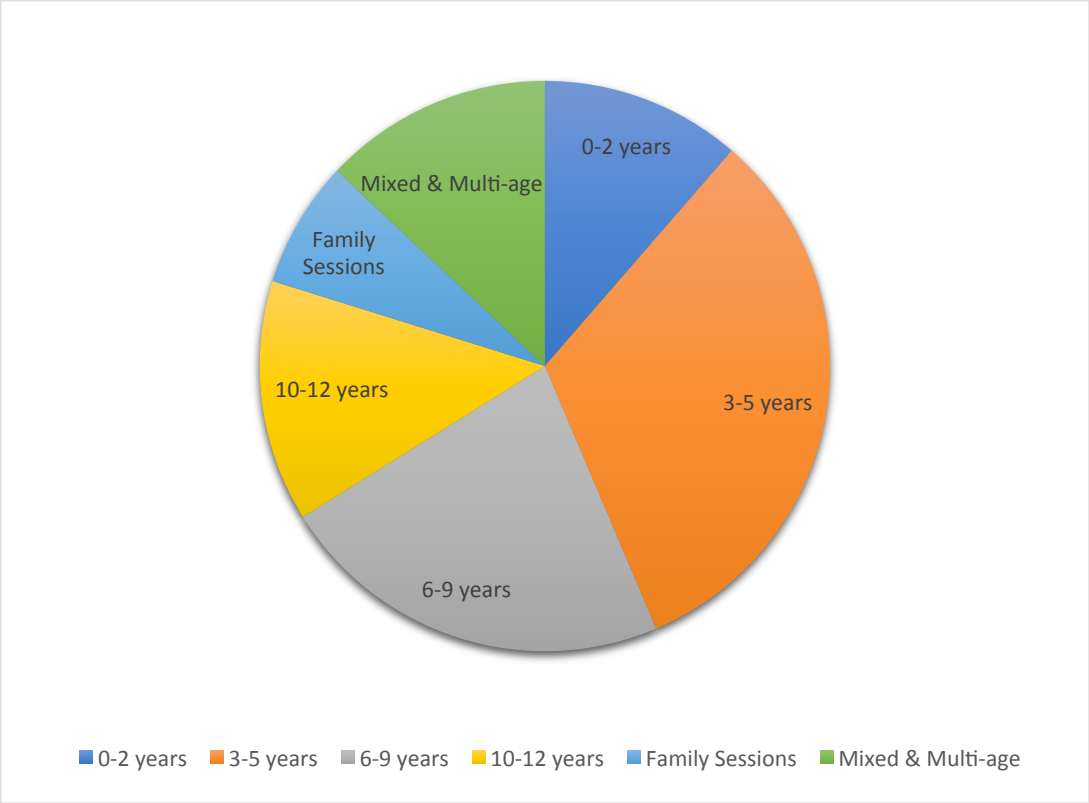

Figure 1: Concentration of programs based on varied age groups

The reported 165 programs spread across all ten Canadian provinces and one territory. The highest concentration of responses identified Ontario as the locale of their outdoor program (n=73). Programs were also frequently reported within British Columbia (n=30), Alberta (n=21), and Québec (n=13). Fewer programs came from New Brunswick (n=9), Manitoba (n=7), Saskatchewan (n=5), Nova Scotia (n=3), and Newfoundland and Labrador (n=2) with 1 program reported in each of Prince Edward Island and the Yukon. Although none of the reported programs came from Nunavut or the Northwest Territories, this may reflect issues with the recruitment procedures given that programs currently operate within both of these locales (e.g., Bushkids in NWT https://www.nccie.ca/story/bushkids/; Nonook School in Nunavut https://nunatsiaq.com/stories/article/learning-from-the-land-at-nuna-school/) and perhaps the study's definition of outdoor nature-based learning did not fully capture the ways in which all

programs self-identify.

Curriculum and Approaches

Survey participants were asked to identify the most accurate descriptor of the curriculum approach used within their outdoor nature-based program (Figure 2). Of the 166 responses to this question, 69 participants, which represents the highest percentage of 42% of total respondents, indicated that an emergent curriculum rooted in play-based approaches best described the method of outdoor teaching/learning. Project-based or inquiry-based approaches, self-developed curricula, or adapting curricula for the outdoors were reported less frequently, and only 7 of the respondents (4%) indicated the use of a required provincial curriculum. Interestingly, 51 participants (31%) indicated varied and multiple curricula were being used in the outdoor programs. Given some participants had indicated they were involved with multiple programs, it is not surprising that many respondents would indicate their involvement with varied and multiple curricula. When asked to explain the varied and multiple curricula approaches used complex and varied descriptions of play-based, emergent, adapted curriculum models were described. For example, one educator responded by describing “emergent, play-based, Forest School ethos, Reggio-Emilia inspired” curricula. This convolution of descriptors might be indicative of the complexities and somewhat illusive nature of defining outdoor nature-based programs. Alternatively, the diversity among all reported approaches could also be caused by the lack of a national framework for outdoor nature-based programs and the gaps in pre-service education (Dietze & Kashin, 2019).

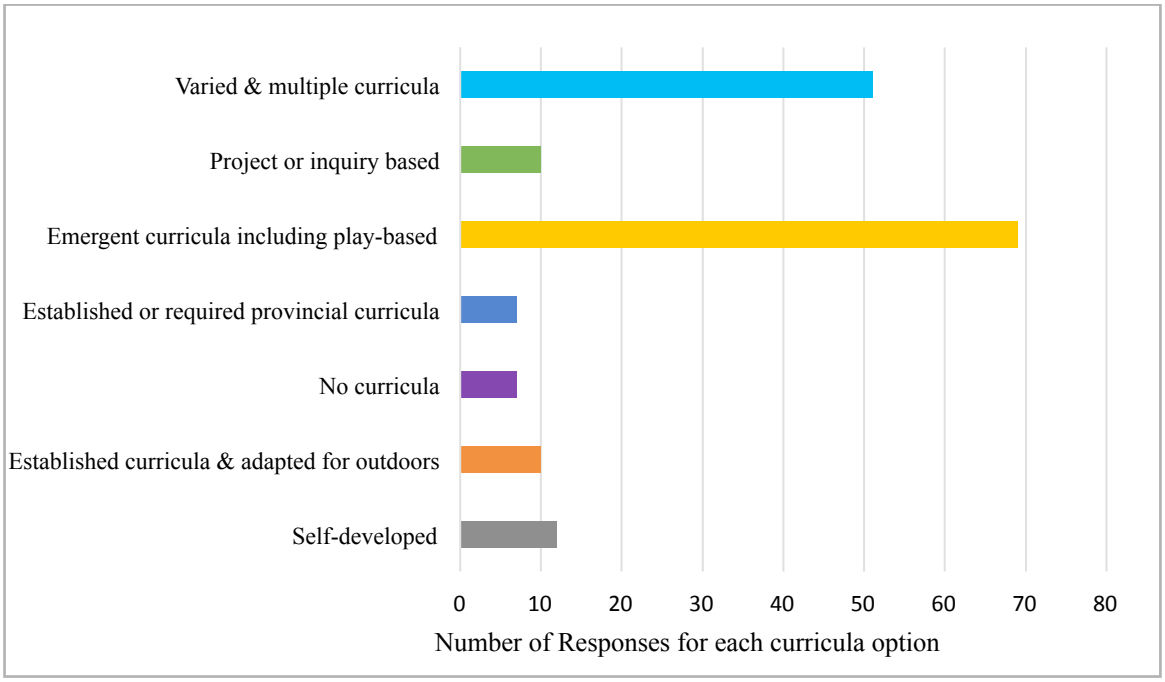

Figure 2: Types of Curricular Approaches Used

Participants were also asked to describe the guiding philosophy or principles of their outdoor nature-based program in an open-ended question. Inductive coding revealed several commonalities among programs. *Opportunities for play and exploration* and a *child-centred approach* were the most frequently listed guiding principles. *Figure 3* illustrates the guiding principles codes that were identified in the collected data based on their frequency of emergence. Codes were categorized based on a four-point scale going from infrequent codes (codes that emerged 10 to 20 times) to most frequent codes (codes that emerged over 40 times).

Figure 3: General frequency of codes from participant responses regarding guiding philosophy of their program(s).

Other elements that were frequently noted by participants included (a) attending to the social-emotional wellbeing of children, (b) emphasizing the children-nature connection, (c) promoting conservation and stewardship values, and (d) respecting others and the environment. These elements appear as interrelated constructs and reflective of common approaches to nature-based early learning and inherent with recent research in early childhood environmental education (Finch & Bailie, 2015; Power, 2016).

Guiding philosophies were narrated with complexity and appeared deeply ingrained in educators' practices.

> The facilitators at XYZ have education and experience in a variety of approaches to early childhood and primary education. These approaches have many shared qualities, including a focus on child-directed learning, problem solving, self-expression and

> creativity. Outdoors, this type of learning occurs quite naturally; facilitators work and play alongside the children to make discoveries, build structures, explore, gather interesting items into collections, run, play, and climb (Participant 140).

However, only a few participants made specific references to the role of Indigenous knowledge and teaching.

> At the heart of Indigenous learning and philosophy in much of Canada are the Seven Grandfather Teachings: love, honesty, humility, respect, bravery, wisdom, and truth. Indigenous pedagogy in many places is also rooted in the Four Directions. The Four Directions Teachings tell us about who we are as human beings in terms of our life cycles as well as in terms of our emotional, physical, spiritual and intellectual selves (Participant 47).

Forest and Nature School principles[3], holistic development, or references to the image of the child as part of the program's philosophy were also infrequently narrated. Health and safety of the children was noted less often than the role of fostering community and family partnerships and connections. Moreover, fostering care, kindness and respect, promoting a sense of place and/or relationships to the land, and the principle of stewardship, conservation, and teaching responsible citizenship were similarly noted by the participants as having an important role.

Program Curricular Approach by Region

Statistical analysis of the curricular approaches used in each region of Canada indicated that similar approaches were used across the country. No significant differences were found in regional approaches with emergent and play-based curricula uniformly reported as the most common approach.

[3] FNS principles are a set of 12 basic guidelines written by the Child and Nature Alliance to provide guidance to educators while teaching outdoors.

The Weather Impact on Outdoor Sessions

One of the survey questions explored if the weather conditions impact the time spent outside. Participants had the choice to address this item with either "yes" or "no" or with an open-ended answer option through which they explain how daily weather or seasonal conditions impact being outside. Out of the 182 participants who answered this item, 141 reported that weather conditions indeed affect the number of hours spent outdoors; 37 of respondents simply selected the "yes" option and 104 provided further explanation. Emerging themes from the 104 open-ended responses suggested that one of the key reasons that impacted outdoor sessions was the extreme low temperatures.

Participants suggested a plethora of low temperatures limits below which outdoor sessions were either shortened or canceled. These low temperatures reported ranged from -4 to -30 degrees Celsius with some participants including wind chill factor information. Yet, the most frequently mentioned low temperature threshold was -20 degrees Celsius reported by 10 participants in four different Canadian provinces. Other proposed weather-related factors affecting the time spent outside included high winds, thunderstorms, snow/ice/rain, heat and humidity as well one participant listed instances of air quality and bugs. Finally, children's appropriate clothing for weather conditions was suggested as an additional factor that influences the time spent outside.

Time outdoors variation by season

Overall, there was a significant difference noted between the mean number of hours spent outside during fall ($\bar{X}$ = 3.3, SE = 0.12) when compared to the mean number of hours spent outside during winter ($\bar{X}$ = 2.6, SE = 0.11), $t(177) = 7.9$, $p < .05$, $r = 0.51$).

There was not a significant difference of time spent outside between provinces/territory in the fall. However, a significant difference in time spent outdoors between provinces/territory did occur during the winter (Figure 4). Programs in British Columbia (BC) and the Yukon (YK) spent the most time outside while Manitoba (MB) and Saskatchewan (SK) provinces spent the least.

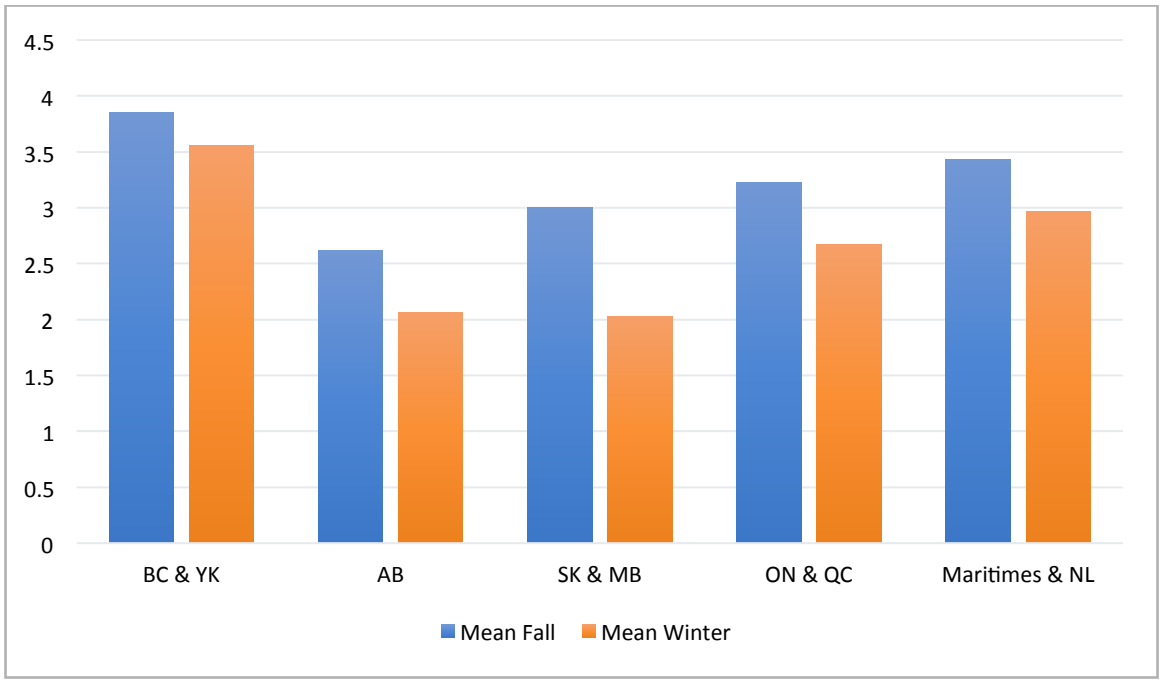

Figure 4: Daily hours spent outside by location and season

Forest School Certification and Time Outdoors

No significant differences were found for time spent outdoors between participants who had a Forest School certificate and those who did not. There was a difference in the means, with those having the certificate spending more time outdoors but it was not a statistically significant difference.

Discussion

Given that about half of the respondents to the survey held their early childhood education qualification and that programs catered mainly to the three- to five-year age group, it

seems that nature-based early learning is often delivered by early childhood educators. Interestingly, a lack of pre-service training on nature-based learning appears consistent among educators' experiences, with many seeming to seek specialized training elsewhere. Study participants were located across Canada; however, distribution of identified programs was uneven across provinces and the one participating territory, with Ontario being represented more than twice as much as British Columbia and Alberta. The other provinces/territory had fewer programs. The distribution of the research participants and their associated programs across Canada could be the result of several factors such as the recruitment procedures and/or the present study's definition for outdoor and nature-based programs that might not fully capture the ways in which some Canadian programs self-identify. Still, this dispersal of the outdoor and nature-based programs appeared to possess some similarities with the regional distribution of the 45 Forest and Nature School programs that are listed on the Child and Nature Alliance of Canada website (https://childnature.ca/about-forest-and-nature-school/).

Despite this geographic variation of the number and location of programs, several commonalities existed within educators' responses. Curricular approaches were similar across the nation, as was time spent outdoors in moderate weather conditions. The similarities in curricular approach are not surprising given the prominence of emergent, child-centred philosophies in early childhood outdoor education. The desire to enjoy the benefits of being outdoors in the absence of extreme weather conditions was also expected.

Conversely, some differences were noted based on the geographic location of programs. Across all programs more hours were spent outdoors in the fall in comparison to winter. Interestingly, a significant difference was only noted in how much time programs spent outdoors in the winter. British Columbia and the Yukon reported the most time outdoors in the winter,

while the prairie provinces (Alberta, Saskatchewan, and Manitoba) the least. It is important to note that the majority of respondents who reported weather did not impact outdoor time resided in British Columbia. Moreover, this was the only province to report programs that were completely delivered outdoors (with no indoor component). Extreme weather conditions (temperatures below -20, wind chill, extreme cold) were also readily described as impacting outdoor time in Alberta, Saskatchewan, and Manitoba. Aligned with previous research (Lysklett & Berger, 2017; Maynard & Waters, 2007), our study also revealed the impact of weather and educators' perceptions of weather as an influence on outdoor programs. Specialized training in outdoor nature programs (i.e., Forest School certification) did not contribute to any notable difference in the amount of time spent outdoors across regions. However, it is important to note that only 29% of the participants indicated they had attained the Forest School certification while 60% indicated a specialized credential. These specialized credentials in a related field were quite varied and included many noteworthy qualifications such as botany, science, naturalist, environmental studies, outdoor play and nature courses. Perhaps, the homogeneity of the participants (i.e., all participants were similarly engaged in delivering some sort of outdoor program) coupled with any form of affiliated specialization explains the consistent results related to time spent outdoors.

Summary

This study sought insight into the landscape of outdoor nature-based early learning programs across Canada. The study demonstrates a consensus among outdoor educators of the importance and value of outdoor programming for young children. Outdoor educators share similarities in curricular approaches and time spent outdoors in moderate weather conditions regardless of the geographic location. As demand for such programs escalates, greater

consideration for training and education will be needed. Additionally, further research of nature-based early learning programs and approaches in Canada is necessary. Specifically, more research attention is needed on the theoretical and philosophical grounding of nature-based education in Canada, as well as the socio-cultural constitution of families engaged in nature-based learning, and ways to promote diversity and inclusion. Insights into the quality and role of pre-service and in-service training focused specifically on outdoor nature-based teaching and learning is required. Understanding outdoor nature play and learning from these multiple perspectives is important in fostering greater connections between research, policy, and practices.

References

Bentsen, P., & Jensen, F. S. (2012). The nature of "Udeskole": Outdoor learning theory and practice in Danish schools. *Journal of Adventure Education and Outdoor Learning*, *12*(3), 199–219.

Bentsen, P., Mygind, E., & Randrup, T. B. (2009). Towards an understanding of "Udeskole:" Education outside the classroom in a Danish context. *Education 3-13*, *37*(1), 29–44.

Bentsen, P., Søndergaard Jensen, F., Mygind, E., & Barfoed Randrup, T. (2010). The extent and dissemination of udeskole in Danish schools. *Urban Forestry & Urban Greening*, *9*, 235–243.

Betrand, J., & Gestwicki, C. (2016). *Essentials of early childhood education* (5th edition). Toronto, ON: Nelson Canada.

Blenkinsop, S. (2014). In search of the eco-teacher: Public school edition. *Canadian Journal of Environmental Education*, 19, 145-159.

Boileau, E. Y. S., & Dabaja, Z. F. (2020). Forest School practice in Canada: a survey study. *Journal of Outdoor and Environmental Education*. https://doi.org/10.1007/s42322-020-00057-4

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Breunig, M., Murtell, J., Russell, C., & Howard, R. (2014). The impact of integrated environmental studies programs: Are students motivated to act pro-environmentally? *Environmental Education Research*, *20*(3), 372.

Child & Nature Alliance of Canada (CNAC). (2019). *CNAC strategic plan 2019-2024*. https://childnature.ca/wp-content/uploads/2019/08/CNAC-2019-Strategic-Plan-14-Web.pdf

Child & Nature Alliance of Canada (2020, May 12). *Forest and nature school Canada*. https://childnature.ca/forest-school-canada/

Coe, H. A. (2016). From excuses to encouragements: Confronting and overcoming the barriers to early childhood outdoor learning in Canadian schools. *Canadian Children*, *41*(1), 5–15.

Creswell, J. W. (2013). *Steps in conducting a scholarly mixed methods study*. DBER Speaker series, University of Nebraska. https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1047&context=dberspeakers

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage.

Dietze, B. & Cutler, A. (2020). College faculty's outdoor play pedagogy: The ripple effect. *Canadian Journal of Environmental Education*, 24, 31-49.

Dietze, B., & Kashin, D. (2019). Perceptions that early learning teachers have about outdoor play and nature. *LEARNing Landscapes*, *12*(1), 91–105.

Elliott, S. (2017). An Australian perspective: Seeking sustainability in early childhood outdoor play spaces. In T. Waller (Ed.), *The sage handbook of outdoor play and learning* (pp. 295–316). Sage.

Finch, K., & Bailie, P. (2015). Nature preschools: Putting nature at the heart of early childhood education. *Bank Street Occasional Paper Series*, *2015*(33), 95–104.

Gordon, A. M., & Browne, K. W. (2016). *Beginning essentials in early childhood education* (3rd edition). Boston, MA: Cengage Learning.

Gruenewald, D. A. (2008). The best of both worlds: A critical pedagogy of place. *Environmental Education Research*, *14*(3), 308–324.

Lysklett, O., & Berger, H. (2017). What are the characteristics of nature preschools in Norway, and how do they organize their daily activities? *Journal of Adventure Education and Outdoor Learning*, *17*(2), 95–107. https://doi.org/10.1080/14729679.2016.1218782

MacQuarrie, S., Nugent, C., & Warden, C. (2015). Learning with nature and learning from others: Nature as setting and resource for early childhood education. *Journal of Adventure Education and Outdoor Learning*, *15*(1), 1–23. https://doi.org/10.1080/14729679.2013.841095

Mannion, G., & Lynch, J. (2016). The primacy of place in education in outdoor settings. In B. Humberstone, H. Prince, & K. A. Henderson (Eds.), *International handbook of outdoor studies* (pp. 85–94). London, UK: Routledge.

Mawson, W. B. (2014). Experiencing the 'wild woods': The impact of pedagogy on children's experience of a natural environment. *European Early Childhood Education Research Journal*, *22*(4), 513–524. https://doi.org/10.1080/1350293X.2014.947833

Maynard, T., & Waters, J. (2007). Learning in the outdoor environment: A missed opportunity? *Early Years: An International Journal of Research and Development*, *27*(3), 255–265.

McLaughlin, C. (2016). Behind the scenes. *Interaction*, *30*(1), 2.

Munroe, E., & MacLellan-Mansell, A. (2013). Outdoor play experiences for young First Nation children in Nova Scotia: Examining the barriers and considering some solutions. *Canadian Children*, *38*(2), 25–33. North American Association for Environmental Education. (2020). *Nature-based preschools in the US: 2020 Snapshot*. NAAEE.

http://naturalstart.org/sites/default/files/staff/nature_preschools_2020_snapshot_final_0.pdf

North American Association for Environmental Education (NAAEE). (2017). *Nature preschools and forest kindergartens: 2017 national survey*. NAAEE

Power, M. (2016). It's okay to let kids play: Forest and nature school, risky play, and early learning. *Interaction*, *30*(1), 26–28.

Ritchie, J. (2012). Early childhood education as a site of Ecocentric counter-colonial endeavour in Aotearoa New Zealand. *Contemporary Issues in Early Childhood*, *13*(2), 86–98. https://doi.org/10.2304/ciec.2012.13.2.86

Sobel, D. (1996). *Beyond ecophobia: Reclaiming the heart in nature education*. Orion Society.

Sobel, D. (2008). *Childhood and nature: Design principles for educators*. Stenhouse.

Somerville, M. (2010). A place pedagogy for "global contemporaneity." *Educational Philosophy and Theory*, *42*(3), 326–344.

Somerville, M. (2013). *Water in a dry land: Place-learning through art and story*. New York, NY: Routledge.

Stacey, S. (2009). *Emergent curriculum in early childhood settings*. St. Paul, MN: Redleaf Press.

Torquati, J., & Ernst, J. A. (2013). Beyond the walls: Conceptualizing natural environments as "third educators". *Journal of Early Childhood Teacher Education*, *34*(2), 191–208.